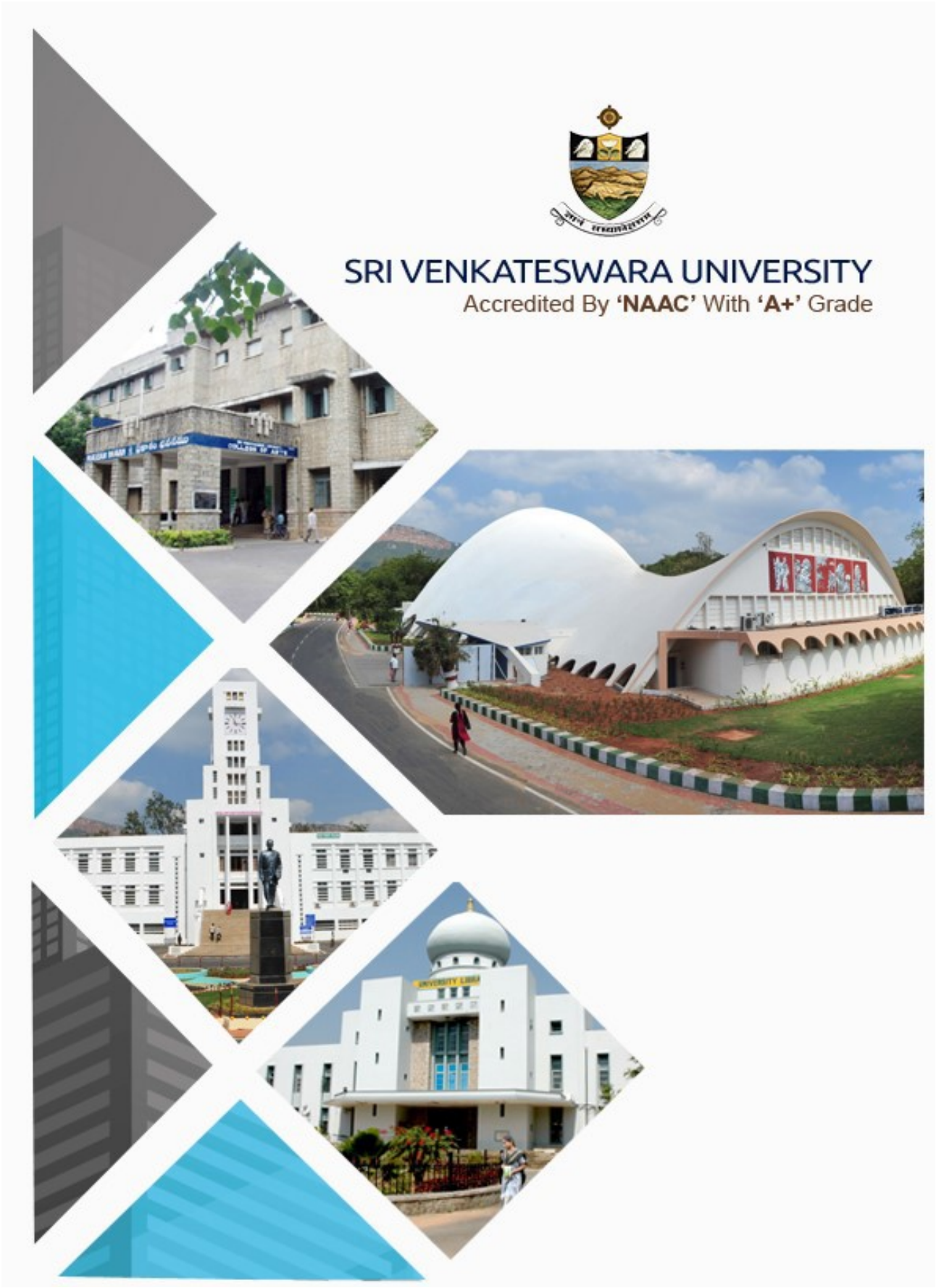


**3.4.6. Total number of Books and Chapters in edited Volumes/Books Published and Papers in National/ International conference proceedings year-wise during last Five years - 2021-2022**

# SRI VENKATESWARA UNIVERSITY

**Accredited By NAAC with 'A+' Grade**

| 3.4.6 Number of books and/or chapters in edited volumes published per teacher during the last five years (15) | | | | | |
|---|---|---|---|---|---|
| Year | 2017 | 2018 | 2019 | 2020 | 2021 |
| Number | 119 | 81 | 151 | 93 | 190 |

**Total 634**

PRINCIPAL
S.V. COLLEGE OF SCIENCES
S.V. UNIVERSITY, TIRUPATI-517 502

PRINCIPAL
S.V. COLLEGE OF ENGINEERING
TIRUPATI-517 502

PRINCIPAL
S.V. UNIVERSITY COLLEGE OF ARTS
TIRUPATI-517 502

PRINCIPAL
College of Commerce,
Management & Computer Science
SRI VENKATESWARA UNIVERSITY
Tirupati-517 502

PRINCIPAL
College of Pharmaceutical Sciences
S.V. University, Tirupati

Prof. M. Srinivasulu Reddy
Director
NAAC Steering Committee
Sri Venkateswara University
Tirupati-517 502

**3.4.6 Number of books and/or chapters in edited volumes published per teacher during the last five years (15)**
**3.4.6.1: Total Number of Books and Chapters in edited volumes/books published, and papers in National / International Conferences - proceedings year wise during the last five years**

| Sl. No. | Na me of the Teacher | Title of the Book/Chapters published | Title of the Paper | Title of the Proceedings of the Conference | Year of Publication | ISBN/ISSN Number of the Proceedings | Whether at the time of publication affiliating institutions was same (Yes/No) | Name of the Publisher | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Dr. Murali Konidina | Scholars Press | Statistical data Mining Techniques | – | 2021 | ISBN 978-613-8-929697 | Yes | – | view |
| 2 | Dr. B.V. Muralidhar | B.A (First Year - Semeste - I) Political Science | Introduction to Political Science | – | 2021 | – | yes | APSCHE, Atamakur (V), Mangalagiri (M), Guntur, A.P 522 503 | view |
| 3 | Prof. Dr. B.V. Muralidhar | M.A. Political Science (Previous) Paper II | Political Science & Public Administration Modern Political Theory/Analysis | – | 2021 | – | yes | SV University, Tirupati 517 502 | view |
| 4 | Dr.A. Kusuma & Dr. G. Janakiramaiah | Research Methodology in Social Science | Research Methodology in Social Sciences | – | 2021 | 9789391844219 | yes | Serials Publications (P) Ltd. Darya Ganj, New Delhi - 110 002 | view |
| 5 | Dr. S. Janardhana Reddy | Emerging trends in Nanotechnology: Innovations, Health and Risks | Emerging trends in Nanotechnology: Innovations, Health and Risks | – | 2021 | ISBN 978-81-949237-1-8 | Yes | AGROBIOS (INDIA) Jodhpur - 342 003 | view |
| 6 | Dr. B. Sreenivasulu & Dr. S. Venkatramana Reddy | Emerging trends in Nanotechnology: Innovations, Health and Risks | Nanotechnology and Feature Trend Applications | – | 2021 | ISBN 978-81-949237-1-8 | yes | AGROBIOS (INDIA) Jodhpur - 342 003 | view |
| 7 | JayaChandra Reddy Ramesh Babu | India Vietnam strategic partnership : progress and prospects | India Vietnam strategic partnership : progress and prospects | – | 2021 | ISBN 978-81-949154-1-6 | Yes | Uday Publishing House, New Delhi | view |
| 8 | Dr. K. Suneetha | Performance of public distribution system in Andhra Pradesh | Performance of public distribution system in Andhra Pradesh | – | 2021 | ISBN:978-93-89264-79-1 | Yes | Viswabharathi | view |
| 9 | Dr.I.Narendra kumar | Performance of Public Distribution System in in Andhra Pradesh | – | – | 2021 | ISBN 978-93-89264-79-1 | Yes | Vishwabharati Research Centre, LATUR, Maharashtra | view |
| 10 | P. Krishna Mohan Reddy | India-Vietnam In The Indo-Pacific China | . "India-Vietnam Relations and the Indo-Pacific", Jayachandra Reddy and prayaga Med. India-Vietnam In The Indo-Pacific China Factor, Narendra Publishing House, New Delhi.2021.pp.14-30. ISBN:978-93-91063-26-9 | India-Vietnam In The Indo-Pacific China | 2021 | ISBN:978-93-91063-26-9 | No | Narendra Publishing House, New Delhi. | view |
| 11 | Dr. P. Krishna Mohan Reddy | Indo-Pacific Construct A New Regional Order and Implications | Asia-Pacific and Indo-Pacific: Power Politics | International Conference on Indo-Pacific Construct | 2021 | – | yes | – | view |

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|---|---|---|---|---|---|---|---|---|---|
| 12 | Dr. G. Vijay Kumar Reddy | Indo-Pacific Construct A New Regional Order and Implications | India's Engagement in the Quad: Implications for India-Russia Relations | International Conference on Indo-Pacific Construct | 2021 | – | yes | – | view |
| 13 | Dr. Y. Yagama Reddy | Indo-Pacific Construct A New Regional Order and Implications | All - Pervasive Diversity and Complexity at the base of Strategic Salience of Indo-Pacific | International Conference on Indo-Pacific Construct | 2021 | – | yes | – | view |
| 14 | Dr. M. Priyaga | Indo-Pacific Construct A New Regional Order and Implications | India and the ASEAN Centrality in the Indo-Pacific Emerging Security Architecture | International Conference on Indo-Pacific Construct | 2021 | – | yes | – | view |
| 15 | Dr. M. Padmaja | Indo-Pacific Construct A New Regional Order and Implications | The Impact of Indian Diaspora in the Indo-Pacific Region: India's Interests | International Conference on Indo-Pacific Construct | 2021 | – | yes | – | view |
| 16 | Dr. V. Ramesh Babu | Indo-Pacific Construct A New Regional Order and Implications | India-Japan Partnership towards Consolidation of the QUAD | International Conference on Indo-Pacific Construct | 2021 | – | yes | – | view |
| 17 | Dr. Nagalakshmi Devamma | Advances in nanotechnology | Magnetically Recoverable gold supported iron oxide (Fe3O4) nanoparticles and its application as efficient catalytic activity for the degradation of organic dyes | – | 2021 | 978-93-93737-96-0 | Yes | Shanlax publications | view |
| 18 | Dr. Manjula K, Dr. B.Kalyani and Dr. D.Jhansi | Emerging trends in Nanotechnology: Innovations, health and risks | Nanotechnology in designing and development of functional foods for health promotion | Chapter in book | 2021 | 978-81-949237-1-8 | Yes | AGROBIOS | view |
| 19 | Dr.Anupallisudhakaraiah E.Gnanadeepika | Some studies on dominating sets and restrained dominating sets | Some studies on dominating sets and restrained dominating sets of interval graphs and circular arc graphs | – | 2021 | 9786200619914 | YES | Globe Edit | view |
| 20 | Dr.Anupallisudhakaraiah Dr.Kadadasari Ramakrishna | Study on non split restrained domination and average distance | Average distance of interval graphs with algorithms an over study on domination numbers, non split restrained domination | – | 2021 | 9786138948803 | YES | Scholar’s Press | view |
| 21 | Dr. B. Sarojamma | Computational Mathematics | Maximum Likelihood Estimation of Parameters for Gamma Distribution using R | Proceedings of the International Virtual Conference on Recent Developments in Computational Mathematics-2021 | 2021 | ISBN 978-93-89105-57-5 | YES | Coimbatore Institute of Information Technology, Coimbatore - 641 009, TAMILNADU | view |
| 22 | Dr. M. Rajasekhar | Emerging trends in Nanotechnology: Innovations, Health and Risks | A Critical Review on Potent Prospects of Biogenic Metallic Nanoparticles in Cancer Therapy | – | 2021 | – | YES | Publisher: Agrobios (India) | view |
| 23 | Dr. M. Rajasekhar | Emerging trends in Nanotechnology: Innovations, Health and Risks | Therapeutic Role of Nanotechnology in Neurological Diseases | – | 2021 | – | YES | Publisher: Agrobios (India) | view |

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|---|---|---|---|---|---|---|---|---|---|
| 24 | Dr. M. Rajasekhar | Emerging trends in Nanotechnology: Innovations, Health and Risks | Biogenic Nanoparticles: A Comprehensive Review to Explore Multiduring Resistance Mechanisms among Microbes | – | 2021 | – | YES | Publisher: Agrobios (India) | view |
| 25 | Dr. M. Reddy Bhaskara Reddy | Water Resources of Madanapalli Taluk | – | – | 2021 | ISBN 9786202316224 | YES | Scholar's Press | view |
| 26 | Dr. M. Hema | | Recent developments in detection and diagnosis of plant viruses | – | 2021 | ISBN 978-0-12-821406-0 | YES | Academic Press | view |
| 27 | Dr. N.V.V.Jyothi | Science of Environment | Health Implications by Tainted Drinking Water | – | 2021 | 978-81-955557-8-9 | Yes | Scienge publications Chennai | view |
| 28 | Dr.K.Anuradha | Recent Advances in Home Science | Impact of Parenting Styles on Behaviour of Pre School Children According to Mother's Variables. | – | 2021 | ISBN: 978-93-90471-42-3 | YES | Integrated Publications, New Delhi | view |
| 29 | Dr. B. Swaroopa Rani | Recent Advances in Home Science | Impact of Parenting Styles on Behaviour of Pre School Children According to Mother's Variables. | – | 2021 | ISBN: 978-93-90471-42-3 | YES | Integrated Publications, New Delhi | view |
| 30 | Dr. Usha Rani | Recent Advances in Home Science | Impact of Parenting Styles on Behaviour of Pre School Children According to Mother's Variables. | – | 2021 | ISBN: 978-93-90471-42-3 | YES | Integrated Publications, New Delhi | view |
| 31 | Dr. S. Ramanaiah | Exploration and Development of Mineral Resources | Editor | – | 2021 | ISBN: 978-613-8-94848-3 | YES | Scholars' Press, Mauritius | view |
| 32 | Prof. V. Padmavathi | - | Synthesis and spectral characterization of 1,2,4 - triazole derivatives | AIP Conference Proceedings | 2022 | 2390, 020065 | Yes | AIP Publishing, USA | view |
| 33 | Dr. Anupalli Sudhakaraiah & Dr. Tata Sivaiah | Study of All Powers of Paths and Cycles Towards Domination | Study of All Powers of Paths and Cycles Towards Domination and Labeling Numbers | – | 2022 | ISBN 9786200630575 | YES | GlobeEdit Paperback | view |
| 34 | Dr. Anupalli Sudhakaraiah & Dr. K Narayana | Conspicuous Studies on Dominating Sets and Neighbourhood Sets | Some Conspicuous Studies on Dominationg Sets and Neighborhoods Sets of an Interval Graph and Circular - Arc Graph | – | 2022 | ISBN 978-620-0-63587-7 | Yes | GlobeEdit Paperback | view |
| 35 | Dr. B.C. Sundara Raja Reddy | Assessment of Water Quality from the Gundlakamma Estuary, Andhar Coast, Southest Coast of India | – | – | 2022 | ISBN: 978-3-031-21644--2 | YES | Springer Nature Switzerland AG | view |
| 36 | Dr. V. Padmavathi | - | Synthesis and spectral characterization of 1,2,4 - triazole derivatives | AIP Conference Proceedings | 2022 | 2390, 020065 | Yes | AIP Publishing, USA | view |
| 37 | Dr. A. Padmaja | – | synthesis and Antifungal Activity of Diamidomethane Linked Oxazolyl/Thiazoly/Imidazolyl Isoxazoles | AIP Conference Proceedings | 2022 | 2390, 020024 | yes | AIP Publishing, USA | view |
| 38 | Dr. A. Padmaja | – | A Green Approach for the Synthesis of Pyridine Linked Bis(Oxadiazoles)/(Thiadiazoles)/(Triazoles) and Evaluation as Antioxidants | AIP Conference Proceedings | 2022 | 2390, 020041 | yes | AIP Publishing, USA | view |

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|---|---|---|---|---|---|---|---|---|---|
| 39 | Dr. V. Padmavathi | – | Synthesis of a new class of Pyrazoly- 1,2,4 - triazole amine derivatives | AIP Conference Proceedings | 2022 | 2390, 020067 | yes | AIP Publishing, USA | view |
| 40 | Dr. B.V. Muralidhar | B.A. First Year Political Science Basic Organs of the Government | B.A. (First Year - Semester -II) Political Science (Basic Organs of the Government) | – | 2022 | – | Yes | Published by APSCHE, Guntur - 522 503 | view |
| 41 | Dr. Paramageetham Chinthala | Microbial Resource Technologies for Sustainable Development | Electrochemically active bacteria as platform technology in microbial electrochemical system | – | 2022 | ISBN 978-0-323-90590-9 | YES | Elsevier | view |
| 42 | Dr. D. Bharathi | Recent Trends in Multidisciplinary Subjects | Orthogonal Generalised - N Semi Derivations on Semiprime Nearrings | – | 2022 | ISBN 978-93-93239-48-8 | YES | RED Shine Publications | view |
| 43 | Dr. B. Sarojamma | Editor | National Conference on Recent Advances in Data Science & Artificial Intelligence (RADSAI 2022) | Weighted Quantile Regression Models using software for Atmospheric Data | 2022 | ISBN: 978-81-959212-0-1 | YES | Published by APSCHE, Guntur - 522 503 | view |
| 44 | Dr. B. Sarojamma | Editor | National Conference on Recent Advances in Data Science & Artificial Intelligence (RADSAI 2022) | Machine Learning Models using WEKA Software for Atmospheric Data | 2022 | ISBN: 978-81-959212-0-1 | YES | Published by APSCHE, Guntur - 522 503 | view |
| 45 | Dr. B. Sarojamma | Editor | National Conference on Recent Advances in Data Science & Artificial Intelligence (RADSAI 2022) | Outlier Detection and Best Model Fitting for Rainfall Data using Machine Learning Models | 2022 | ISBN: 978-93-91347-42-0 | YES | Published by APSCHE, Guntur - 522 503 | view |
| 46 | Dr. M. Reddy Bhaskara Reddy | Map Interpretation in Geopraphy | – | – | 2022 | ISBN 978-620-2-31976-8 | YES | Scholar's Press | view |
| 47 | Dr.M. Prasantha Kumari | Changing Information Landscape and Its Transformation in LIS Education | Electronic Resource Management systems with Special Reference to Coral | – | 2022 | – | Yes | Alagappa University, Karaikudi - 630 003 | view |
| 48 | Dr. Prasantha Kumari M | Changing Information Landscape and Its Transformation in LIS Education | Trends in Library and Information Science Research | – | 2022 | – | yes | Alagappa University, Karaikudi - 630 003 | view |
| 49 | Dr. Prasantha Kumari M | International Conference on Open Access Sources and Information Services | – | Role of Sri Venkateswara Museum Libray, Central Library and Research Centre (SVCLRC) in preserving cultural heritage | 2022 | – | Yes | Andhra Pradesh Library Association, Vijayawada - 520 010 | view |
| 50 | Dr. Prasantha Kumari M | User Perceptions and Expectations from Academic Libraries in Digital Information Society | Digital Pedagogy in LIS Education | – | 2022 | – | YES | Paramount Publishng House | view |
| 51 | Dr. Prasantha Kumari M | Objective Questions in Library Science | – | – | 2022 | 9789390631704 | YES | Paramount Publishng House | view |
| 52 | Dr. A. Kusuma | Skill Enhancement for Human Resource Development | Core Employability Skills For Human Resource Development | – | 2022 | 978-81-926434-1-0 | Yes | Paramount Publishng House | view |

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|---|---|---|---|---|---|---|---|---|---|
| 53 | Dr. A. Kusuma | Educational Development and Social Welfare | Priciples of Social Impact Assessment | – | 2022 | 978-1-387-57887-0 | YES | Lulu Enterprises UK Ltd. | view |
| 54 | Dr. K. Viswanath | Exploring New Pathways of Research and Innovation in Rehabilitation of Differently Abled | Quality Assurance in Teacher Education | – | 2022 | – | YES | SR Publishing House, Delhi - 110 054 | view |
| 55 | Dr. G. Sai Prasad M .Kishore babu | International Conference on Open Access Sources and Information Services during Post-Covid Times: Challenges and Opportunities | Scientometric Study of Doctoral Dissertations in Physics in Acharya Nagarjuna University, Guntur, Andhra Pradesh | International Conference on Open Access Sources and Information Services during Post-Covid Times: Challenges and Opportunities | 2022 | 978-8185216546 | Yes | Indian Library Association New Delhi | view |
| 56 | M.Kishore Kumar | Changing Information Landscape and its Transformation in lis Education | Use of online learning platforms and Open Educational Resourses by Engineering Students of IIT , Tirupati: A Study | – | 2022 | 978-93-92990-12-0 | yes | Mathi Offset Printer,Udumalpet-642126 | view |
| 57 | Dr. A.J.Madhuri | Changing Information Landscape and its Transformation in lis Education | Use of online learning platforms and Open Educational Resourses by Engineering Students of IIT , Tirupati: A Study | – | 2022 | 978-93-92990-12-0 | yes | Mathi Offset Printer,Udumalpet-642126 | view |
| 58 | Dr. A.J.Madhuri | Proceedings of the International Conference on Emerging Digital Library Platforms Shaping Digital Transformation and National Data Exchange | Research Data Management and University Libraries: An Overview | – | 2022 | 978-93-5680-830-0 | yes | Documentation Research and Training Centre, Indian Statistical Injstitute, Banmgalore | view |
| 59 | Dr. A.J.Madhuri | Transformation of Lkearning Resourse Centres in the Digital Era | Information Seeking Pattern of Research Scholars and Usage of E-Resourse at Sri Venkateswara Ubniversity, Tirupati | – | 2022 | 978-93--85469-08-4 | yes | K.S.Rangaswamy College of Technology and Society bfor the Advancement of Library and Information Science | view |
| 60 | Dr. A.J.Madhuri | Webometric Analysis of University Websites in India | | – | 2022 | 978-620-5-52034-5 | yes | Scholars Press | view |
| 61 | Dr. E.Sudhakar | Revitalizing the Libraries to the Android Society | Utilizing of Online Social Media Informationm Resourses by the Students and Faculty Members at Management Studies College Libraries in Chittoor Disatrict - A Study | – | 2022 | 978-93-95038-25-6 | yes | BS Publications | view |
| 62 | Dr. E.Sudhakar | Changing Information Landscape and its Transformation in lis Education | Use of Information Technology among Post graduate Professional Course Students in Rayalaseema Area, Andhgrapradesh: A Study | – | 2022 | – | yes | – | view |

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|---|---|---|---|---|---|---|---|---|---|
| 63 | M.Hema | Pandemic outbreaks in the 21st century, Epidemiology, Pathogenesis, Prevention, and Treatment | Book Chapter Molecular mechanisms of Zika fever in inducing birth defects: An update Chapter 6; pp. 87-109. | – | 2021 | ISBN: 978-0-323-85662-1 | Yes | Elsevier Publications. | view |
| 64 | M.Hema | Encyclopedia of Virology. | Book Chapter Pecluviruses (Virgaviridae). | – | 2021 | ISBN: 9780128145159. | Yes | Elsevier Publications | view |
| 65 | M.Hema | Recent Developments in Applied Microbiology and Biochemistry | Book Chapter Emerging trends in the Development of Plant virus based Nanoparticles and their Biomedical Applications | – | 2021 | – | – | Elsevier Publications | view |
| 66 | Divi Venkata Ramana Sai Gopal | Pandemic outbreaks in the 21st century, Epidemiology, Pathogenesis, Prevention, and Treatment | Lessons learned from the first pandemic of the 21st Century, global experience, recommendations, and future directions | – | 2021 | ISBN: 978-0-323-85662-1 | Yes | Elsevier Publications. | view |
| 67 | K.V. Sucharitha | Immunotherapy for Gastrointestinal Malignancies | Immuno-Oncology of Colorectal Cancer | – | 2021 | 978-9811564864 | Yes | Springer | view |
| 68 | Prof. G. Jayachandra Reddy | India-Vietnam: Defence, Strategic and Economic Cooperation | Editor | – | 2021 | ISBN 978-81-949154-1-6 | Yes | Uday Publishing House, New Delhi | view |
| 69 | Dr. D. Subramanyam | Technology and women empowerment | Empowerment of Tribal women through Selfhelp groups in Pulicherla Mandal of Chittoor District | Technology and women empowerment | 2021 | 978-93-88854-58-0 | Yes | Discovery publishing houses pvt ltd new Delhi | view |
| 70 | Dr. D. Subramanyam | Technology and women empowerment | Women Empowerment through SHGs A Case Study in Pulicherla Mandal of Chittoor District | Technology and women empowerment | 2021 | 978-93-88854-58-0 | Yes | Discovery publishing houses pvt ltd new Delhi | view |
| 71 | Dr. D. Subramanyam | Technology and women empowerment | Urban Women Entrepreneurs A case study in Chittoor District of Andhra Pradesh | Technology and women empowerment | 2021 | 978-93-88854-58-0 | Yes | Discovery publishing houses pvt ltd new Delhi | view |
| 72 | Dr. D. Subramanyam | Technology and women empowerment | Economic independence of women – a case study of women self-help groups in Andhra Pradesh | Technology and women empowerment | 2021 | 978-93-88854-58-0 | Yes | Discovery publishing houses pvt ltd new Delhi | view |
| 73 | Dr. V. Jagadeeswari | Technology and Women Empowerment (Eds) | Edited Book | – | 2021 | 978-93-88854-58-0 | Yes | Discovery Publishing House(P)Ltd. | view |
| 74 | Dr.G.Damodhar | Financial Performance Of Power Distribution Companies | Financial Performance Of Power Distribution Companies in Andhra Pradesh | – | 2021 | 9786138966425 | – | Scholar’s Press | view |
| 75 | Prof.D. Krishnamoorthy | Indian journal of women and development. | Editor | – | 2021 | ISSN : 22313974 | – | | view |

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|---|---|---|---|---|---|---|---|---|---|
| 76 | Dr.a.Kusuma & Prof.G.Janakiramaiah | Research Methodology in Social Science | Editor | – | 2022 | 9789391844219 | – | Serials Publications,New Delhi. | view |
| 77 | Dr.G.Anand Amruth Raj & Dr.P.Suneetha | Women Self Defence Training Centre | Psycho-Social Problems of Sesondary School Women Teachers | – | 2022 | 97881955554263 | – | Vel Printers | view |
| 78 | Dr. P Hema | Jainism in Rayalaseeema | Editor | – | 2021 | ISBN 9789388789714 | – | BR Publishing Corporation – New Delhi | view |
| 79 | Prof. P. KusumaHarinath | Feminism in Modern Indian Literature | Towards the Right Perspective | – | 2021 | 978-93-5493-310-3 | Yes | | view |
| 80 | Dr.J.N.Chandra Sekhar Dr.P.Dinakara Reddy | Indirect Vector Control of Induction motor with Hybrid Controllers | -- | -- | 2021 | 978-613-8-95513-9 | yes | Scholar's Press | view |
| 81 | Dr.J.N.Chandra Sekhar | Performance Improvement in asynchronous drive with Hybrid Algorithms | -- | -- | 2021 | 978-620-3-92188-5 | yes | LAP LAMBERT Academic Publishing | view |
| 82 | Prof. G. Jayachandra Reddy | India-Vietnam Enhancing partnership | India and Vietnam : New Horizons | – | 2021 | ISBN 9789389695960 | Yes | Narendra Publishing House, New Delhi | view |
| 83 | Prof. K. Raja Reddy | India-Vietnam Enhancing partnership | India - Vietnam Burgeoning Partnership | – | 2021 | ISBN 9789389695960 | Yes | Narendra Publishing House, New Delhi | view |
| 84 | Dr. M. Padmaja | India-Vietnam Enhancing partnership | Indian Diaspora in Vietnam | – | 2021 | ISBN 9789389695960 | Yes | Narendra Publishing House, New Delhi | view |
| 85 | Dr. M. Prayaga | India-Vietnam Enhancing partnership | India- Vietnam Energy Geopolitics in the Indo Pacific Region | – | 2021 | ISBN 9789389695960 | Yes | Narendra Publishing House, New Delhi | view |
| 86 | Dr. G.Vijay Kumar Reddy & Dr.V.ramesh Babu | India-Vietnam Enhancing partnership | India - Vietnam Defense Relations : Past to Present | – | 2021 | ISBN 9789389695960 | Yes | Narendra Publishing House, New Delhi | view |
| 87 | Prof. G. Jayachandra Reddy | India-Vietnam: Defence, Strategic and Economic Cooperation | Editor | – | 2021 | ISBN 978-81-949154-1-6 | Yes | Uday Publishing House, New Delhi | view |
| 88 | Dr.V.RameshBabu | India Vietnam Defence, Strategic and Economic Cooperation | "India-Vietnam Relations towards Comprehensive Partnership" | – | 2021 | ISBN: 978-81-949154-1-6 | Yes | Uday Publishing House, New Delhi,, | view |
| 89 | Prof. G. Jayachandra Reddy | India - vietnam In The Indo-Pacific China Factor | Editor | – | 2021 | ISBN 9789391063269 | Yes | Narendra Publishing House, New Delhi | view |
| 90 | Dr.M.Prayaga | India - vietnam In The Indo-Pacific China Factor | India - Vietnam Cooperation in Emerging Indo- Pacific Order | – | 2021 | ISBN 9789391063269 | Yes | Narendra Publishing House, New Delhi | view |
| 91 | Prof. P.Krishna Mohan Reddy | India - vietnam In The Indo-Pacific China Factor | India - Vietnam relations and the Indo Pacific | – | 2021 | ISBN 9789391063269 | Yes | Narendra Publishing House, New Delhi | view |
| 92 | Dr.M Nagalakshmi Devamma | Endophytic Formulations for Mango Anthracnose | Editor | – | 2021 | ISBN 9786203580006 | Yes | Lambert Academic Publishers | view |

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|---|---|---|---|---|---|---|---|---|---|
| 93 | Dr.M Nagalakshmi Devamma | Medicinal Plants as Veterinary Therapeutics | Editor | – | 2021 | ISBN 9786204199597 | Yes | Lambert Academic Publishers | view |
| 94 | Dr. Appa Rao Ch | Bioactives and Pharmacology of Lamiaceae | Pharmacological Activities of Anisomeles malabarica | – | 2021 | 978-10-032817-0-2 | – | CRC PRESS | view |
| 95 | Appa Rao Ch., Murthy S.D.S., | Recent developments in Applied Microbiology and Biochemistry | Pharmaceutical significance and recent developments in utilizing bacterial enzymes | – | 2021 | 10.1016/b978-0-12-821406-0.00009.6 | Yes | Academic press, Elsevier Publisher, U.K | view |
| 96 | Murthy,S.D.S | Role of various retardants in delaying senescence in wheat plants. | Editor | – | 2021 | 978-620-3-20271-7 | Yes | Lambert Academic Publishers | view |
| 97 | Prof. M. Srinivasulu Reddy | Protein and Energy Requirements for Growth and Maintenance L. vannamei | – | – | 2021 | 978-620-3-30487-9 | Yes | LAP LAMBERT Academic Publishing, Germany | view |
| 98 | Prof. M. Srinivasulu Reddy | Formulation of Feeds for Penaeid Prawn through Protein requirements | – | – | 2021 | 978-613-8-94852-0 | Yes | Scholars' Press, Mauritius | view |
| 99 | Prof. M. Srinivasulu Reddy | Effect of Ocimum sanctum linn. leaf extract and Eugenol in female albino rats | – | – | 2021 | 978-620-3-30544-9 | Yes | LAP LAMBERT Academic Publishing, Germany | view |
| 100 | Prof. M. Srinivasulu Reddy | Role of Ocimum sanctum linn. leaf extract in female albino rats | – | – | 2021 | 978-613-8-94864-3 | Yes | Scholars' Press, Mauritius | view |
| 101 | Dr. D. Subramanyam & Dr Yuvaraj | Technology and women empowerment | Empowerment of women through MGNREGS: Issues and challenges | Technology and women empowerment | 2021 | 978-93-88854-58-0 | Yes | Discovery publishing houses pvt ltd new Delhi | view |
| 102 | Dr. D. Subramanyam & Dr Yuvaraj | Technology and women empowerment | Empowerment of Tribal women through Selfhelp groups in Pulicherla Mandal of Chittoor District | Technology and women empowerment | 2021 | 978-93-88854-58-0 | Yes | Discovery publishing houses pvt ltd new Delhi | view |
| 103 | Dr. D. Subramanyam & Dr Yuvaraj | Technology and women empowerment | Women Empowerment through SHGs A Case Study in Pulicherla Mandal of Chittoor District | Technology and women empowerment | 2021 | 978-93-88854-58-0 | Yes | Discovery publishing houses pvt ltd new Delhi | view |
| 104 | Dr Yuvaraj | Technology and women empowerment | Empowerment of women through MGNREGS: Issues and challenges | Technology and women empowerment | 2021 | 978-93-88854-58-0 | Yes | Discovery publishing houses pvt ltd new Delhi | view |
| 105 | Dr. D. Subramanyam & Dr Yuvaraj | Technology and women empowerment | Urban Women Entrepreneurs A case study in Chittoor District of Andhra Pradesh | Technology and women empowerment | 2021 | 978-93-88854-58-0 | Yes | Discovery publishing houses pvt ltd new Delhi | view |
| 106 | Dr. D. Subramanyam & Dr Yuvaraj | Technology and women empowerment | Economic independence of women – a case study of women self-help groups in Andhra Pradesh | Technology and women empowerment | 2021 | 978-93-88854-58-0 | Yes | Discovery publishing houses pvt ltd new Delhi | view |

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|---|---|---|---|---|---|---|---|---|---|
| 107 | Dr. V. Jagadeeswari | Financial Accountancy | Editor | - | 2021 | 978-93-88854-59-7 | Yes | Discovery Publishing House(P)Ltd. | view |
| 108 | Dr. V. Jagadeeswari & Prof .G.Sandhya Rani | Constructing Women Empowerment (Eds) | Edited Book | - | 2021 | 978-81-951027-2-3 | Yes | Curiosity Press and Media, | view |
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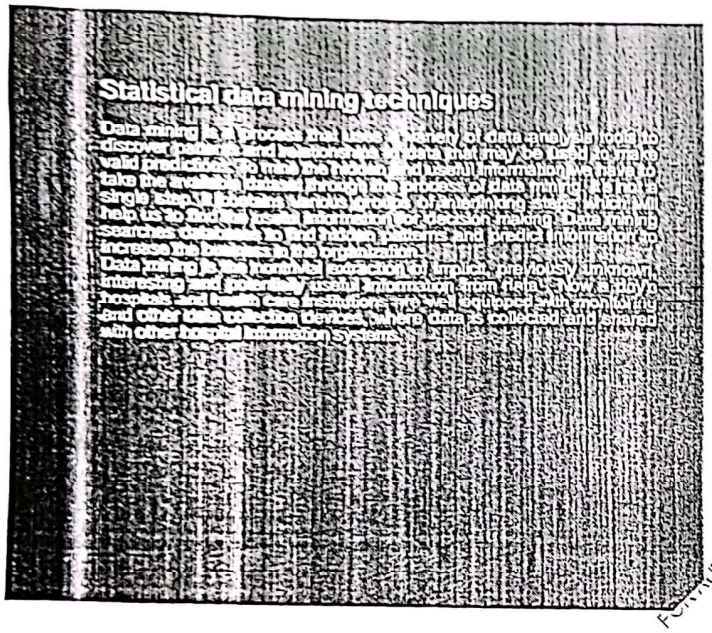




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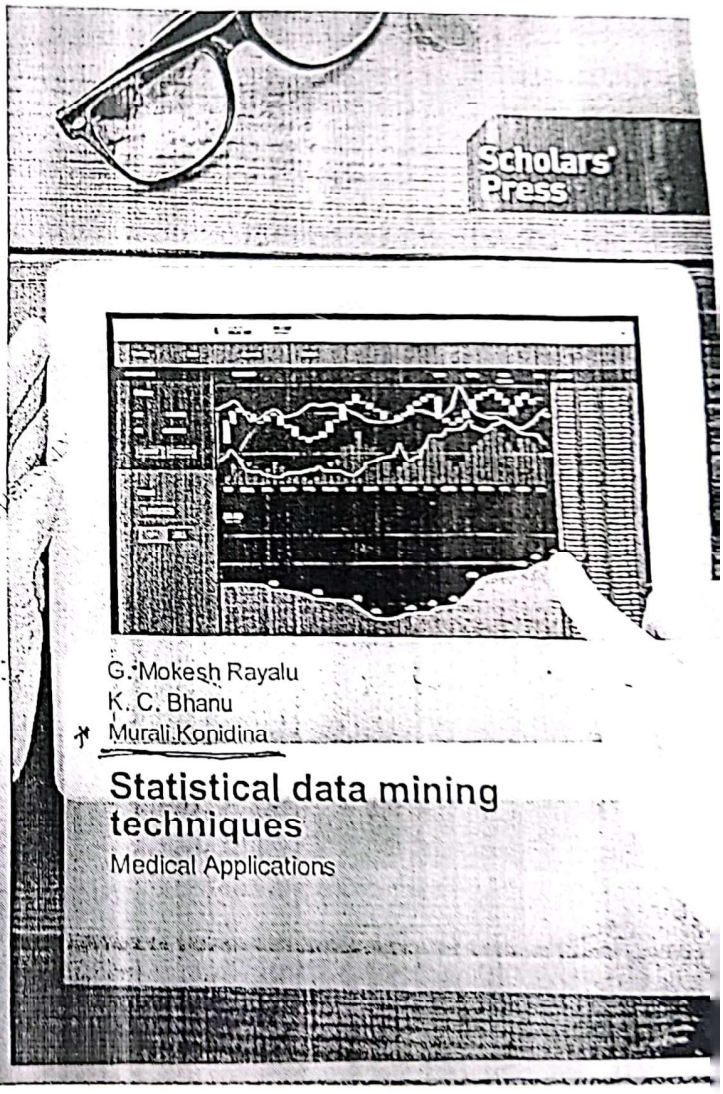


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# B.A. First Year

# Political Science




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B.A. (First Year - Semester - I):
Political Science (Introduction to Political Science)


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# Preface

According to the ancient Greek philosopher Aristotle the good citizen builds the good state, and the bad citizen builds the bad state. Political Science helps to prepare good citizens so that they can build a better state. Orderly human life is possible only with the right political institutions. Political knowledge and political participation are essential in today's democratic age. It can be said that the science of politics gives direction to today's human being who is growing up as a world citizen.

The knowledge of this science is very useful not only for Political Science students but also for those who are preparing for competitive exams, future politicians, rulers, and those who are interested in political science.

Political Science is the science that describes the origin of the state, the laws governed by the state, and the political theories and political phenomena. The state will continue to give man a comfortable and a dignified life. It can be said that knowledge of politics is essential for all citizens as long as the state exists. People who do not have a state or a government are left as a mob.

Introduction to Political Science is a new textbook intended for first year B.A. students and is designed according to the 2020-21 Revised CBCS syllabus.

The text is divided into five chapters. The first chapter deals with the definition, scope, importance, and methods of study of Political Science. Theories of origin of state, evolution of modern state, and welfare state are included in the second chapter. The third chapter focuses on the main concepts of Political Science, such as law, liberty, equality, power, authority, and legitimacy. In the fourth chapter we have a comprehensive discussion on rights and its theories. The fifth chapter talks about ideologies such as liberalism, individualism, anarchism, socialism, Marxism, and multiculturalism. This book is useful for students to gain a grip on the science of politics.

**Prof. B. V. Muralidhar**
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**The Emblem Symbolizes Three Components**



(Flames)
DISSOLVING
IGNORANCE



(Blossoms)
GERMINATION
OF IDEAS



(Books)
KNOWLEDGE

FIRST YEAR B.A.

# POLITICAL SCIENCE

## Introduction to Political Science

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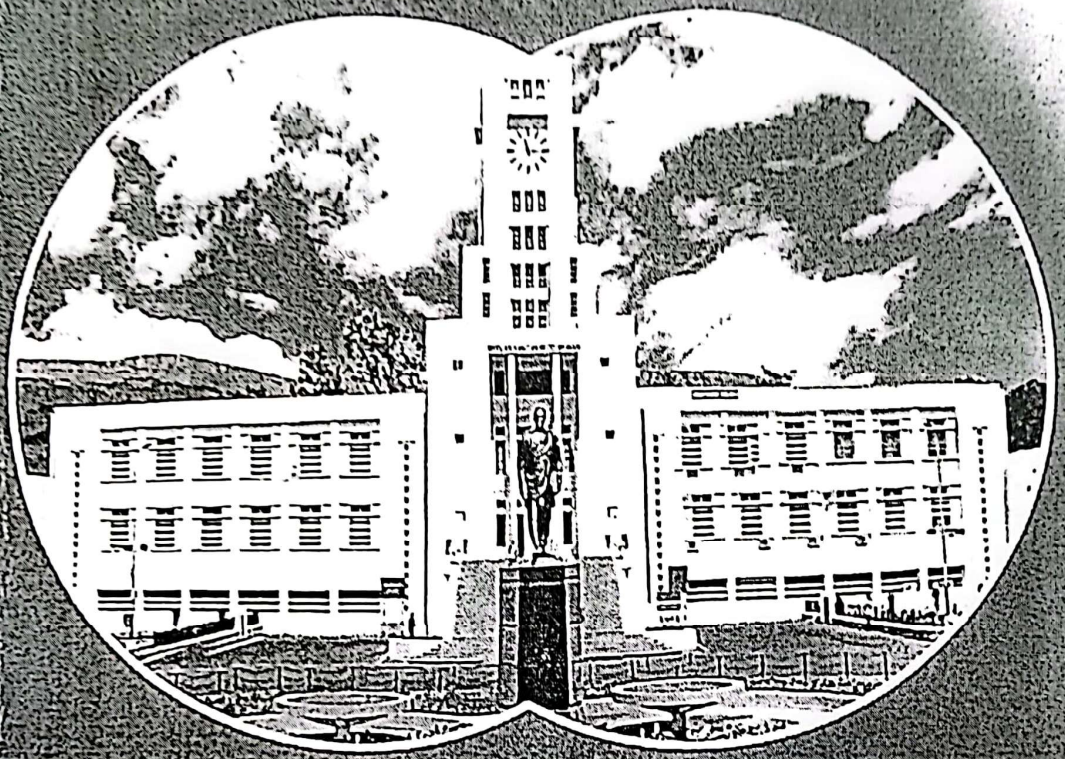

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## About the Author



**Prof. G.Janakiramaiah** is a Professor in the Dept. of Education, S.V.University , Tirupati. He has Masters Degree as well as Doctorate degree in both Sociology and Education. He has been teaching Sociology and Education for over 25 years. He has published 5 books and around 42 articles in reputed journals. He has organised 6 National Seminars and 7 workshops.

Under his able guidance, 5 students were awarded Ph.D, and 25 students with M.phil Degrees. He is a Member of National Assessment and Accreditation Council (NAAC) and National Council for Teacher Education (NCTE). He has visited several countries in connection with academics.

Prof. G.Janakiramaiah has served as Rector and Vice Chancellor I/c, Sri Venkateswara University. He is Head and Chairman, Board of Studies, Dept. of Education in Sri Venkateswara University. At present, Prof. G.Janakiramaiah is also functioning as Principal, Institute of Advanced Study in Education (IASE), Sri Venkateswara University, Tirupati.

## About the Book

In the social sciences, quantitative research refers to the systematic empirical investigation of quantitative properties and phenomena and their relationships. The objective of quantitative research is to develop and employ mathematical models, theories and/or hypotheses pertaining to phenomena. The process of measurement is central to quantitative research because it provides the fundamental connection between empirical observation and mathematical expression of quantitative relationships. Social research can serve a variety of purposes. Three of the most influential and common purposes of research are exploration, description and explanation. Exploration involves familiarizing a researcher with a topic. Exploration satisfies the researcher's curiosity and desire for improved understanding. Survey research is one of the most important areas of measurement in applied social research. The broad area of survey research encompasses any measurement procedures that involve asking questions of respondents. A "survey" can be anything form a short paper-and-pencil feedback form to an intensive one-on-one in-depth interview. This book is focuses on a range of different qualitative research methods commonly applied within and across the social sciences. The course begins with an introduction to the historical, epistemological and ontological basis of qualitative research methods. It then turns to common qualitative data collection methods, research designs and ethical planning strategies

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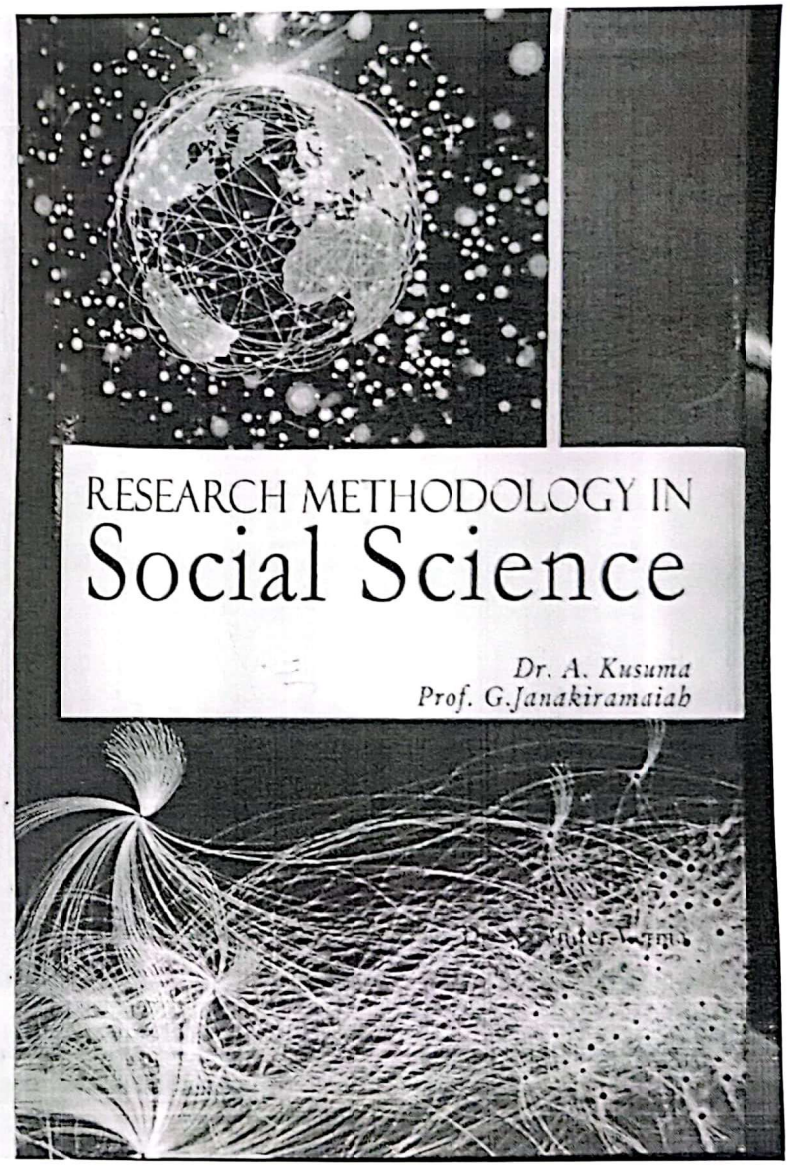

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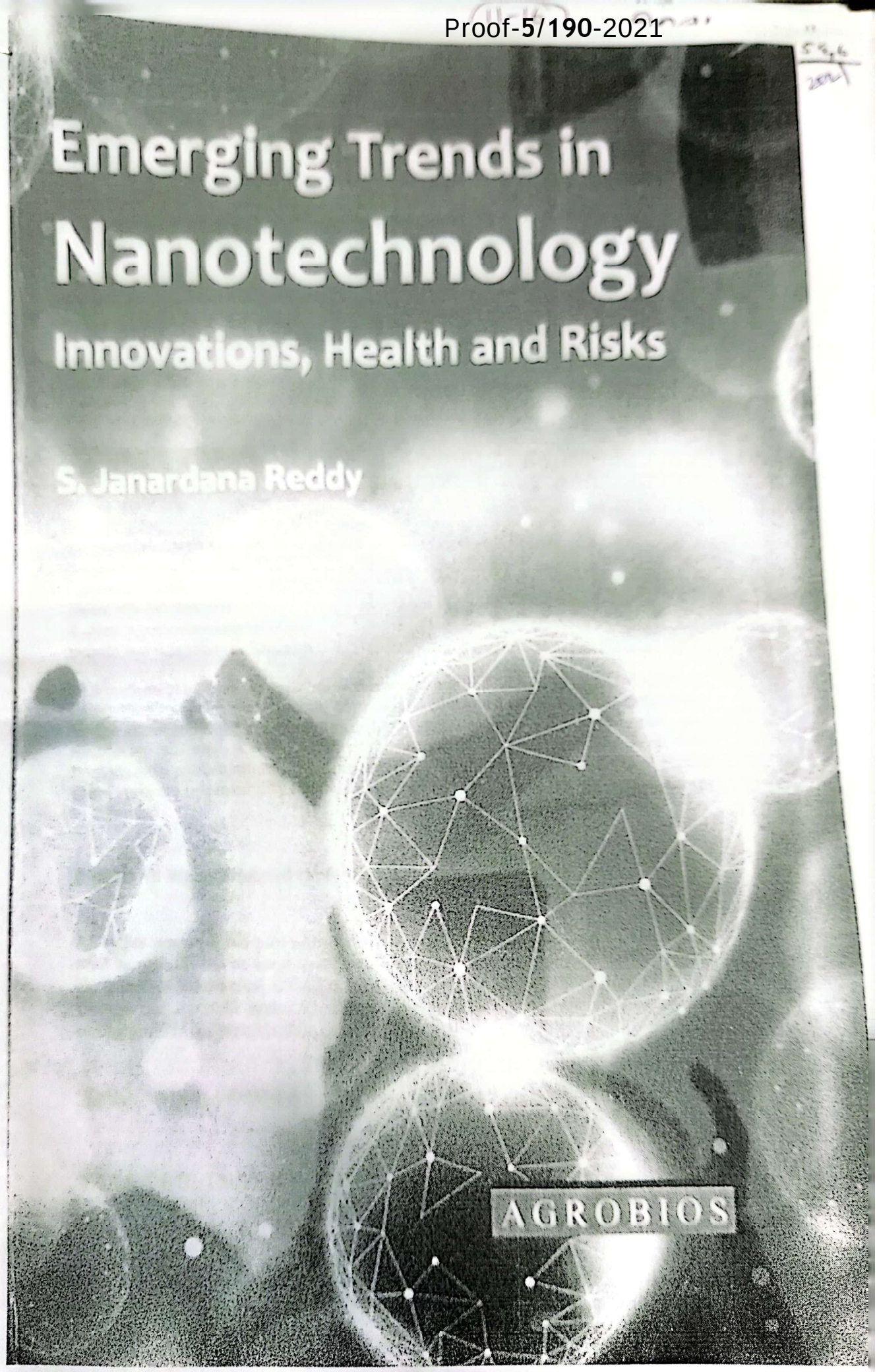
# Emerging Trends in Nanotechnology

## Innovations, Health and Risks

S. Janardana Reddy



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# Nanotechnology and Feature Trend Applications

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**Department of Physics, Sri Venkateswara University, Tirupati 517 502, Andhra Pradesh, India*
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## Abstract

Nanotechnology is a multidisciplinary field that covers a vast and diverse array of devices derived from engineering, physics, chemistry, and biology. This offers great opportunities to explore the new emerging nanodevices such as the Carbon Nanotube and Nanosensors. Nanotechnology has opened up by rapid advances in science and technology, creating new opportunities for advances in the fields of medicine, electronics, foods, and the environment. Nanoscale structures and materials (nanoparticles, nanowires, nanofibers, and nanotubes) have been explored in many biological applications (biosensing, biological separation, molecular imaging, and anti-cancer therapy) because their novel properties and functions differ drastically from their bulk counterparts. Due to their high volume/surface ratio, improved solubility, and multi functionality open many new possibilities. The objective of this chapter is to describe the potential benefits and impacts of the nano biotechnology in different areas and gives a deep survey regarding different aspects of the new nanotechnologies.

*Keywords:* 3D-structures, Dielectric, Gene therapy, Magnetic materials, Nano biotechnology, Nano tubes, Nanowires, Quantum Dots, Quantum effects, Self-assembly and Semiconductors

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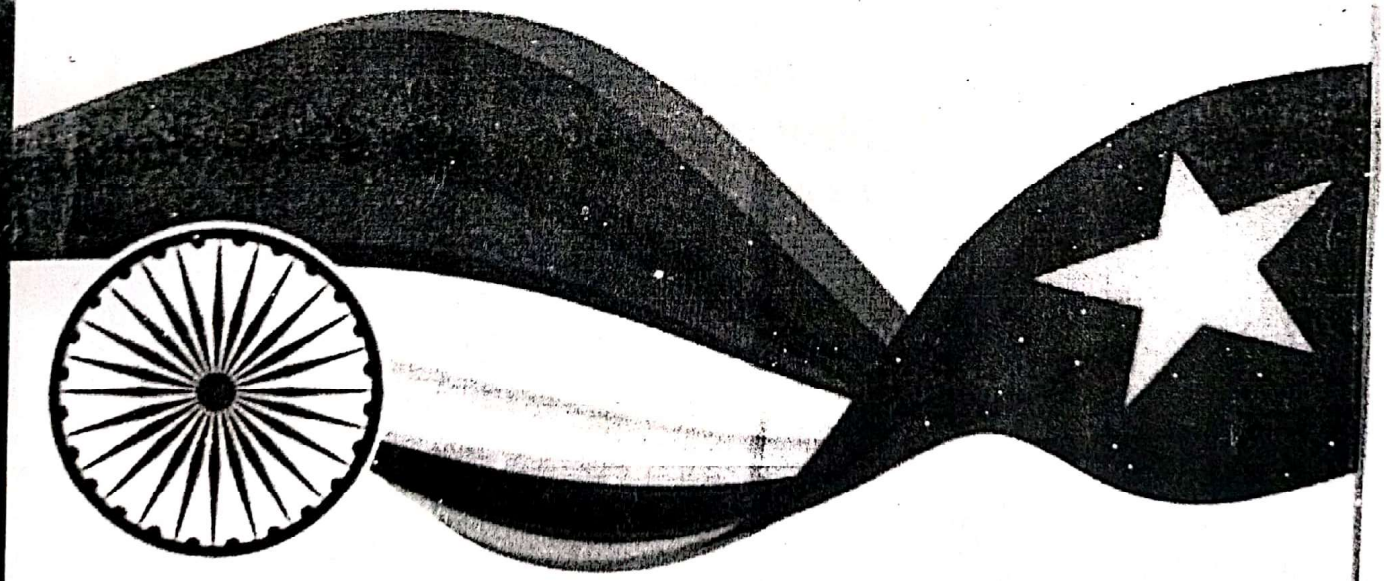

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# India-Vietnam

## Defence, Strategic and Economic Cooperation

*Editors*

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# India-Vietnam Strategic Partnership: Progress and Prospects

*Vinodini JMJ*

**Abstract**

India and Vietnam have nurtured long standing diplomatic links, which can be traced back in history. As various diplomats and statesmen pointed out the importance of strengthening the ancient relations with Vietnam, which was further strengthened and reiterated by former Indian PM Atal Bihari Vajpayee and PM Manmohan Singh's commitment in developing Sittwe and Dawei ports in Myanmar, opening the gateway for the countries falling in the Mekong basin. Given the fact that both India and Vietnam, apart from Malaysia, use the same basic defense equipments, imported from Russia, cooperation based on training and capacity building became the foundation for defense cooperation in the 90s. Relations got elevated to a new comprehensive strategic level, when both the nations started cooperating on counter-insurgency training and sharing of guerilla warfare techniques and tactics. This has been further accentuated by cooperation in training of technicians and air-force pilots. The paper will try to outline the trajectory of the defense and strategic relations between India and Vietnam in the last two and half decades and how capacity building and cooperation have formed the bedrock of bilateral trust.

In a world that is facing new challenges in the guise of actions adapted by state actors assisted by non-state actors, relations between nations are being forged to balance and counterweigh such expansions and threats. As Waltz has noted that these balances are formed in between some or all states, consciously aiming to establish and maintain balance, to deter some powerful states' aim for regional or universal domination[1]. It has been also argued that the risk of major wars increases when there are power shifts between major contenders in the system[2]. When a shift in power positions occurs between a rising challenger and a dominant status quo power, it turns into a period of competition for leadership and may be critical for systemic

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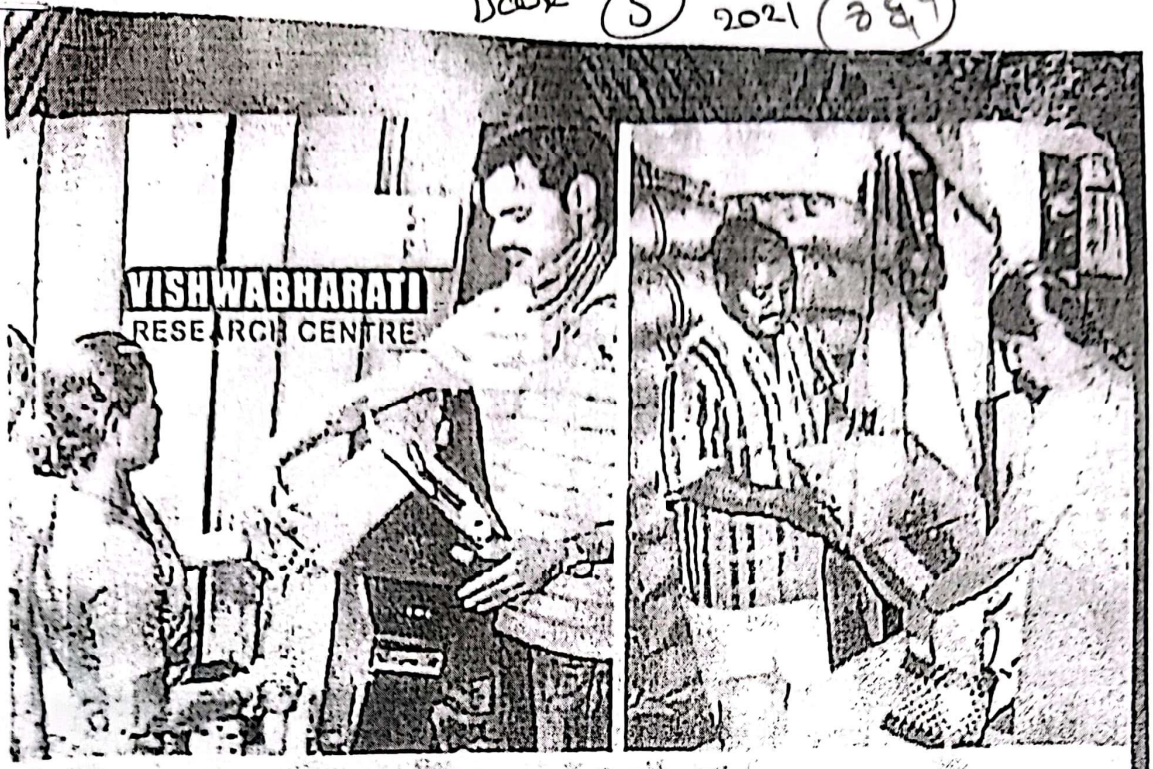


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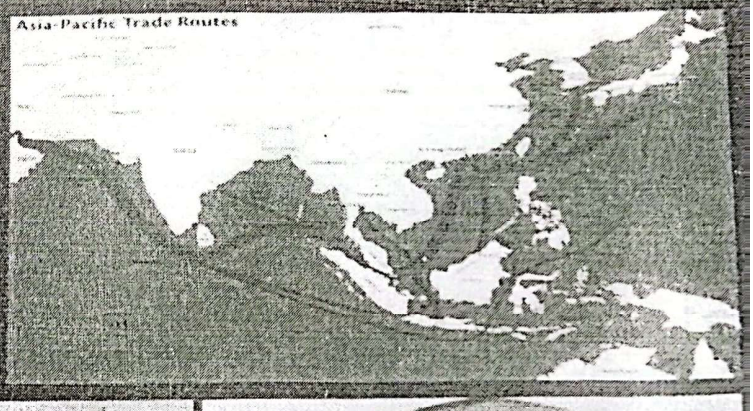


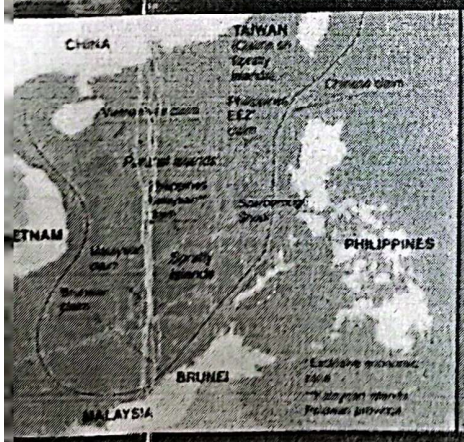








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# Asia- Pacific and Indo-Pacific: Power Politics

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(Draft Paper)

## Abstract

In the arena of International power politics three phases can be distinguished. 1.The Cold War (1945-1991) 2.Post Cold War (1991-2001) 3. Post Post Cold War (2001-2021). During these three phases the Cold War phase has more or less became outdated or disconnected for the analysis of the International Power politics. During the Post Cold War phase, Asia-Pacific region evolved into a theater of International power politics fuelled by international trade, commerce and regional organizations. During the Post Post Cold war Phase Indo-Pacific has turned into a hotbed of International power politics. In the present article an attempt is made to understand the nature of powers and factors that resulted in the development of Indo-pacific as a web of International power politics.

**Great Power Politics, Asia-pacific and Indo-pacific**

My thesis in the present article is in two parts. 1. The nature and evolution of Great Power politics during Post Post Cold War Phase and spilling into Indo-pacific 2. The evolution of the concept of Indo-pacific vis a vis Great Power politics.

In so far as the Great Power Politics in the Post Post Cold War Phase (2001-21), we need a new approach, new elements and new causes that are different from the Post Cold War Phase (1991-2001). The new elements are the complex nature of the definition of an adversary/enemy in both bilateral and multilateral dimensions. The US considers China as a great threat during the Post Post Cold War Phase, but is dependent on China for its trade and consumer goods needs. Likewise, China also may not survive without America in its trade but declares its ambitions to take up the role of a Super Power to challenge USA. Several Nations like Japan, India, Indonesia and even European Union face the similar situation with regard to China. This phase is witnessing the unprecedented challenges where a war is both economic and military: mutually dependent economically but preparing for a military show down simultaneously. In other words, interdependence in a conflicting, competing environment is the hall mark of the current Post Post Cold war Phase. The rise of China displaying an aggressive behaviour especially in and around South China Sea and challenging the Supremacy of the US; Russia resorting to military attacks in Eastern Europe, evidently challenging NATO and the European powers is another important framework in the Post Post Cold war Phase. The Islamic Terrorism and violence by the Non State Actors across many parts of the world has developed into a profound challenge in this phase. The profusion of Social Media and its capacity to foment wars and terrorism is a new phenomenon in this phase. Again, cyberwarfare is a typically new method as well as a challenge Post Post Cold War Phase has posed to the Great Powers as is Drone technology. There is a rapid progress of space technology and space weapons in which China has been participating aggressively.

I wish to put forward certain theories and projections with regard to the Great Power politics in the present Post Post Cold War Phase which include Great Power Competition as well as Great Power Conflict/Rivalry.



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# India's Engagement in QUAD: Implications for India and Russia Relations

**Dr. Vijay Kumar Reddy**
Assistant Professor, Center for Southeast Asian & Pacific Studies
Sri Venkateswara University, TIRUPATI

The Quadrilateral Security Dialogue (QSD, also known as the Quad) is an informal strategic dialogue between the United States, Japan, Australia and India that was maintained by talks between member countries. The dialogue was initiated in 2007 by Prime Minister Shinzo Abe of Japan, with the support of former Vice President Dick Cheney of the US, former Prime Minister John Howard of Australia and former Prime Minister Manmohan Singh of India. The dialogue was followed by joint military exercises of an unprecedented scale, titled Exercise Malabar. The diplomatic and military arrangement was widely viewed as a response to increased Chinese economic and military power.

The QSD ceased following the withdrawal of Australia during Kevin Rudd's tenure as prime minister, reflecting ambivalence in Australian policy over the growing tension between the United States and China in the Asia-Pacific. Following Rudd's replacement by Julia Gillard in 2010, enhanced military cooperation between the United States and Australia was resumed, leading to the placement of US Marines near Darwin, Australia, overlooking the Timor Sea and Lombok Strait. India, Japan, and the United States continue to hold joint naval exercises through Malabar.

During the 2017 ASEAN Summits in Manila, all four former members led by Shinzo Abe, Narendra Modi, Malcolm Turnbull, and Donald Trump agreed to revive the quadrilateral alliance in order to counter China militarily and diplomatically in the South China Sea. Tensions between Quad members and China have led to fears of what was dubbed by some commentators as "a new Cold War" in the region.[1]

On March 12, 2021 the Quad leaders issued a joint statement, "The Spirit of Quad" Quad members described "a shared vision for a Free and Open Indo-Pacific," and a "rules-based maritime order in the East and South China Seas," which Quad members state are needed to counter Chinese maritime claims. The Quad pledged to respond to COVID-19, and held a first Quad Plus meeting that included representatives from New Zealand, South Korea and Vietnam to work on its response to it. Widely viewed as intending to curb "China's growing power," the Quad's joint statement drew criticism from China's foreign ministry, which said the Quad "openly incites discord" among regional powers in Asia.[2]

**Background**

The circumstances of the twenty-first century have called for a shift in the security architecture from the Asia-Pacific to the Indo-Pacific, triggered by the rise of China, the growth of India's economic and strategic clout, and, most importantly, the growing importance of the Indian Ocean as a strategic trade corridor that carries almost two-thirds of global oil shipments and a third of bulk cargo. These factors have led to the rise of regional stakeholders calling for a free and open Indo-Pacific, which in turn has led to the formation of the Quad. Member states have a shared Indo-Pacific vision based on their commitment to maintaining a free, open, inclusive, peaceful, and prosperous Indo-Pacific built on a rules-based international order, underpinned by the Association of Southeast Asian Nations (ASEAN) centrality, rule of law, sustainable



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## Sub-theme
## Indo-Pacific: An Emerging Ground for Multilaterals and Minilaterals

# All-pervasive Diversity and Complexity at the base of Strategic Salience of Indo-Pacific

**Prof. Y. Yagama Reddy (Retd.)**
Emeritus Professor (2015-17), Centre for Southeast Asian & Pacific Studies, Sri Venkateswara University, Tirupati-51750 2 (yagamareddy.y@gmail.com)

Much as Indo-Pacific on its way to becoming a fertile ground for collaboration and competition, both the regional powers and the extra-regional powers have made this region for convergence of their interests and for divergent approaches, and hence Indo-Pacific acquires geostrategic, geo-economic and geopolitical salience. Though the Indo-Pacific is looked upon as a strategic enlargement of the Asia-Pacific template, the two terms are "not synonymous, though they overlap." Indo-Pacific is not simply a new name for the Asia-Pacific, but nor is it a radically redefined regional concept that downplays the centrality of Asia (Medcalf 2016). 'Indo-Pacific' has begun to be viewed as "a shorthand for the wider region of the Asia-Pacific area plus South Asia and the Indian Ocean region: hence Indo + Pacific" (Ferguson 2007). The 2009 Australian Defence White Paper perceptively called the Indo-Pacific as the 'logical extension' of the 'wider Asia-Pacific region' (Tyler and Shearman 2013). Inasmuch as "Asia-Pacific" is still a component of "Indo-Pacific" for Japan's adjusted geographical definition, Indo-Pacific has not fully replaced "Asia-Pacific" (Haruko 2020: 21). In the context of the imperatives of post-Cold War globalization that entailed the re-configuration of global power-equations, Indo-Pacific region has begun emerging as a key driver of global politics rather a centre of global power since early this century. As well as being the arena of three of the world's superpowers (the USA, China and India), Indo-Pacific has also become the home to four of the world's largest militaries (USA, Russia, China, and North Korea), and the world's largest navies, (USA, China, India and Russia) and three major Asian economic powers (China, Japan and India), besides being the home to nearly 3 billion people. According to yet another account, Indo-Pacific is the most militarized area in the world with seven of the world's ten largest standing armies, the world's largest and most sophisticated navy and five of the world's declared nuclear nations (Yoshihara 2013: 91).

The idea of the "Indo-Pacific" is developed as a mental map depicting the emerging geopolitical realities entailing the policy discourse of Australia, United States, India, Japan and Indonesia which have consequently adjusted the geographical scope of "Indo-Pacific" (Haruko 2020); interestingly, several other Asian middle powers acquiesced to the "Indo-Pacific" terminology (Raja Mohan 2016). A multiplicity of political priorities, economic necessities and changing strategic perspectives of the above five countries together with France, the United Kingdom and ASEAN need to be understood as a geographical adjustment process to conceptualize the "Indo-Pacific" term (Huruko 2020; Mahawar and Sakhuja). Paradoxically, various nomenclatures have been coined without clearly defining geographic boundaries. Irrefutably, 'Indo-Pacific' is neither a new paradigm nor a Western concept but a



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# India and the ASEAN Centrality in the Indo-Pacific Emerging Security Architecture

**Dr. M. PRAYAGA**
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In the wake of the United States-China competition and Beijing's myriad instances of assertive postures in the Indian Ocean, South China Sea (SCS), East China Sea and Taiwan straits have led to flux and set a stage for rapid geopolitical changes in the "Indo-Pacific" region. The shift of global politics and economic gravity to the 'Indo-Pacific' in recent years turned the security architecture a more complex, as well. The major powers of the region the US, India, Japan and Australia were augmented for new alliance networks forged to counter tactical power plays of China. The new transformations are causing insurmountable concern to the security not only to major powers themselves as well as to the Association of Southeast Asian Nations (ASEAN) in the region. Thus, the changing trends led to evolve a new geopolitical concept, 'Indo-Pacific' in the global politics and have been creating more room for manoeuvre new security mechanisms and supply chains to emerge. The main catalyst for the beginning of 'Indo-Pacific' was the strategic outlook of the former Japanese Prime Minister Shinzo Abe, who proposed the 'Confluence of the Two Seas' while addressing the Indian Parliament in 2007.

**Indo-Pacific Initiation**

Since 2011, the term "Indo-Pacific", a geopolitical region, is being widely used in the global geostrategic discourses. The "Indo-Pacific", covers two regions of the Indian Ocean and the Pacific Ocean, encompass the tropical waters of the Indian Ocean and the western and central Pacific Ocean. [1] Major powers evinced keen interest in the "Indo-Pacific" region as it is becoming the centre of gravity, the engine of world growth and development. An estimated 65 per cent of world trade carries through the Indo-Pacific region and contributes 60 percent of global GDP. Nearly ninety per cent of India's international trade also traverse these waters. On the growing importance of Indo-Pacific, American General Dempsey clearly viewed that, "All of the trends, demographic trends, geopolitical trends, economic trends and military trends are shifting toward the Pacific. So our strategic challenges in the future will largely emanate out of the Pacific region, but also the littorals of the Indian Ocean." [2] As he rightly remarked the region has become an epicentre of economic driving force globally as well as to several non-conventional challenges such as piracy, terrorism, proliferation, natural resources, and border issues.

Moreover, Indo-Pacific region is assuming greater attention with the involvement of major powers like the US, Japan, Australia and India, for safeguarding shipping routes, freedom of navigation and airlines so as to keep Indo Pacific a rules-based stable area against the asserting China. The shared interests of the US, Japan and Australia, India and ASEAN countries have to circumvent China from dominating the region. The US had paid huge attention towards the 'Indo-Pacific' and making many strategic initiatives. The US military renamed its 'US Pacific Command' to 'US Indo-Pacific Command' in May 2018. In a bid to safeguard the interests of sea lanes of communication and to ensure maritime cooperation, India and other member countries



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# The Impact of Indian Diaspora in the Indo-Pacific Region: India's Interests

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The phenomena surrounding such human migration are best conceptualised under the rubric *diaspora*. *Etymologically*, the term diaspora is derived from the Greek composite verb *dia-* and *speirein* (infinitive), literally meaning 'to scatter' 'to spread' of 'to disperse'. It was originally used to refer to the dispersion of Jews after the Babylonian exile in 586 BC and to the aggregate of Jews or Jewish communities scattered in exile outside Palestine. In current parlance, however, the term is applied to describe any group of people who are so dispersed (N. Jayaram,2004, P. 16). The present paper focus its attention on India's interest in Indo-Pacific region.

**Background of Indian Diaspora**

The largest ethnic category in the Pacific Islands is Indian. They out-number the population of every Pacific country except Fiji (where they are the largest ethnic category) and Papua New Guinea (though Pacific Indian greatly outnumber any Papua New Guinean language group). The Indian community in Fiji is well known, but not many are aware that there are smaller Indian communities in Tonga, Samoa, New Caledonia, Vanuatu (the former New Hebrides), Solomon Islands, Papua New Guinea, Nauru, Guam and other Pacific territories, as well as in Australia, New Zealand, Philippines, Japan Canada, USA and elsewhere on the Pacific rim.

Indians will have a great impact on the future of the Pacific Islands. Cultural differences between them and the indigenous Islanders are great, and there will be stresses in the adjustment for all concerned. The Indian communities tend to be skilled, active, innovative and ambitious. They have much to give and to gain. No perception of the Pacific is at all adequate unless it contains an understanding of the present place and likely future role of the Indian communities in it. The Indians has been a long time in Reunion, where they had been brought in under a service agreement on the plantations, as in the British island of Mauritius. They were considered excellent labourers in the plantations, as they were manageable, hard-working, careful and sought to leas a peaceful family life.

The Indian labourers came either from the French "Comptoirs" of India (Pondichery, Karikal, Mahe, Yanahon, Chandernagor), or following the French-British Convention of the 1 July 1861, were recruited in the territories of French Reunion. West Indies or Guiana. Thus the Indians brought to New Caledonia had first been recruited in Reunion, then reenlisted after expiration of their service agreement. Half of these labourers came from Karikal and Pondichery while the other half was from British India, Mainly the Madras area. (Jean Claude Roux, 1981, p.13). The Indian labour was isolated on the few large estates: islands of colonization, with very little transport, and cut off from the rest of the country, especially from Noumea which was the only dynamic area at that time. (Jean Claude Roux, 1981, p.14).

Have very little official information regarding the life of these Indian settlers of La Foa. They were concentrated 5 to 10 kilometres from La Foa centre on the Noumea-Bouloupari road at Naina which was to keep the name of Malabars Plain for a long time, and further south at black forest. (Jean Claude Roux, 1981, p. 15). Regarding wedding between Indian, they learn that husband and wife are joined in wedlock "according to Indian law". For some marriages and births, there is sometimes a large



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# India-Japan Partnership towards Consolidation of the QUAD

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**Introduction:**

The relations between India and Japan have a long history rooted in spiritual affinity and strong cultural and civilization ties dating back to the visit of Indian monk Bodhisena to Japan in 752 AD. In contemporary period, famous Indians associated with Japan were Swami Vivekananda, Nobel laureate Rabindranath Tagore, entrepreneur JRD Tata, freedom fighter Netaji Subhash Chandra Bose and Judge Radha Binod Pal.

India and Japan established diplomatic relations on 28 April 1952. In the first decade after diplomatic ties were established, several high level exchanges took place, including Japanese Prime Minister Nobusuke Kishi's visit to India in 1957, Prime Minister Nehru's return visit to Tokyo the same year and President Rajendra Prasad's visit in 1958. Japan started providing yen loans to India in 1958. A test of the reliability of Japan as a friend was witnessed in 1991, when Japan was among the few countries that bailed India out of the balance of payment crisis.[1]

The Japanese Prime Minister Yoshiro Mori visited India in 2000 led to a significant and qualitative shift in India Japan relations with the establishment of the 'Global Partnership' between the two sides. The transformation of our ties with Japan were provided further fillip by the decision to have Annual Summits between the Prime Ministers commencing 2006 when both sides established 'Strategic and Global Partnership'.

The Prime Minister of Japan Mr. Shinzo Abe who had first raised the concept of INDO-PACIFIC at parliamentary conference in India which covers all the land areas around Indian and the Pacific Oceans moving on from the then concept of ASIA PACIFIC. It was from then India started working towards it and also included it in the Ministry of External Affairs (MEA) in New Delhi in 2007.

Prime Minister Narendra Modi also spoke about Indo – Pacific as he also wants the India – Japan Partnership to grow and prosper and his visit for the 13th Annual Summit, to Japan on 28 29 October 2018 provided further impetus to bilateral ties, building upon the momentum creating by his visits to Japan in 2014 and 2016 as well as the visits of PM Abe to India in 2015 and 2017. During the Summit, both PMs outlined the shared vision for the future India Japan relations.

The present paper discusses India–Japan Partnership in Indo–Pacific as well as in the QUAD by means of different areas of cooperation between them.

**INDO – PACIFIC:**

The Indo-Pacific is a geopolitical construct that has emerged as a substitute to the long-prevalent "Asia-Pacific", which represented the eastwards shift of global developments from Euro-Atlantic dimension. It is an integrated theatre that combines the Indian Ocean and the Pacific Ocean, and the land masses that surround them. The Indo-Pacific region includes world's four big economies: USA, China, Japan and India.[2]

Though still an evolving concept, it is both a strategic as well as an economic domain comprising important sea-lines of communication. And since it is primarily a maritime space, the Indo-Pacific is also associated with maritime security and cooperation.

The term 'Indo-Pacific' is interpreted differently by different stakeholders.

- India considers the region as an inclusive, open, integrated and balanced space. India continuously emphasises on strategic inter-connections, common challenges and opportunities between the Indian Ocean and the Pacific.
- The U.S. considers it to be a free and open Indo-Pacific, highlighting the importance of rules or norms of conduct in the region, thus trying to contain the role of China in the region.



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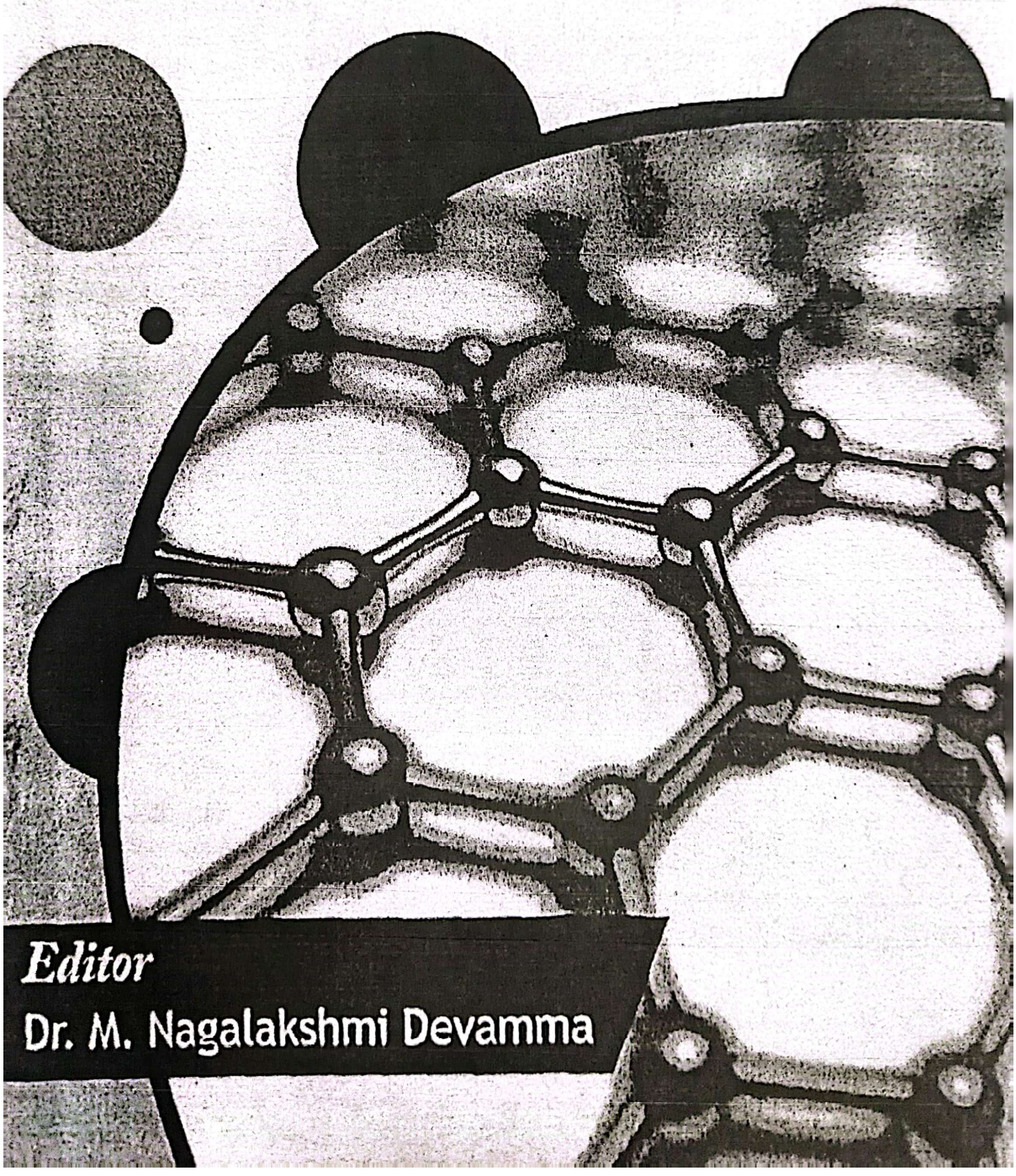

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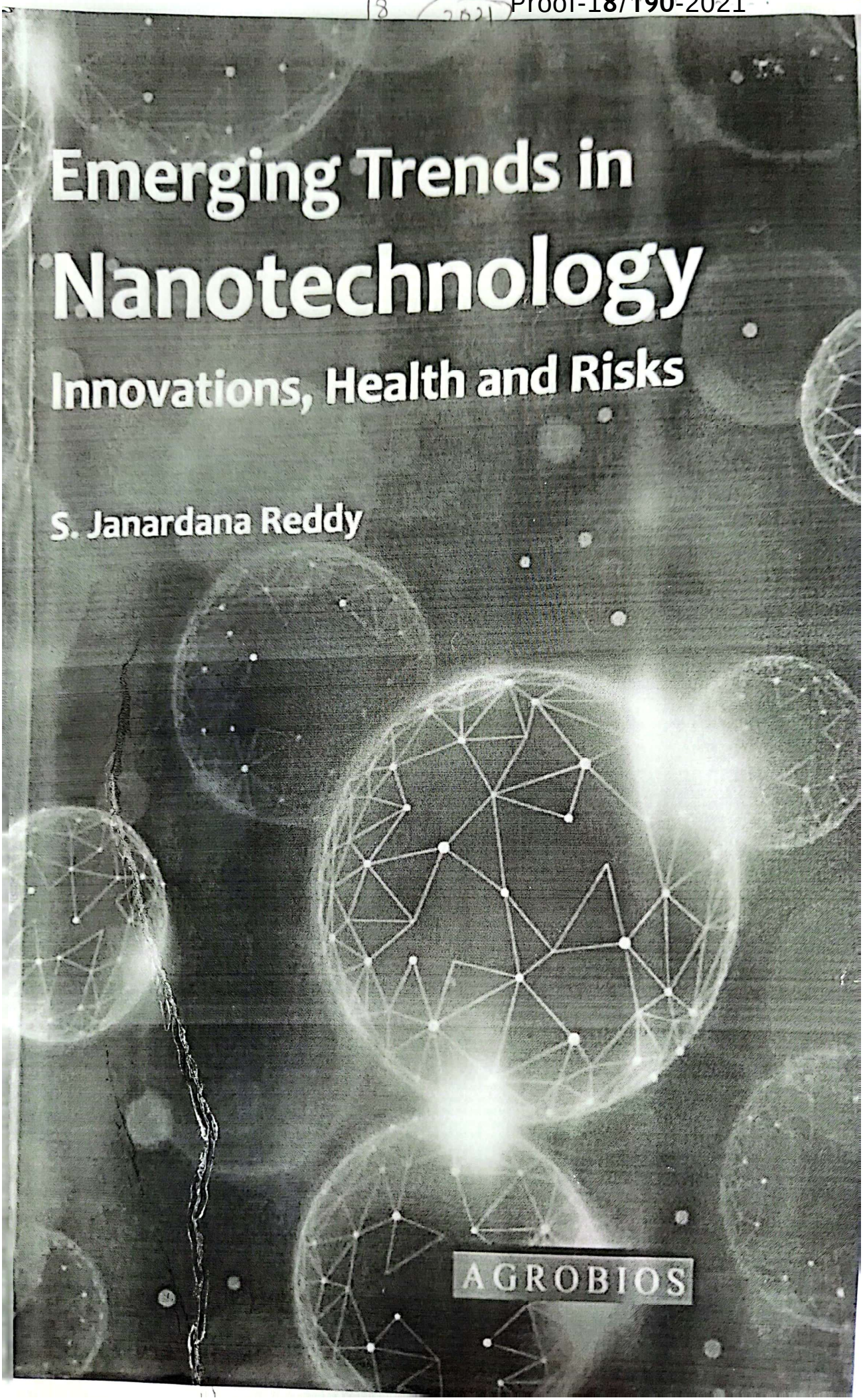


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# Nanotechnology in Designing and Development of Functional Foods for Health Promotion

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## ABSTRACT

Increasing awareness on the relation between human health and diet has created a huge interest in the development of functional foods. Several challenges including discovering of establish optimal intake levels, beneficial compounds, product formulations and budding adequate food deliver matrix need to be addressed. A number of innovative materials and processes derived from nanotechnology have the potential to provide new solutions. Nanotechnology, a new science and technology, has been used in various fields. Nanotechnologies have been applied in various segments including food industry, medicine, diagnostics and electronics etc. Nanotechnology applications in food sector has gained great importance in recent years, view of its potential development is healthier and novel food. Food nanotechnology opens up new prospects for development of novel food products. Application of nanotechnology in food includes food processing, food science, preservation manufacturing of functional foods, medical foods, Herbal foods, Dairy foods, Food safety and food packaging etc., However, the existing applications of nanotechnology in food sector are few, while the science is relatively recently evolving, but they have been on a steady increase in recent years and are predicted to grow rapidly in the coming years.

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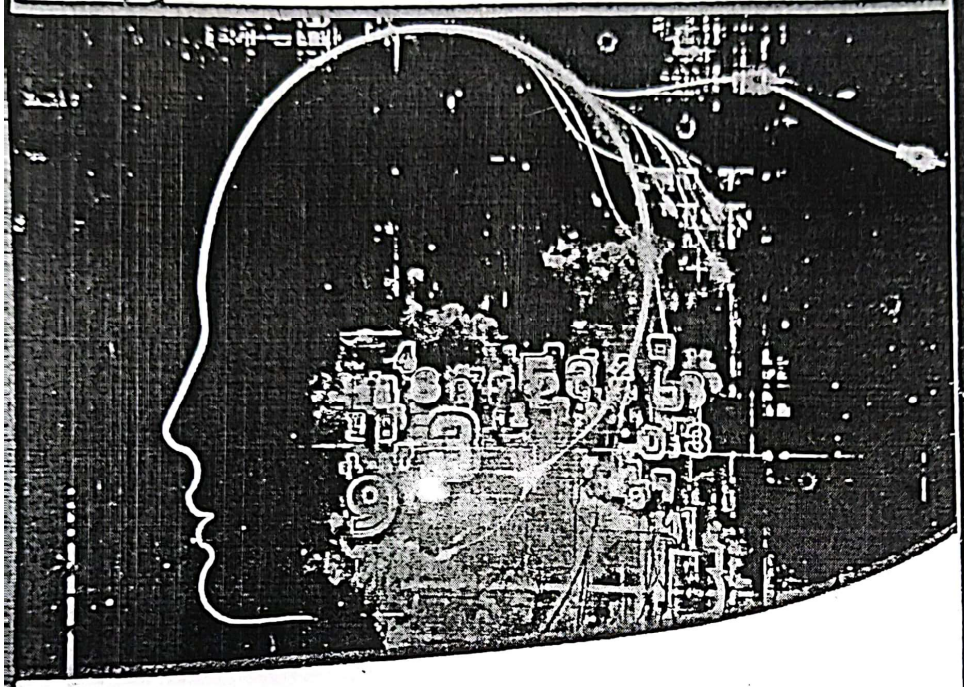

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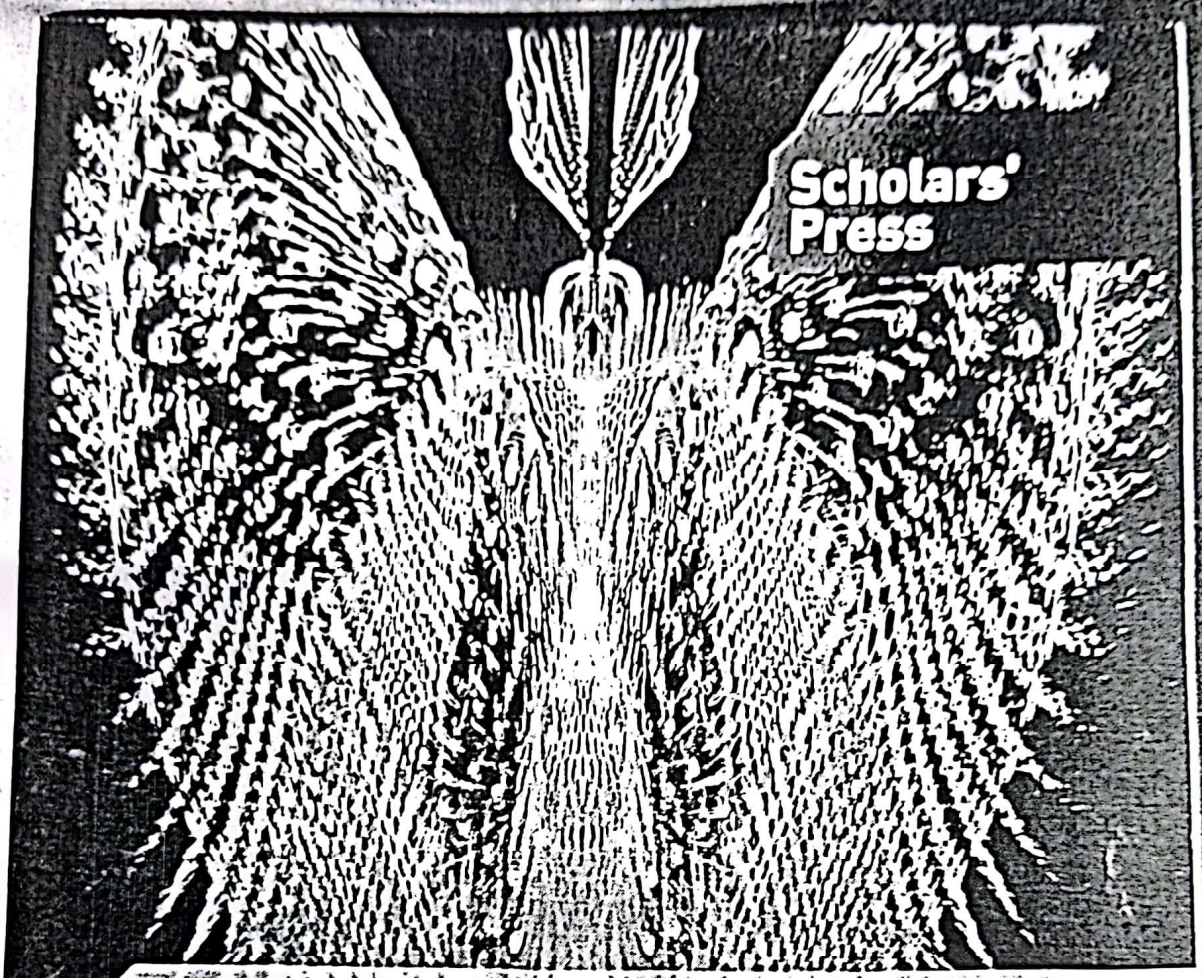


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# Maximum Likelihood Estimation of Parameters for Gamma Distribution using R

A. Kullaya Swamy[1], B. Sarojamma[2] and S. Venkatramana Reddy[3]

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***Abstract---***Maximum Likelihood Estimation (MLE) method is used for estimation of parameters for Gamma distribution. In the present paper R programming is used for α =1, 2, 5 and λ takes 1, 2 with sample size of 30, 100, and 200. Newton- Raphson iterative procedure is used to find shape parameter α. Bias of the estimates is investigated numerically. MLE is used since this method is better than all other methods of estimation.

***Keywords---***MLE, Gamma Distribution, Bias, Newton-Raphson Method, Life Testing.

## I. INTRODUCTION

SEVERAL authors have considered the method of estimating the parameters of the Gamma distribution[1-4]. Fisher showed that the method of moments could also be inefficient for estimating the parameters of Pearson type III distributions and suggested use of the Maximum Likelihood (M.L.) method. Harter [6] and Chapman [7] have applied the M.L. principle to study the Gamma parameters. Cohen used estimation of parameters by the method of moments in his study. Analytically closed expression cannot be obtained in solving first order derivatives with corresponding parameters equating to zero. To overcome this problem authors used Newton-Raphson iterative procedure to estimate parameters.

## II. MATHEMATICAL THEORY

The probability density function of the random variable X having a Gamma distribution with shape parameter $\alpha$ and scale parameter $\beta$ is given by

$$f(x;\mu,\beta) = \begin{cases} \frac{\beta^{\alpha}}{\Gamma(\alpha)} x^{\alpha-1} e^{-\beta x}, & \alpha,\beta>0, x>0, \\ 0, & otherwise. \end{cases} \quad (1)$$

Let $x_1, x_2, \ldots, x_n (n>1)$ be a random sample of values from $X$ population. If $L$ denotes the likelihood function, then

$$\begin{aligned} L &= \prod_{i=1}^{n} f(x_i;\alpha,\beta) \\ &= \prod_{i=1}^{n} \frac{\beta^{\alpha}}{\Gamma(\alpha)} x_i^{\alpha-1} e^{-\beta x_i} \\ &= \frac{\beta^{n\alpha}}{(\Gamma(\alpha))^{n}} \left(\prod_{i=1}^{n} x_i\right)^{\alpha-1} e^{-\beta \sum_{i=1}^{n} x_i} \end{aligned} \quad (2)$$

and its log likelihood becomes

$$\log L = n[\alpha \log\beta - \log\Gamma(\alpha)] + (\alpha-1)\sum_{i=1}^{n} \log x_i - \beta \sum_{i=1}^{n} x_i \quad (3)$$

For convenience of notation let $\phi_1(\alpha,\beta) = \frac{\partial \log L}{\partial \alpha}$ and $\phi_2(\alpha,\beta) = \frac{\partial \log L}{\partial \beta}$

from (3) we have:

$$\phi_1(\alpha,\beta) = n[\log\beta - \Psi(\alpha)] + \sum_{i=1}^{n} \log x_i \quad (4)$$

and

$$\phi_2(\alpha,\beta) = n[\alpha/\beta] - \sum_{i=1}^{n} x_i \quad (5)$$

where

$$\Psi(\alpha) = \frac{d}{d\alpha} \log\Gamma(\alpha). \quad (6)$$

Analytically closed expressions for the Maximum Likelihood Estimators cannot be obtained the solution of $\phi_1(\hat{\alpha},\hat{\beta}) = 0$ and $\phi_2(\hat{\alpha},\hat{\beta}) = 0$ yielding the parameter estimates $\hat{\alpha},\hat{\beta}$ requires numerical estimates.

## III. NUMERICAL SOLUTION

Let $\hat{\alpha},\hat{\beta}$ denote the M.L. estimators of $\alpha$ and $\beta$. Simultaneous solution of the system of equations, $\phi_1(\hat{\alpha},\hat{\beta}) = 0$ and $\phi_2(\hat{\alpha},\hat{\beta}) = 0$ in terms of $\hat{\alpha}$ yields the implicit equation

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# A Critical Review on Potent Prospects of Biogenic Metallic Nanoparticles in Cancer Therapy

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## ABSTRACT

Cancer is one of the deadliest diseases all over the globe, causing social and economic inequalities among people. The incidence is being increased each year and diagnosed with different types of cancers with drug resistance followed by metastasis. Many cancer cells have type specific cancer protein all over their surface, which is lacking in normal cells. The nanoparticles like metal, Biogenic metal and other types conjugate or bind to the cancer cells and helps to increase the specific antibodies to unravel the treatment mechanisms. Many works indicate that the nanoparticles help in drug delivery systems as a result unique cancer treatment will be enabled. Therefore, nanotherapeutics is rapidly developing in cancer treatment, diagnostics, biomarker identification, detection of multiple genes and matrix RNA. The conjugated nanoparticles allow to detect cancer related proteins, resulting in to new method of analyzing proteome of each tumor

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# Therapeutic Role of Nanotechnology in Neurological Diseases

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## ABSTRACT

Last few decades have witnessed nanotechnology helping to improve and even revolutionize different sectors such as medicine, electronics, energy, manufacturing, food and agriculture among many others. The basic concept behind this technology is that, materials or particles at nanoscale exhibit distinct physicochemical characters that can be altered and functionalized for better results. Though nanomaterials are portrayed as a recent development, we have been exposed to naturally produced nano entities since the inception of the earth and indeed have co-evolved with humans. With the advent of the industrial revolution, incidental nanomaterials have been produced as byproducts unintentionally, whose impact on health and environment are not duly evaluated. After the realization of their potential applications, large amounts of engineered nanomaterials or particles of different types and makes are delivered to cater to their demand in varied sectors. Nanotechnology enabled approaches have gained the attention of researchers to find solutions,

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# Biogenic Nanoparticles: A Comprehensive Review to Explore Multidrug Resistance Mechanisms among Microbes

K. VASAVI[1], N. RAVI KUMAR[2], A. T. VENKATRAMANA REDDY[3], G. L. N. PRASAD[4], I. S. CHAKRAPANI[5], AND M. RAJASEKHAR[2*]

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## ABSTRACT

Microbial resistance has been an intense hindrance in preventing diseases for many decades. The rapid emergence of resistance towards several antibiotics could help the bacteria to become stronger to the existing antibiotics and becoming fatal to the mankind. This multidrug resistance is paving a challenging threat to human beings globally due to indiscriminate use of synthetic antibiotics and several other chemical compounds. Several factors have been influencing in developing resistance either by vertical or horizontal gene transfer among microbial species through different ecosystems. Microorganisms are altering genetic makeup to tackle the existing antibiotics very rapidly. Therefore, there is an urgent need to overcome this resistance and to develop new forms of antibiotics that are cost-effective, biocompatible, showing fewer side effects and a single-step fabricated approach that helps for large scale production. Biogenic mediated metallic nanoparticles became a

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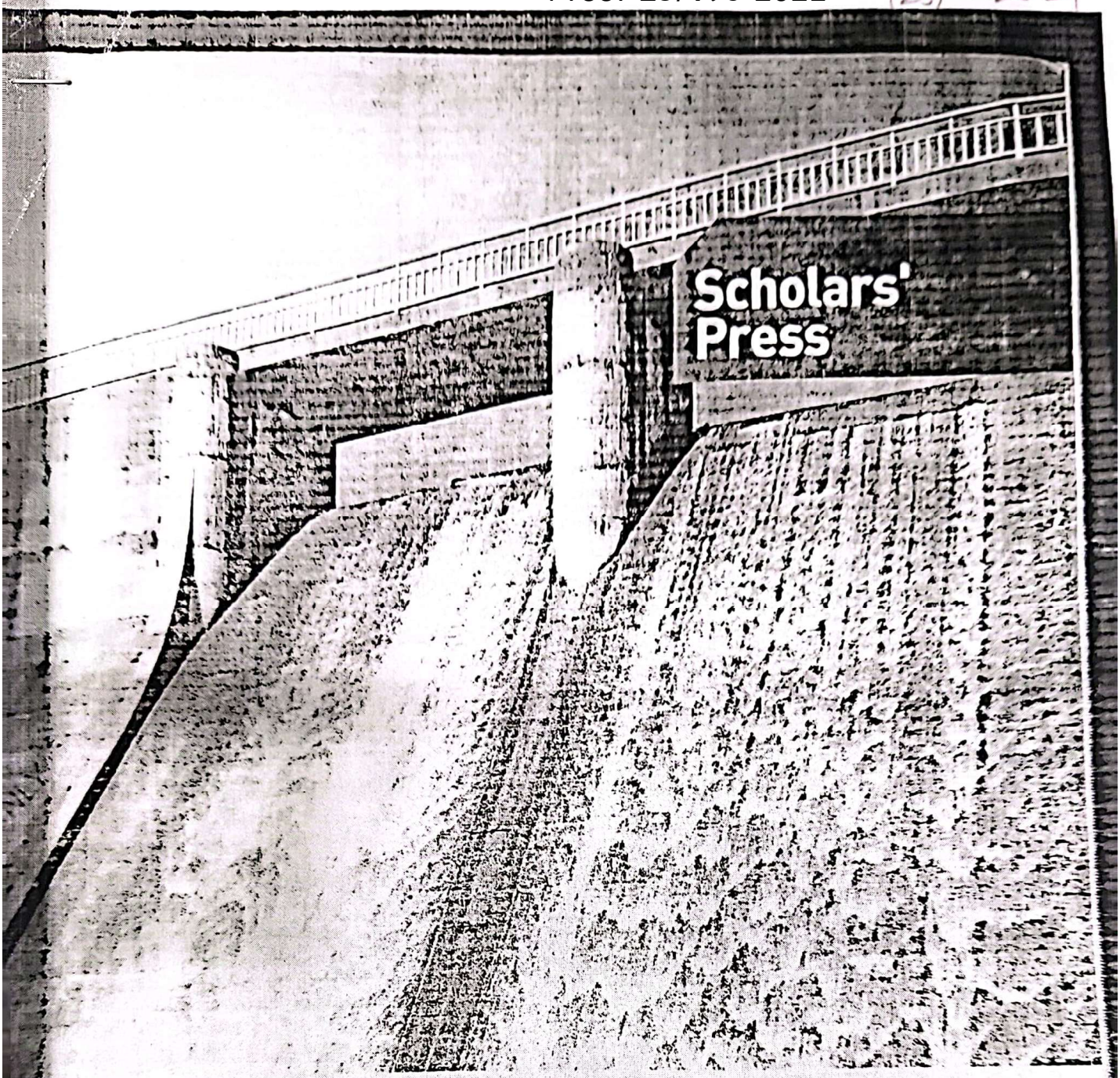


M. Reddi Bhaskara Reddy

# Water Resources of Madanapalli Taluk

in Chittoor District, Andhra Pradesh

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# Water Resources of Madanapalli Taluk

This Book aims to understand the spatial aspects of water resources distribution and associated problems involved in the utilization and management. In the present study an attempt has been made to study the characters of the terrain to evaluate the Land Resources which include both natural resources and artificial resource. An attempt has been made to study the characteristics of rainfall and temperature as they are the primary source of water resources. It evaluate and examined the origin and distribution of the land and water resources of the district and explained the utilization and management of the water resources. This book an attempt is made to deal with the evaluation of problems in the utilization and management of water resources. It examined the problems for better management of the water resources and also explained the conservation of water resources through watershed management. Finally it suggested measures for the development and optimum utilization of the water resource.



Dr. M. Reddi Bhaskara Reddy is working as Assistant Professor in Dept. of Geography, Sri Venkateswara Univ, Tirupati, India. He has Research guided and successfully Awarded 3 Ph.D's and 2 M.Phils's. He has published 3 books, 25 articles at national and International levels. His Teaching specialization is Cartography, GIS and Remote Sensing.

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# WATER RESOURCES OF MADANAPALLI TALUK IN CHITTOOR DISTRICT, ANDHRA PRADESH

By

Dr. M. REDDI BHASKARA REDDY

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# *Recent Developments in*
# APPLIED MICROBIOLOGY AND BIOCHEMISTRY

VOLUME 2



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VOLUME 2

# *Recent Developments in* APPLIED MICROBIOLOGY AND BIOCHEMISTRY

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***Recent Developments in Applied Microbiology and Biochemistry, Volume 2*** provides a comprehensive treatment and understanding on application-oriented microbial concepts, giving readers insights on recent developments in microbial biotechnology and medical, agricultural, and environmental microbiology.

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# Chapter 16 - Recent developments in detection and diagnosis of plant viruses

M. Hema [a], Naga Charan Konakalla [b]

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## Abstract

Plant virus diseases are one of the major constraints to the global agriculture industry. Early and accurate detection and diagnosis of plant viruses, both in plants and carrier vectors, play a critical role in reducing disease spread and developing effective management strategies. Conventional diagnostic techniques based on biological and physical properties related to interaction of the virus with its host and/or vector and to its size and shape (e.g., symptoms, electron microscopy) are time-consuming, cumbersome, and not feasible for large-scale testing. For the last four decades, detection tests based on virus protein (e.g., enzyme-linked immunosorbent assays [ELISAs]) have been widely used for routine and large-scale testing of plant viruses. Nucleic acid-based methods (e.g., nucleic acid hybridization, polymerase chain reaction [PCR]) provide greater flexibility, and increased sensitivity and specificity than the serological methods for rapid and reliable diagnosis of plant virus diseases. In this chapter, recent developments in the area of plant virus detection and diagnosis, which include the techniques that can be performed in the field (e.g., lateral flow immunoassay), methods to detect many viruses in a single test (e.g., multiplex-PCR), and cutting edge

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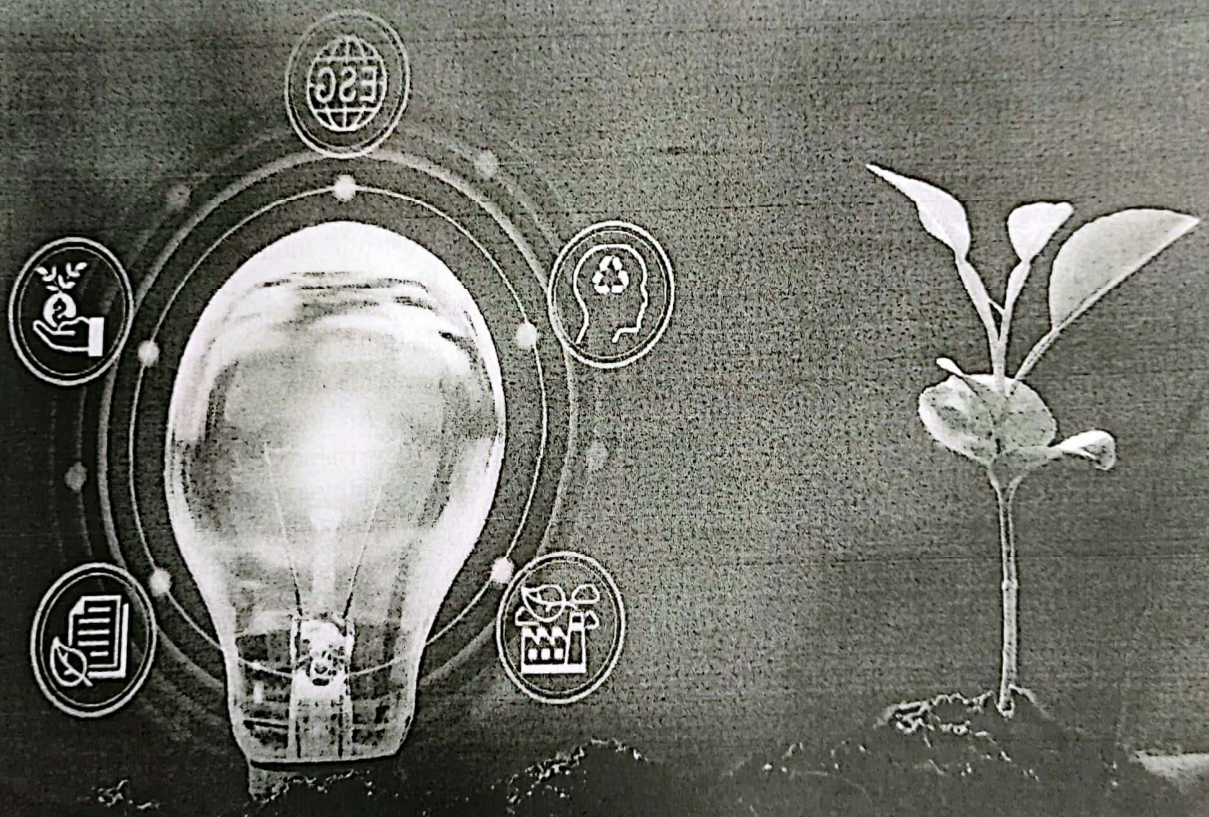

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Chapter 19

# Health Implications by Tainted Drinking Water

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Department of Chemistry, Sri Venkateswara University, Tirupati-517502, Chittoor Dist. Andhra Pradesh, India.

*Corresponding Author: T. Vasantha, Email: vasanthathoti@gmail.com.

## ABSTRACT

Water, water, far and wide, nor any drop to imbibe. Water is an imperative source for the human being civilization. Nowadays, defy is sizeable, creating existential intimidation to biodiversity and manifold human being communities, in addition to intimidating fiscal advancement and sustainability of human lives. Water and particularly clean water are indispensable for humans with a profound effect on healthiness and has the capability to diminish illnesses. There is heavy extraction of water for familial, farming and industrial purposes that leads to more than 50 per cent of water wastage in the domestic, agriculture and industrial sectors. An adequate furnish of safe drinking water is one of the major prerequisites for a hale and hearty existence. Even though microbiological contamination remains the biggest origin of water allied morbidity and mortality globally. However waterborne illness is tranquil a major root of fatality in many parts of the world, particularly in brood. Chemicals in water provisions may also the reason for diseases and substantiation of the human wellbeing. Consequences are limited or lacking for many of them and it is also momentous fiscal constraint in many subsistence economies. Water pollution is rendering much of the accessible water precarious for consumption. In India, most of the inhabitants are depend on surface water as the font of intake water supply. Water Quality Index provides a solitary number that expresses largely water quality at a convinced location and time, based on copious water quality parameters. Geogenic contaminants, including salinity, fluoride, iron and arsenic have pretentious groundwater in many districts burgeon across many states. There is oblige for habitual monitoring of drinking water quality and it is crucial to identify contamination of potable water supplies.

**KEY WORDS:** Water, contamination, health effects, Challenges, Advancing Solutions.

## INTRODUCTION

The global populace of the earth is expected to go beyond 9.8 billion by the year 2050. The swift population is likely to have allied impacts such as increased stipulate for water, food and other basic requirements. This, in turn, will situate further pressure on the farming

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# RECENT ADVANCES IN HOME SCIENCE

Volume - 1

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# Chapter - 7

## Impact of Parenting Styles on Behaviour of Pre School Children According to Mother's Variables

M. Usha Rani, Dr. B. Swaroopa Rani and Prof. K. Anuradha

**Abstract**

Parenting is that prepares children to meet the demands of the specific culture or subculture in which they live. Parenting style refers to the normative patterns of behaviour and practices that parents use to socialize and control their children.

According to Baumarind (1971) there are three types of parenting styles

1) Authoritarian
2) Authoritative
3) Permissive

The aim of the present study was to know the relationship between the parenting styles and behaviour of pre-school children. Tools used were Parenting Style Questionnaire (PSQ) (Swaroopa Rani and Anuradha, 2016)) and Behaviour Problems Check List (Anuradha and Bharathi, 2004)). The sample were pre-school children who were studying in Govt and private schools of Kadapa and Tirupati towns. The children studying in eight pre-schools (5 Govt and 3 Private) in two districts were identified randomly and thus 30 girls and 30 boys and their mothers constituted the sample. Results of the study revealed that mothers did not differ significantly in exercising of parenting style according to their education but differed according to their occupation. The mothers who were doing Government jobs were found to be adopting less authoritarian parenting styles when compared of mothers who were doing private jobs. It was found that the children whose mothers were adopting authoritative parenting style had exhibited low behaviour problems.

## Introduction

Parenting refers to the normative patterns of behaviour and practices that parents use to socialize and control their children and it is the most important factor contributing to a child's development. Parenting style is a psychological

# Chapter - 7
# Impact of Parenting Styles on Behaviour of Pre School Children According to Mother's Variables


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Dr Y V. Sanjay Das obtained his Ph D Degree in Geology from Department of Geology under the supervision of Dr S Ramanaiah.
Dr S Ramanaiah is a currently working as Professor in the Department of Geology of S V University, Tirupati, A.P, India. His research interests have focused on mineral exploration and applications of modern geotechniques.

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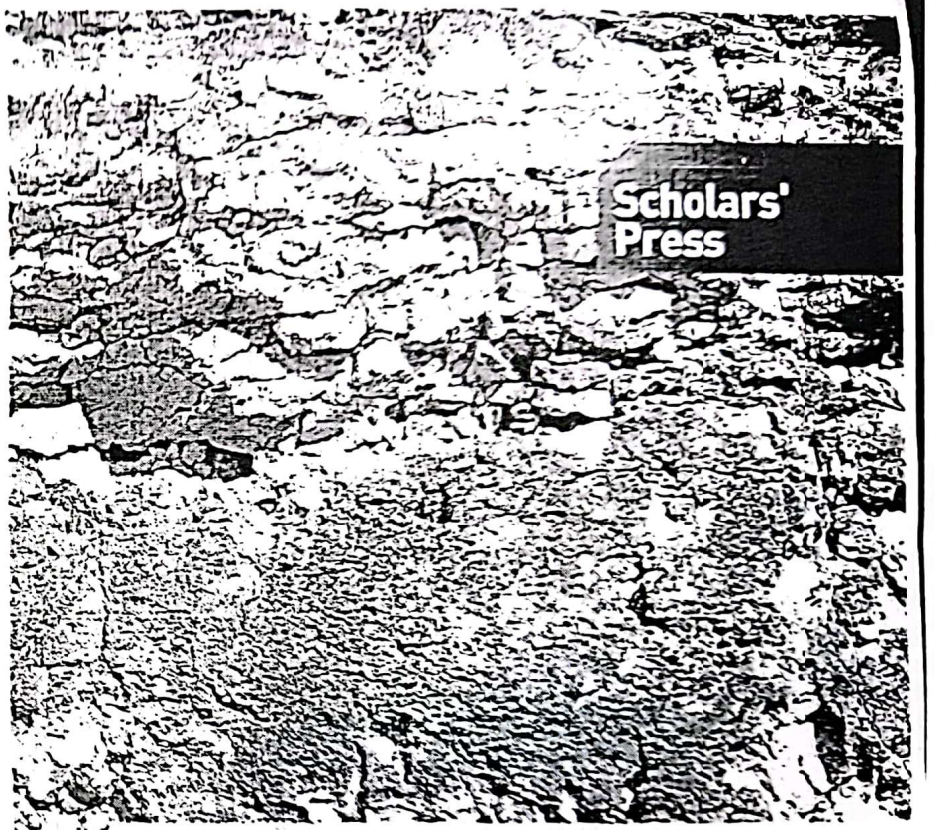

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# Synthesis and spectral characterization of 1,2,4-triazole derivatives

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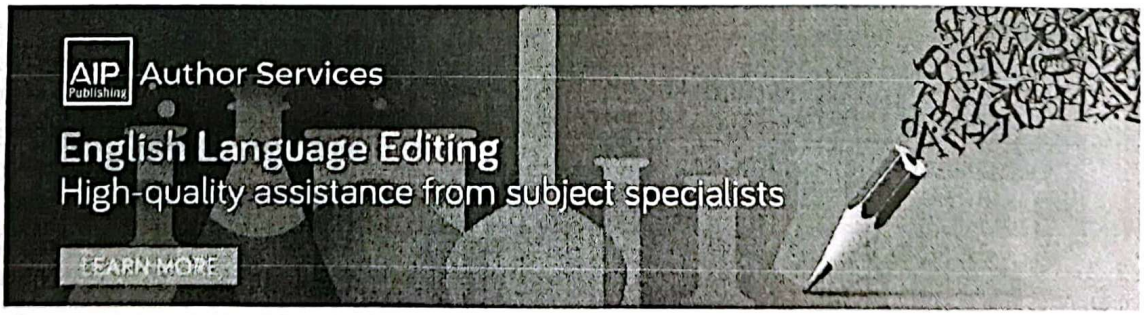




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# Synthesis and Spectral Characterization of 1,2,4-Triazole Derivatives

N. Bakthavatchala Reddy,[1,a)] U. Nagarjuna,[2,b)] Grigory V. Zyryanov,[1,3,c)] A. Padmaja,[2,d)] V. Padmavathi[2,e)] and G. Sravya[1,f)]

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**Abstract.** The olefin moiety presents in styrylsulfonylmethyl-1,2,4-triazolylamine **(1)** was exploited to build up five-member heterocycle-pyrazoles. The series of novel pyrazolyl-1,2,4-triazole amine derivatives **(2-3)** have been synthesized. All the entitles compounds were characterized by $^{1}H$ and $^{13}C$ NMR spectra.

## INTRODUCTION

Compounds having triazole core are recognized for their wide range of biological activities and anti-inflammatory properties.[1-4] Over the last decades, improved research has been passionate to triazole drugs.[5] Furthermore, to frequent potent activities, the 3-amino-1,2,4-triazole motif shows valuable inherent physicochemical-properties that expand total solubility, bioavailability, or chemical stability of a molecule.[6,7] Besides, the structural features of 3-amino-1,2,4-triazole permit it to mimic different functional groups, e. g. they are repeatedly measured as urea bio isostere, with improved solubility and decreased tendency to form aggregates.[8] In addition, several clinically approved drugs with potent antiproliferative and antiangiogenic properties contain the diaryl urea function,[9]making, the 1,2,4-aminotriazole core an interesting pharmacophore. Based on the importance of these heteroaromatics we have synthesized a new class of 1,2,4-triazole derivatives.

## RESULTS AND DISCUSSION

The mono heterocycles 5-*Z*-styrylsulfonylmethyl-1,2,4-triazolyl-3-amines were synthesized from the synthetic intermediate *Z*-styrylsulfonylacetic acid **(3)** (Schemes **1**). The cyclocondensation of compound **3** with hydrazinecarboximidamide in the presence of $POCl_3$ formed 5-((styrylsulfonyl)methyl)-4*H*-1,2,4-triazol-3-amine **(4)**. The $^{1}H$ NMR spectrum of **4a** displayed a singlet at $\delta$ 4.42 due to methylene protons attached to C-5. Apart from this, a doublet was observed in this compound at 6.90 ppm due to olefin proton $H_B$ and another doublet due to olefin proton, $H_A$ adjacent to aryl group appeared at downfield region and merged with aromatic protons. The coupling constant value $J \approx 9.1$ Hz indicated that they possess *cis* geometry. In addition, a broad singlet appeared at 5.36 and 12.67 ppm in **4a** was ascribed to $NH_2$, NH which disappeared on deuteration.

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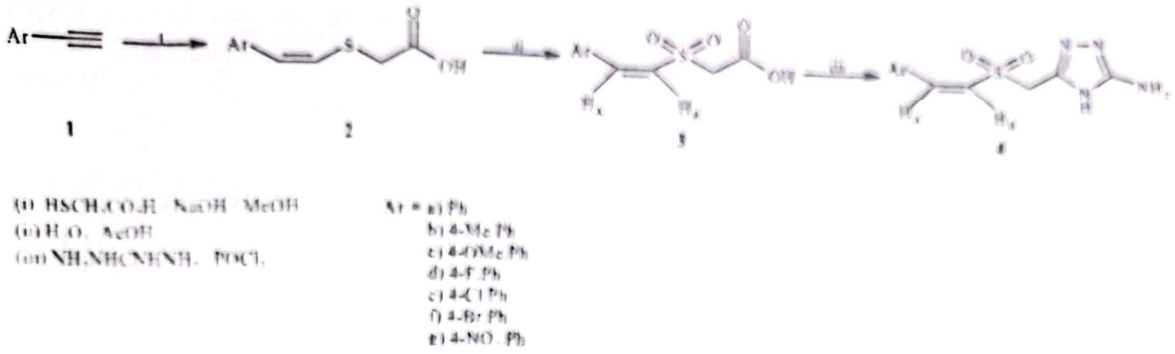

**SCHEME 1.** Synthesis of styrylsulfonylmethyl-1,2,4-triazolylamines

## EXPERIMENTAL

The $^1$H NMR spectra were recorded in $CDCl_3$/DMSO-$d_6$ on a Jeol JNM λ-400 MHz spectrometer. The $^{13}$C NMR spectra were recorded in $CDCl_3$/DMSO-$d_6$ on a Jeol JNM spectrometer operating at λ-100 MHz. All chemical shifts were reported in δ (ppm) using TMS as an internal standard. The elemental analyses were determined on a Perkin Elmer 240C elemental analyzer. The temperature was measured by flexible probe throughout the reaction.

## CHEMISTRY

**General procedure for the synthesis of 5-(2-arylethenesulfonylmethyl)-4*H*-1,2,4-triazol-3-amine (4a-g)**

$POCl_3$ (6 mL) was added to an equimolar mixture (1 mmol) of hydrazinecarboximidamide and *Z*-styrylsulfonylacetic acid (**3a-g**) and heated under reflux for 3-5 h. The surplus $POCl_3$ was removed under vacuum and the residue was poured onto crushed ice. The ensuing precipitate was filtered, washed with saturated sodium bicarbonate solution and then with water. It was dried and recrystallized from ethanol.

**5-(Phenylethenesulfonylmethyl)-4H-1,2,4-triazol-3-amine (4a)**

Yield 78%, mp 151-153°C. $^1$H-NMR ($CDCl_3$ DMSO-$d_6$, 400 MHz): δ = 4.42 (bs, 2H, $CH_2$), 5.36 (s, 2H, $NH_2$), 6.90 (d, 1H, $H_B$, *J* = 9.1 Hz), 7.14-7.76 (m, 6H, $H_A$ & Ar-H), 12.67 (bs, 1H, NH). $^{13}$C-NMR ($CDCl_3$ / DMSO-$d_6$, 100 MHz) δ = 59.3 ($CH_2$), 125.8 (C-$H_B$), 135.2 (C-$H_A$), 156.6 (C-3), 160.4 (C-5), 129.8, 130.4, 130.9, 137.6 (aromatic carbons). Anal. Calcd. for $C_{11}H_{12}N_4O_2S$: C, 49.99; H, 4.58; N, 21.20; Found: C, 50.11; H, 4.56; N, 21.41.

**5-(4-Methylstyrylsulfonylmethyl)-4H-1,2,4-triazol-3-amine (4b)**

Yield 83%, mp 155-157°C. $^1$H-NMR ($CDCl_3$/DMSO-$d_6$, 400 MHz): δ = 2.27 (s, 3H, Ar-$CH_3$), 4.44 (bs, 2H, $CH_2$), 5.38 (s, 2H, $NH_2$), 6.92 (d, 1H, $H_B$, *J* = 9.3 Hz), 7.16-7.78 (m, 5H, $H_A$ & Ar-H), 12.67 (bs, 1H, NH). $^{13}$C-NMR ($CDCl_3$ / DMSO-$d_6$, 100 MHz) δ = 22.4 (Ar-$CH_3$), 59.5 ($CH_2$), 126.0 (C-$H_B$), 135.4 (C-$H_A$), 156.88 (C-3), 160.6 (C-5), 130.8, 131.2, 134.3, 139.5 (aromatic carbons). Anal. Calcd. for $C_{12}H_{14}N_4O_2S$: C, 51.78; H, 5.07; N, 20.13; Found: C, 51.89 H, 5.0; N, 20.35.

**5-(4-Methoxylstyrylsulfonylmethyl)-4H-1,2,4-triazol-3-amine (4c)**

Yield 89%, mp 164-166°C. $^1$H-NMR ($CDCl_3$/DMSO-$d_6$, 400 MHz): δ = 3.89 (s, 3H, Ar-$OCH_3$), 4.46 (bs, 2H, $CH_2$), 5.40 (s, 2H, $NH_2$), 6.94 (d, 1H, $H_B$, *J* = 9.5 Hz), 7.18-7.80 (m, 5H, $H_A$ & Ar-H), 12.67 (bs, 1H, NH). $^{13}$C-NMR ($CDCl_3$ / DMSO-$d_6$, 100 MHz) δ = 57.6 (Ar-$OCH_3$), 59.7 ($CH_2$), 126.2 (C-$H_B$), 135.6 (C-$H_A$), 157.0 (C-3), 160.8 (C-5), 115.8, 129.2, 132.8, 161.6 (aromatic carbons). Anal. Calcd. for $C_{12}H_{14}N_4O_3S$: C, 48.97; H, 4.79; N, 19.04; Found: C, 49.09; H, 4.82; N, 19.28.

**5-(4-Fluorostyrylsulfonylmethyl)-4H-1,2,4-triazol-3-amine (4d)**

Yield 91%, mp 160-162°C. $^1$H-NMR ($CDCl_3$ / DMSO-$d_6$, 400 MHz): δ = 4.47 (bs, 2H, $CH_2$), 5.41 (s, 2H, $NH_2$), 6.95 (d, 1H, $H_B$, *J* = 9.6 Hz), 7.19-7.81 (m, 5H, $H_A$ & Ar-H), 12.67 (bs, 1H, NH). $^{13}$C-NMR ($CDCl_3$ / DMSO-$d_6$, 100 MHz) δ = 59.8 ($CH_2$), 126.3 (C-$H_B$), 135.7 (C-$H_A$), 157.1 (C-3), 160.9 (C-5), 118.3, 132.2, 132.7, 164.3 (aromatic carbons). Anal. Calcd. for $C_{11}H_{11}FN_4O_2S$: C, 46.80; H, 3.93; N, 19.85; Found: C, 46.79; H, 3.94; N, 20.06.

**5-(4-Chlorostyrylsulfonylmethyl)-4H-1,2,4-triazol-3-amine (4e)**



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Yield 80%, mp 167-169°C. $^1$H-NMR ($CDCl_3$/DMSO-$d_6$, 400 MHz): $\delta$ = 4.43 (bs, 2H, $CH_2$), 5.37 (s, 2H, $NH_2$), 6.91 (d, 1H, $H_B$, $J$ = 9.2 Hz), 7.15-7.77 (m, 5H, $H_A$ & Ar-H), 12.67 (bs, 1H, NH). $^{13}$C-NMR ($CDCl_3$/ DMSO-$d_6$, 100 MHz) $\delta$ 59.4 ($CH_2$), 125.9 (C-$H_B$), 135.3 (C-$H_A$), 156.7 (C-3), 160.5 (C-5), 131.2, 132.4, 135.3, 134.7 (aromatic carbons). Anal. Calcd. for $C_{11}H_{11}ClN_4O_2S$: C, 44.22; H, 3.71; N, 18.75; Found: C, 44.34; H, 3.72, N, 18.99.

**5-(4-Bromostyrylsulfonylmethyl)-4H-1,2,4-triazol-3-amine (4f)**

Yield 75%, mp 175-177°C. $^1$H-NMR ($CDCl_3$/DMSO-$d_6$, 400 MHz): $\delta$ = 4.41 (bs, 2H, $CH_2$), 5.35 (s, 2H, $NH_2$), 6.89 (d, 1H, $H_B$, $J$ = 9.0 Hz), 7.12-7.75 (m, 5H, $H_A$ & Ar-H), 12.67 (bs, 1H, NH). $^{13}$C-NMR ($CDCl_3$/ DMSO-$d_6$, 100 MHz) $\delta$ = 59.2 ($CH_2$), 125.7 (C-$H_B$), 135.1 (C-$H_A$), 156.5 (C-3), 160.3 (C-5), 124.8, 132.7, 134.3, 136.9 (aromatic carbons). Anal. Calcd. for $C_{11}H_{11}BrN_4O_2S$: C, 38.50; H, 3.23; N, 16.32; Found: C, 38.61; H, 3.21; N, 16.52.

**5-(4-Nitrostyrylsulfonylmethyl)-4H-1,2,4-triazol-3-amine (4g)**

Yield 87%, mp 172-174°C. $^1$H-NMR ($CDCl_3$ / DMSO-$d_6$, 400 MHz): $\delta$ = 4.45 (bs, 2H, $CH_2$), 5.39 (s, 2H, $NH_2$), 6.93 (d, 1H, $H_B$, $J$ = 9.4 Hz), 7.17-7.79 (m, 5H, $H_A$, Ar-H), 12.67 (br. s, 1H, NH). $^{13}$C-NMR ($CDCl_3$ DMSO-$d_6$, 100 MHz) $\delta$ = 59.6 ($CH_2$), 126.1 (C-$H_B$), 135.5 (C-$H_A$), 156.9 (C-3), 160.7 (C-5), 125.2, 131.4, 142.7, 149.8 (aromatic carbons). Anal. Calcd. for $C_{11}H_{11}N_5O_4S$: C, 42.71; H, 3.58; N, 22.64; Found: C, 42.84; H, 3.59; N, 22.87.

## CONCLUSION

The olefin moiety present in styrylsulfonylmethyl-1,2,4-triazolylamine (**1**) was exploited to build up five-member heterocycle-pyrazoles. The series of novel pyrazolyl-1,2,4-triazole amine derivatives (**2-3**) have been synthesized. All the entitles compounds were characterized by $^1$H and $^{13}$C NMR spectra.

## ACKNOWLEDGEMENTS

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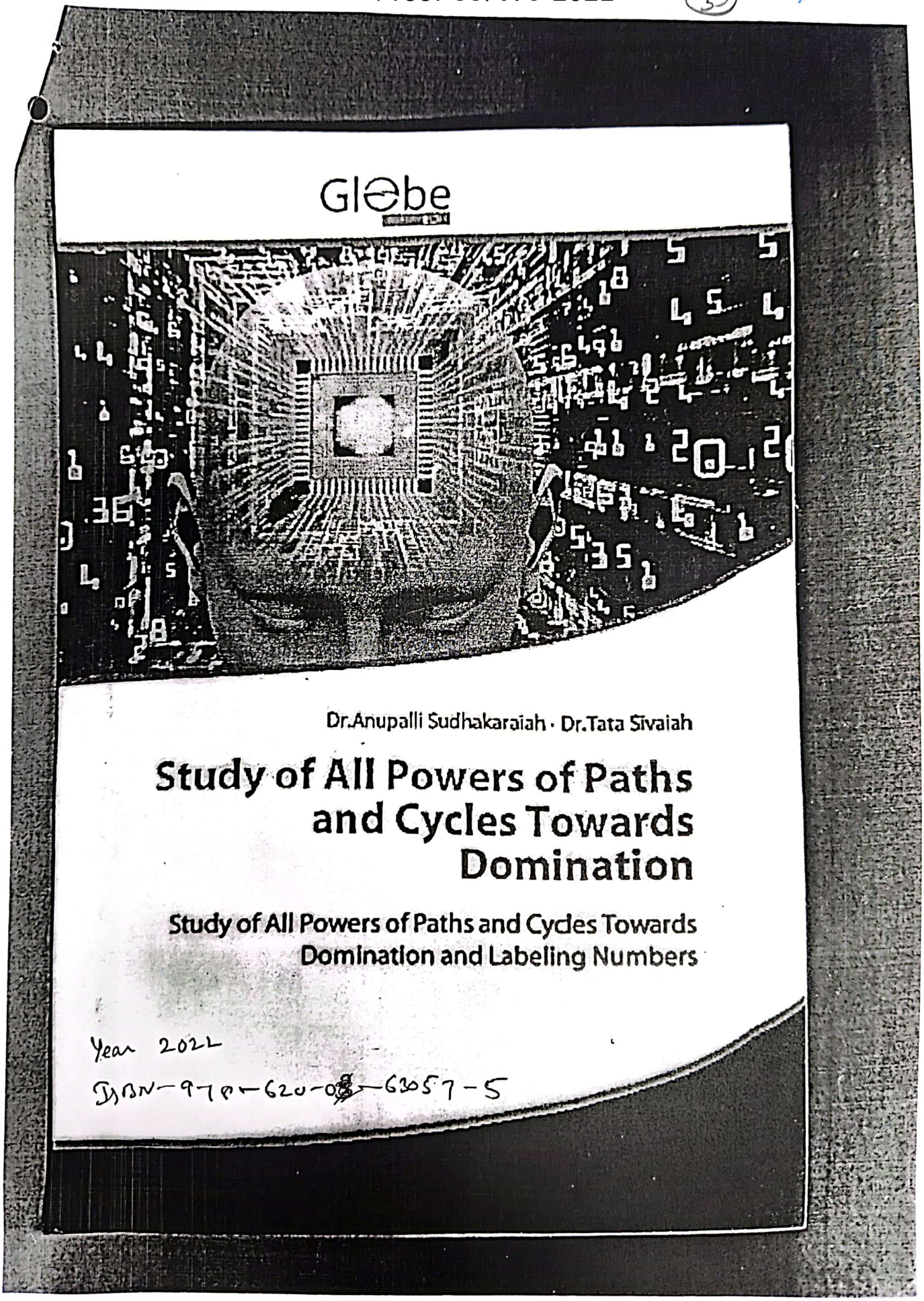


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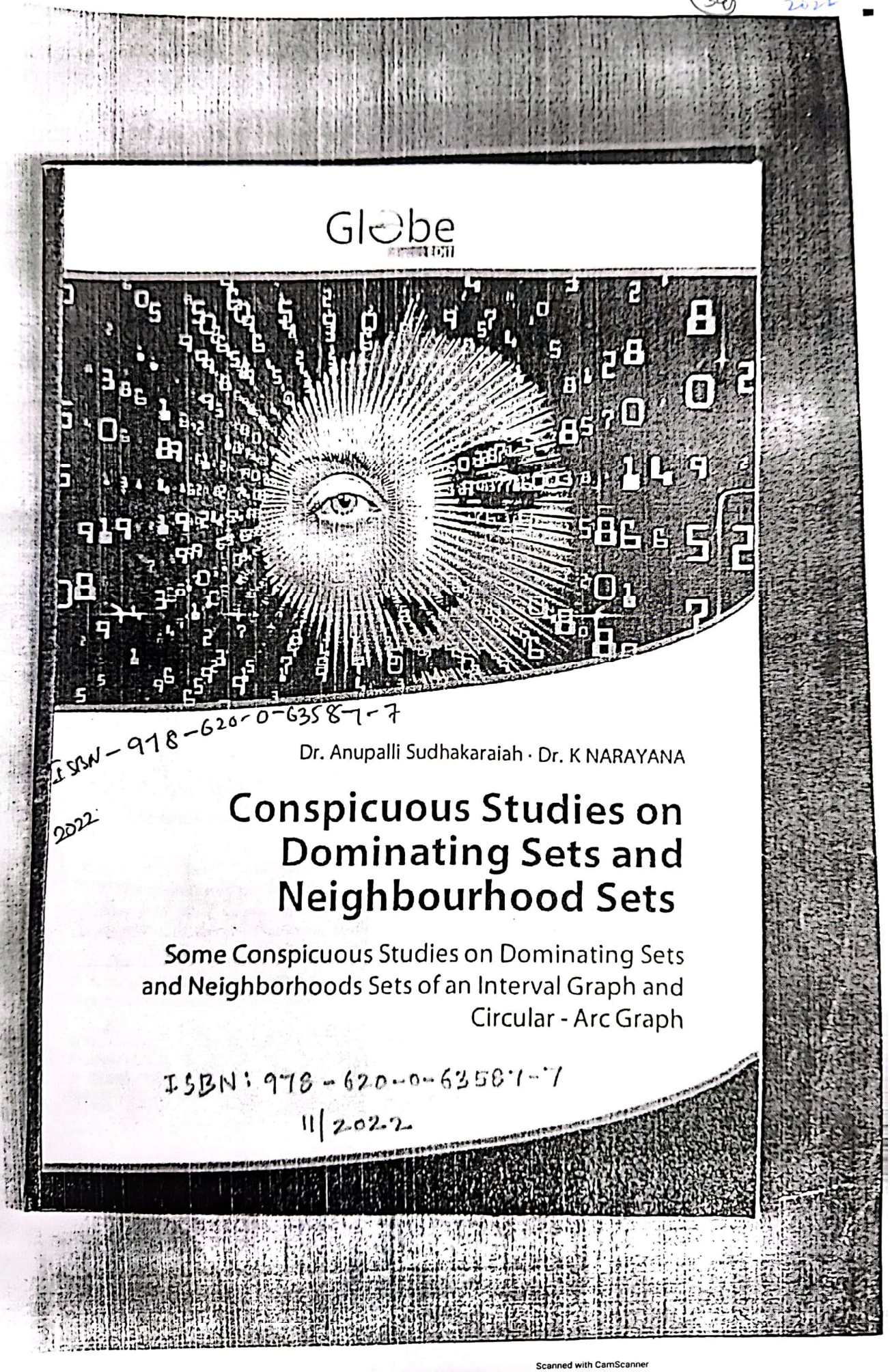


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# Chapter 4
# Assessment of Water Quality from the Gundlakamma Estuary, Andhra Coast, Southeast Coast of India

U. Suresh and B. C. Sundara Raja Reddy

**Abstract** Twenty-four marine water samples in three seasons (premonsoon-2016, monsoon-2016, and premonsoon-2017) from Gundlakamma estuary, Prakasam district, Southeast coast of India, were collected using shallow water sampler at 1 m below the surface. The physicochemical properties were determined. The results for the studied parameters revealed that the water composition of the study area is pH 7.0–8.9; TDS 25.16–64,972 ppm; Salinity 28.92–47.85 ppt; DO 4.04–40.04 ppm; Ca 412.50–1577.50 ppm; Cl 16,012–26487.50 ppm; Na 3023–17454.50 ppm; and K 85–186.5 ppm. Statistical treatment of Factor Analysis (FA) for the distribution of physicochemical parameters shows that they exhibit a strong affinity among several parameters of the study area. In the typical context, water composition may be fresher in some part of upstream and more concentrated near estuary. The impact of anthropogenic as well as natural input, as a source of physicochemical parameters, is lethal. However, a comprehensive investigation is warranted to assess the health of the fragile estuarine ecosystem.

**Keywords** Physicochemical parameters · Water quality · Gundlakamma estuary · Southeast coast of India

## 4.1 Introduction

Water is one of the most important components of the ecosystem (Priyanka et al. 2009). Water quality can be described by chemical and microbiological properties (Manjare et al. 2010). Significant correlation is possible among these studied variables, and thus be useful in indicating the health of the watery (Sreenivasulu et al.

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# Synthesis and spectral characterization of 1,2,4-triazole derivatives

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N. Bakthavatchala Reddy, U. Nagarjuna, Grigory V. Zyryanov, et al.

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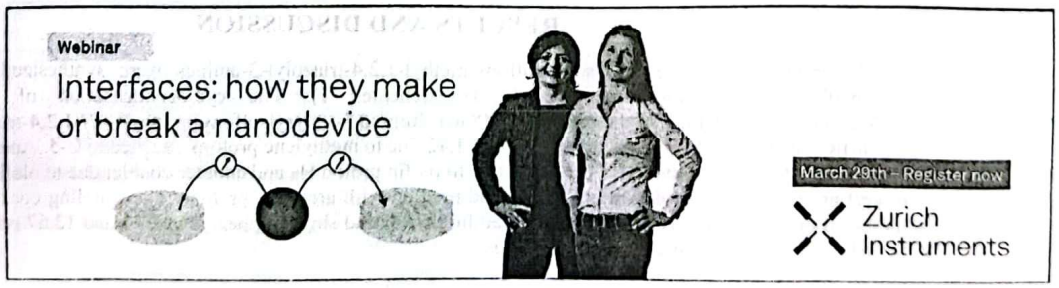




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# Synthesis and Spectral Characterization of 1,2,4-Triazole Derivatives

N. Bakthavatchala Reddy,[1,a)] U. Nagarjuna,[2,b)] Grigory V. Zyryanov,[1,3,c)] A. Padmaja,[2,d)] V. Padmavathi[2,e)] and G. Sravya[1,f)]

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**Abstract.** The olefin moiety presents in styrylsulfonylmethyl-1,2,4-triazolylamine (**1**) was exploited to build up five-member heterocycle-pyrazoles. The series of novel pyrazolyl-1,2,4-triazole amine derivatives (**2-3**) have been synthesized. All the entitles compounds were characterized by $^1$H and $^{13}$C NMR spectra.

## INTRODUCTION

Compounds having triazole core are recognized for their wide range of biological activities and anti-inflammatory properties.[1-4] Over the last decades, improved research has been passionate to triazole drugs.[5] Furthermore, to frequent potent activities, the 3-amino-1,2,4-triazole motif shows valuable inherent physicochemical-properties that expand total solubility, bioavailability, or chemical stability of a molecule.[6,7] Besides, the structural features of 3-amino-1,2,4-triazole permit it to mimic different functional groups, e. g. they are repeatedly measured as urea bio isostere, with improved solubility and decreased tendency to form aggregates.[8] In addition, several clinically approved drugs with potent antiproliferative and antiangiogenic properties contain the diaryl urea function,[9]making, the 1,2,4-aminotriazole core an interesting pharmacophore. Based on the importance of these heteroaromatics we have synthesized a new class of 1,2,4-triazole derivatives.

## RESULTS AND DISCUSSION

The mono heterocycles 5-*Z*-styrylsulfonylmethyl-1,2,4-triazolyl-3-amines were synthesized from the synthetic intermediate *Z*-styrylsulfonylacetic acid (**3**) (Schemes **1**). The cyclocondensation of compound **3** with hydrazinecarboximidamide in the presence of $POCl_3$ formed 5-((styrylsulfonyl)methyl)-4*H*-1,2,4-triazol-3-amine (**4**). The $^1$H NMR spectrum of **4a** displayed a singlet at $\delta$ 4.42 due to methylene protons attached to C-5. Apart from this, a doublet was observed in this compound at 6.90 ppm due to olefin proton $H_B$ and another doublet due to olefin proton, $H_A$ adjacent to aryl group appeared at downfield region and merged with aromatic protons. The coupling constant value $J \approx 9.1$ Hz indicated that they possess *cis* geometry. In addition, a broad singlet appeared at 5.36 and 12.67 ppm in **4a** was ascribed to $NH_2$, NH which disappeared on deuteration.

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# Synthesis and antifungal activity of diamidomethane linked oxazolyl/thiazolyl/ imidazolyl isoxazoles

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# Synthesis and Antifungal Activity of Diamidomethane Linked Oxazolyl / Thiazolyl / Imidazolyl Isoxazoles

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**Abstract.** Nitrogen containing heterocyclic compounds have great utility in synthetic, medicinal and material chemistry. Oxazole, isoxazole, thiazole, imidazole and their derivatives have gained prominence as they constitute the structural features of many bioactive compounds. In fact, amide functionality represents a privileged scaffold of biomolecules and many drugs. The combination of two or more heterocycles linked by amide functionality into one molecular framework would yield new chemical entities with enhanced pharmacological activities. Besides, development of environmentally benign methods with improved yields is highly desirable. In our continued interest to synthesize a variety of bioactive heterocycles, we planned to develop some new isoxazoles in combination with oxazoles / thiazoles / imidazoles adopting green methodologies and to study their antifungal activity. The results related to these aspects will be presented.

## INTRODUCTION

Molecules having azole ring particularly oxazole, thiazole and imidazole as a privileged scaffold exhibits a wide range of applications in drug discovery as antimicrobials, antioxidants, antitumor and anticancer agents. Oxazole is one of the structural motifs in biologically active natural products such as phenoxan, hennoxazoles and leiodolides A and B [1]. Thiazole is the key component of alkaloids and pharmaceuticals [2]. The drugs sulfathiazole and tiazofurin constitute thiazole unit [3]. On the other hand, imidazoles are prominent players in pharmaceutical research. The antibiotic metronidazole, antifungals miconazole, econazole [4, 5] comprises of imidazole moiety. Besides, the combination of amide moieties with potential heterocycles is being used to develop novel formulation. Moreover, there is a quest for development of green methods to prepare heteroaromatic compounds. Based on the above and in continuation of our efforts to prepare biologically potential heterocycles [6, 7], the present work synthesis and antifungal activity of azolyl isoxazoles have been taken up.

### Chemistry

The synthetic intermediates *N*-(2-oxo-2-((4-phenyloxazol-2-yl)amino)ethyl)cinnamamide (**1**), *N*-(2-oxo-2-((4-phenylthiazol-2-yl)amino)ethyl)cinnamamide (**2**) and *N*-(2-oxo-2-((4-phenyl-*1H*-imidazol-2-yl)amino)ethyl)-cinnamamide (**3**) were prepared as per the literature precedents [8]. The olefin functionality in **1**, **2** and **3** was utilized to build isoxazole. The cycloaddition of nitrile oxide developed from benzaldoxime in the presence of PhIO

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# A green approach for the synthesis of pyridine linked bis-(oxadiazoles)/(thiadiazoles)/(triazoles) and evaluation as antioxidants

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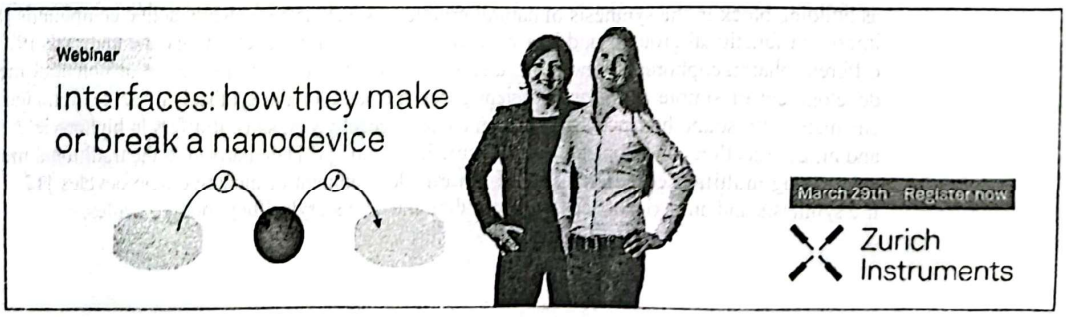




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# A Green Approach for the Synthesis of Pyridine Linked Bis-(Oxadiazoles) / (Thiadiazoles) / (Triazoles) and Evaluation as Antioxidants

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**Abstract.** The sulfone moiety is an important core unit in organic synthesis and medicinal chemistry. Amongst different heteroaromatic compounds oxadiazoles, thiadiazoles and triazoles form the basis of many pharmaceuticals and agrochemicals. In fact, pyridine exhibits diversified biological activities. The presence of different pharmacophores in the same unit is an attracting approach to develop new drugs due to synergetic effect. Besides, application of green chemistry concepts is an important goal to prepare biologically active compounds. In view of the above, the present study deals with the synthesis of pyridine linked bis(oxadiazoles), bis(thiadiazoles) and bis(triazoles) under ultrasonication and evaluation of radical scavenging activity. The results related to these aspects will be discussed.

## INTRODUCTION

1,3,4-Oxadiazoles, 1,3,4-thiadiazole and 1,2,4-triazoles are important structural units in medicinal chemistry due to their wide spectrum of biological activities such as antioxidant, antibacterial, anti-inflammatory and antifungal, antimicrobial and anticancer activities [1-4]. The familiar drugs viz., raltegravir, zibotentan, megazol, cefazedone, anastrozole and letrozole contain oxadiazole, thiadiazole and triazole moieties [5-7]. In addition, pyridine is useful as building block in the synthesis of natural products as well as biologically active compounds [8]. The sulfone is an important functional group found in a wide variety of natural products, drugs and materials [9]. The combination of different pharmacophores in one molecular frame would lead to the formation of potential therapeutics. Thus, the development of simple and more efficient green methods for the synthesis of azoles remains a goal for synthetic chemists. Ultrasound has increasingly been used in recent years, since it offers in higher yield, shorter reaction time and milder reaction conditions under ultrasonic irradiation [10] comparison to the traditional method [11]. As part of an ongoing multifaceted program aimed towards development of bioactive heterocycles [12, 13], herein we report the synthesis and antioxidant activity of pyridine linked bis(arylsulfonylmethyl) azoles.

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# Synthesis of a new class of pyrazolyl-1,2,4-triazole amine derivatives

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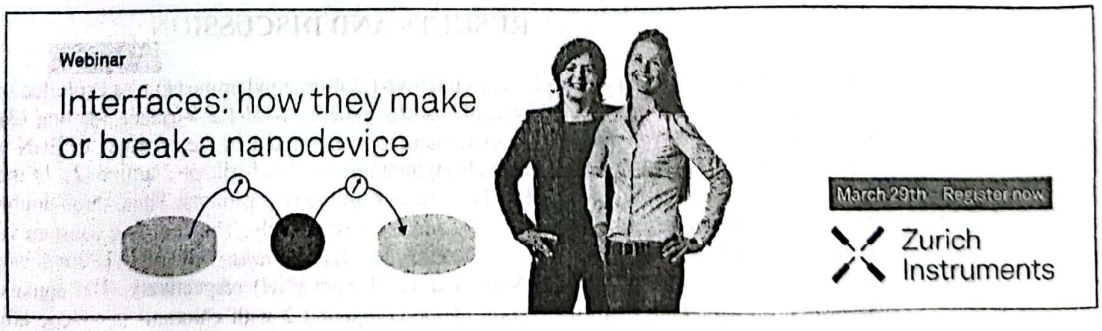




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# Synthesis of a New Class of Pyrazolyl-1,2,4-Triazole Amine Derivatives

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**Abstract.** The olefin moiety presents in styrylsulfonylmethyl-1,2,4-triazolylamine (**1**) was exploited to build up five-member heterocycle-pyrazoles. The series of novel pyrazolyl-1,2,4-triazole amine derivatives (**2-3**) have been synthesized. All the entitles compounds were characterized by $^1$H and $^{13}$C NMR spectra.

## INTRODUCTION

Nitrogen containing heteroarenes have great utility in synthetic medicinal and material chemistry. One such class of compounds are triazoles and pyrazoles. 1,2,3-Triazole derivatives possess significant biological and pharmacological properties, inclusive of antimalarial[1], antitubercular,[2] antiviral,[3] and antibacterial activity.[4] Therefore, 1,2,3-Triazole derivatives are privileged scaffolds for the development of novel drugs.[5] Pyrazole and its derivatives represent one of the most active classes of compounds, which exhibit broad spectrum of pharmacological activities like antimicrobial,[6] anticonvulsant,[7] anticancer,[8] analgesic,[9] anti-inflammatory,[10] cardiovascular[11] etc. Pyrazole moiety makes the core structure of various drugs such as Difenamizole, Celecoxib, Tepoxalin[12] etc. In continuation of our studies to synthesis of sulfonyl methyl linked bis-heterocycles having different heterocyclic moieties has been taken up.

## RESULTS AND DISCUSSION

The olefin moiety present in styrylsulfonylmethyl-1,2,4-triazolylamine (**1**) was exploited to build up five-member heterocycle-pyrazoles. 5-(4-Aryl-1*H*-pyrazol-3-sulfonylmethyl)-4*H*-1,2,4-triazol-3-amine (**3**) was prepared by the 1,3-dipolar cycloaddition of ethereal diazomethane to compound **1** in the presence of $Et_3N$ in ether at -20 to -15°C gave 5-(4,5-dihydro-4-aryl-1*H*-pyrazol-3-sulfonylmethyl)-4*H*-1,2,4-triazol-3-amine (**2**). In the $^1$H NMR spectrum of **2a** an AMX splitting pattern was observed due to pyrazoline ring protons. Thus, three double doublets present at $\delta$ 3.53, 4.19, 4.55 in **2a** was assigned to $H_X$, $H_M$ and $H_A$, respectively. The coupling constant values $J_{AM} \approx 12.4$, $J_{MX} \approx 10.3$ and $J_{AX} \approx 6.4$ Hz indicated that $H_A$, $H_M$ are *cis*, $H_A$, $H_X$ are *trans* while $H_M$, $H_X$ are *geminal*. Further **2a** showed signals at $\delta$ 4.47 ($CH_2$), 5.51, 5.41 ($NH_2$) and 12.71 ppm (NH) respectively. The signals due to $NH_2$ and NH disappeared on deuteration. Aromatization of the compound **2** with chloranil in xylene afforded 5-(4-phenyl-1*H*-

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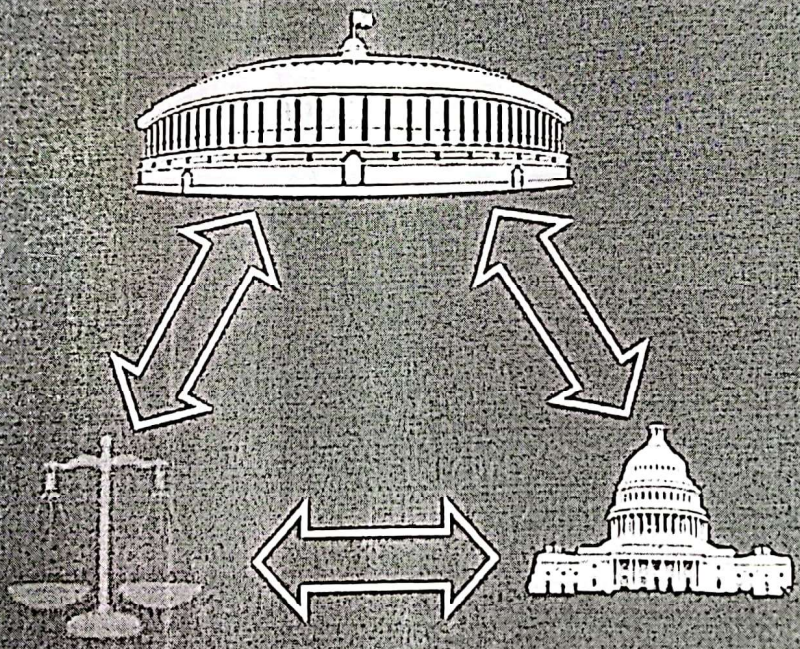

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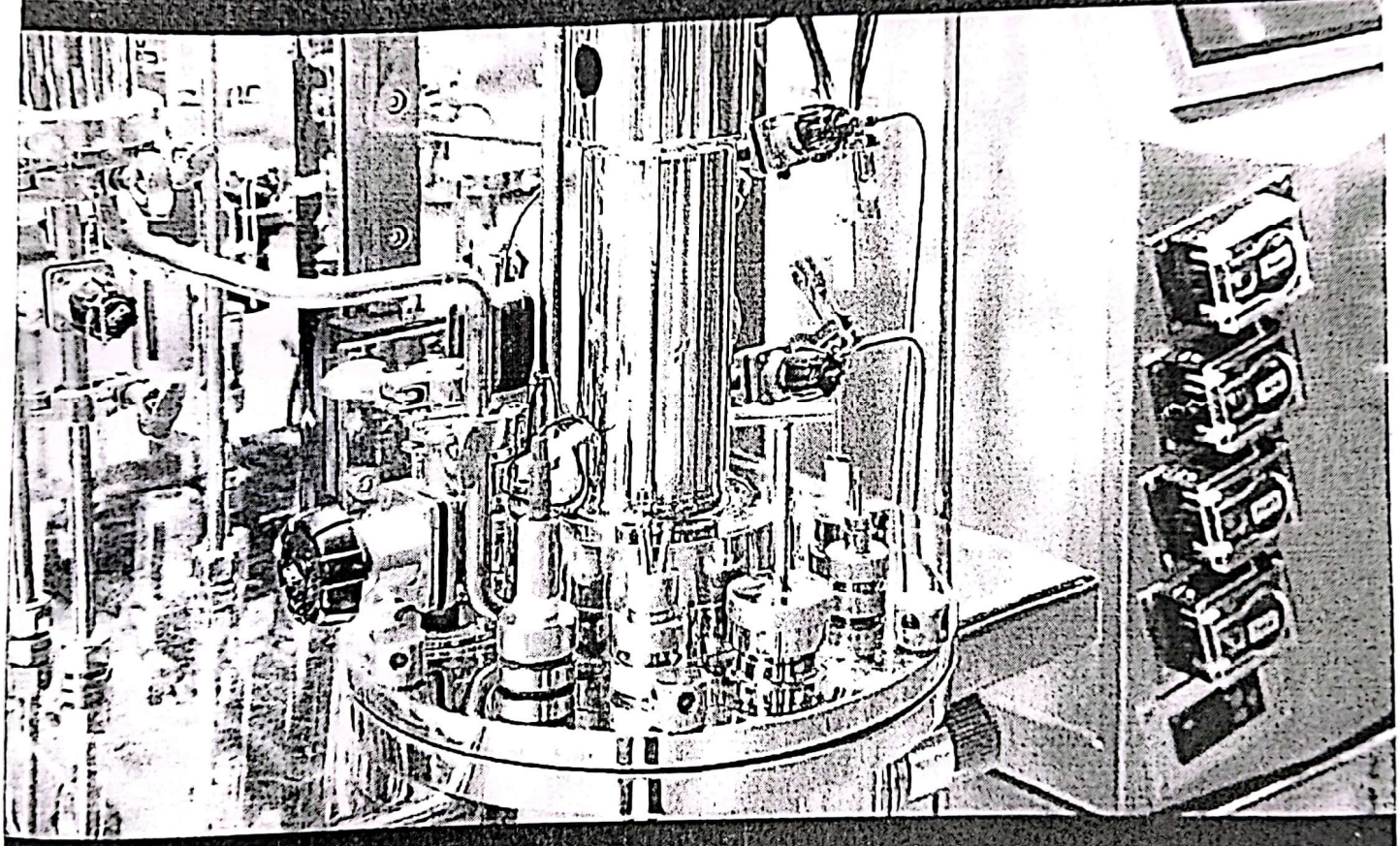
# Microbial Resource Technologies for Sustainable Development



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CHAPTER 20

# Electrochemically active bacteria as platform technology in microbial electrochemical system

Prasada Babu Gundala and Paramageetham Chinthala
Department of Microbiology, Sri Venkateswara University, Tirupati, Andhra Pradesh, India

## Introduction

In recent times, increased fossil fuel burning, deforestation, and population explosion resulted in high $CO_2$ emissions. The continued $CO_2$ emission resulted ozone depletion, changes in weather pattern, and sea level rise. In 2020, annual energy outlook stated that since 1980–2005, there is an average hike of 0.9% in $CO_2$ emissions, while since 2005 there is slight decline (0.2%) in $CO_2$ emissions due to the use of green energy which is environment friendly. However, the global energy demand will rise to 60% by 2050 due to climate change. This leads to the search of sustainable supply of renewable energy. Renewable energy is generated from natural resources, e.g., water, sunlight, wind, and rain. Now, the entire world is looking to convert organic waste into energy. Microbial electrochemical systems or technology focuses on organic waste or biomass as a resource to produce electric current and high value products (Rabaey and Verstraete, 2005).

Microbial electrochemical technologies (METs) primarily operate in two modes of functions: one is called as microbial fuel cells (MFCs) and the other is microbial electrolysis cells (MECs). The microorganisms that are utilized in MET are called as electroactive bacteria or "exo electrogens" which transfer extracellular electrons to a solid anode which is also called as extracellular electron transfer (EET)( Doyle and Marsili (2015). Exoelectrogens are capable of producing high current densities (>1 $A/m^3$ anode) at extreme environmental conditions of pH, temperature, and saline (Li et al., 2013). Similarly, they could also be isolated from waste water generated by industries such as oil and natural gas production industries, sea food processing, and textile drying industries (Badani et al., 2005; Xiao and Roberts, 2010; Monzon et al., 2014). In the EET process, extremophiles particularly highly alkaliphiles (*Geoalkalibacter ferrihydriticus*) Halophilic (*Geoalkalibacter subterranean*) and thermophilic bacteria (*Thermonicola ferria* and *Thermonicola pseudothaaanolicus*) play a key role (Badalamenti et al., 2013); Parameswaran et al., 2013; Lusk et al., 2015). Roussean et al. (2013) and Miceli et al. (2012) suggested that extreme natural environments are the sites of exoelectrogens and they effectively transfer extracellular electron to the anode.

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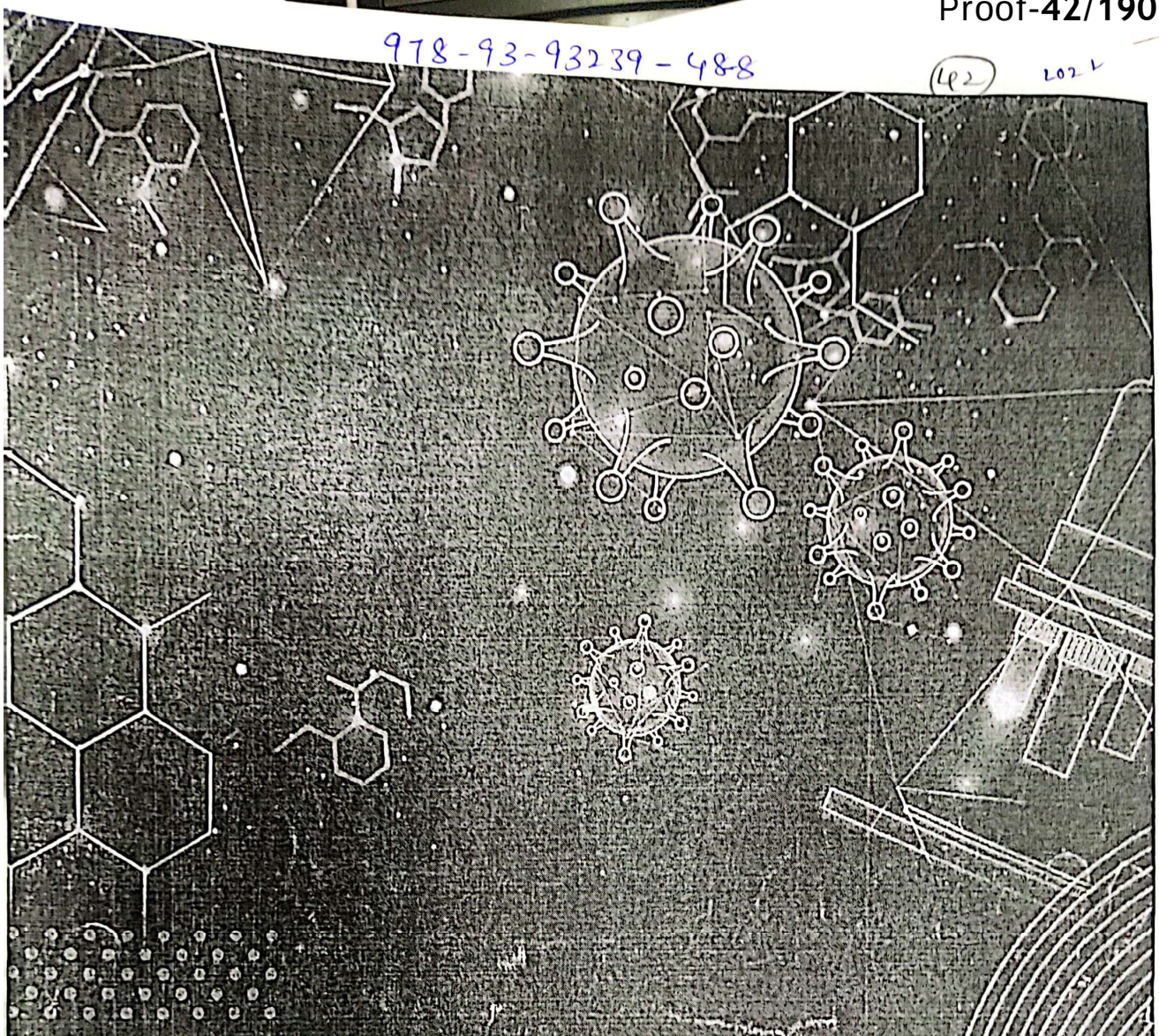

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# CHAPTER 4

# ORTHOGONAL GENERALISED $(\sigma, \tau)$ - N SEMI DERIVATIONS ON SEMIPRIME NEARRINGS

**Dr C.Gangi Reddy [1], Dr D. Bharathi [2], Dr G. Vinod Kumar [3]**

**Abstract:** In this paper N is a prime nearring, d is a $(\sigma, \tau)$ - n semi derivation of N and f is a generalised $(\sigma, \tau)$ - n semi derivation of N.

In this article we proved that, if $f_1$ *and* $f_2$ are orthogonal then

(i) $f_1(t_1, t_2 \dots \dots t_n) f_2(u_1, u_2 \dots \dots u_n) = f_2(t_1, t_2 \dots \dots t_n) f_1(u_1, u_2 \dots \dots u_n) = 0$

(ii) $d_1(f_2(t_1, t_2 \dots \dots t_n), u_2 \dots \dots u_n) = f_2(d_1(t_1, t_2 \dots \dots t_n), u_2 \dots \dots u_n) = 0$and $d_2(f_1(t_1, t_2 \dots \dots t_n), u_2 \dots \dots u_n) = f_1(d_2(t_1, t_2 \dots \dots t_n), u_2 \dots \dots u_n) = 0$

(iii) $f_1(f_2(t_1, t_2 \dots \dots t_n), u_2 \dots \dots u_n) = f_1(d_2(t_1, t_2 \dots \dots t_n), u_2 \dots \dots u_n) = 0$

***Keywords:*** *$(\sigma, \tau)$-n semi derivation, generalised $(\sigma, \tau)$- n semi derivation, orthogonal generalised $(\sigma, \tau)$- n semi derivation.*

## INTRODUCTION

Orthogonal derivations were studied by Bresar.M and Vukman.J[7]. They were permuting n- derivations in rings introduced by Ashraf.M and siddeeque. MA.[31]. Further many authors studied the notation of permuting n - derivations in nearrings. Ashraf.M and siddeeque. MA.[32] introduced generalised n - derivations in nearrings.

A non-empty set N with two binary operations, "addition" and "multiplication", such that

(i) N is a group concerning addition (not necessarily abelian)

(ii) N is a semigroup concerning multiplication and

(iii) $\forall a, b, c \in N$

If $(a + b).c = a.c + b.c$ (right distributive law) holds then N is called a right nearring.

If $a.(b + c) = a.b + a.c$ (left distributive law) holds then N is called a left nearring.

Let $n$ be a positive integer. An $n$ - additive mapping $f: N \times N \times \cdots \times N \to N$ is called a right generalised $(\sigma, \tau)$ - n semi derivation associated with $(\sigma, \tau)$ - n semi derivation d such that the equations

$$f(t_1 t_1', t_2, \cdots, t_n) = f(t_1, t_2, \cdots, t_n) g(\sigma(t_1')) + \tau(t_1) d(t_1', t_2, \cdots, t_n)$$
$$f(t_1, t_2 t_2', \cdots, t_n) = f(t_1, t_2, \cdots, t_n) g(\sigma(t_2')) + \tau(t_2) d(t_1, t_2', \cdots, t_n)$$
$$f(t_1, t_2, \cdots, t_n t_n') = f(t_1, t_2, \cdots, t_n) g(\sigma(t_n')) + \tau(t_n) d(t_1, t_2, \cdots, t_n')$$

and $g(f(t_1, t_2, \cdots, t_n)) = f(g(t_1, t_2, \cdots, t_n))$ holds, $\forall t_1, t_1', t_2, t_2' \cdots t_n, t_n' \in N$

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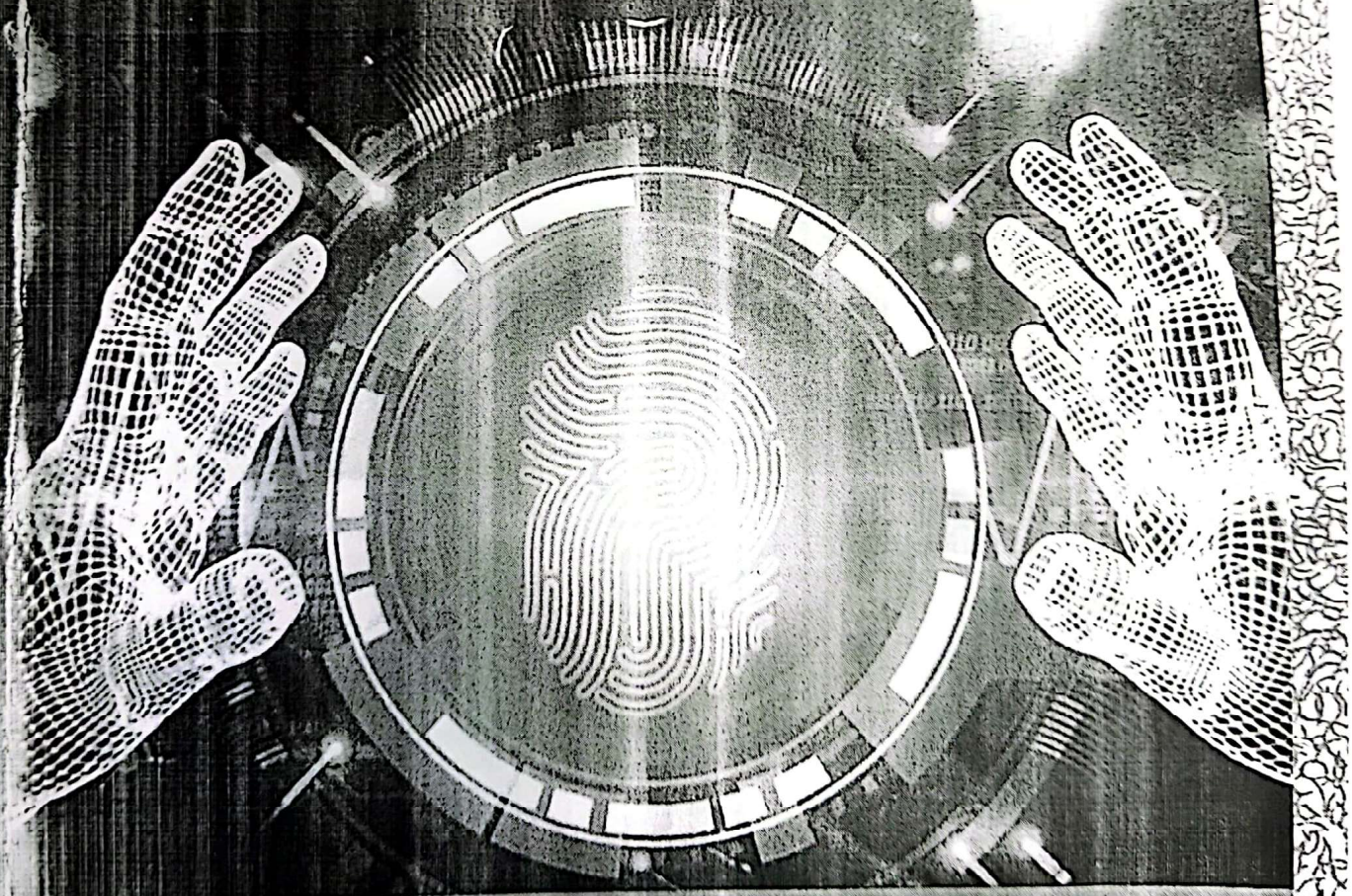

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# WEIGHTED QUANTILE REGRESSION MODELS USING R SOFTWARE FOR ATMOSPHERIC DATA

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Abstract:-In our day to day life atmospheric variables like rainfall plays an important role for human kind. For the purpose of crop yield, cultivation, drinking and irrigation purpose, survival of plants, animals using fresh water to the earth's surface. If rainfall is less, there is water scarcity which causes drought like situation. If there is excess rainfall, floods takes place which make the life of the affected people miserable. In time series, there are many models such as Moving average model, Simple Exponential smoothing model, Double Exponential Smoothing model, Triple Exponential Smoothing model, Adaptive Smoothing model, Auto regressive integrated moving average model etc. In this paper we are fitting Weighted Quantile Regression models, six Quantiles with different measures for atmospheric data and the best model among these different models is chosen using Root Mean Square Error (RMSE) criteria.

**Keywords:** Rainfall data, weighted quantile regression model, RMSE.

## 1. Introduction

In literature there are many types of regression models and some of them are

i.Linear Regression:

Relation between independent(x) and dependent variables(y)

$$y = a + bx$$

Where a and b are constants to be estimated

ii.Polynomial Regression:

It is nonlinear form of relationship between dependent variable(y) and independent variable(x)

$$y = a + bx + cx^2$$

Where a, b and c are constants of the above model estimated using ordinary least squares or any other methods.

iii.Logistic Regression:

Logistic regression is a method that was method used to estimate probability of certain events that are mutually exclusive.

iv.Quantile Regression:

Quantile regression is an econometric technique used when the necessary conditions to use linear regression are not met. Some other regression models are Ridge Regression, Lasso Regression, Elastic Net Regression, Principle Components Regression(PCR), Partial Least Regression, Support Vector Regression, Ordinal Regression, Poisson Regression, Negative binomial Regression, Quasi Poisson Regression, Cox Regression and Tobit Regression, etc.

J. W. Taylor[1] gave an article entitled "forecasting Daily supermarket sales using exponentially weighted Quantile Regression". In his paper, he used exponential smoothing for point forecasting in inventory control motivates the development of the approach for interval forecasting. He proposed interval forecasting and Robust point forecasting also. Ben Sherwood et al[2] explains about "Weighted Quantile Regression for analyzing health care cost data using missing covariates". In their paper they proposed Quantile Regression to obtain complete picture of the effects of the covariates on the health care cost and is naturally adapted to the skewness and heterogeneity of the cost data. J. W. Taylor[3] in gave research paper entitled "Using exponentially weighted Quantile Regression to estimate value Risk and Expected shortfall". He estimated time varying quantiles using exponentially weighted quantile regression.

Vivian Yi-Ju Chen et al[4] published an article on "Geographically Weighted Quantile Regression (GWQR): An Application to U. S. Mortality Data". Xiaoming Lu and Zhaozhi Fan[5] gave "Weighted Quantile regression for longitudinal data". Michal Gostkowski and Krzysztof Gajowniczek[6] explains about "Weighted Quantile Regression Forests for Bimodal Distribution Modeling: A Loss given default case".

## 2. Methodology:

If we compute models for total data, it is called simply regression. If we compute Regression for first 25 percent of observations it is called 0.25 Quantile Regression. If we compute regression for first 50 percent of observation, it is called 0.5 Quantile Regression, etc.

Quantile regression allows understanding relationship between variables outside of the mean of the data. Quantile Regression uses to estimate median or the 0.25 Quantile or any Quantile, key assumption of linear regression is not satisfied, outliers in the data, residuals are not normal, increase in error variance with increase in outcome variable.

Different Quantile Regressions are

Trimean (Model-1):

$$Y_t = 0.25\, Q_t(0.25) + 0.5\, Q_t(0.5) + 0.25\, (Q_t)(0.75)$$

Gast Wirth (Model-2):

$$Y_t = 0.3\, Q_t(1/3) + 0.4\, Q_t(0.5) + 0.3\, Q_t(2/3)$$

Five – Quantile (Model-3):

$$Y_t = 0.05\, Q_t(0.1) + 0.25\, Q_t(0.25) + 0.4\, Q_t(0.5) + 0.25\, Q_t(0.75) + 0.05\, Q_t(0.9)$$



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# Machine Learning Models using WEKA software for Atmospheric Data

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**Corresponding author: drsvreddy123@gmail.com*

**Abstract-** *Now-a-days machine learning models plays vital role in interpretation of data. In this paper a machine learning software like Waikato Environment for Knowledge Analysis (WEKA) is used for Atmospheric variables. For the atmospheric variables like Minimum temperature, Maximum temperature, Temperature, wind speed and visibility, we perform Locally Weighted Learning (LWL), Regression by Discretization and M5P tree based algorithms. Among these three models, the best model is chosen using Root Mean Square Error and Symmetric Mean Absolute Percentage Error (SMAPE).*

**Keywords:** WEKA, Atmospheric data, LWL, M5P and SMAPE.

## 1. Introduction

The most popular and important statistical softwares used in literature are SPSS, R, MAT Lab, Microsoft Excel, SAS, GraphPad Prism, Minitab, etc. In this paper we are using WEKA software for computation of machine learning models for atmospheric data. Lubnashaikh and KirtiSawlani [1] presents a rain fall prediction model using artificial neural networks. Artificial neural network, feed forward network, multilayer artificial neural network component compared with different models of auto regressive moving averages for rainfall data. An artificial neural network model for rainfall forecasting in Bangkok, Thailand given by Hung, et al [2].Coecho et al[3] given their article published a paper on "forecast calibration and combination: A simple Bayesian Approach for ENSO". Kharin et al[4] explains "climate predictions with multi model ensembles". Shin et al[5] published a paper on improving tropical perception forecasts from a multi analysis super resemble. The prediction of the wind speed at different heights by machine learning methods given by Yusuf et al[6]. Shij et al [7] explains evaluation of hybrid forecasting approaches for wind speed and power generation time series. Mohandes et al[8] explains a neural networks approach for wind speed prediction.

In this paper for prediction of wind speed we are using visibility, minimum temperature, maximum temperature, date and time. For the data, we are fitted machine learning trees like LWL, regression by Discretization and M5P tree based algorithms. To choose which model is the best among these three by using measures of accuracy like root mean square error and symmetric mean absolute percentage error.

## 2. Methodology

For atmospheric data various machine learning models are fitted using WEKA software. In this paper we used weka.classifiers.lazy.lwl, weka.classifiers.mda.Regression by discretization, weka.classifiers.rules.out, M5 rules-M 4.0 step by step procedure for computation of models using WEKA is as follows.

The procedure for weka.classifier.lazy.lwl:

i. Open weka explorer which contains preprocess, classify, cluster, associate, select attributes and visualize.
ii. In process we have option open file from that open file by choosing appropriate file from folder of comma separated file.



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iii. Go to classify in that go to choose, by clicking on choose it contains classifies of bayes, functions, lazy, meta, mi, misc, rules and trees.
   a) Double click on lazy and click on LWL.
   b) Double cilick on meta and click on regression by discretization.
   c) Go to rules, click on M5P.

iv. Choose cross validation fold as '10'.

v. Click wind speed as dependent variable and all others are independent variables.

vi. By using more options in weka, we store predictions for visualization and output model etc.

vii. Then click on start, it starts calculations and generates output.

**Multiple correlation coefficients:** It is a measure of how well a predictor can be predicted using a linear function of set of other variables.

**RMSE:** Root Mean square error can be calculated by using the following equation

$$RSME = \sqrt{\frac{\sum_{i=1}^{n}(y_i - \hat{y}_i)^2}{n}},$$

Here $y_i$ is the observed value and $\hat{y}_i$ is the predicted value and n is the number of observations.

## 3. EMPIRICAL INVESTIGATIONS

By using weka software, we performed neural network models for wind speed data as dependent variable and visibility, temperature, maximum temperature, date/time, minimum temperature as independent variables from 1st January 2018 to 1st January 2020 i.e. day wise data[9].

**The run information of the LML model is as follows:**

Scheme: weka.classifiers.lazy.LWL -U 0 -K -1 -A "weka.core.neighboursearch.LinearNNSearch -A \"weka.core.EuclideanDistance -R first-last\"" -W weka.classifiers.trees.DecisionStump

Attributes are Date, Time, Minimum Temperature, Maximum Temperature, Wind speed and Visibility. After executing the software, we obtained the following statistical parameters.

| | |
|---|---|
| Correlation coefficient | 0.8926 |
| Mean absolute error | 4.6218 |
| Root mean squared error | 5.8818 |
| Relative absolute error | 40.8479 |
| Root relative squared error | 45.1251 |

**For regression by discretization in weka classifier scheme of the model is as follows:**

Scheme: weka.classifiers.meta.RegressionByDiscretization -B 10 -W weka.classifiers.trees.J48 -- -C 0.25 -M 2

The attributes are same as in the above scheme. After executing, the regression by discretization of neural network model, the parameters are as follows:

| | |
|---|---|
| Correlation coefficient | 0.9872 |
| Mean absolute error | 1.646 |
| Root mean squared error | 2.0808 |
| Relative absolute error | 14.5473 |
| Root relative squared error | 15.9643 |

M5 rules for wind speed data as dependent variable and visibility, Temperature, Minimum Temperature, Maximum Temperature, date and time as independent variables. We get the statistical parameters as listed below.

Scheme: weka.classifiers.trees.M5P -M 4.0

| | |
|---|---|
| Correlation coefficient | 0.0018 |
| Mean absolute error | 11.2197 |
| Root mean squared error | 13.0601 |
| Relative absolute error | 99.1617 |
| Root relative squared error | 100.1977 |

## 4. SUMMARY AND CONCLUSIONS

For day wise data of wind speed, visibility, temperature, maximum temperature, minimum temperature, date and time are variables. Among these wind speed as dependent variable and all



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# Outlier Detection and Best Model Fitting for Rainfall Data using Machine Learning Models

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**Abstract**

Among different data points in data, a point far away from data is called outlier. An outlier may cause serious problem in Statistical data. Normal probability plot and box plot are two graphical methods for detection of outliers. In this paper we are first estimated outlier detection using DBSCAN machine learning algorithm. For annual rainfall data from 1992 to 2016, "0" gives if data point in control and "1" explains outlier point in DBSCAN algorithm. After removing outliers, we are fitted various models such as Gaussian Process, Multilayer Perceptron, IBK, M5rules, Reptree, Conjunctive Rule and linear Regression. Best model among these is selected using different measures of accuracy such as MAE, RMSE, RME etc.

**Keywords:** Rainfall, DBSCAN algorithm, Reptree, regression, outlier.

**Introduction:** Outlier plays a vital role in fitting the models. If setting the data as usual, Model fit may be over fit or under fit. For choosing the best model of the data we have to remove outliers. Fitting rainfall data without outliers is the best for prediction. Liang Tian et al [1] gave methods to identify defects in amorphous solids based on linear outlier machine learning methods. Karanjit Singh and Shuchita Upadhyaya [2] presented about outliers types and their detection procedures, they also listed simple outliers from complex outliers. Complex outliers are again two types such as contextual and collective outliers. Steven lang et al [3] explained about Machine learning methods that generates multi layer data using artificial Neural networks. S.A. Ghogare, S.R. Kalmegh [4] discussed about car review by using two Classifiers i.e Random Forest and Hoeffding Tree to analyze data. K Geetha et al[5] published a paper on estimation and fitting atmospheric data using Decision Trees like J48, Random Forest, Random Tree, Rep Tree and Hoeffding Tree using WEKA.

**Methodology:** Detection of outlier for Rainfall data from 1996 to 2016 using DBSCAN algorithm. DBSCAN Algorithm: Density based spatial clustering of applications with noise (DBSCAN) was



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introduced by Martin Ester et al in 1996. It usually uses non parametric algorithm for a set of points. It is the most common clustering algorithm. '1' is given for outlier point and '0' for normal points. After removing outliers we are fitted various models such as Gaussian Process, Multilayer Perceptron, IBK, M5Prule, Reptree, Conjunctive Rule and linear Regression.

Gaussian Process. Gaussian Process is a regression model with Stochastic process.

Multilayer Perceptron (MLP): It is a feed forward artificial neural network. MLP Utilizes Supervised learning technique called back propagation. MLP divides the data into multiple layers.

IBK: It is a Machine learning model with Euclidean distances.

M5P Rules: This algorithm is used for dividing and conquers to generate decision lists and sets of it then rules for regression problems.

Reptree: It Explains relation between dependent variable and independent variable.

Conjunctive Rules: Conjunctive Rule algorithm implements a single conjunctive rule learner that can predict for numeric and normal class values.

Measures of Accuracy like Mean Absolute Error(MAE) is mean for absolute error, Root Mean Squared Error(RMSE) is positive Square root for squared mean error values and RME.

**Empirical Investigations**: For the Annual rainfall data from the year 1992 to 2016 [6], DBSCAN Algorithm found outliers 2002 and 2013. After eleminating outliers, for modified data we are fitted Gaussian process, Multilayer Perceptron, IBK, M5P, Conjunctive Rules and linear regression models(Reptree). For choosing the best model among 6, we use accuracy measures like Mean Absolute Error, Root Mean Squared Error, Relative absolute Error(RME), Root relative Error. Accuracy of various measured values for different models are listed in Table-1.

**Table 1**

Accuracy of various measured values for different models

| Error Accuracy | Gaussian Process | MLP | M5P | IBK | Conjunctive Rules | Reptree |
|---|---|---|---|---|---|---|
| MAE | 613.2139 | 669.8602 | 685.6393 | 746.9783 | 643.9899 | 621.5669 |
| RMSE | 731.5382 | 784.1599 | 806.8282 | 910.0946 | 776.2796 | 740.594 |
| RME | 96.5734 | 105.4945 | 107.9795 | 117.6396 | 101.4202 | 97.8859 |
| RRE | 96.0633 | 102.9734 | 105.9501 | 119.5107 | 101.9386 | 97.2523 |

**Summary and Conclusions**: Outliers of the Annual Rainfall data are 2002 and 2013 using DBSCAN Algorithm. By using different Machine learning models like Gaussian process, MLP, IBK, M5P,



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e rules and linear regression(Reptree) for modified data, we choose the best model among fitted s Gaussian process based on MAE and RMSE.

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## Map Interpretation in Geography

The book Map Interpretation in Geography is to provide an explanation for the elementary but essential principles of practical work in geography particularly for students preparing for any courses in university education. In this book an attempt has been made to give a graduate course aimed at explaining basic principles. An idea of maps with a brief history of their origin and development, their importance as a tool of geography is given. Its emphasis has been laid on the Interpretation of Aerial photographs, which is a part of Remote Sensing. It will be of immense use for the budding geographers to get an insight view about the Remote Sensing and GIS techniques and also it deals with the interpretation of Indian daily weather report.



Dr. M. Reddi Bhaskara Reddy is working as Associate Professor in Dept of Geography, Sri Venkateswara University, Tirupati, India. He has research guided and successfully awarded 4 Ph.D.'s and 2 M.Phils's. He has published 4 books, 25 articles at national and international levels. His teaching specialization is Cartography, GIS and Remote Sensing.

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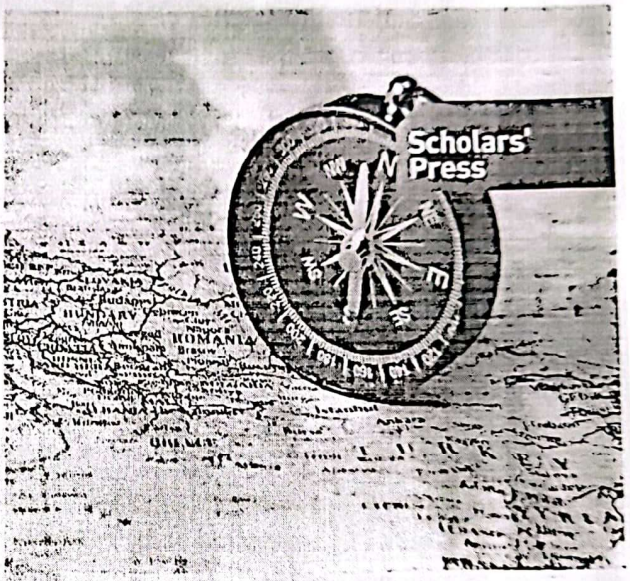
Map Interpretation in Geography

Reddy, Bhupal, Reddy

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# Map Interpretation in Geography

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# Changing Information Landscape and Its Transformation in LIS Education

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(A State University Accredited with A+ Grade by NAAC (CGPA: 3.64) in the Third Cycle and Graded as Category I University by MHRD-UGC)
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# ECTRONIC RESOURCE MANAGEMENT SYSTEMS WITH SPECIAL REFERENCE TO CORAL

Dr.PrasanthaKumari, M & Murthy Naik, K

**Abstract**

*Today, all academic libraries are equipped with electronic resources such as: E-books, e-journals, e-databases, etc. The development of electronic resources in the library is a challenge for librarians. To solve maintenance problems, a new tool called Electronic resource management is evolving in this area. These papers discussed Electronic Resource Management systems with special reference to CORAL.*

**Keywords:** Electronic Resource Management; Electronic Resource Management System; Open-Source Software; CORAL; Libraries.

## Introduction

Libraries and information centers have been greatly impacted by recent IT changes. In this era, the speed of change is accelerating in terms of creating new products and processes; autonomous machines, customized information packs, video cassettes, home information appliances, personal computers, copiers, outside relatives; Databases Online information systems , Shared Library Information Network and electronic information processing systems such as e-books, e-journals etc., Modern libraries use a variety of electronic resources to develop collections that meet their needs. However, to achieve the goals of an ideal information system, electronic resources must be selected, evaluated, and organized in the est possible way to provide the maximum amount of information for both users and ployees as it can be accessed and retrieved at any time.

CORAL is an electronic resource management system consisting of interoperable dules designed around core components of electronic resource management for libraries other organizations. CORAL is available as a free open-source program. CORAL is a stable mature open source ERM. Like many early open source ERM systems such as Hermes, and S, CORAL was developed at a major academic research institution, Duke University. L was launched in 2008 and is based on the popular PHP/MySQL platform. This platform d by other long-lived open-source software such as WordPress and Drupal, as well as ource library software such as SubjectsPlus and VuFind.

## rces Module

The resource module supports electronic resource management in two main aspects. his module provides a robust database for tracking data related to the organization's es. This module then provides customizable workflow tools for tracking, assigning, and ing workflow tasks for resources. The resource module is flexible for a wide range of ions and offers customization options via a management front end. Other features resource browsing, data export to MS Excel format, and import tools. Resource are self-contained. However, the Resources module includes integration with both nsing and Organization modules for quick access to a resource's licensing tation and contact/account information.



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# CHANGING INFORMATION LANDSCAPE AND ITS TRANSFORMATION IN LIS EDUCATION

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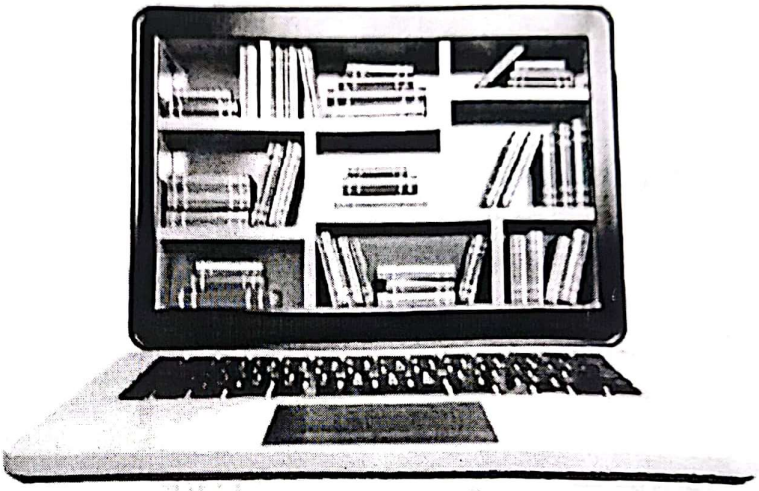

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# TRENDS IN LIBRARY AND INFORMATION SCIENCE RESEARCH

Prasada Rao, B.& Dr. Prasantha Kumari, M.

**Abstract**

*The rapid growth of technology has resulted in several changes within the study of library and information science. Research is an essential component of Library and Information Science (LIS), and this field can't make any progress without it. People who work in libraries are always looking for new ways to solve the difficulties they confront on a regular basis through their research. The study attempts to determine trends in LIS research by evaluating the existing literature in this field. This study intends to give basic information regarding various sorts of services utilized for library and information science research (LIS). This includes augmented reality (AR), Blockchain technology, Cloud computing, Electronic resource management (ERM), Federated search (FS), Internet-of-Things (IoT), and Radio-frequency identification (RFID. This article is beneficial to the researchers, students, and library professionals.*

**Keywords:** Research Trends; LIS Research; Library and Information Science; Emerging Technologies; Internet of Things.

## Introduction

Ranganathan defines research as "a critical and exhaustive investigation to discover new facts, to interpret them in the light of known ideas, theories, and laws, and to revive the current laws and theories in the light of the newly discovered facts to apply the conclusion to practical purpose". In India, the study of library and information sciences (LIS) has been going on for more than a century. Research in libraries and information sciences is both dynamic and multi-disciplinary. For the ongoing growth of any field, it is vital to identify research trends and the direction that research activity is heading, and LIS is not an exception to this rule. Libraries are vital to contemporary society's progress. Their value is growing. Libraries must be built properly to meet expectations. LIS research was formerly regarded as a theoretical underpinning for professional practice.

## Historical Development and Current Status of LIS Education in India

Research in library and information science (LIS) was first conducted on a global level towards the middle of the preceding century. Dr. S.R. Ranganathan, who had been directly involved in numerous aspects of library science including classification and cataloging as well as library administration and management, and many other aspects, is credited with initiating individual research in India in the 1930s. Education in LIS was first offered in India as early as 1911. But it wasn't until after the Second World War that it started to gain acceptance as a legitimate field of study. Separate LIS departments were created in universities, and they started offering B.L.I.Sc., and M.L.I.Sc., programs. This finally prepares the ground for official research projects on the topic. On the other hand, Ranganathan undertook studies on his initiative and in a non-formal setting in almost every area of LIS research. In addition, he was charged with establishing graduate and doctoral programs at Delhi University for the first time in 1948 and 1950–1951, respectively, with the help of Sir Maurice Ggwyer, who served as the vice-chancellor of



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# International Conference on Open Access Sources and Information Services during Post-Covid Times: Challenges and Opportunities

Volume - I




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# OER (Open Educational Resources) in the Academic Environment: Opportunities and Challenges

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**Abstract**

*Open Educational Resources (OERs) are any type of educational materials that are in the public domain or introduced with an open license. The nature of these open materials means that anyone can legally and freely copy and use. The paper discusses the number of examples in OER like SWAYAM, Swayam Prabha, Shodhganga, NDLI, E-yantra etc. with their features. The paper also discusses opportunities and the challenges of OER and National Educational policy, 2020 vision towards OER.*

***Keywords:*** *Open Educational Resources, SWAYAM, Swayam Prabha, NDLI, Shodhganga, National Education Policy-2020.*

## INTRODUCTION

In the information society, data is available both in printed and electronic form.With the emergence and extensive use of digital technologies, many learning resources are available on the Internet/online (public domain) and can be accessed via digital devices like computer, mobile phone and iPod, etc. These educational resources that are available in the public domain are known as Open Educational Resources (OERs).Open Educational Resources (OERs) are any type of educational materials that are in the public domain or introduced with an open license. The nature of these open materials means that anyone can legally and freely copy and use. Generally,OERs refer to online materials that can be adapted, reused, shared and even used for commercial purpose. Thus, OERs are reusable teaching-learning materials. OERs can be as short as small text, audio, video, image files, etc. as well as big files like textbooks or whole courses.



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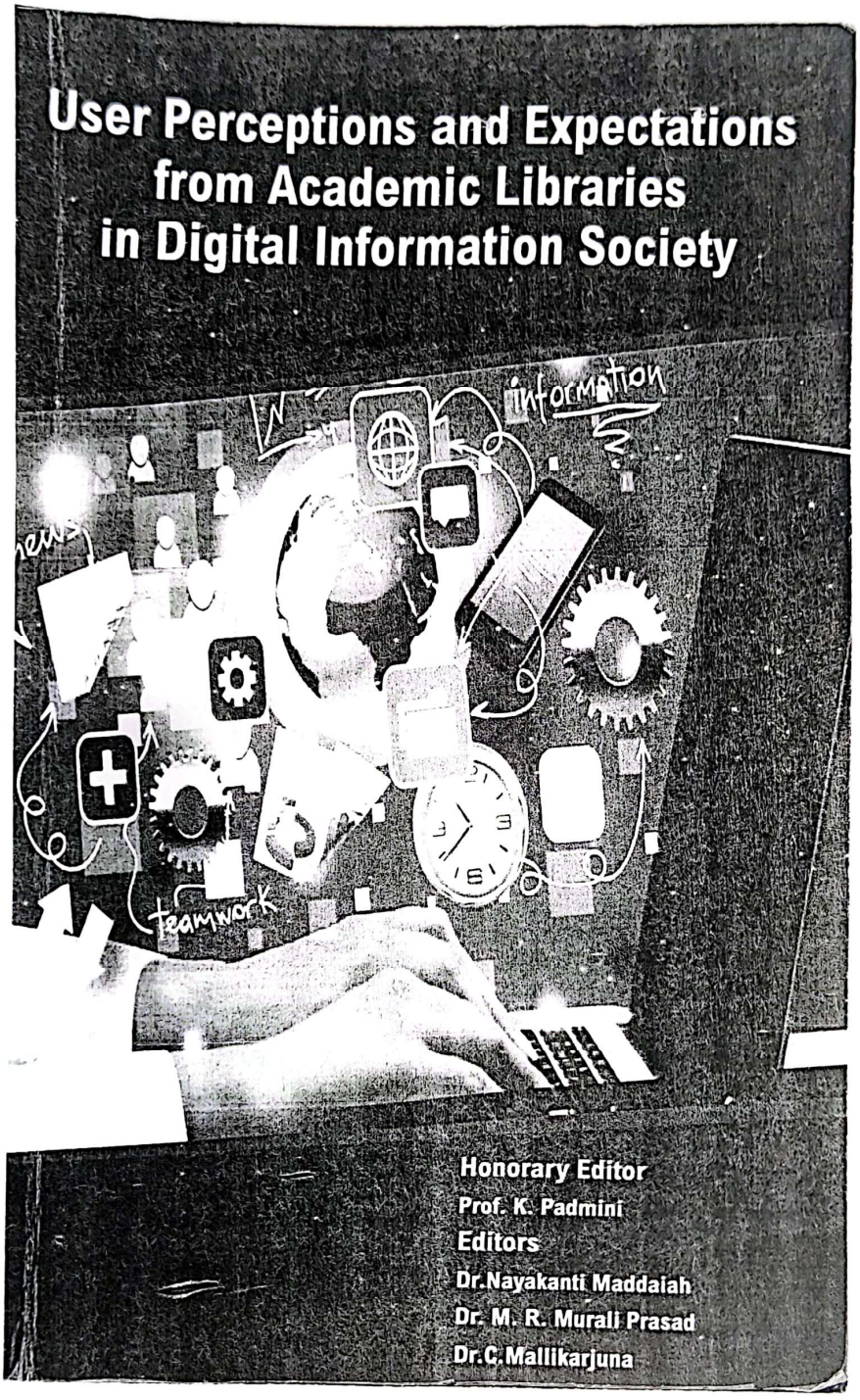


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# Awareness and Use of Institutional Repositories by Research Scholars in Sri Venkateswara University – A study

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***Abstract*** *- This article deals with user awareness and use of Institutional Repositories in Sri Venkateswara University. The main objectives of this study is to investigate the awareness and usefulness of IRs in an academic institution and different aspects associated with it, such as software use, sources for users awareness, motivation for contribution of IRs, demand of the users in changing paradigms from traditional to digital environment. This article also describes the potential role of institutional repositories and its easiness and simplicity of use are attracting more patrons in the use of institutional repositories. Entirely this article is based on a critical study, which measures the utility of institutional repositories in users point of view.*

Key words: Institutional Repositories, Softwares, University, Awareness, Usefulness, Research Scholars, Open Access.

## INTRODUCTION

An Institutional Repository is a set of services offered by a university or group of universities to members of its community for the management and dissemination of scholarly materials in digital format created by the institution and its community members, such as e-prints, technical reports, theses and dissertations, data sets and teaching materials. Stewardship of such materials entails their organization in a cumulative, openly accessible database and a commitment to long-term preservation when appropriate. Some institutional repositories



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# User Perceptions and Expectations from Academic Libraries in Digital Information Society

## About the Editors



**Dr. K. Padmini**, is presently working as Principal, S.V.U. College of Arts, S. V. University, Tirupati. She has a rich experience of more than 30 years in teaching and research. She guided 20 Ph.D.s and 7 M.Phils. She participated in good number of national and international conferences and presented papers. She was invited as resource person by many institutions. She is the Principal Investigator for a UGC-Major Research Project. She is a life member in 7 professional associations. She held positions like, Head of the Department, Chair-person BOS, Coordinator- NAAC, Academic Senate Member in S.V. University. Sri Potti Sreeramulu Telugu University honoured her with 'Keerthi Puraskara' in the field of Library and Information Science for the year 2017.



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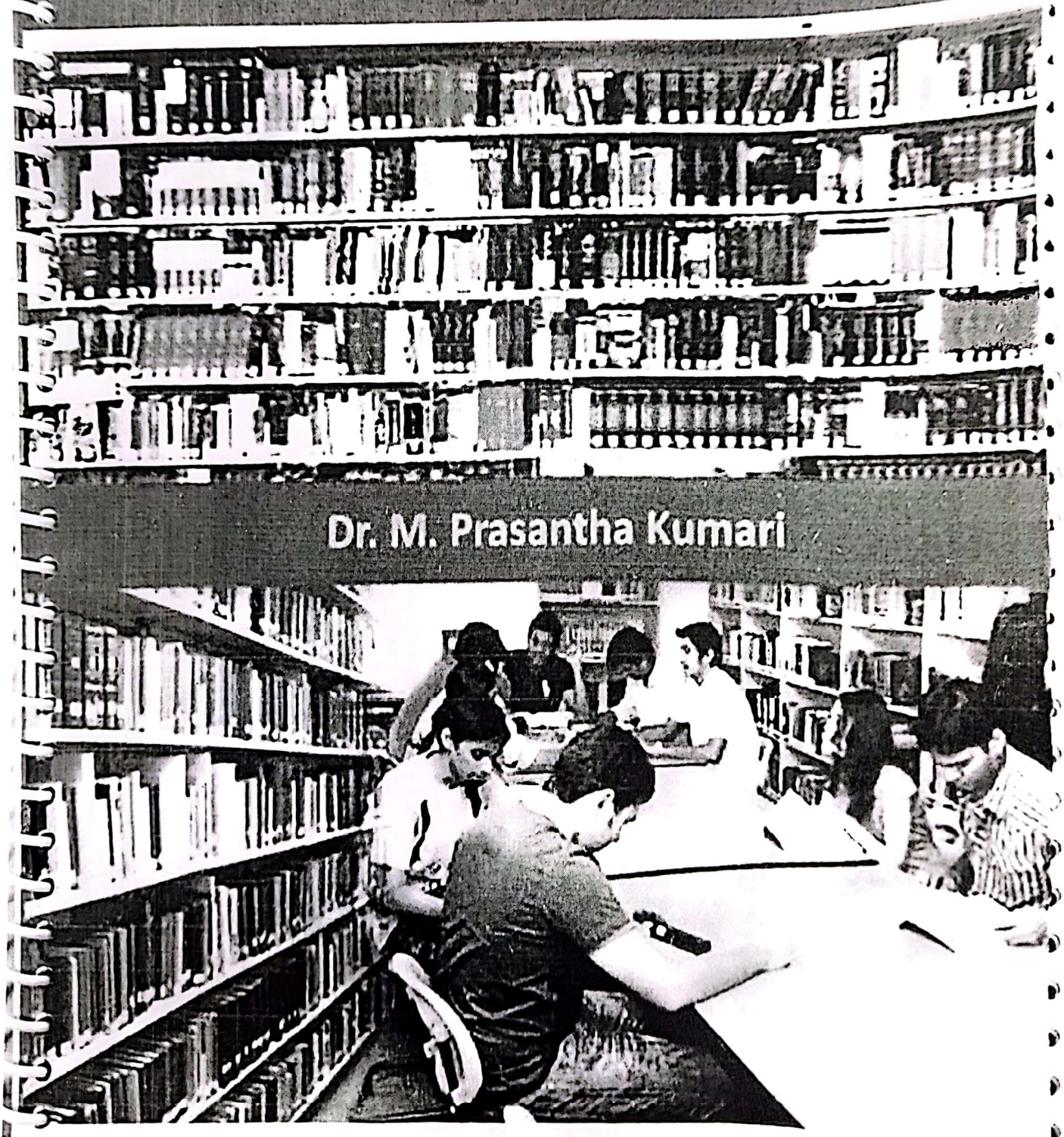

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# Objective Questions in Library Science

## About the Author



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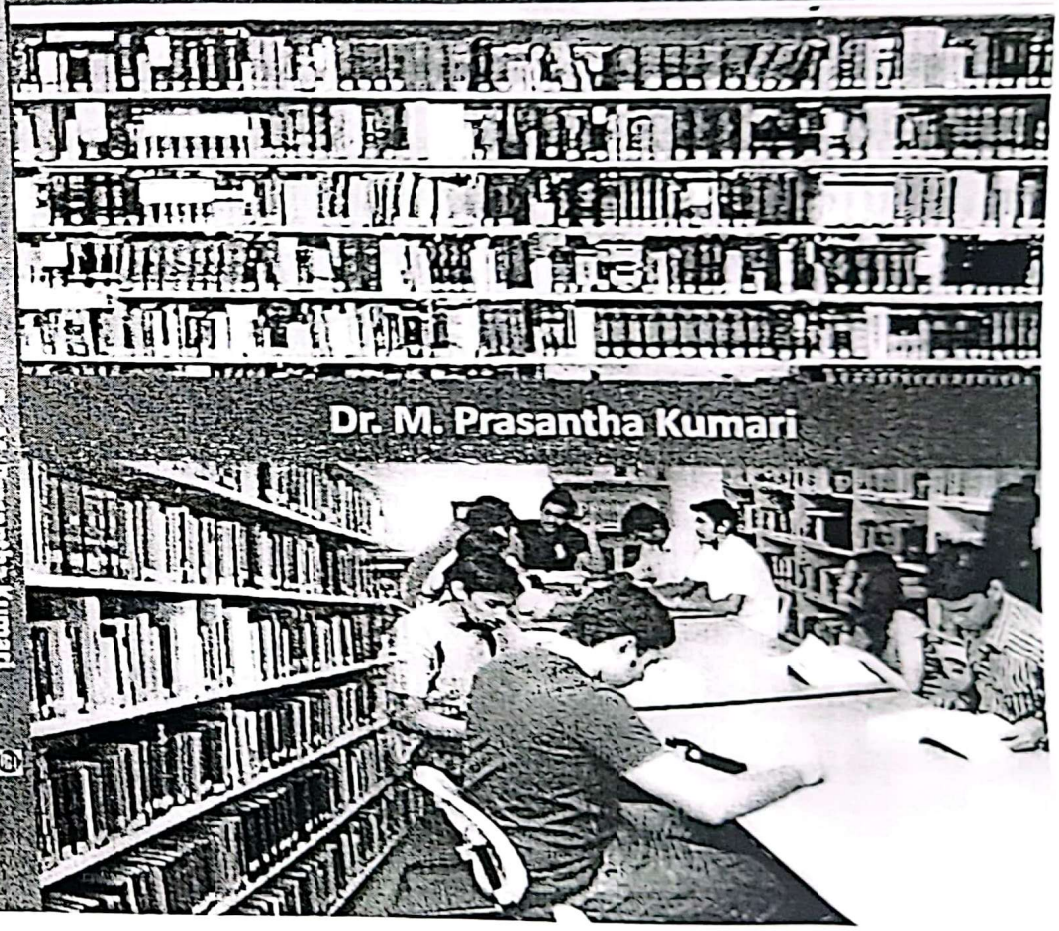

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# OBJECTIVE QUESTIONS IN LIBRARY SCIENCE

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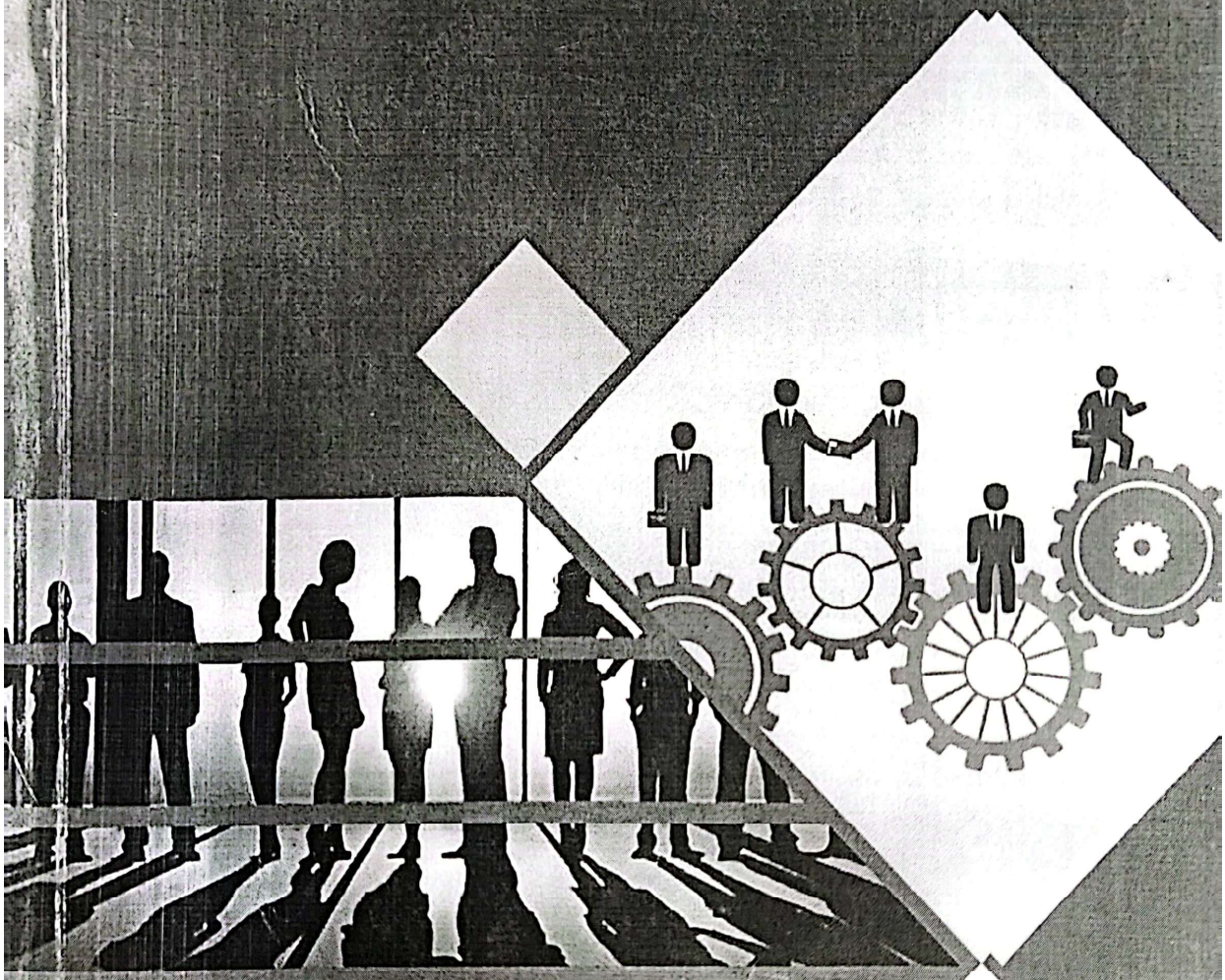

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# Core Employability Skills for Human Resource Development

Kusuma .A

## Introduction

Employability skills can be considered as one of the components of human capital. Human capital is closely related to skills and abilities of an individual. It has been conceptualized as competency, attitude and behaviour embedded in an individual. Employers perceive that skill set of an employee is an economic value which has been measured as human capital. Skill development will improve their productivity and earnings as well. Employers want to employ people who are productive. During the recruitment process, the employers identify productive candidates by assessing the employability skills of the candidates. Vocational and technical skills are essential, but employers are seeking applicants with much more than these basic requirements. They want employees who can continue to learn and adapt; read, write and compute competently; listen and communicate effectively; think creatively; solve problems independently; manage themselves at work; interact with co-workers; work in teams or groups; handle basic technology, lead effectively as well as follow supervision. These core skills for employability are both important to employers' recruitment and to enhance an individual's ability to secure a job, retain employment and move flexibly in the market as well as to engage in lifelong learning. Employability entails much more than the ability to get that first job. It has the capacity to network and market oneself, navigate through a career and remain employable throughout life. It requires the ability to ask questions, acquire new skills, identify and evaluate options, understand rights at work including the right to a safe and healthy work environment, adapt successfully to changing situations and the courage to innovate.

Employability Skills can be defined as the transferable skills needed by an individual to make them 'employable'. 'Employable Skills' are mostly soft skills. Employability skills build upon and strengthen those developed through basic education, such as reading and writing, the technical skills needed to perform specific duties, and

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# EDUCATIONAL DEVELOPMENT AND SOCIAL WELFARE

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# PRINCIPLES OF SOCIAL IMPACT ASSESSMENT

**Dr.A.KUSUMA**

*Member, Executive Council of VSU and Assistant Professor of Social Work, Vikrama Simhapuri University, Kakutur, Nellore-524 320*

**Abstract**

*Economic development projects brought innumerable benefits but also had unintended detrimental effects on people and natural resources. Human activities have resulted in the disruption of social and communal harmony, the loss of human livelihood and life, the introduction of new diseases, and the destruction of renewable resources. Social impacts are the impacts of developmental interventions on human environment. The impacts of development interventions take different forms. While significant benefits flow in from different development actions, there is also a need to identify and evaluate the negative externalities associated with them. Such impacts not only need to be identified and measured but also need to be managed in such a way that the positive externalities are maximized and the negative externalities are minimized. In view of this, the present paper focuses on the principles of Social Impact Assessment in detail.*

**Key words:** *Economic development, Social Impact, Social and Communal harmony, etc.*

## INTRODUCTION

A balanced development planning takes into account the environmental, social and biodiversity impacts of economic development. Environmental Impact Assessment (EIA), Social Impact Assessment (SIA) and biodiversity impact assessments are some of the methods that aid in the planning and decision making process. These impact assessments help in identifying the likely positive and negative impacts of proposed policy actions, likely trade-offs and synergies, and thus facilitate informed decision-making. Moreover, the need for impact assessment stems from the fact that:

- Impact assessments enhance positive and sustainable outcomes associated with project implementation.
- They support the integration of social and environmental aspects associated with the numerous subprojects into the decision making process.
- The enhance positive social and environmental outcomes;
- They minimize social and environmental impacts as a result of either individual subprojects or their cumulative effects;
- They protect human health and minimize impacts on cultural property.

## WHAT IS SOCIAL IMPACT ASSESSMENT?

Social Impact Assessment (SIA) can be defined in terms of efforts to assess or estimate, in advance, the social consequences that are likely to follow specific policy actions (including programs/ projects and the adoption of new policies), and specific government actions. It is a process that provides a framework for prioritizing, gathering, analyzing, and incorporating social information and participation into the design and delivery of developmental interventions. The SIA ensures that the development interventions:

- are informed and take into account the key relevant social issues; and
- incorporate a participation strategy for involving a wide range of stakeholders. Social Assessment (SA), on the other hand, is a process that provides framework for prioritizing, gathering, analyzing and incorporating social information and participation into the design and delivery of development operations (Rietbergen- McCracken and Narayan 1998).

## PURPOSE OF THE STUDY

The purpose of the study is to provide clear and comprehensive knowledge about principles of Social Impact Assessment in detail.

## PRINCIPLES OF SOCIAL IMPACT ASSESSMENT

It gives an overview of the principles that guide the concepts, the process, and the method of conducting social impact assessment. These principles are based on the expert judgment of widely varied professionals like sociologists, anthropologists, social psychologists, geographers, land-use planners, economists, natural resource social scientists and landscape architects. These principles are meant to ensure sound scientific inquiry and are based on the best practices established in the field over the last three decades. This section draws heavily from the guidelines



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# Exploring New Pathways of Research and Innovation in Rehabilitation of Differently Abled

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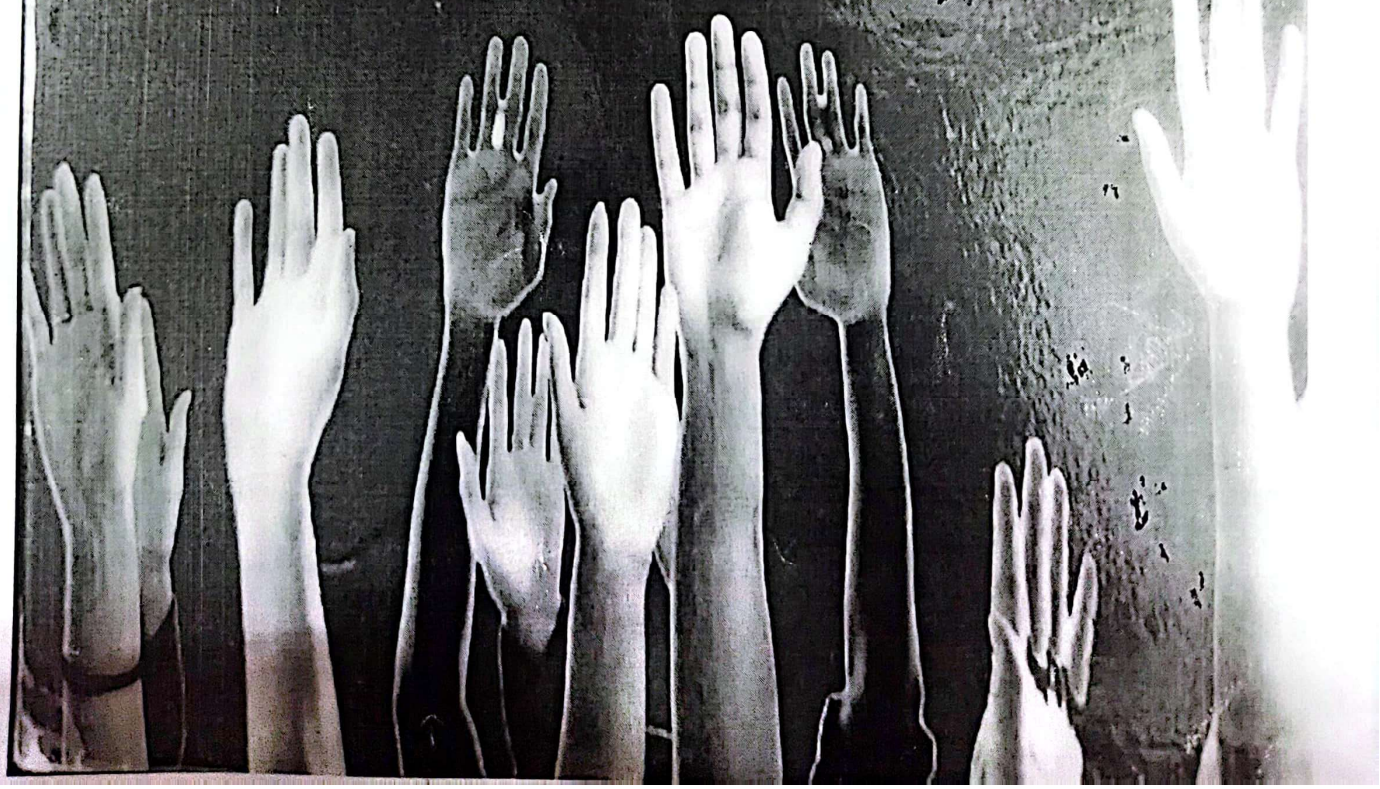

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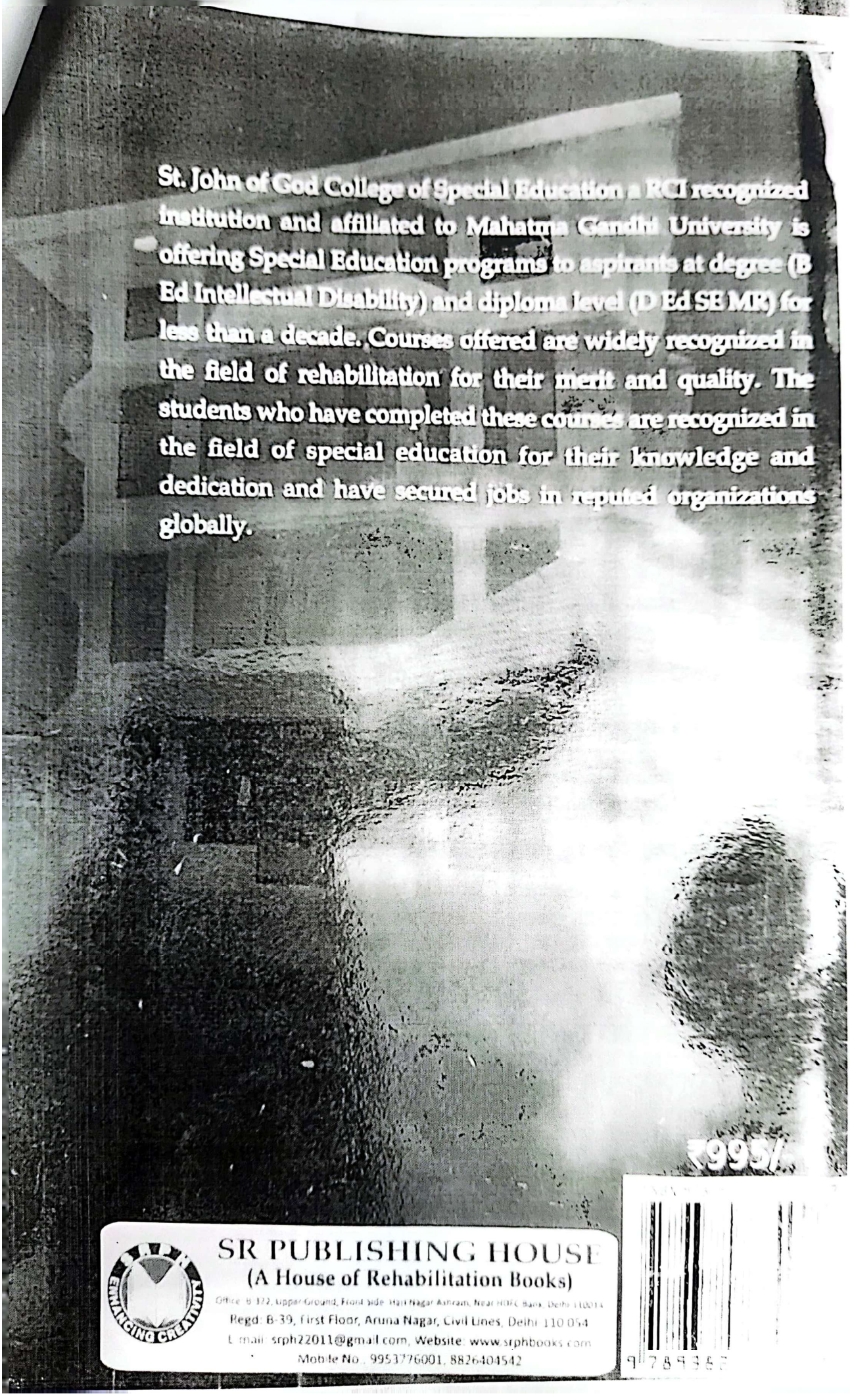
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# Chapter–8

# Quality Assurance in Teacher Education

*Dr. K. Viswanath, Dr. S. Azmal Basha & Dr. S. Viswanatha Reddy*

## ABSTRACT

Teachers are the crucial elements in preparing young people not only to face the future with confidence but to build it with purpose and accountability. Education is a dynamic process of human development and empowerment. Teacher education has been widely advocated as the single important ingredient in the economic, social, political and cultural development of developing/developed society. Quality in general education has been defined through aims, key qualifications, organizational standards, didactic requirements, but also learning outcomes which depend on students' proficiency in the language of schooling and their cognitive academic skills. Teacher without quality can be judged as a man without mind. Quality of teacher education depends basically on a number of factors such as infrastructure, learning environment curriculum, teaching learning materials (TLM) and teacher's participation with demand of changing society. Quality enhancement in teacher education is a deliberate process of change that leads to improvement. In academic

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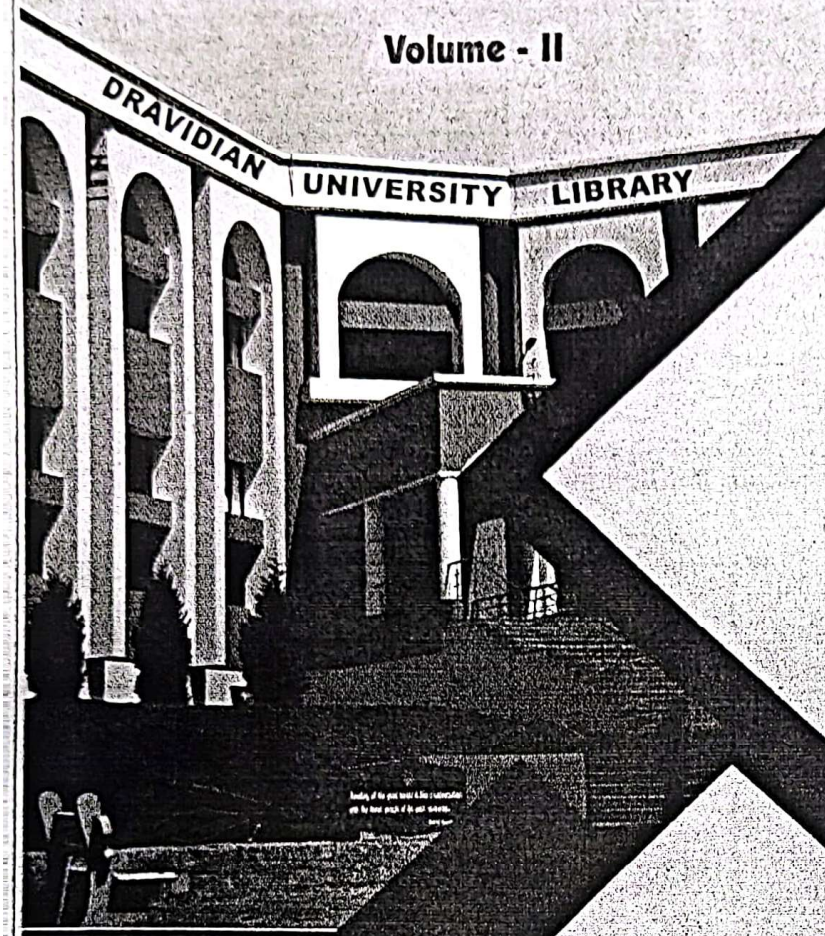


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**by Prof. B. Ramesh Babu**

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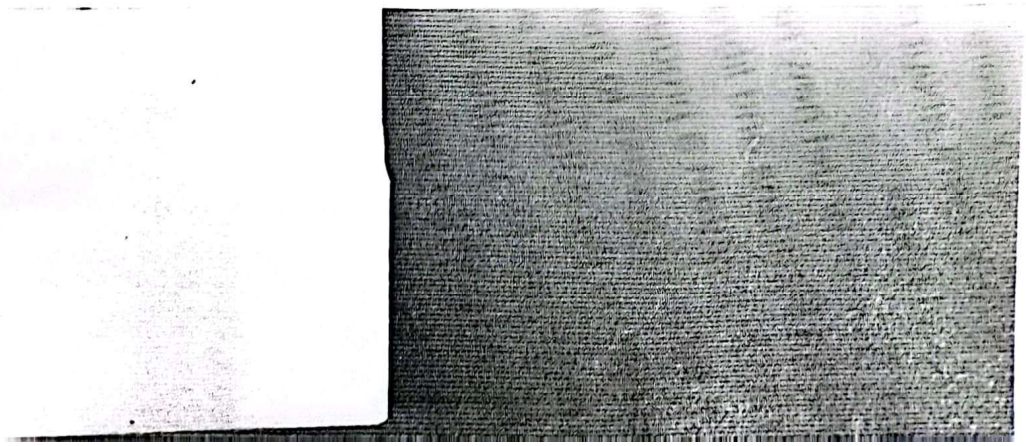

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# Scientometric study of Doctoral Dissertations in Physics in Acharya Nagarjuna University, Guntur, Andhra Pradesh

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**Abstract**

*The purpose of the study is to assess the research trends in physics to derive meaningful inferences to support information needs of scientists, economists, policymakers, librarians and other stakeholders. The study uses for data the theses in Physics accepted for the degree of Doctorate of Philosophy by Achraya Nagarjuna University, Guntur. The data analysis of the various parameters such bibliographic forms, authorship pattern of books and journals, chronological citations, publisher's wise citations, country wise, degree of collaboration etc.*

**Key words**: *Scientometric, Physics, Citation analysis, Degree of collaboration*

## INTRODUCTION

Citation analysis deals with the analysis and assessment of the various patterns in which references from books and articles are cited, along with their rate of recurrence. Researchers employ citations in academic works for connecting to the other works as well as other researchers. In essence, citation analysis studies the nature, relevance and quality of relationships that the cited documents share with the citing documents. A cited document refers to the source of a reference as shown by the author as a part of his work, while the document that makes references of other documents is known as a citing document. Therefore, citation analysis broadly encompasses the analysis of a spectrum of citations emanating from and into the documents, appended into the research communication with the count of citations. In general, the citations appear at the bottom of a scientific article along with its number, which is known as citation analysis. In fact, citation analysis offers important perspectives into the relevance and influence of the scholars as well as their work on other prospective researchers based on the frequency, mode and quantum of references.



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# CHANGING INFORMATION LANDSCAPE AND ITS TRANSFORMATION IN LIS EDUCATION

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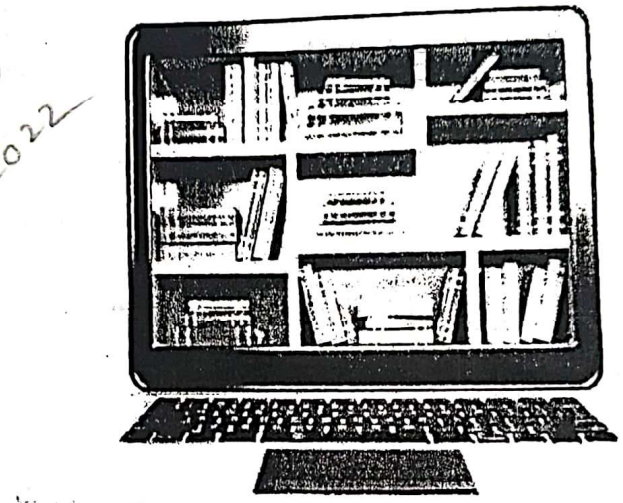

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## Editors

Prof. S. Thanuskodi, Dr. S. Kishore Kumar, Dr. S. Raja & Dr. A. Alagu

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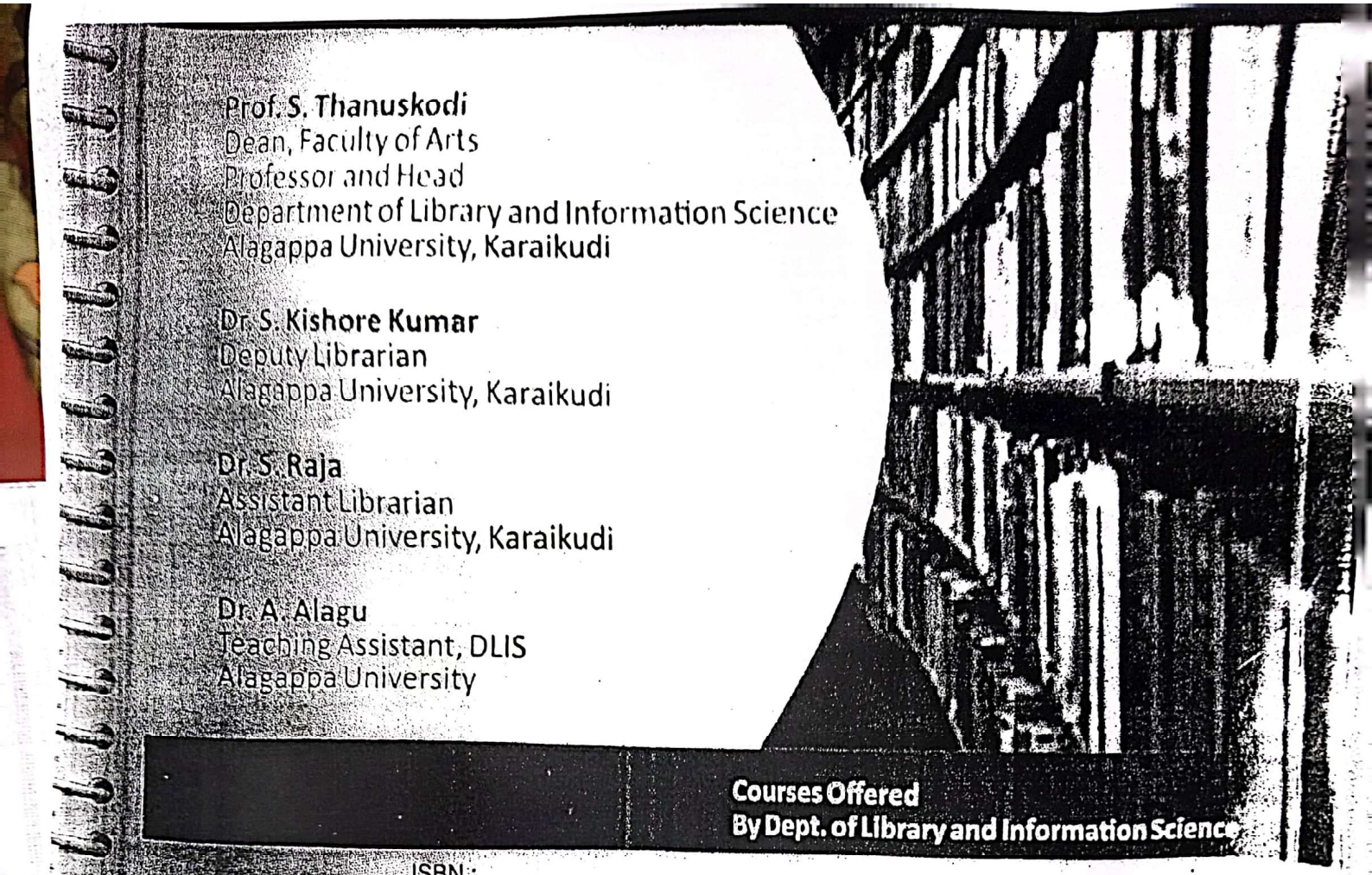

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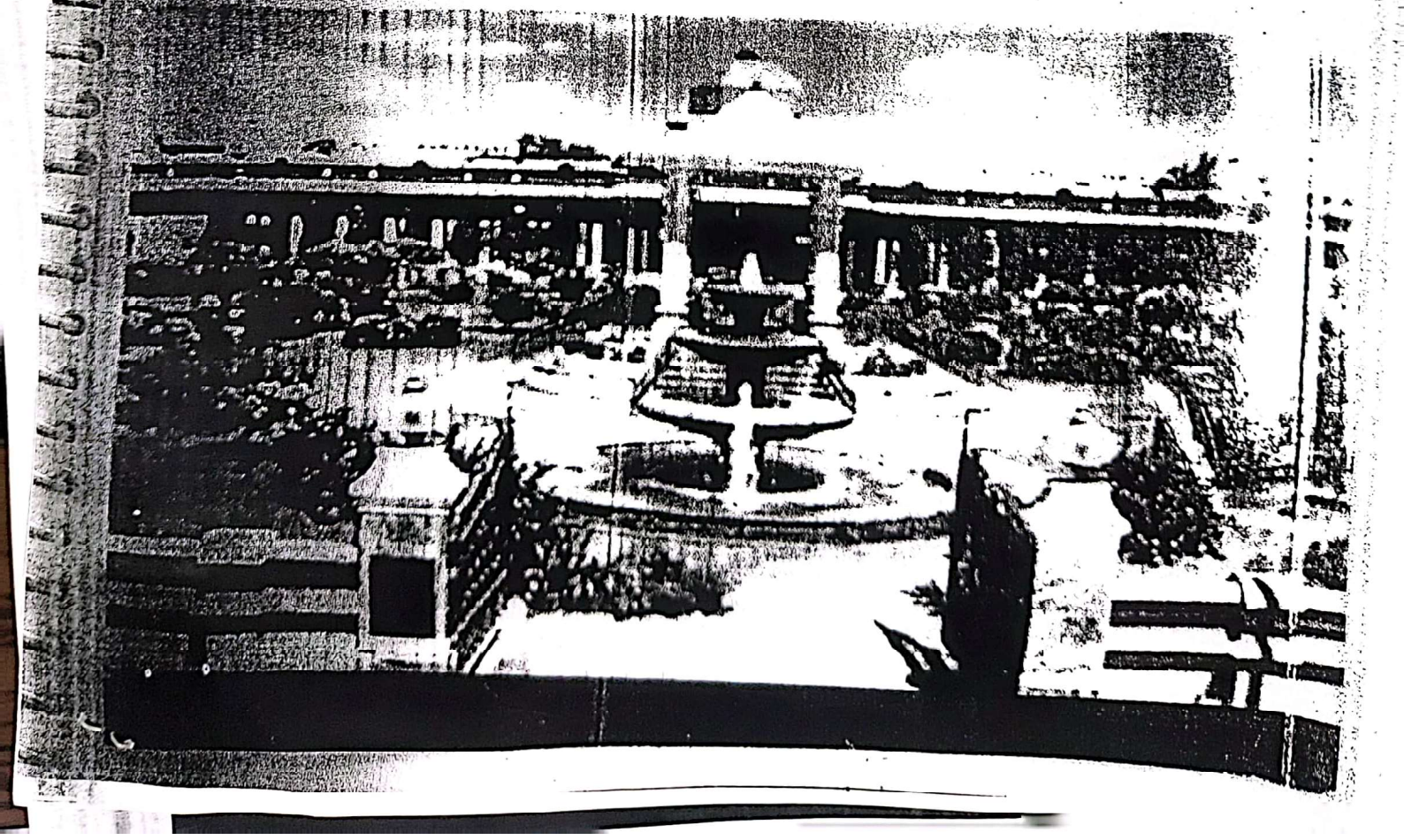

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# Proceedings of the International Conference on Emerging Digital Library Platforms Shaping Digital Transformation and National Data Exchange


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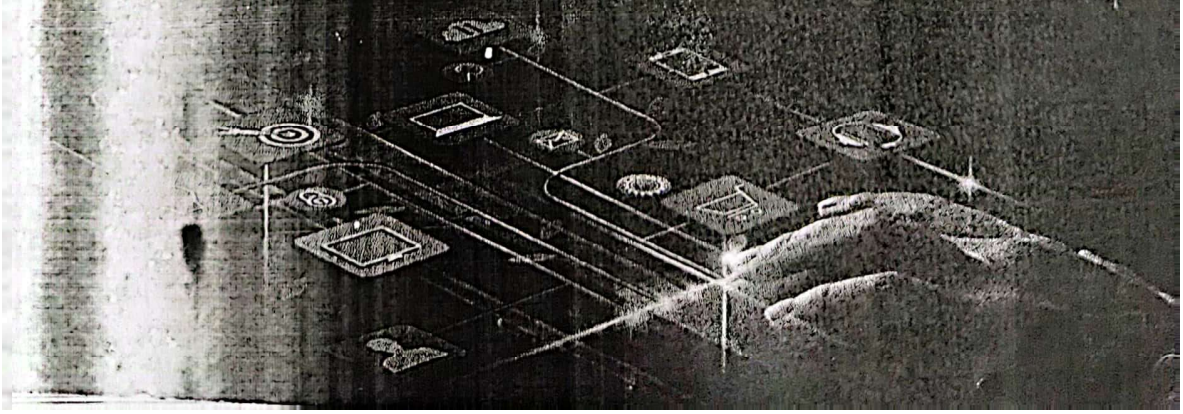

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# Research Data Management and University Libraries: An Overview

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Abstract: *Managing research data is a major concern and challenging for academic libraries. Universities are rapidly generating a vast amount of digital data in various forms. Retrieving information is very important for researchers and university librarians, and data retrieval plays an important role in this context. The act of planning, collecting, processing, sharing, storing, reusing, and managing data related to research data is the spirit of today's information retrieval systems. This was made possible by working with information and communications technology for both researchers and university librarians. Scholars are now creating, distributing, and storing much more digital data than text. Managing research data is a challenge for many universities. This study shows that the data management policies of academic libraries and their services have been developed with some success.*

Keywords: *Research Data Management, University, Data Lifecycle, Policy, Services, Challenges.*

## 1. Introduction

In the present scholarly world, research data management (RDM) has been becoming a vital service, nowadays a variety of knowledge centers provide it. The Study by Whyte and Tedds (2011), "Research data management concerns the organization of data, from its entry to the research cycle through to the dissemination and archiving of valuable results". The vision of sharing resources, increasing efficiency and collaboration more effectively in the working environment and it goes beyond established domains such as IT services., Library and Research Support. Carti et al. (2019) defined Research data is defined as "a primary material to support technical or scientific research, research grants, or artistic activities, as evidence of a research process, and/or in the research community when verification is required. Generally accepted data. Survey results are results. All other digital and non-digital content can be research data. Survey data includes experimental data, observational data, operational data, and third parties. Third is party data, public sector data, monitoring data, processed data, or reused data. Fearon et al. (2013) defined RDM services as "providing information, consulting, training or active involvement in data management planning, data management guidance during research (e.g., advice on data storage or file security), research documentation and metadata, research data sharing and curation (selection, preservation, archiving, curation of completed projects and published data".

Active organization of data throughout the research process and proper archiving of data at project completion. Tools, services, and standards are evolving to assist researchers to manage their research resources and make the underlying evidence of their research papers more widely available, such as raw and processed data. Effective management enables educational institutions to find collaborations between research groups, generate new knowledge by engaging a wide range of stakeholders, reuse

# Transformation of Learning Resource Centres in the Digital Era

Dr. A.J. MADHURI
DLIS

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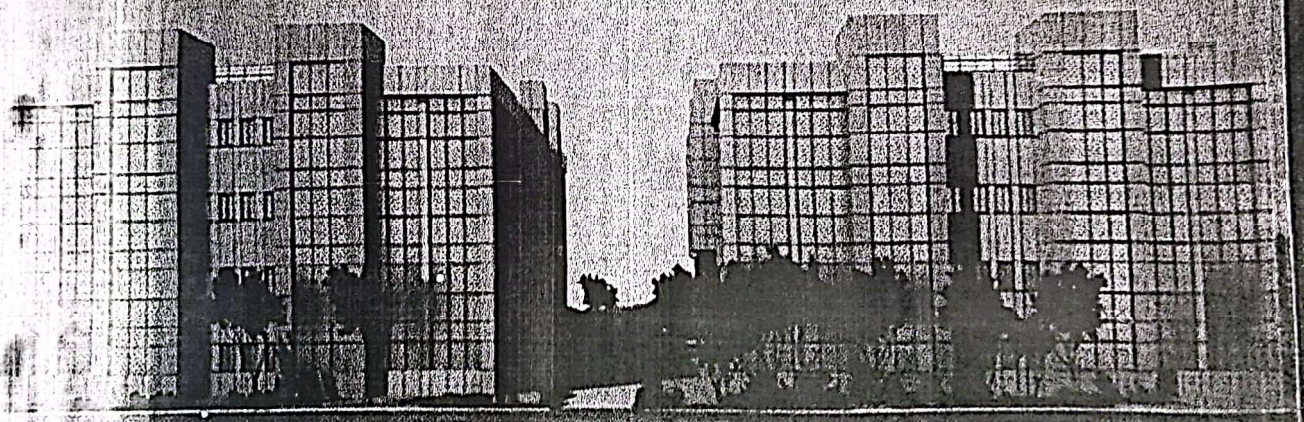

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# Information Seeking Pattern of Research Scholars and Usage of E-Resources at Sri Venkateswara University, Tirupati, A.P

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**Abstract**

*The study investigates the information seeking patterns of research scholars in the usage of e-resources at Sri Venkateswara University library and their problems in getting the required information. Data was collected from 100 research scholars of Sri Venkatewsara University library using a questionnaire tool. The questionnaire consists of questions pertaining to the visit to library, awareness on e-resources, need of information, and problems they face in getting the required information in the library. The study reveals that 45% of the research scholars are visiting library daily; 27.08% of them are seeking information from e-journals; 75% of them are aware of e-journals; and 34.48% of the researchers are seeking information from e-shodh sindhu consortium. The study examines information seeking pattern of the research scholars and awareness of e-resources in the university library, Sri Venkateswara University Tirupati. The investigated the purpose of visit, approaching methods to get information, types of e-resources, types of information sources, search engines usage, problems faced while seeking information in the library.*

***Keywords:*** Information Seeking Pattern, Research Scholars, e-Resource

## Introduction

University libraries are service oriented institutions that should give priority to the needs its users. Their services and sources are important in any kind of library. The information needs of research scholars of Sri Venkateswara University library shall be fulfilled by providing e-resources. Efforts have been made to know their awareness of e-resources, usage of e-resources, seeking information though different types of e-resources and their problems while getting information in the library.

## About Sri Venkateswara University

The university was established in 1954, in the year at Tirupati. The university has 58 departments, wherein 71 different PG courses and several diploma and certificate courses are being run with total academic faculty strength of 400 and 1500 non-teaching and student's strength of 7000 including research scholars. The University Library was started in the year 1955 with a small collection of 6,700 books taken from the Sri Venkateswara College, Tirupati, administered by Tirumala Tirupati Devasthanams. The present library building which was open on 12th July 1964, by Late Dr. S. Radhakrishnan, the President of India. He described it as "Taj Mahal of the South". The university library, centrally situated and easily accessible to all the departments on the campus has steadily grown over the years and it has 3, 76,000 documents. It includes textbooks, reference books, general books, gift books, reports, back volumes of Journals, MPhil, and Ph.D. Dissertations and E-Documents. The library subscribes to about 300 print journals of National and International importance.



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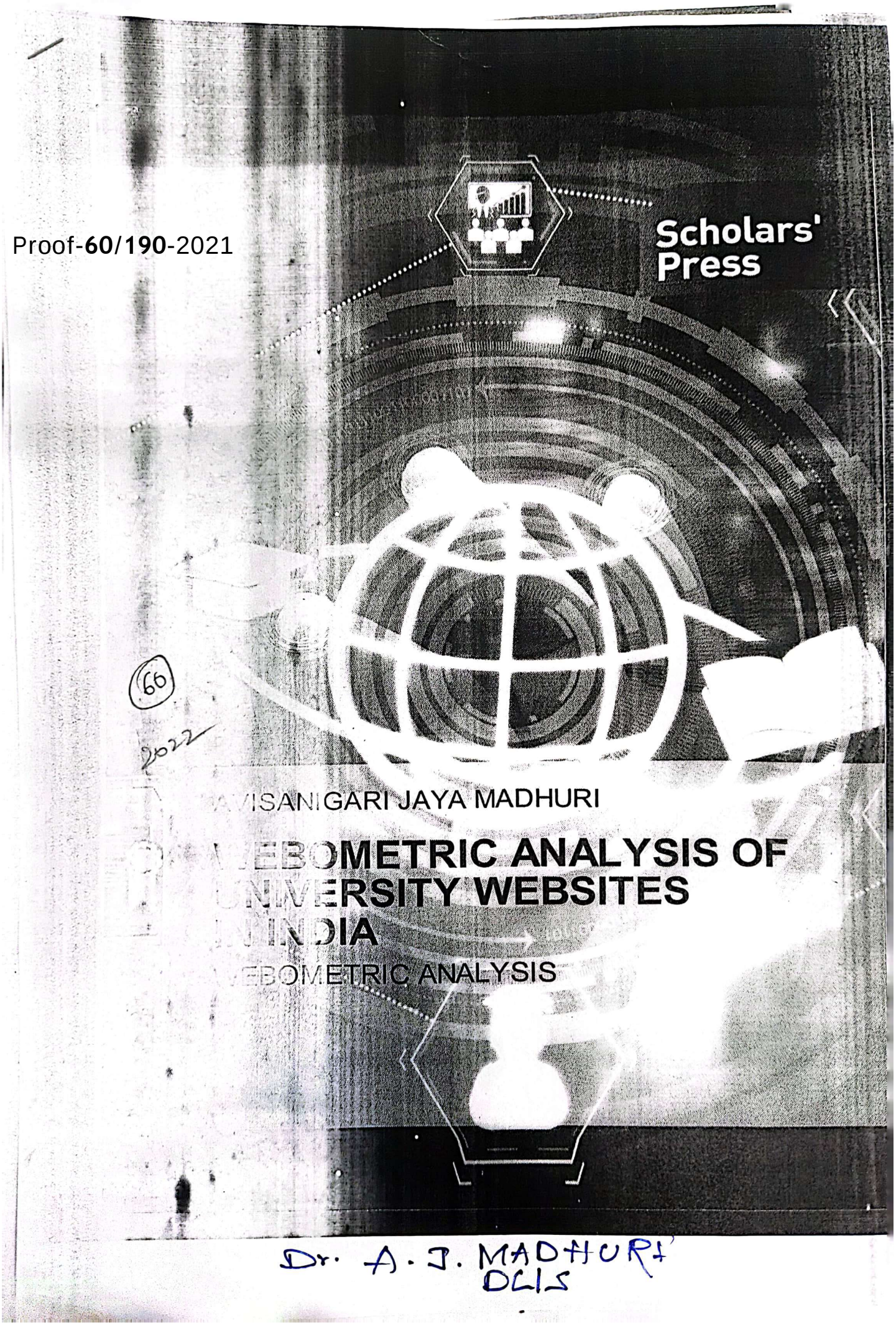


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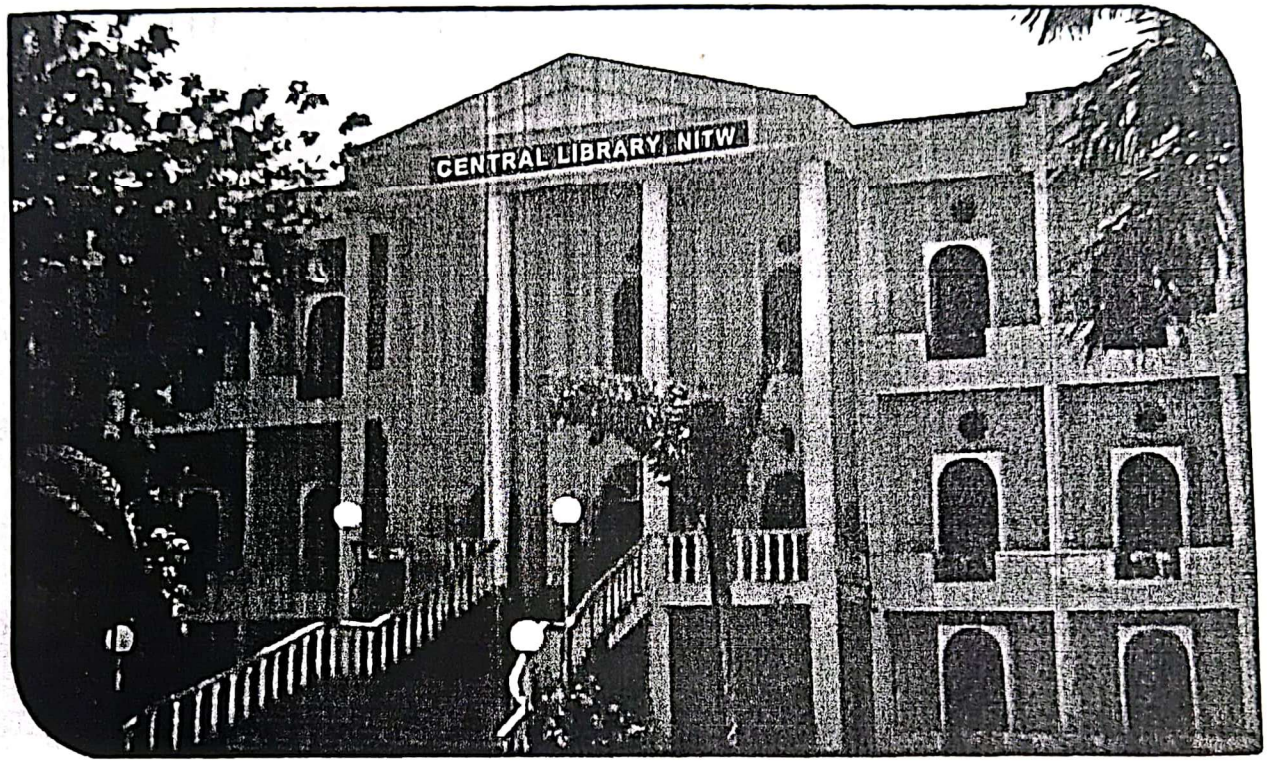


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# UTILIZATION OF ONLINE SOCIAL MEDIA INFORMATION RESOURCES BY THE STUDENTS AND FACULTY MEMBERS AT MANAGEMENT STUDIES COLLEGE LIBRARIES IN CHITTOOR DISTRICT - A STUDY

**Dr. L. Lakshmipathi[1] and Dr. E. Sudhakar[2]**
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## INTRODUCTION

In the 21st century online Social media a computer based collection of tools is a platform where people can build social relations among people who share their interests, activities, personal matters, etc. They share their information resource in different forms of namely text, photos, audio, video, etc. In other words online Social media are a collective term for the online tools and services and collection such as blogs, wikis, social networking, photo and video sharing communities, online social bookmarking, podcasts, discussion forums, virtual worlds, presentation distribution and a lot more. Over two hundred social Medias are now available in the world. Due to the popularity of social media, library professional cannot keep themselves aside from the use of social media in the LIS area.

It is a great challenge for the librarian to capture the attention of the remote users who are using online social media like Social news Social Bookmarking Social Networking (Face book, MySpace, LinkedIn), Social Photo and Video Sharing (YouTube, Flickr) and Wikis (See Table One) and who are reluctant to visit the library physically. So many libraries of India and around the world are giving facility to their users to use social media through library's website.

### Characteristics of social media

### Objectives of using social media in libraries

- Librarians can tweet about events of daily activities in the library.
- To update the new books, journals and other and new arrivals in library members of interest.
- The Using instant messenger apps also library staff can send alert messages to the library patrons for discharge of books and fine reminder
- The you tube channel for the library and host events and live Programmes taking place in the library.
- Sharing library programmes photos using with photo sharing tools likeasflickr, pinterest.
- Create a library patron groups for sharing information by using tools like WhatsApp, Telegram.
- To share the public or private messages related to the library and its services
- To create groups between the library and users to discuss the new age of information or services.

Librarians can tweet about events of daily activitues in the library.

¬To update the new books, journals and other and new arrivals in library members of interest.
¬The Using instant messenger apps also library staff can send alert messages to the library

### Objectives

To study the techniques in use of online social mediaby the faculty in teaching and learning in Managemer studies colleges.

- To study the importance of use of online social mediaby the faculty in teaching and learning in Managemer studies colleges.
- To study the purpose of collecting information through online social media by the respondents.
- To analyze the extent of use of online social media by the respondents.

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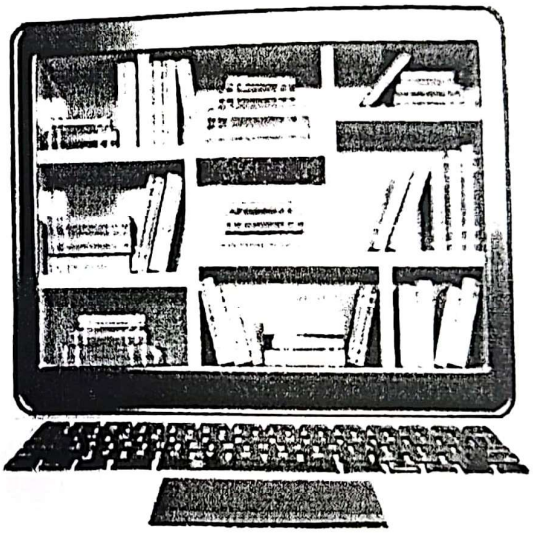

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# USE OF INFORMATION TECHNOLOGY AMONG POSTGRADUATE PROFESSIONAL COURSE STUDENTS IN RAYALASEEMA AREA, ANDHRA PRADESH: A STUDY

Dr. Sudhakar, E. &Kiran Kumar, E.

**Abstract**

*In this paper researchers studied Use of Information Technology among Postgraduate Professional Course Students in Rayalaseema Area, Andhra Pradesh: A Study, distributed 2000 questionnaires in colleges and collected 1655 questionnaires. It is found in this study the Use of information Technology library information resources, services (electronic & print), and library expressed their opinion about library working hours, physical facility, library information resources and services excellent and good.*

**Keywords:** Use of Information Technology; Professional colleges; Library and Information resources; ICT sources and services; Rayalaseema Area.

## Introduction

Education is the passport to accelerated economic growth. It is the key to build human capital. Human capital is the vital ingredient in building a nation. Education is a crucial building block, that recognized as pre-requisite for the general development programme. Since long time immemorial education formed a continuous basis for the development of society, "Education in whatever form has to respond expeditiously and effectively to the changing needs in an ever-changing society" as change is the only unchanging law. Education is a process of learning with the aim to develop the capabilities in the people at all levels. In this process, schools, colleges and universities play a vital role. The present educational system in India comprises both academic and professional studies by offering courses leading to bachelors and master's degree.

## Objectives of the Study

The following are the specific objectives of the study:

- To know the purpose of Information Technology services using by Postgraduate Professional course students in the library.
- To assess the suitable place to access the Internet services to the students.
- To understand the Utilization of different Internet services by the students.
- To identify the problems faced by Postgraduate students in accessing Information Technology services.
- To examine the overall satisfaction of postgraduate students with IT based Information services.

## Methodology

The present study focuses on the availability of Information technology resources, services and their utilization in professional college libraries in Rayalaseema area.

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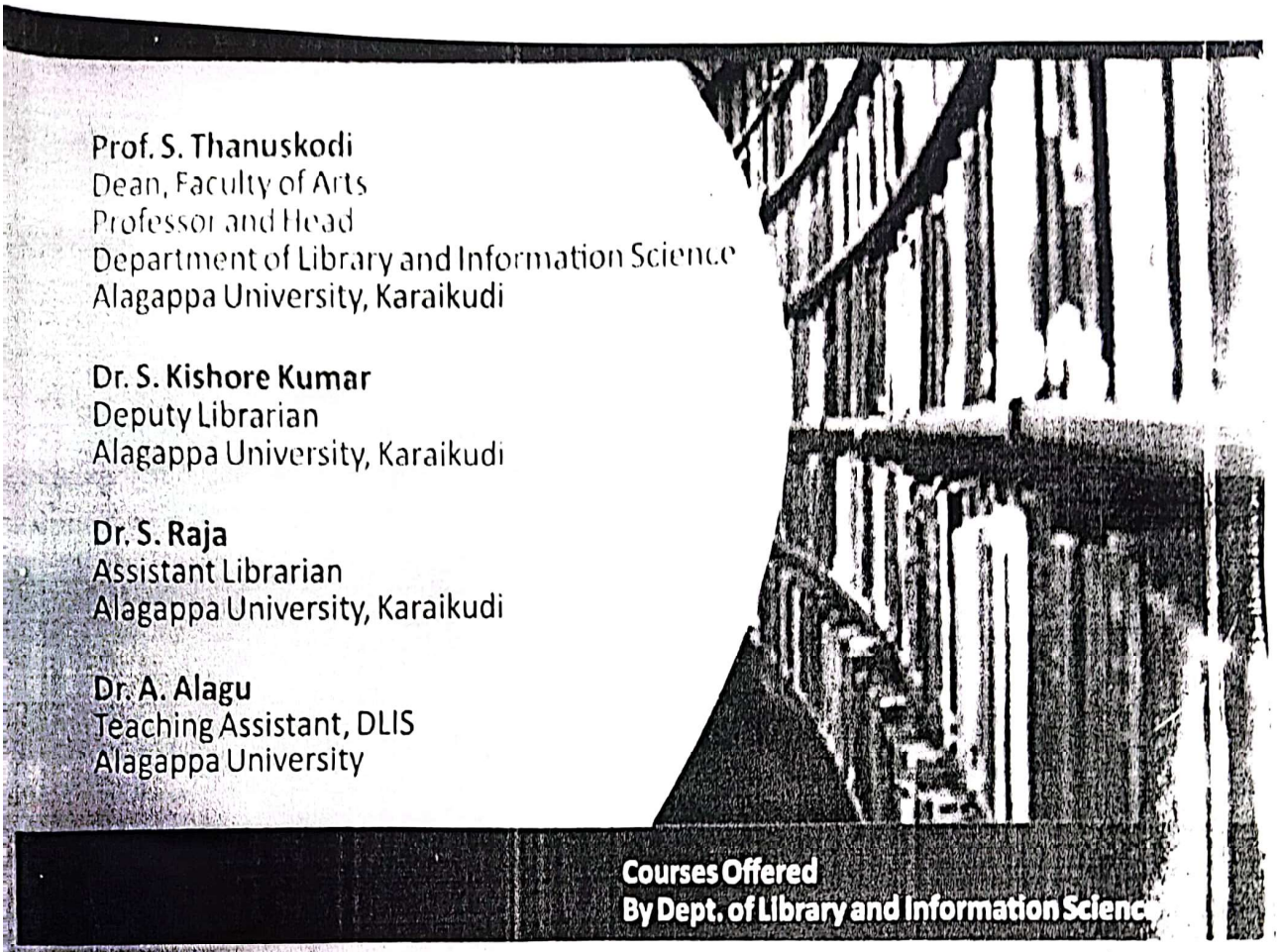

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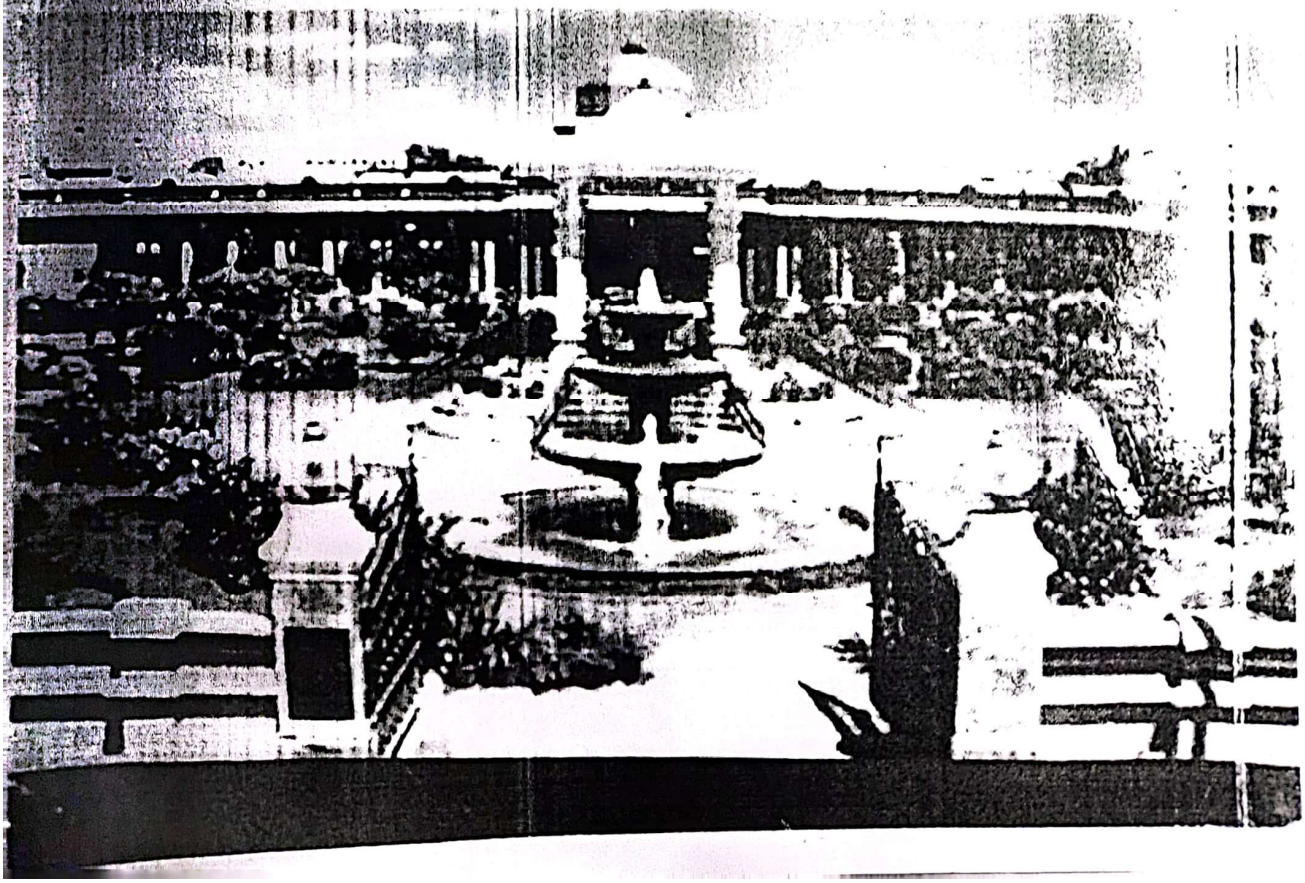

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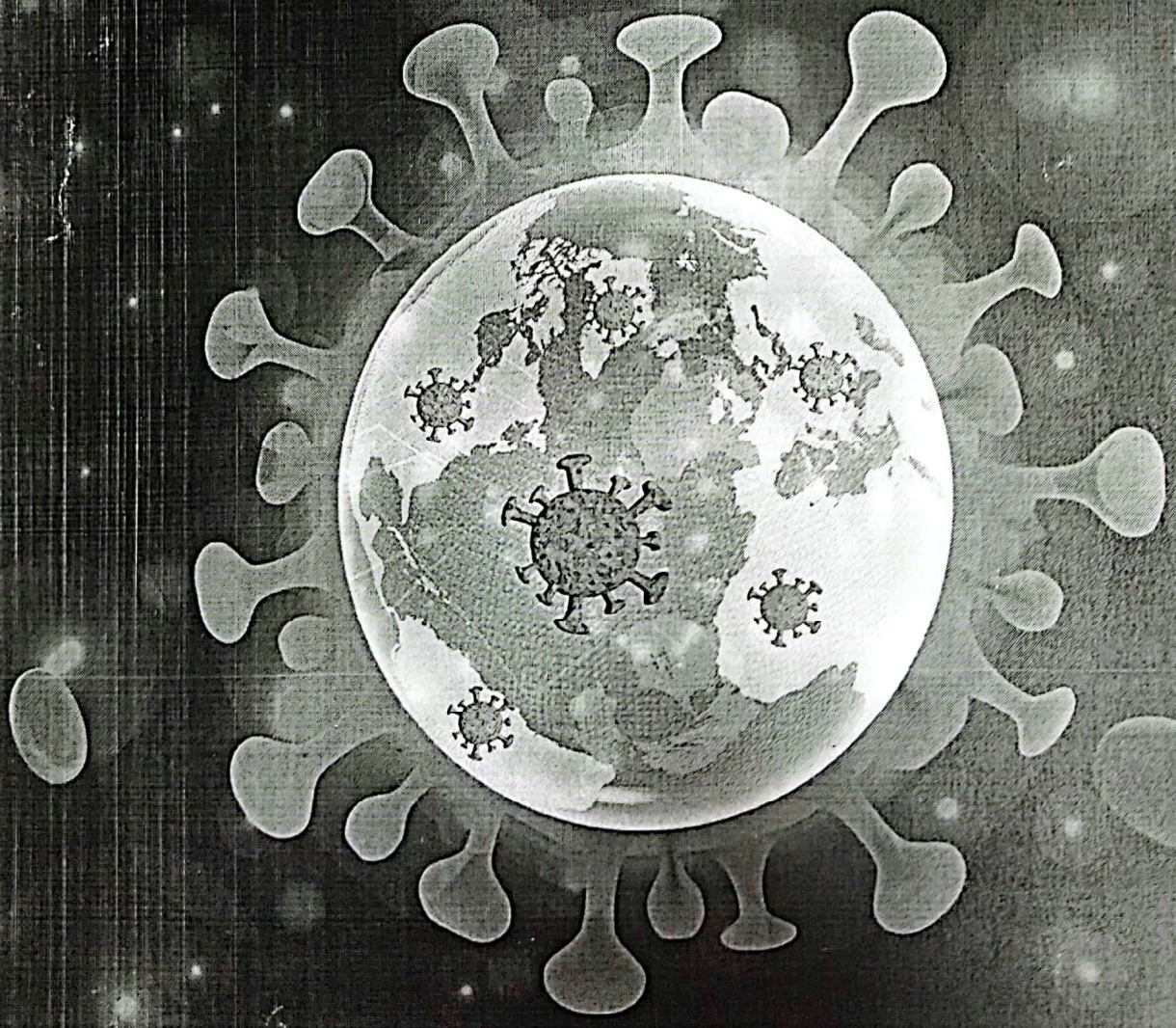
## Epidemiology, Pathogenesis, Prevention, and Treatment



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## Epidemiology, Pathogenesis, Prevention, and Treatment

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Chapter 6

# Molecular mechanisms of Zika fever in inducing birth defects: an update

Hema Masarapu[1] and Naga Charan Konakalla[2]

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## 6.1 Introduction

Zika virus (ZIKV) is an emergent mosquito-borne member of the genus *Flavivirus* of the family *Flaviviridae* and it poses a significant global threat to public health due to its link to the serious complications such as neuropathies in the pregnant women and teratogenic damage to the developing fetus. ZIKV was first isolated in 1947 from a rhesus monkey in the Zika forest of Kampala, Uganda, Africa [1] and later it was reported in humans in Uganda and Tanzania in 1952, while the virus was isolated for the first time from Nigeria in 1954 [2]. It had remained sporadic with fewer than 20 human infections for decades until the major outbreaks in Pacific islands and French Polynesia in 2007 and 2013, respectively [3–5]. Then the virus was introduced into Brazil, subsequently spreading rapidly throughout Brazil and the Americas, caused a large epidemic in 2015 [6–8]. Currently, there are 86 countries, territories, or subnational areas with evidence of ZIKV transmission (http://www.who.int/emergencies/zika-virus/classificationtables/en/; http://www.cdc.gov/zika/geo/index.html; http://www.who.int/mediacentre/factsheets/zika/en/). As ZIKV advances across the globe, more imported cases of human infection are being reported worldwide in places with no previous record [8]. World Health Organization (WHO) declared ZIKV as major international public health concern in 2016 with the growing evidences that the ZIKV is causally associated with Guillain–Barre syndrome (GBS) in the adults and neonatal complications such as microcephaly and other severe neurological disorders [8–10]. To date, there are no approved vaccines or specific antiviral treatments available for ZIKV control (covered in [11,12]).

ZIKV is closely linked to dengue virus (*Flavivirus*) both genetically and serologically, with approximately 43% amino acid sequence homology [13]. As per the literature, there is one ZIKV serotype, two sublineages (African and Asian), and three genotypes (West African, East African, and Asian). During the last decade, the clinical manifestations, mode of transmission of the virus have changed due to the increased infectivity of ZIKV, resulting in larger outbreaks with more severe symptoms and increased sexual transmission cases [6,14,15]. It has been postulated that genetic changes of the ZIKV may have contributed to its increased transmissibility and infectivity, enhanced neurotropic potential, and greater replicative capacity with its ability to breach the placental protection and to trigger permanent fetal brain injuries. The epidemiological associations between ZIKV and congenital neuropathologies have been confirmed during the last few years by using in vivo animal models and in vitro cellular systems (reviewed in [8,9,16–24]).

The placenta and the fetal brain appear to be the primary targets of ZIKV, as evident due to the presence of ZIKV particles, RNA and proteins in human placental and fetal brain remnants. Experimental studies showed potential transplacental passage of the ZIKV and subsequent selective targeting of neural progenitor cells (NPCs), the founder cells that generate all neuronal and glial cells, leading to changes in the expression of genes and proteins related to the cell cycle, stress response, cell death, intracellular structural organization, cell differentiation, innate and adaptive immune responses, cell proliferation, cell migration, cell adhesion, and synaptic organization (reviewed in [23,25–29]). Depletion of NPCs by ZIKV is associated with restricted brain growth in mice with suspected transplacental ZIKV passage recapitulates the features of congenital ZIKV-associated microcephaly in humans. Other neonatal and pediatric neural disorders associated with ZIKV infection include chorioretinopathy, sensory neural hearing loss, and epilepsy and other motor deficits [16,17,23]. Evidence indicated that ZIKV infection cripples the host cells' innate immune

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# PANDEMIC OUTBREAKS IN THE 21st CENTURY
## Epidemiology, Pathogenesis, Prevention, and Treatment

**Edited by Buddolla Viswanath**

In the past two decades, several pandemics have ravaged the globe, giving us several lessons on infectious disease epidemiology, the importance of initial detection and characterization of outbreak viruses, the importance of viral epidemic prevention steps, and the importance of modern vaccines. *Pandemic outbreaks in the 21st century* summarizes the improvements in the 21st century to overcome/prevent/treat global pandemic with future prospective.

Divided into 19 chapters, the book begins with an in-depth introduction to the lessons learned from the first pandemic of the 21st century. It describes the history, present, and future in terms of detection, prevention, and treatment. Followed by chapters on the outbreak, treatment strategies and clinical management of several infectious diseases such as MERS, SARS, EBOLA, Avian Influenza A, SWINE-FLU, ZIKA, and COVID 19 were discussed. This book presents chapters on immunotherapies and vaccine technologies to combat pandemic outbreak and challenges. It finishes with a chapter on the current knowledge and technology to control pandemic outbreaks.

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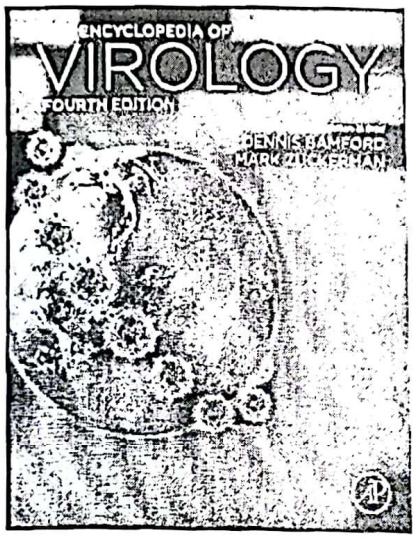


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6

# Emerging Trends in the Development of Plant Virus-Based Nanoparticles and Their Biomedical Applications

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## 6.1 INTRODUCTION

Viral nanoparticles (VNPs) are nucleoprotein-based, biologically evolved supramolecular ensembles that could be used to develop bioinspired nanomaterials and nanocarriers due to their simple and inexpensive production, well-defined structural features, unique shapes and sizes, genetic programmability, and robust chemistries (Ma et al., 2012; Koudelka et al., 2015;

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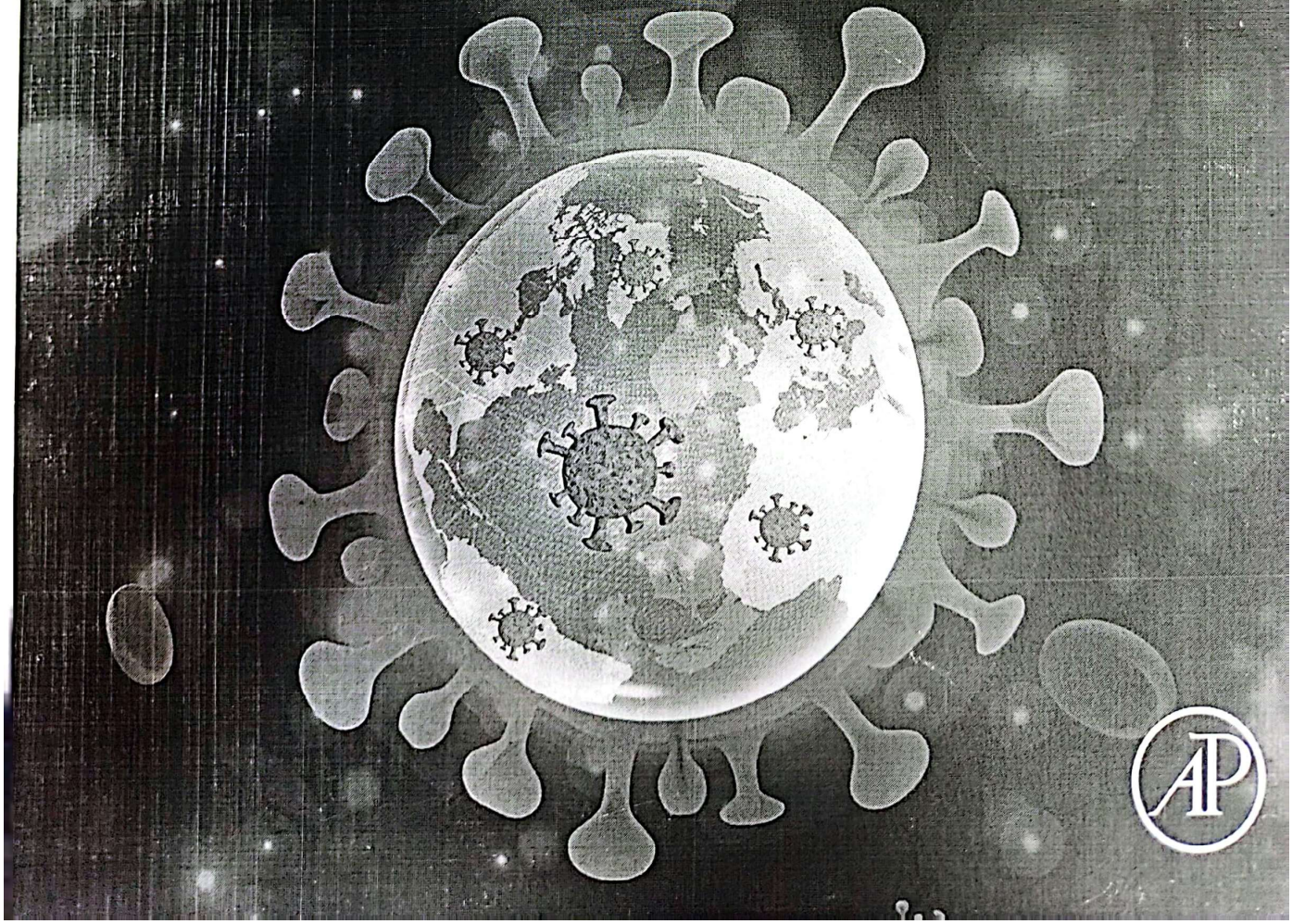

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Chapter 1

# Lessons learned from the first pandemic of the 21st century, global experience, recommendations, and future directions

Kandati Kusuma[1,2], Praveen Belagal[3], Buddolla Viswanath[1] and Divi Venkata Ramana Sai Gopal[3,4,5]
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## 1.1 Introduction

Many infectious diseases have swept the world, taking the lives of millions of people. Viral outbreaks of varying frequencies and severities have caused panic and havoc across the globe throughout history [1]. The 21st century witnessed a few pathogenic and contagious virus outbreaks of zoonotic origin including severe acute respiratory syndrome coronavirus (SARS-CoV-1&2), Ebola virus, Middle East respiratory syndrome coronavirus (MERS-CoV), and Nipah virus [1]. SARS is an airborne virus and can spread through small droplets of saliva in a similar way to the cold and influenza. It was the first severe and readily transmissible new disease to emerge in the 21st century and showed a sustained human–human transmission along the routes of international air travel [2]. The 2003 outbreak of SARS shocked the world as it spread swiftly from continent to continent, resulting in >8000 infections, a total of 916 deaths globally with ~10% mortality and affecting local and regional economies [3]. In November 2002 the first case of SARS occurred in Foshan, China, and in June 2012, the first case of MERS died at a hospital in Jeddah, Saudi Arabia [4]. In November 2002 unusual cases of atypical pneumonia of unknown cause occurred in Foshan City, Guangdong province in China, where many health care workers were infected [5]. Three laboratories—one each in Hong Kong, Germany and the Centres for Disease Control and Prevention (CDCs) in Atlanta, Georgia, United States—nearly simultaneously isolated an apparently new coronavirus as the causative pathogen of SARS [3]. The infection was brought to Hong Kong on February 21, 2003, by a physician who had looked after similar cases of atypical pneumonia in the mainland China, leading to outbreaks in Hong Kong. On March 15, 2003, WHO officially declared an epidemic and labeled it a SARS (later referred as SARS-CoV) [6–8]. The SARS-CoV epidemic quickly spread to 29 countries, but the global public health, medical, and scientific communities were not adequately prepared for the emergency. Chains of human-to-human transmission occurred in Toronto, Canada, Hong Kong Special Administrative Region of China, China Taipei, Singapore, and Hanoi, Vietnam. The duration of the SARS epidemic was short and WHO declared the end of the SARS epidemic in July 2003 with a total of 8096 SARS cases and 774 deaths reported across 29 countries/regions [4]. The scientific effort demonstrated unusual international cooperation and was in turn facilitated by electronic communication. Media coverage provided accurate worldwide pictures to augment scientific data. As of March 1, 2[illegible] there were 1695 citations related to SARS seen in the Medline [9]. One reason why SARS-CoV-2 spread is evidently much wider compared to SARS is the rapid urbanization and world trade network resulting in increased international travel during the last two decades. Hence, the control measures applied at the time of SARS-CoV-2 are no longer adequate in the current days, and more vigorous actions are required to control SARS-CoV-2 [10]. Besides, the duration of the infectious period between patients infected with SARS and those infected with SARS-CoV-2 is not the same. While in the former case, viral shedding peaks only when the patient's illness is advanced and respiratory symptoms are [10], for SARS-CoV-2, the transmission can occur in the early phase of the illness, when the patients are completely asymptomatic [11]. Hence, isolation after the onset of symptoms might be ineffective in preventing virus transm[illegible]

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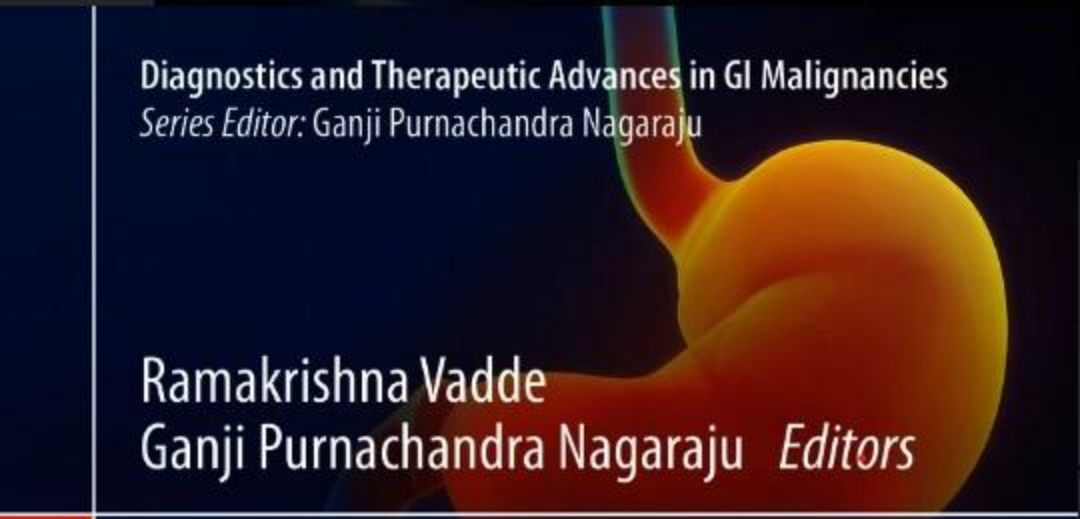

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# Immunotherapy for Gastrointestinal Malignancies

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# Immuno-Oncology of Colorectal Cancer

Ramachandra Reddy Pamuru, K. V. Sucharitha & Ramakrishna Vadde

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## Abstract

The colorectal cancer (CRC) a second leading cancer become most predominant and causing deaths worldwide. Since its spread, more attention has been made to control the CRC. For developing anti-tumor therapies, it is important to know the immune-oncology of CRC. A number of events are identified in the tumor microenvironment of CRC. This chapter gives details of the basics of CRC, immune cells of tumor microenvironment, tumor suppression, and repression. These details of tumor immune-oncology of CRC may help to provide better understanding of CRC and suggest ways to control CRC.

## Keywords

**Colorectal cancer** **Microenvironment** **Immune cells** **Immune response**

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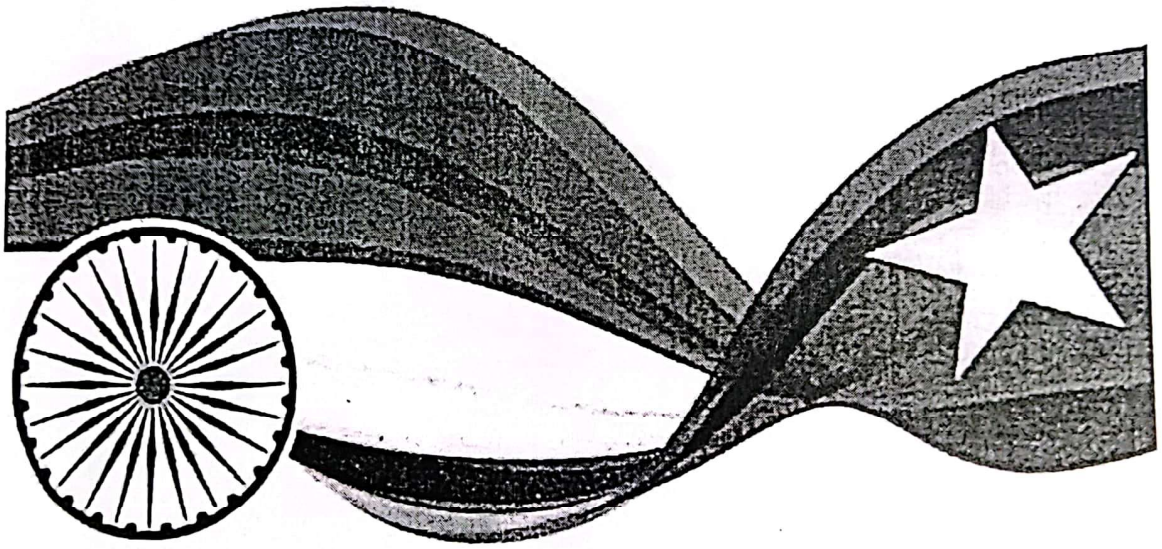

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# India-Vietnam

## Defence, Strategic and Economic Cooperation

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# Changing Trends in India and Vietnam Trade Relations

*Sravanakumar B and Muralidhar BV*

**Abstract**

India and Vietnam share a strong relationship with much scope for deepening of relations in the future. These relations have a history stretching back not only to 46 years of diplomatic ties since 1972, but to nearly 2000 years of interactions. During colonial times, people from both countries showed their sympathy and support to each other, and prominent leaders from the two, like Jawaharlal Nehru and Ho Chi Minh, had personal contacts even before independence. India had also supported Vietnam in several wars in the past. India and Vietnam have a time-tested, problem-free relationship, which is currently better and stronger than it had been. In line with the Comprehensive Strategic Partnership (CSP), bilateral cooperation has expanded in many areas including economy, culture, and science, and has deepened in areas such as security, defence, and politics. Economic cooperation has also witnessed tremendous progress between 2007 and 2017 and the bilateral trade surged from US$ 1 billion to US$ 7.6 billion - marking a 700 percent rise. The volume of trade between the two countries reached US$ 3.5 billion in the first four months of 2018, and was expected to rise to US$ 9-10 billion by December 2018. New Delhi and Hanoi maintain close coordination on international issues as well. Vietnam is in favour of India's increased engagement with the Southeast Asian region and beyond.

**Keywords:** India, Vietnam, Colonial, CSP, Tremendous, Bilateral Trade, Co-ordination.

The present India-Vietnam relations were first forged between first Indian Prime Minister Jawaharlal Nehru and President Ho Chi Minh making state visits to each other's country during the 1950's. Indian Prime Minister Nehru was the first head of government to

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# TECHNOLOGY AND WOMEN EMPOWERMENT

Prof. G. Sandhya Rani • Dr. V. Jagadeeswari



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# TECHNOLOGY AND WOMEN EMPOWERMENT

Irrespective of the language, nationality, religion, status, women are playing multiple roles in their way of life. Since 1970s, women have been benefited from women's liberation movements and taken ever greater leads in business education, politics and public life. When compared with pre-independence era, now-a-days women are educated and are participating in all fields on par with men, viz., Economic, Political, Social, Sports, Educational, Entrepreneurship, Navy, Air force, Army, Space Technology, etc. and are contributing a considerable part to the economy. As women became aware of technology they are empowering themselves and enjoying the fruits of technological progress in all domains. Having access to technology, control of it and ability to create and shape it is a fundamental issue. The major aim of any technology is to help and the gender technology gap and empower women and girls to create, innovative solutions to balance for equality in the society. One way or the other technological revolution has changed the lifestyle of human beings. But it has both positive and negative effects on women and girls. On the positive side it is supporting women to have a better standard of living and to participate in decision making processes. On the negative side it is misused to degrade women's status and leading towards raising violence against women. As technology is treated as a knife with sharp edges on both sides, it is the responsibility of everyone to make use of it with right senses so as to promote the wellbeing of human kind.

Hence, articles relating to Technology for Women Empowerment in different areas viz., Education, Health, Employment, Children, Politics, Industry, Agriculture, Social, Safety, etc. are invited from academicians, Government officials, NGO Personnel, Project Directors and Programme Coordinators.

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# TECHNOLOGY AND WOMEN EMPOWERMENT

Irrespective of the language, nationality, religion, status, women are playing multiple roles in their way of life. Since 1970s, women have been benefited from women's liberation movements and taken ever grater leads in business education, politics and public life. When compared with pre-independence era, now-a-days women are educated and are participating in all fields on par with men, viz., Economic, Political, Social, Sports, Educational, Entrepreneurship, Navy, Air force, Army, Space Technology, etc. and are contributing a considerable part to the economy. As women became aware of technology they are empowering themselves and enjoying the fruits of technological progress in all domains. [illegible] to technology, control of it and ability to create and shape it is a fundamental issue. The major aim of [illegible] is to help end the gender technology gap and empower women and girls to create, innovative solutions [illegible] for equality in the society. One way or the other technological revolution has changed the lifestyle of [illegible] things. But it has both positive and negative effects on women and girls. On the positive side it is supposed [illegible] to have a better standard of living and to participate in decision making processes. On the negative [illegible] used to degrade women's status and leading towards raising violence against women. As technology [illegible] is a knife with sharp edges on both sides, it is the responsibility of everyone to make use of it with right [illegible] promote the wellbeing of human kind.

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Technology and Women Empowerment

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# Empowerment of Tribal Women through Self-Help Groups in Pulicherla Mandal of Chittoor District

Dr. D. Yuvaraju, Dr. D. Subramanyam and Ms. Guri Rajani

## Introduction

Empowerment of tribal women is a challenging issue in the present situation. Without empowering tribal women, meaningful inclusive growth of the country is not possible. Empowerment of tribal women can be measured through the power they have over economic resources to earn income and their per capita income, access to education, access and availability of professional opportunities and participation in economic decision making and their access to political opportunities. Access to education is the key for economic, social and political empowerment of tribal women. Tribal women empowerment through education is a possible means for inclusive growth. It has direct impact on various aspects of tribal development. Educational attainment increases women's understanding on the present socio-political structure and the existing hurdles on their development. Empowering the marginalized tribal women through education will contribute a lot to national development. The educational status of tribal women is very low compared their counterparts in other communities. Education is a powerful tool for country development. Education has the power to raise the status of tribal women. It is a meaning to empower and the marginalized tribal women around 35 Tribal communities are residing in Andhra Pradesh with different socio-economic background. The present topic make an attempt to analyse the current educational status of Scheduled Tribal women in Andhra Pradesh and the

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# Women Empowerment through SHGs – A Case Study in *Pulicherla Mandal of Chittoor District*

Mr. M. Sreenivasulu, Ms. Giri Rajani and Dr. D. Subramanyam

## Introduction

Women empowerment through self-help group constitutes an emerging and fast growing trend towards social and economic development of the nation. Self Help Groups (SHGs) are one of the innovative and much needed schemes to accelerate the women entrepreneurship, women's self-employment and women empowerment. This concept was successfully implemented in Bangladesh and now in India. It has become the wise tool to improve the social and economic development. Government also provides various financial and non-financial assistance to promote the Self Help Groups for women empowerment. Banks and financial institutions have also realized the impact of the Self Help Groups. Hence they are channelizing their funds for women and rural development through Self Help Groups.

Women Self Help Groups were formed based on the motives like social and economic welfare, awareness of women's rights and duties, building leadership qualities, skill development, etc. Andhra Pradesh Women Empowerment and Poverty Reduction Project was launched to reduce poverty and empower the women. Apart from regular savings, Self Help Groups are engaged in business activities to uplift themselves financially and economically. Self Help Groups in the state are engaged in giving training for sewing, manufacturing of soaps, manufacturing of toys and wires, bringing up of mushroom etc. Many workshops were conducted

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# [illegible]n Women Entrepreneurs
## A Case Study in Chittoor District of Andhra Pradesh

[illegible]. Gu[illegible]i, Dr. D. Yuvaraju and Dr. D. Subramanyam

Introduction

Development of any nation to a great extent depends on the successful organization of productive economic activities, a perspective for which is the presence of good quality entrepreneurs. In other words, in any nation the responsibility of pulling the tempo of economic development ahead falls ultimately on entrepreneur.

Government of India followed the policy for development of entrepreneurship among human e-sources of the country in general and women in particular during post-liberalization regime. Government has set up [illegible] number of institution to provide financial and other supportive measures for the growth of entrepreneurship among women. Under the new economic regime, the women entrepreneurs are engaged in small businesses. The major factor responsible for increase in participation of women in economic activities has been spread of general and technical education, growth of IT sector and entrepreneurship as a career.

Entrepreneurship development among women may be looked at from two angles: one is to create the involvement needed for healthy and sound entrepreneurship and the other is to organise more and more rational motivational campaigns for the women entrepreneurship when they take on challenging [illegible] and want to [illegible] their personality needs, family and social [illegible]

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# Economic Independence of Women – *A Case Study of Women Self-Help Groups in Andhra Pradesh*

Dr. D. Subramanyam, Dr. D. Yuvaraju and Ms. Guri Rajani

## Introduction

Women as mother of the nation should be strong, aware and alert. The Government of India has continuously been formulation strategies and initiating process to bring women in to the mainstream. In addition, the government has brought about specific legislation to protect and safeguard the rights of women. Women constitute nearly half of the nation's population. They have tremendous talent potential to contribute in harnessing technology for human and social development. Women empowerment concept was introduced at the international women's conference in 1395 at Nairobi. Empowerment means individual acquiring the power to think and act freely, exercise choice and fulfill their potential as full and equal members of the society. Women's empowerment principally aims at enhancing their social functioning by a quantitative and qualitative change particularly in the field of education, health and employment, which will bring the desired level of change. The government and voluntary organizations are providing many income generating schemes to raise the economic status of women. Women's empowerment is very essential for the development of the society.

## Is it Need of the Day?

Persistence is what makes the impossible possible. Empowerment of women is the pressing need of the day. Empowerment is an active multi dimensional process which should enable women to realize their full identity

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2

# Empowerment of Women through MGNREGS
## *Issues and Challenges*

Dr. D. Subramanyam, Dr. D. Yuvaraju and Ms. Guri Rajani

### Introduction

Empowerment is a process aimed at changing the nature and direction of systematic forces, which marginalize women and other disadvantaged sections in a given context. A large segment of Indian womanhood still suffers deprivation and discriminatory attitudes. It is necessary to mobilize the vast women power, if the country has to progress in all sphere of development. Empowerment of women is a long and difficult process which is to be promoted with full public support and this could be successful only when those women living at the lower strata who have been suppressed by the male dominated society taking undue advantage of their lack of education and poverty can rise up to claim their rightful place in their own society. In spite of the draw backs in the implementation of the legislation, significant benefits have already started accruing to women through better access to good employment, at minimum wages, with relatively decent and safe work conditions.

Gender is the inevitable push factor for growth and development of a nation like India. In India women constitute a major share of chronically poor population. The Government has framed different programmes/ schemes to uplift the women from poverty and vulnerability of life. One such women friendly programme is Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) which was enacted in 2005. MGNREGA has provided a unique opportunity to people from rural India to earn their own income without any discrimination of caste or gender.

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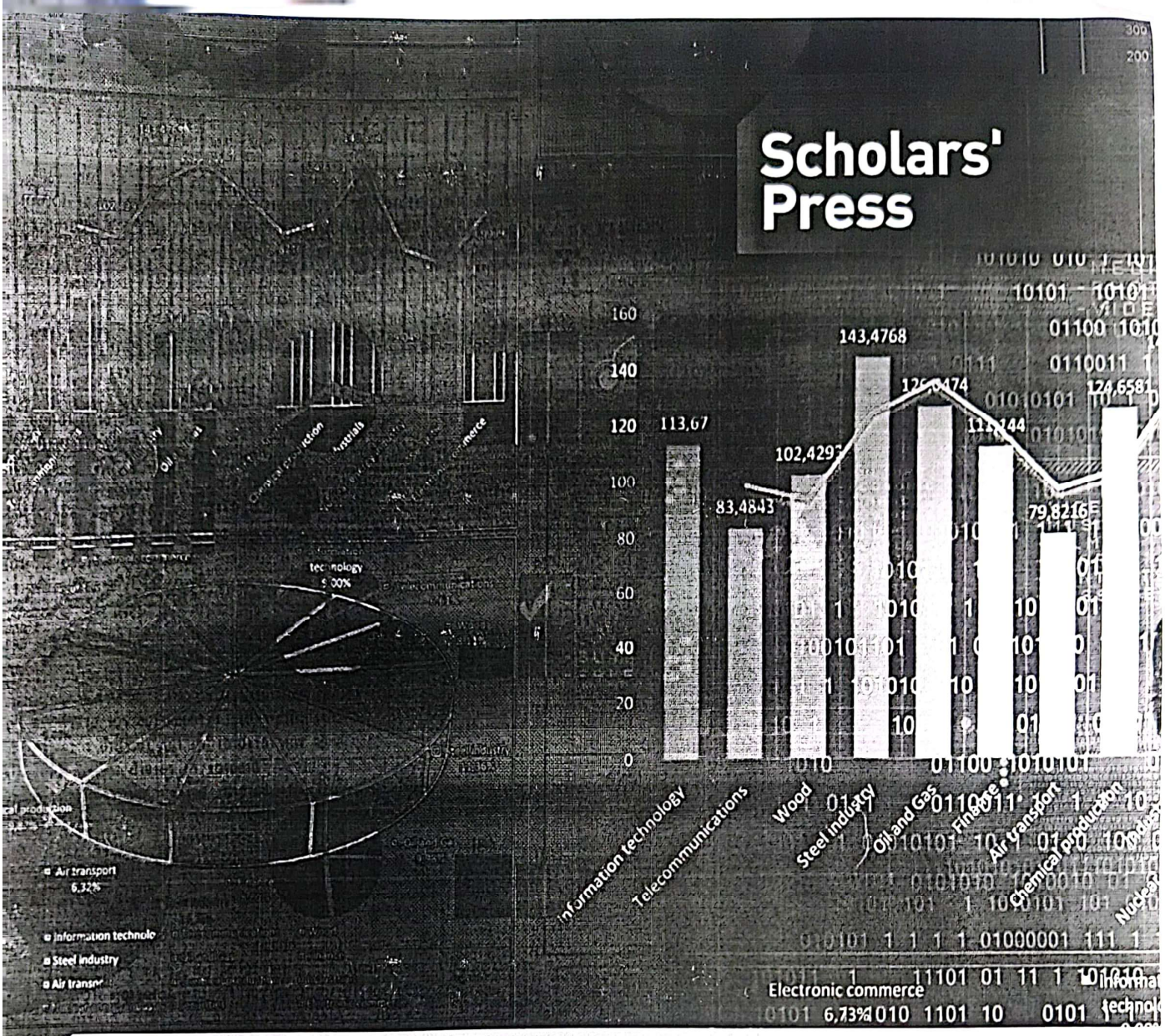


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# Role of Women during India's Freedom Struggle

Dr. K. Srilathakishori & Dr. D. Raja Rajeswari

*Abstract*

*Women in India have always been inspiring, whether it is now or during the times of the Indian freedom struggle. Woman's participation in Indian freedom struggle began as early as in1817. The history of Indian Freedom Struggle would be incomplete without mentioning the contributions of women. The sacrifice made by the women of India will occupy the foremost place. They fought with true spirit and undaunted courage and faced various tortures, exploitations and hardships to earn us freedom. When most of the men freedom fighters were in prison the women came forward and took charge of the struggle. The list of great women whose names have gone down in history for their dedication and undying devotion to the service of India a long one. Women leaders made a significant mark of their valor and will as early as in the 18 century and set the stage for emphasizing that women were in no way willing to be relegated to the backdrop of the freedom struggle.*

**Keywords:** *Freedom Struggle, Sacrifice, Valor.*

## Introduction

As India celebrates 75 years of Independence from British Rule, here we take a look at some of the eminent freedom fighters who fought equally hard but never got any share of the limelight in Indian history. An Indian independence activist Aruna Asaf Ali is widely remembered for hoisting the Indian National flag at the Gowalia Tank maidan in Bombay during the Quit India Movement in 1942. She also held the position of Mayor in Delhi post-Independence. A key member of the Indian Independence movement Madam Bhikaji Cama was an influential figure for gender equality Freedom activist Kamaladevi Chattopadhyay is known for her contribution to the Indian independence movement. She is the first woman ever in Indian history to run for a legislative seat and was also the first Indian woman to be arrested by the British.

## Women Freedom Fighters

World War II veteran Lakshmi Sahgal was an Indian National Army officer who oversaw the Ministry of Women's Affairs in the Azad Hind government. She also led the Rani



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# The Position of Women in Indian Society after Independence

Dr. D. Raja Rajeswari & Dr. K. Srilathakishori

**Abstract**

*In Indian history, nowhere men and women were treated alike and assigned the same status. Women have been always fighting for their rights and position in society. They have urged for equality so that they can lead a life exactly on par with men. If talking about the women's status in Independent India, the structural and cultural changes in India have brought into many opportunities for women in the fields of education, employment and politics. Such changes ultimately lead to a reduction in the exploitation of women as they have been granted equal status as men. The improvement in the status of women can be analyzed since independence in the areas of legislation, economic sectors, social and cultural life and so on.*

*Constitution of India guarantees equal status to all citizens of India including women under article 14 and does not distinguish or discriminate between a man or a woman. Moreover, article 15 empowers the government to make special provisions for women. The new Panchayati Raj was an effort to empower women at least at the village level.*

*Keywords: Position of Women, Indian society, Educational rights.*

## Introduction

If we trace the pages of history now here men and women were treated alike and assigned the same status. Women have been always fighting for their rights and position in society. They have several times urged for equality so that they can lead a life exactly on par with men. If talking about the women's status in Independent India, then it has been surely improved. The structural and cultural changes in India have brought into many opportunities for women in the fields of education, employment and politics. Such changes ultimately lead to a reduction in the exploitation of women as they have been granted equal status as men.

Women are free to participate in all the religious, cultural, economic and political . After Independence, the educational rights of women were promoted and they were aware of the value of education. The ratio of women pursuing higher studies and taking improved gradually since then. the number of working women has also steadily Women have been recruited in all posts such as teachers, doctors, nurses, advocates rs, bank employees in all major cities of India. The 73rd Constitutional Amendme



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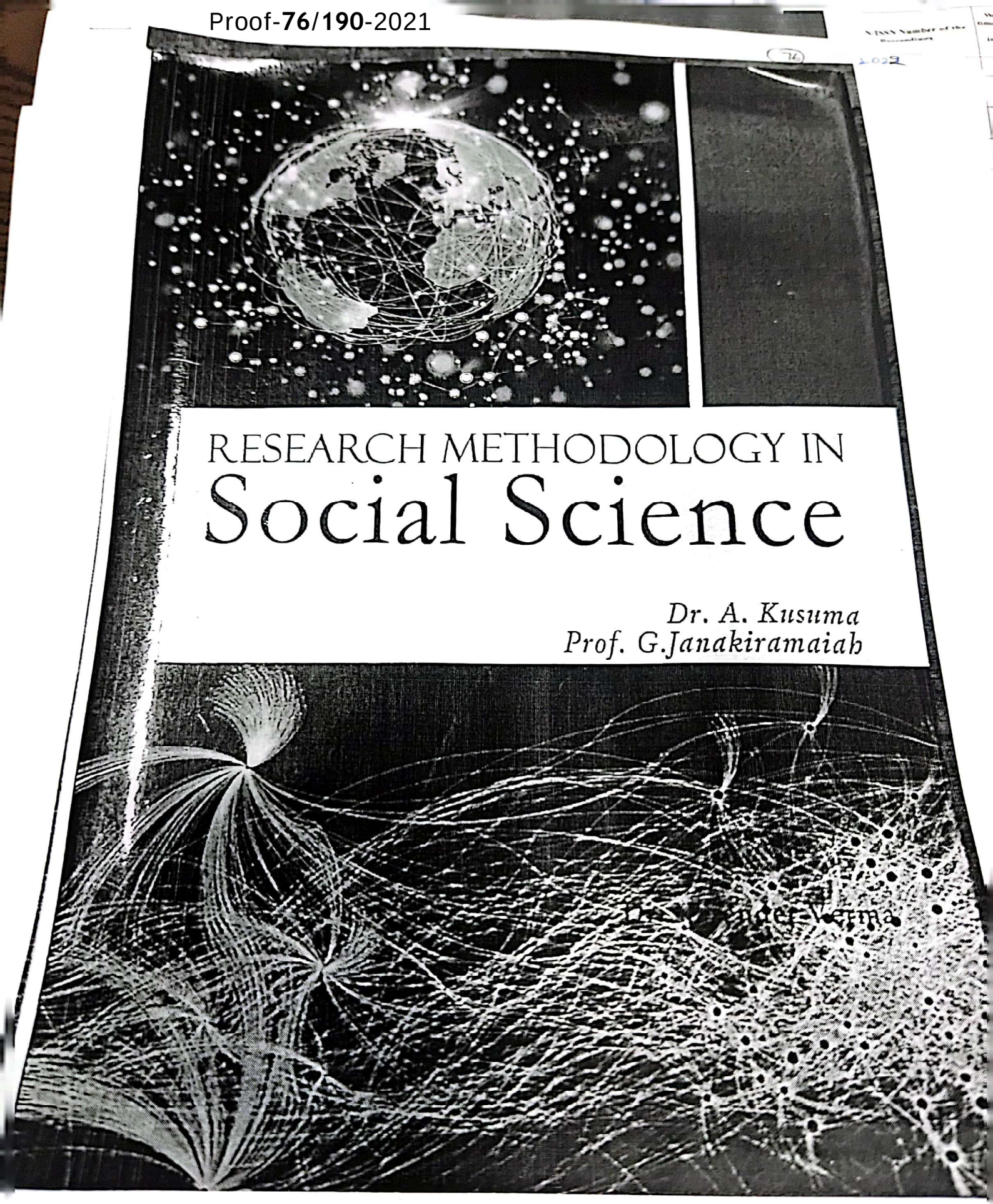

# RESEARCH METHODOLOGY IN Social Science

*Dr. A. Kusuma*
*Prof. G.Janakiramaiah*

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In the social sciences, quantitative research refers to the systematic empirical investigation of quantitative properties and phenomena and their relationships. The objective of quantitative research is to develop and employ mathematical models, theories and/or hypotheses pertaining to phenomena. The process of measurement is central to quantitative research because it provides the fundamental connection between empirical observation and mathematical expression of quantitative relationships. Social research can serve a variety of purposes. Three of the most influential and common purposes of research are exploration, description and explanation. Exploration involves familiarizing a researcher with a topic. Exploration satisfies the researcher's curiosity and desire for improved understanding. Survey research is one of the most important areas of measurement in applied social research. The broad area of survey research encompasses any measurement procedures that involve asking questions of respondents. A "survey" can be anything form a short paper-and-pencil feedback form to an intensive one-on-one in-depth interview. This book is focuses on a range of different qualitative research methods commonly applied within and across the social sciences. The course begins with an introduction to the historical, epistemological and ontological basis of qualitative research methods. It then turns to common qualitative data collection methods, research designs and ethical planning strategies

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Dr. A. Kusuma, M.A. – Sociology, population studies : M.S.W., Ph.D., holds a Post Graduate Diploma in Industrial Relations & Personal Management, post Graduate Diploma in Guidence and counselling (IRPM; PGDGC) ; and another Diploma in Health Care & Hospital Management. She is now working as an Assistant Professor in the Department of Sociology , S.V University, Andhra Pradesh, India. She has been teaching Social Work and at the PG level since 2006. She has published 2 books and more than 42 articles in National, International Journals and Books. Her research output was well received in International and National Seminars and Conferences. She gave several invited talks and chaired sessions in several national events. She was also a member of professional Organizations like All India Association for Educational Research (RIE, Bhubaneswar), Indian Association for Women's Studies, New Delhi. And Indian Society of Professional Social Work (ISPSW), Bangalore. With Multiple abroad visits to attend International Conferences at Bangkok, Perth (Australia) and Singapore and Malaysia on Academic interests

She is the course writer of the study material for the first- and second-year papers for MSW Course offered through Directorate of Distance Education, S.V. University, Tirupati, and She served as former member of the Executive Council in Vikrama Simhapuri University Nellore: She has 20 years of teaching and Research experience She completed one minor research project and Organized Six Day Workshop on Research methodologies in Social Science sponsored by ICSSR - Src Hyderabad

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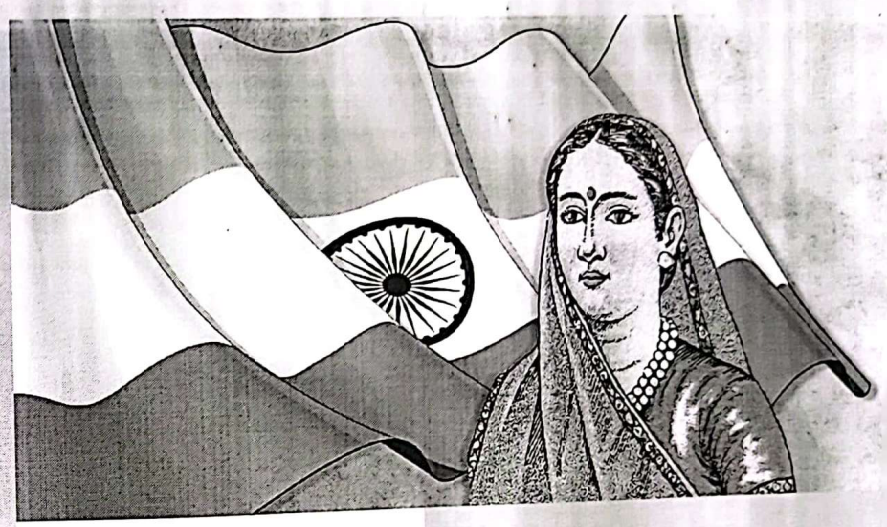

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# PSYCHO-SOCIAL PROBLEMS OF SECONDARY SCHOOL WOMEN TEACHERS

*Dr. G. Anand Amruth Raj, Academic Consultant, Department of Education,*
*Sri Venkateswara University,*
*Dr. P. Suneetha, Academic Consultant, Department of Women's Studies*
*Sri Venkateswara University,*

## ABSTRACT

*The aim of the study was to find out the psycho-social problems of secondary school women teachers. The sample consisted of 100 women teachers working in secondary schools. A simple random sampling technique was used in this study. In order to collect data, the Psycho-Social Problems Scale developed by Hundal (2002) was used. The statistical techniques like t-test and ANOVA were used through SPSS 20.0 version. The results found that there was a significant difference between government and private, rural and urban, married and unmarried, and teaching experience of secondary school women teachers with respect to their psycho-social problems.*

**Keywords: Psycho-Social Problems, Secondary School Women Teachers.**

## Introduction

From early childhood to higher education, teachers are at the center of every child's educational journey. Every day in the classroom, dedicated instructors have a good impact on young minds. A woman is society's fundamental unit. Women build a family, families build a house, and homes build a society. Thus, society would never exist without the contribution of women. A child's first and finest school is his or her mother's lap. A decent, healthy society does not appear on its own and stand steady; it must be created, and women play a critical role in this process. The modern woman's role at home, in society, and in the world is diametrically opposed to the role of women in the past. Women were once viewed solely as wives who were expected to work, clean, and care for their families. They were not allowed to vote, while men were responsible for finding work and paying any bills that arose.

In terms of how widespread and to what extent an individual shows the signs of a personality disorder, psycho-social problems can range from mild to severe, affecting one's life, career, family, and home life. "Psychosocial dysfunction" refers to issues that arise in one's psychosocial functioning. It is defined as a lack of development or atrophy of the psychosocial self, which frequently occurs in conjunction with other dysfunctions such as physical, emotional, or cognitive in character. Several studies have found that work-family conflicts have a negative impact on working women's mentality and physiology. Family troubles are characterized by a lack of engagement with family members, as well as physical, emotional, and psychological issues.

## Literature Review

**Shaveta Sharma (2020)** conducted a study on the predictive influence of teaching experience and psycho-social problems on teacher self-efficacy of school women teachers. A sample of 250 married school women teachers drawn from five randomly selected districts i.e. Ludhiana, Jalandhar, Hoshiarpur, Amritsar and Moga out of the total twenty two districts of the state of Punjab. The results of the study indicated that teaching experience and psycho-social problems conjointly predict 9.9% of teacher self-efficacy of school women teachers, 0.1% of teacher self-efficacy is predicted by teaching experience and 9.8% by psycho-social problems.



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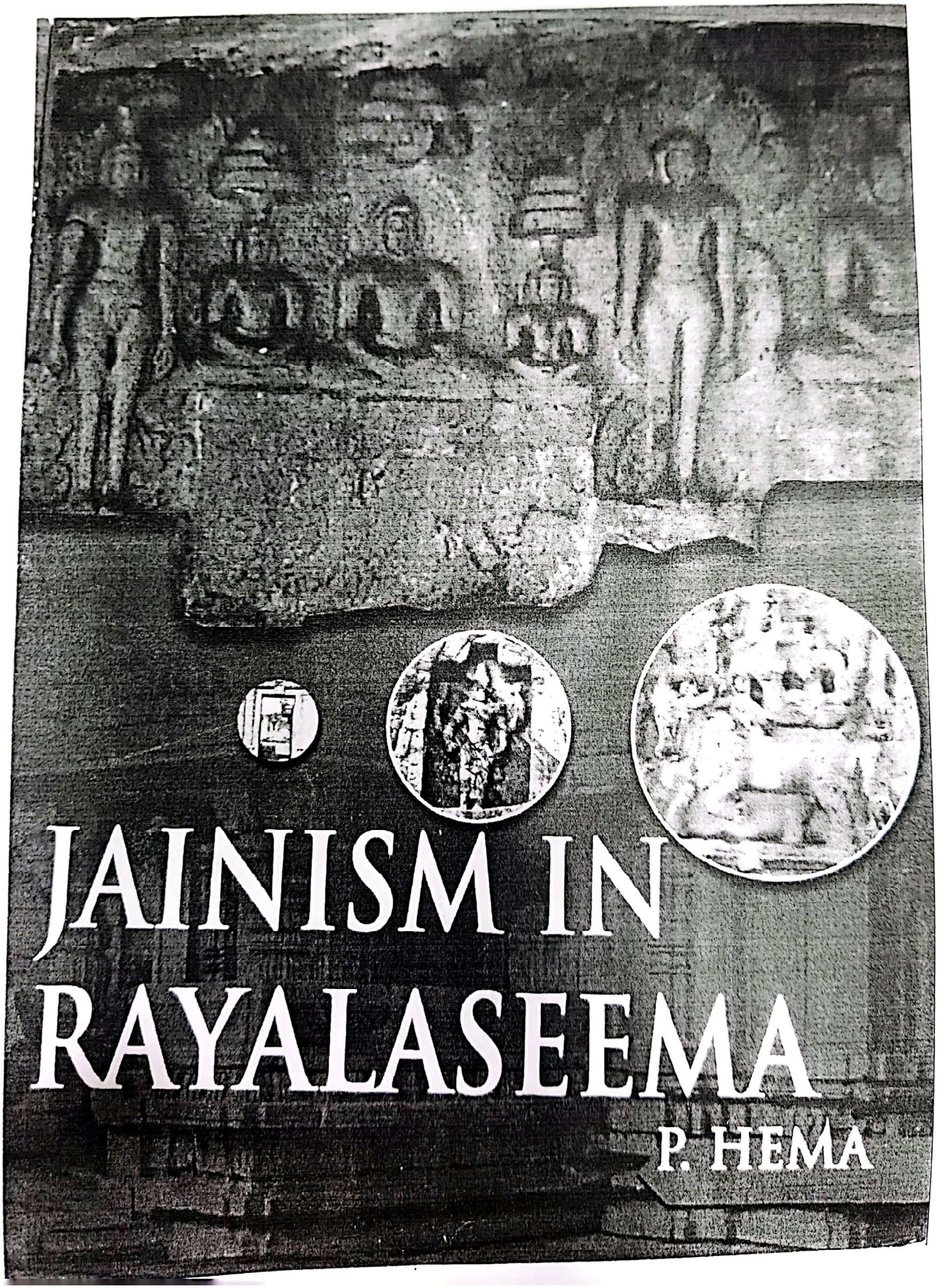


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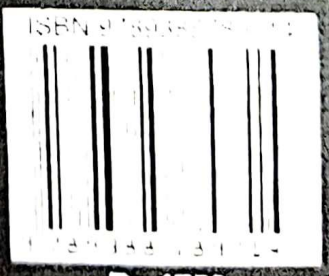

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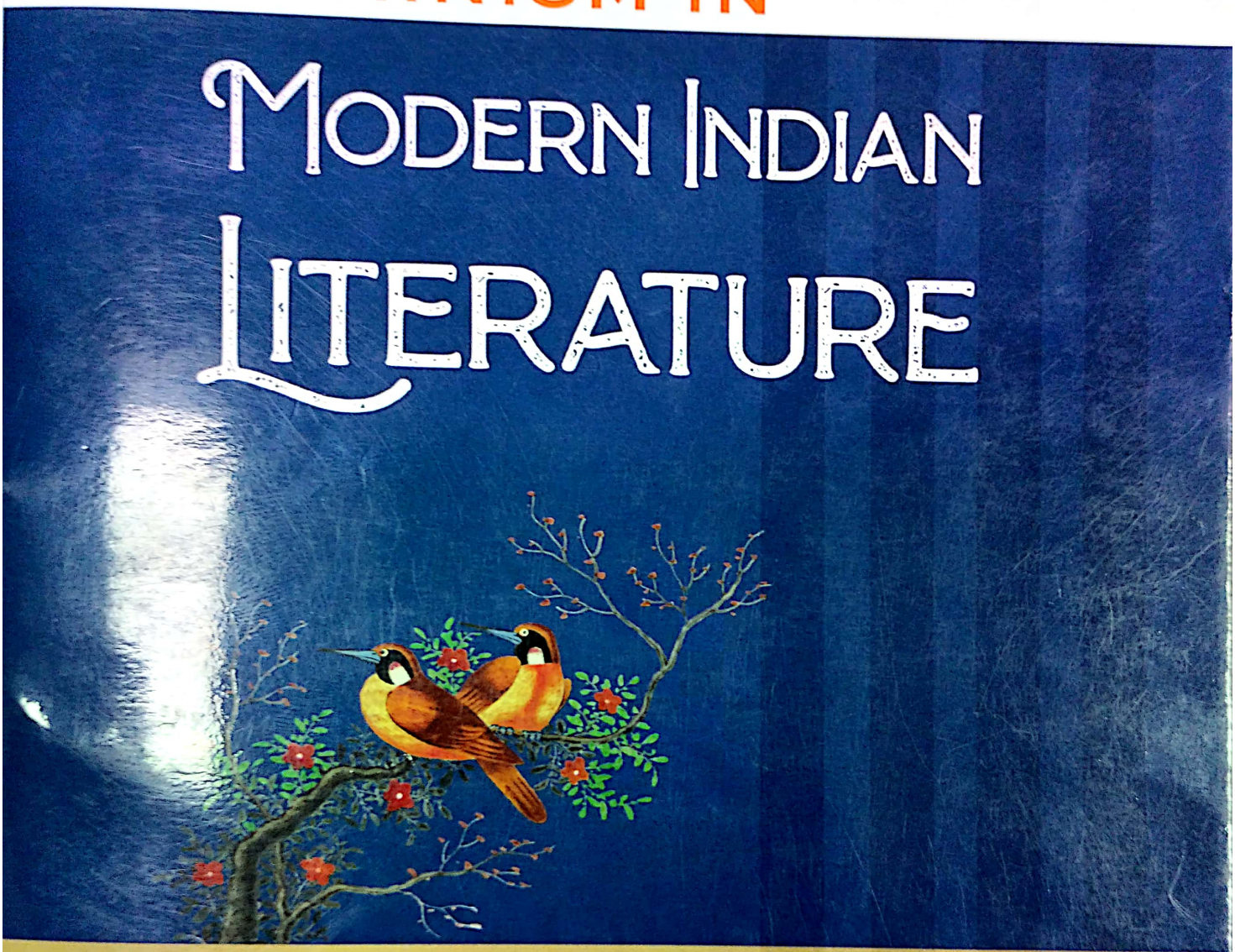

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# TOWARDS THE RIGHT PERSPECTIVE

Dr P. Kusuma Harinath*

Feminism appears to be a concept of very recent origin. But it dates back to many centuries in Indian society. The heroine of *The Mahabharatha*, Drupadi, craves for freedom and equality. She questions the court of Dhritharastra to explain the reasons of punishment proposed to her for a blunder committed by her husband(s). Logically speaking her argument is correct. How can one be punished for the wrong doings of the other? It is just because of the patriarchal society in which she lived where a woman has no place to share in all major issues of life. The court belongs to man. The culprit is a man. The criminal is a man. The crime is of a man. But the punishment is to a woman. How can it be accepted? But the male society fails to give her a reply. Still her questioning makes one to think of the longing of a woman for equality, liberty and individuality on par a man. It becomes very clear that a woman needs economic freedom that gives equality of woman in all aspects of life. Draupadi does not have that freedom so she is forced to experience humiliation, agony frustration and emotional imbalance which she overcomes at the end, of course through violence in the form of Kurukshetra war. Whatever the consequences may be Draupadi stands as an embodiment of what we think today, a move towards feminism.

Indians give great respect and regard to a woman. She is made a half of the man. In fact Lord Shiva is called 'Arthanareeswar'. But this is all in words not in deeds. From the beginning she has been placed high underneath it her freedom, emotions, tastes, interests and her individuality are subdued. In an Indian family it appears, she dominates in all aspects of the family. She is the mother, sister, daughter, friend, guide, philosopher and what not everything, but how long? Until she accepts the decisions of the man. Once she speaks against him all

* *Professor & Head, Department of English, Sri Venkateswara University, Tirupati*

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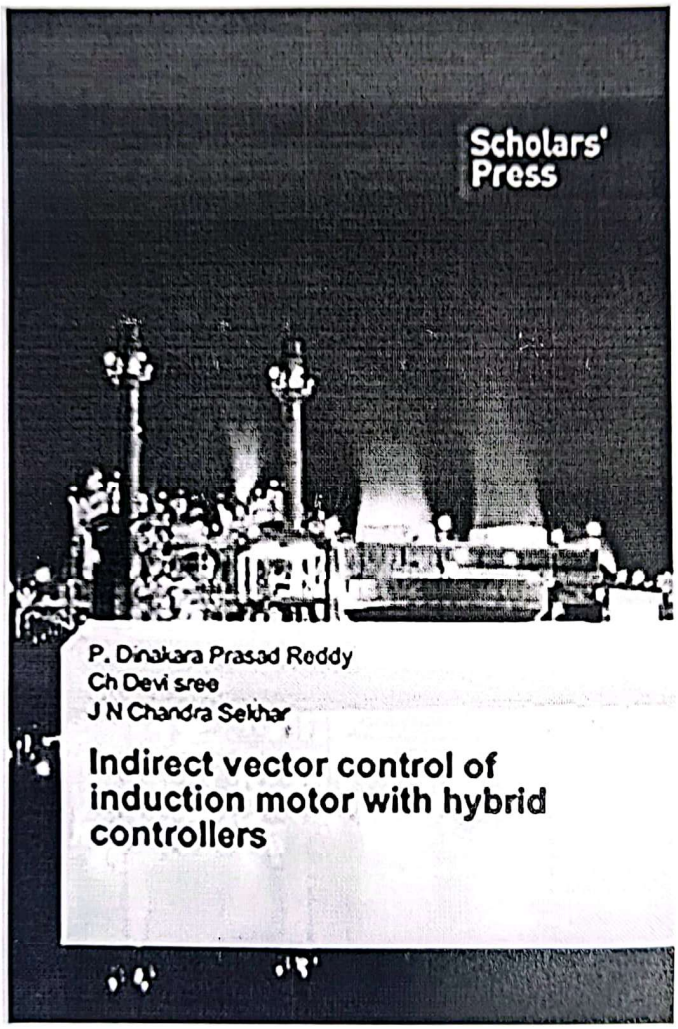


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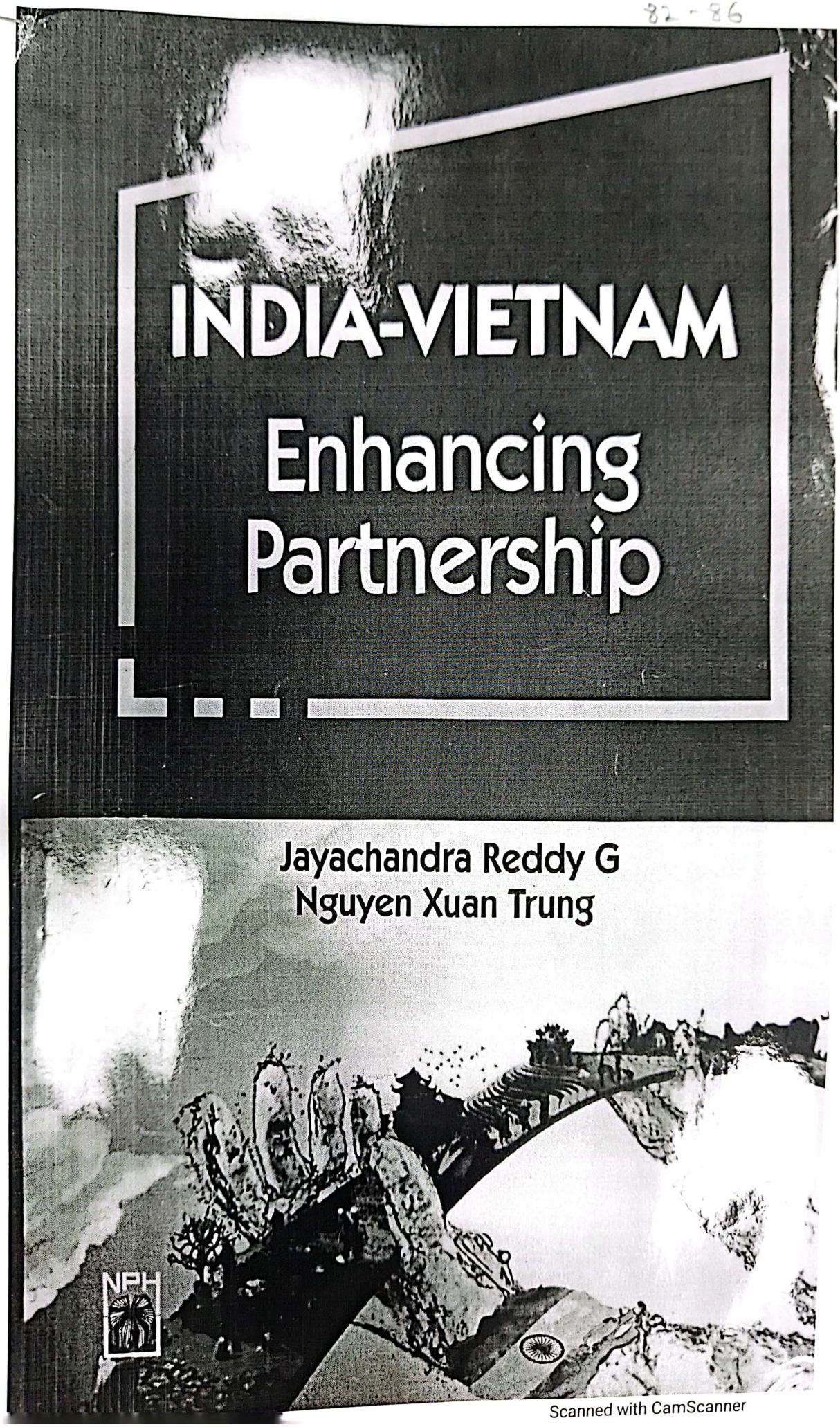


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# INDIA-VIETNAM
## Enhancing Partnership

India-Vietnam relations have been very cordial since their foundations laid by founding fathers of the two countries. The traditionally close and cordial relations have their historical roots in the common struggle for colonialism and imperialism and the national struggle for independence. In recent times, political contacts have been strengthened as reflected in exchange of high-level visits by leaders from both sides. Trade and economic linkages continue to grow. India's thrust under the 'Look East' and 'Act East' policies combined with Vietnam's growing engagement within the region and with India has paid rich dividends. The relations are not restricted to only trade but expanded to the other significant areas like defence, security, science and technology, energy, education and information technology apart from improved people to people contacts.

In view of the emerging geopolitical scenario in the Indo-Pacific region and the challenges from China, both the countries are striving hard to evolve a [illegible]ive strategy which may serve at regional as well as international [illegible]standing India-Vietnam relations, this book serves as a major [illegible]olars interested in India-Vietnam relations, and global and [illegible]olitics.

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# India-Vietnam

## *Enhancing Partnership*

*Editors*

Jayachandra Reddy G

Nguyen Xuan Trung

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# 1

# India and Vietnam: New Horizons

G. Jayachandra Reddy and Nguyen Xuan Trung

India-Vietnam relations have been exceptionally friendly and cordial since their foundations were laid by two friends - President Ho Chi Minh and Prime Minister Nehru. The traditionally close and cordial relations have their historical roots in the common struggle for liberation from foreign rule and the national struggle for independence. Pandit Jawaharlal Nehru was one of the first visitors to Vietnam after its victory against the French at Dien Bien Phu in 1954. President Ho Chi Minh visited India in February 1958.

Vietnam and India have a rich history of diplomatic relations. During the most testing times in its independence movement, India supported the North Vietnamese regime steadfastly. India was also one of the first countries to recognise the Vietnamese government once the consolidation of the country was achieved in the mid-1970s. Both Vietnam and India were also close allies of the Soviet Union during the Cold War.

Though both the countries believed in different political ideologies but the patriotic spirit and political goal was only achieving independence to their respective countries. Of course, Vietnamese have great admiration towards Gandhian philosophy of Peace and Non-violence at the same time Indians always respect the fighting spirit of the Vietnamese who won two great wars against French and the US. Though the political ideologies are different, India and Vietnam leaders have transformed their personal friendships into diplomatic relations and further fostering towards greater partnerships.

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# India-Vietnam Burgeoning Partnership

K. Raja Reddy

India-Vietnam relations has been a rationale governing partnership whether it be a cooperation in the struggle for independence and decolonisation or in the reconstruction of the two countries. Being a lead country in Asia, India always and consistently stood by the people of Vietnam in the latter's oppression and division of Vietnamese society by the outside forces. Ever since India upgraded the diplomatic relations with Vietnam in 1972, New Delhi desired a lasting peace for Vietnam as the Vietnamese were pushed into the vortex of the Cold War rivalry for a long time. With the end of Vietnam War in 1975 and the subsequent unification of the country India became a favoured nation to Vietnam. The change of governments in New Delhi did not alter the foreign policy priorities towards Vietnam. On the foundation of what Jawaharlal Nehru and Indira Gandhi built, the Janata government further strengthened the relations between the two countries, Atal Behari Vajpayee, the then External Affairs Minister, by proclaiming in 1977 stated that India and Vietnam has had mutually advantageous relationship. Vajpayee said: "It is a matter of some pride that India is the first country outside the socialist bloc to which Vietnam, which is as much non-aligned as it is socialist, has turned to us for a close, abiding and mutually advantageous relationship."[1] Vietnam continued to believe that India has been a trusted friend and an ally.

Chinese 'punitive action' against Vietnam in 1979 over the issue of Vietnam's occupation of Cambodia in the previous year 'according to Chinese perspective', demonstrated India's abundant support to Vietnam as Vajpayee abruptly ended his visit o China and returned to New Delhi. The two visits of the Vietnamese Prime Minister 'ham Van Dong to New Delhi in February 1978 and in April 1980 respectively signaled

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the whetting of the relations between India and Vietnam in many fronts chiefly in the diplomatic, economic and cultural spheres. In he political and diplomatic field the China factor received importance as the two nations decided not to allow China advances into their territories. The psyche of the Indians and the Vietnamese forced both the nations to oppose the hegemonic nature of the Chinese. On Mrs. Gandhi's resumption of premiership in 1980 and the Indian recognition of Vietnam backed Cambodian regime clearly indicated India's resolve to support Vietnam against the Chinese intervention in the affairs of Indo-China countries. According to John W. Garver there was a convergence of Vietnamese and Indian views. He stated : "Both were concerned with checking the southern advance of Chinese power."[2] In many of the international fora India condemned the repressive Pol Pot regime and extended support to Vietnam backed Heng Samrin government.[3]

The establishment of Joint Commission for Economic, Scientific and Technical Cooperation during the visit of the Vietnamese Foreign Minister Nguyen Co Thach to New Delhi in December 1982 was considered as the beginning of comprehensive political relationship with the economic and technical backing. For the Vietnamese this was the toughest time because the external economic aid and assistance pledged to Vietnam was stopped because of its troop presence in Cambodia. The economic position of Russia, the main backer of Vietnam was also in bad shape and signaled all the dependent states to look for alternative resources. At this hour of need India appeared as a trusted friend to Vietnamese. During his visit Le Duan, Vietnam Communist Party General Secretary, in September 1984, graciously stated: "The Indian spirit of self-sacrifice and compassion has conquered the hearts of the Vietnamese people. Such is the far and deep sense of the Indo-Vietnamese friendship fostered by the late Prime Minister, Jawaharlal Nehru and late President Ho Chi Minh themselves."[4] A year later Rajiv Gandhi visited Vietnam to an emotional welcome and received an award conferred in the name of Indira Gandhi. Nguyen Van Linh, the reformer General Secretary of Vietnam Communist Party, was the guest of honour at India's 39th Republic Day celebration. At the banquet given in his honour Rajiv Gandhi said:

> *Indian and Vietnam share common objectives and goals in regard to the replacement of the present world order by one which is more just, equitable and democratic, a world which is not menaced by nuclear weapons nor anchored in violence. We are both nonaligned countries firmly believing in peaceful*

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# 19

# Indian Diaspora in Vietnam

M Padmaja

## Introduction

Indians have been trading with East and Southeast Asia since ancient times. From the 1860s down to the early twentieth century, the traders were joined by large number of labourers who went out, or were sent out, largely to work in the plantations in British territories. But, since the end of World War II and following the decolonization of the British Empire, this movement of people changed course. Thus for more than thirty years, India had little obvious interest in the two regions. Instead, the focus of the Indian government was mainly on the Middle East and the Western World

As we speak of the Indian communities in today's Vietnam, it will be instructive to briefly look at the historical background of India's presence in the countries of Indochina which is one of the regions where the Indian civilization had reached as early as the first century A.D. The Indianization of Southeast Asia, referred to by Western scholars as " Farther India" was a saga which lasted for more than a millennium in which Indian religion, art, architecture, dance forms, literature, etc., left an indelible imprint. In the kingdoms of Champa, Funan, parts of Laos and Thailand during the Dvaravati and Lopburi period, the fusion between the Indian and local cultures was clearly evident. Indian *Brahmins* and *Kshatriyas* are said to have married local princesses. The concept of *devaraja* (Godking) and the structure of administration derived from it formed the ruling pattern in these countries. The

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temples of Angkor Wat in Cambodia, the *wats* (temples) of Laos and the monuments in Vietnam bear witness to the rich backdrop of the Indianization of this region in ancient times[2]

The Champa kingdom which was located in the southern part of what is today Central Vietnam, was a highly Indianized Hindu Kingdom, practicing a form of Shaivite Hinduism brought by sea from India. Mỹ Sơn, a Hindu temple complex built by the Champa is still standing tall in Quang Nam province, in Vietnam. **Champa** was conquered by the Vietnamese and today the Chams are one of the many ethnic minorities of Vietnam. Hindu temples are known as Bimong in Cham language and the priests are known as Halau Tamunay Ahier. The Balamon Hindu Cham people of Vietnam make up only 25% of the overall Cham population (the other 75% are Muslims or Cham Bani). Of these, 70% belong to the Nagavamshi Kshatriya caste (pronounced in Vietnamese as "Satrias"), who claim to be the descendants of the Champa Empire. The majority of the Chams in Vietnam are Hindus. A sizeable minority of the Balamon Hindu Chams are Brahmins. In all, approximately 50,000 Chams in Vietnam are Hindus, with another 4,000 Hindus living in Ho Chi Minh City; some of whom are ethnic Cham, but most are Indians (Tamil) or of mixed Indian-Vietnamese descent[3]. Prior to the Vietnam War, there was a vibrant Indian community consisting of primarily Tamils and Punjabis. They practiced a religious syncretism of Hinduism (Brahmanism) with Mahayana Buddhism. Hindu temples serve both Hindus and Buddhists. Indian-Vietnamese, who have been living in Vietnam since the late 1800s and Indian expats who arrived after the Doi Moi economic reforms, are entrepreneurs, business people, professionals and workers [4]. In the year 2011, there were about 2,000 people of Indian origin settled in Vietnam, mainly in Saigon[5].

## Historical Contact of Indians with Vietnam

As regards the Indochinese States, their civilizations differ widely from each other, and each seems to have an entirely individual character; yet they all owe so much to India. It is worth discussing the issue in some detail in these concluding remarks. Indian influence on Indochina was deep in those areas where it operated most continuously, and where there was a strong centralized government run by an oligarchy of princes and dignitaries who, whether laymen or clerics, were impregnated with Indian culture and who by means of an administrative system directly under

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# India-Vietnam Energy Geopolitics in the Indo-Pacific Region

M. Prayaga

India has a long history of affinity with Vietnam in cultural and commercial a... In the struggle for national independence against their respective colonial po... the two countries continued honest support to each other. During the Viet... War against the United States, India extended its moral and political suppo... the cause of Vietnam's national unification. Immediately after the unificat... India recognized the Socialist Republic of Vietnam and extended assistance a... cooperation in various areas including economic, cultural, commercial, scientific a... technological and human resource development.

## India's Look East Policy

In response to the ongoing international political changes, particularly after the implosion of the Soviet Union, security relations were transformed globally. The slow but effectual globalization effects also inspired India to look for new orientation in the political, economic, foreign policy and security spheres. Indian market liberalization reforms in 1991 were aimed at lessening the government's intervention in the business thereby pushing economic growth. The policy opened up the country to global economy. It discouraged public sector monopoly and paved the way for competition in the market. In the post-economic reforms, the country has seen major economic, political, social and foreign policy changes. India's restructure of foreign policy that led to the launch of 'Look East Policy'(LEP) in the 1990s, following which its relations with its eastern

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neighbours got restored to the right track. Initiated by Indian Prime Minister P.V. Narasimha Rao, the LEP has taken the lead role in propelling political, economic and foreign relations with the countries of Southeast Asia.

The termination of Cold War and the rapidly changing geopolitical milieu in the region created a positive environment for the forging of closer relations between India and the Southeast Asian countries. India made constructive approaches to get absorbed in the process of the Association of Southeast Asian Nations (ASEAN). India focused on economic and development cooperation with ASEAN states. India became a Sectoral Dialogue Partner of ASEAN in 1992 which marked a defining moment in India-ASEAN dialogue relations. Subsequently, India was elevated to the status of a full Dialogue Partner in December 1995 after Vietnam became a member of ASEAN in July of the same year. The interaction between ASEAN and India was elevated from the Senior Official meetings to the Ministerial level and promoted cooperation in the political and security field. India also became a member of the ASEAN Regional Forum (ARF), the only security forum of the kind in the Asia Pacific. The mutually growing relations eventually led to the Summit level interaction between India and ASEAN in 2002. [1]

The geopolitics of the region witnessed great changes following the emergence of economically vibrant and militarily powerful China. The Southeast Asian countries welcomed India's overtures perceiving it as a bulwark against the powerful presence of China.[2] New Delhi's clout with the states of the region was boosted following India's bilateral military engagements with Japan and Korea. India has improved its political, economic and security presence in the "Indo-Pacific" region through its engagements with institutions such as the ASEAN Regional Forum, East Asia Summit, The ASEAN Defence Ministers' Meeting (ADMM) and the Regional Cooperation Agreement on Combating Piracy and Armed Robbery against Ships in Asia.

## Indo-Pacific Initiation

Since 2011, the term "Indo-Pacific", a geopolitical region, is being widely used in the global geostrategic discourses. The "Indo-Pacific" – which covers two regions of the Indian Ocean and the Pacific Ocean – comprises the tropical waters of the Indian Ocean and the western and central Pacific Ocean.[3] While India is regarded as a prominent player in Southeast Asian region relative to powers like the United

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# 9

# India–Vietnam Defense Relations: Past to Present

G. Vijay Kumar Reddy and V. Ramesh Babu

India–Vietnam relations have been built on a firm foundation, with close links in culture, history and civilization, mutual trust and understanding as well as the strong mutual support in international and regional fora. The strong affinity between the two countries was established due to their shared historical roots of common struggle for liberation from foreign rule and the national struggle for independence. The foundation of this relationship was laid by the two prominent leaders - Prime Minister Pandit Jawaharlal Nehru of India and President Ho Chi Minh of Vietnam, exchanged visits way back in the 1950s. India had extended her moral support and assistance to Vietnam during its struggle against French colonialism. Both countries have actively cooperated in Non aligned movement (NAM).

In 1975, India granted Most Favoured Nation status to Vietnam in all her trade cooperation. This was further cemented by Bilateral Investment Promotion Agreement in 1997. The development cooperation continued to improve in terms of trade inching upto US$ 395.68 million. A joint declaration on comprehensive cooperation was signed in 2003. Subsequent to this declaration the development cooperation was expanded to information technology, education, space, direct air links and relaxed visa regulations.

It has been progressive increment which reflects the continuation of close relationship that the two countries have maintained. The expansion of trade relations

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has kept pace with the development of two countries. Every field in which India has gained improvement has been shared with Vietnam. By 2015, the bilateral trade stood at US$9 billion, which is likely to reach US$ 15 billion by 2020.

India and Vietnam do not share common borders, both are in different geographical locations, but there seems to be developing an understanding of the need to cooperate on a wide range of issues at the regional and global level. India-Vietnam relations have gained more momentum in recent years. The Post Cold War global strategic developments have its impact on the relationship between the two countries in a significant way. The recent boom in strategic ties between India and Vietnam has to be seen in the context of the emergence of India's Look East Policy. The Post Cold War India-Vietnam relation is for the mutual benefit of the two countries in their national security matters. Vietnam supports India in its peaceful use of nuclear energy and backs India's bid for a permanent candidature in United Nations Security Council reforms. While, India support Vietnam entry into the World Trade Organization. This way it won't be wrong to say that relationship with Vietnam is of very important from the political, economic and strategic point of view.

Vietnam is an important regional partner in Southeast Asia. India and Vietnam closely cooperate in various regional forums such as ASEAN, East Asia Summit, Mekong Ganga Cooperation, Asia Europe Meeting (ASEM). Converging long-term political, economic and strategic interests, aspirations and concerns have driven them to have close partnership. This partnership will enable both countries to harness the vast potential of bilateral relations, drawing upon complementarities and each other's intrinsic strengths, and work together to address regional and global challenges. The evolving strategic partnership is meant for mutual benefit that would work together to meeting the common concerns for the long-term partnership and does not amount to alliance against any third country[2].

## Strategic Relationship

The relationships between the two countries make a lot of sense when they share common interest- maritime security, security of the sea lanes of communication, piracy and natural disasters. Ever since India and Vietnam signed the New Strategic Partnership in 2007, significant improvement in a multifaceted ties ranging from political and economic engagements, security and defense cooperation, science and

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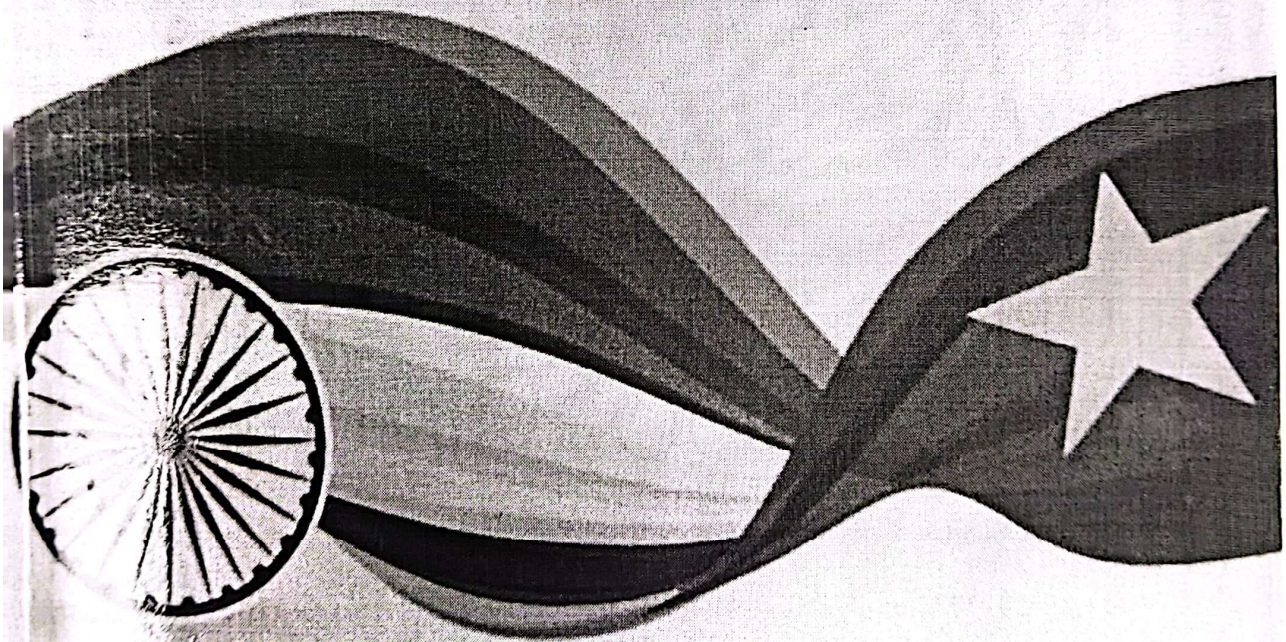
# INDIA VIETNAM

## DEFENCE, STRATEGIC AND ECONOMIC COOPERATION



JAYACHANDRA REDDY G
RAMESH BABU V

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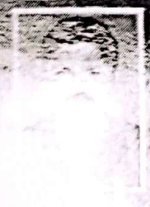
India and Vietnam have developed closer ties and a common destiny based on the cultural ... association with the historical kingdoms and the impact of Buddhist philo... struggle during the colonial rule.

...ks the 45th anniversary of the India-Vietnam diplomatic relations which ... half decades of cooperation has witnessed many spheres of bilateral and ... By both sides have pushed their relations from 'strategic partnership ... partnership' in 2016. Such efforts have been envisaged in a multi-faceted ... tion in political, economic, security, defence, science and technology, edu... ...ourism and building up a closer cultural contact between the people of the two ... Over the years, Vietnam has emerged as a significant player in India's foreign policy (A... ...). The emerging contours of India-Vietnam relations with reference to Indo-Pacific regi... been guided by nuances of geopolitics and praxis of diplomacy and geo-strategic concerns. To have a comprehensive understanding of defence, strategic and economic cooperation between India and Vietnam, this book serves as a major source for scholars interested in India-Vietnam relations and emerging geopolitical dynamics at regional as well as global level.



**Prof. G. Jayachandra Reddy** is the Director and Chairman, Board of Studies, UGC Centre for Southeast Asian and Pacific Studies, Sri Venkateswara University, Tirupati. His areas of research interests are regional geography, security, strategic and geopolitical issues of Southeast Asia and Pacific regions. He published 42 research papers and 13 books, besides participating in 64 national and international conferences. He is a member, Research Committee, ICWA, New Delhi. He was a member of the ICWA, delegation to Vietnam and New Zealand; he was a founder member, Executive Council, Allahabad State University, Uttar Pradesh. He is the Editor-in-Chief, Asia-Pacific Journal of Social Sciences and Editor, Area Studies: A Journal International Studies and Analyses. Prof. Reddy was an Awardee of the Australia-India Council Fellowship (2012-13), Government of Australia. He served as a visiting fellow in different universities of Japan, the Philippines, Taiwan, China, Singapore and Vietnam. He was an Awardee of Vietnam National Day Award-2018, Embassy of Vietnam, New Delhi. Prof. Reddy has organized 9 international conferences apart from 3 workshops and has been serving as a member in different committees at national and international level. He visited countries like Ethiopia, Dubai, Singapore, Thailand, Philippines, Taiwan, Japan, Australia, Vietnam and China.



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# India-Vietnam

## Defence, Strategic and Economic Cooperation

*Editors*

**Jayachandra Reddy G**

**Ramesh Babu V**

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**NEW DELHI**

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# India-Vietnam Relations towards Comprehensive Partnership

*Jayachandra Reddy G and Ramesh Babu V*

## Introduction

India-Vietnam relations have been exceptionally friendly and cordial since their foundations were laid by founding fathers of the two countries - President Ho Chi Minh and Prime Minister Nehru. The traditionally close and cordial relations have their historical roots in the common struggle for liberation from foreign rule and the national struggle for independence. Jawaharlal Nehru was one of the first visitors to Vietnam after its victory against the French at Dien Bien Phu in 1954. President Ho Chi Minh went to India in February 1958. President Rajendra Prasad visited Vietnam in 1959. India initially maintained Consulate-level relations with the then North and South Vietnams and established full diplomatic relations with Vietnam on 7th January 1972. India morally supported Vietnam in several wars in the past. When Vietnam and India began undertaking reforms almost simultaneously in the 1980s and 1990s, a new momentum of relations was created. India's thrust under the 'Look East' policy combined with Vietnam's growing engagement within the region and with India has paid rich dividends. Vietnam is an important regional partner in South East Asia. India and Vietnam closely cooperate in various regional forums such as ASEAN, East Asia Summit, Mekong Ganga Cooperation, Asia Europe Meeting (ASEM) besides UN and WTO.

## India-Vietnam Engagement

So as to revitalize its financial commitment with the ASEAN nations and the major powers of Asia, Prime Minister Narendra Modi

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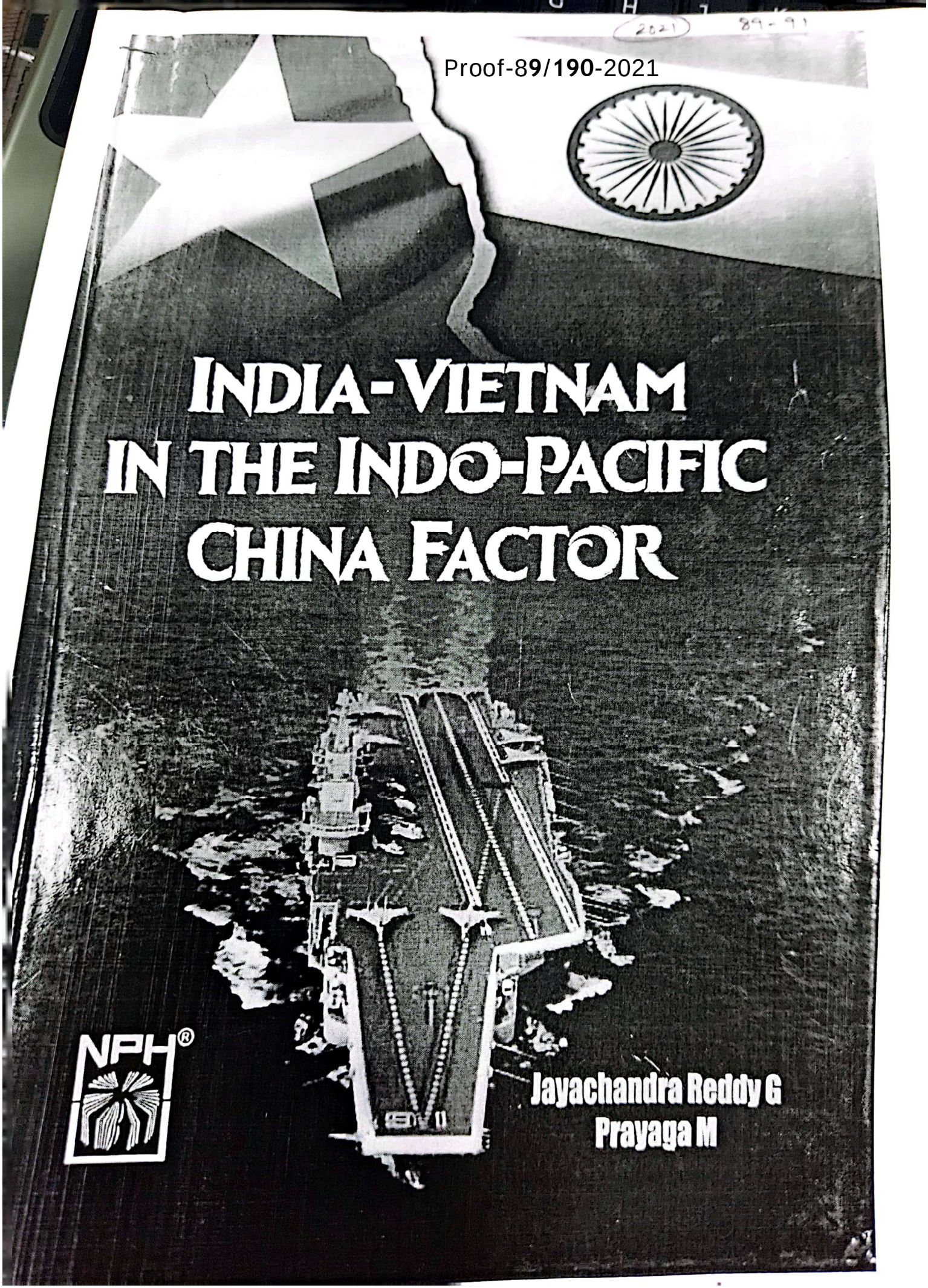

# INDIA-VIETNAM IN THE INDO-PACIFIC CHINA FACTOR

Jayachandra Reddy G
Prayaga M

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# -VIETNAM IN THE INDO-PACIFIC
# CHINA FACTOR

India and Vietnam share historical, political, economic relations a result both the countries are attracting much of the global attention in t emerging geopolitics of the Indo-Pacific construct. Significantly Vietnam enjoys laudable regional connectivity with the ASEAN economies, and a strategic position on the South China Sea. Thus India's 'Act East' policy emphasized Vietnam as a key player in its economic and strategic engagements in the region. The Indo-Pacific region is assuming greater attention with the involvement of major powers like the US, Japan, Australia, South Korea and the European Union for safeguarding shipping routes in the region against the asserting China. In a bid to safeguard the interests of sea lanes of communication, freedom of navigation and to ensure maritime cooperation India and Vietnam will play a major role in the establishment of rule-based order among the stakeholders of the Indo-Pacific region.

This book, an outcome of the papers presented at the International Conference on "*India-Vietnam Relations through the Prism of Gandhian and Ho Chi Minh Philosophies*", is designed to deal with the burgeoning India-Vietnam multidimensional cooperation. The sixteen chapters discuss the pertinent issues of political, economic, strategic and security in considerable detail. This book will be valuable to analysts, academics, researchers and policy-makers.

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# India-Vietnam in the Indo-Pacific: China Factor

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Edited by: Jayachandra Reddy G. and Prayaga M.
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1

# India-Vietnam Cooperation in Emerging Indo-Pacific Order

Jayachandra Reddy G. and Prayaga M.

## Introduction

The time-tested traditional and historical relations of India and Vietnam got further strengthened during their national struggle for freedom in the last century. The visionary leaders, Jawaharlal Nehru and Ho Chi Minh admired each other's nationalistic sentiments, had laid strong base for the growth of contemporary relations between the two nations. On the foundations of their win-win cooperation, present-day relations of India and Vietnam pushed their contacts to several areas like economic, diplomatic, cultural, science and technology and people to people contacts. The sudden surge of geopolitics with end of the Cold War had ushered in immense changes in Asian economic, security and diplomatic spheres. As well, Asia is becoming the centre of world economy. The region could account for more than half of global GDP and about 40 percent of global consumption by 2040. Global cross-border flows are shifting towards Asia, and the "region's growth is becoming more broad-based and sustainable as its constituent economies increasingly integrate with each other."[1] This vividly reveals the growing verve of Asia and major powers appraisal in their economic, strategic and geopolitical calculations of the region.

Against the backdrop of defining shift of power from the West to the East, India's pivotal role in the emerging "Indo-Pacific" theatre is steadily gaining strength. At the turn of 2020, while the COVID-19 pandemic affected health, businesses and disrupted the world trade and movements, China's aggressive standoff at India's border and parallel belligerence in the South China Sea (SCS) caused immense worries to both New Delhi and Hanoi.

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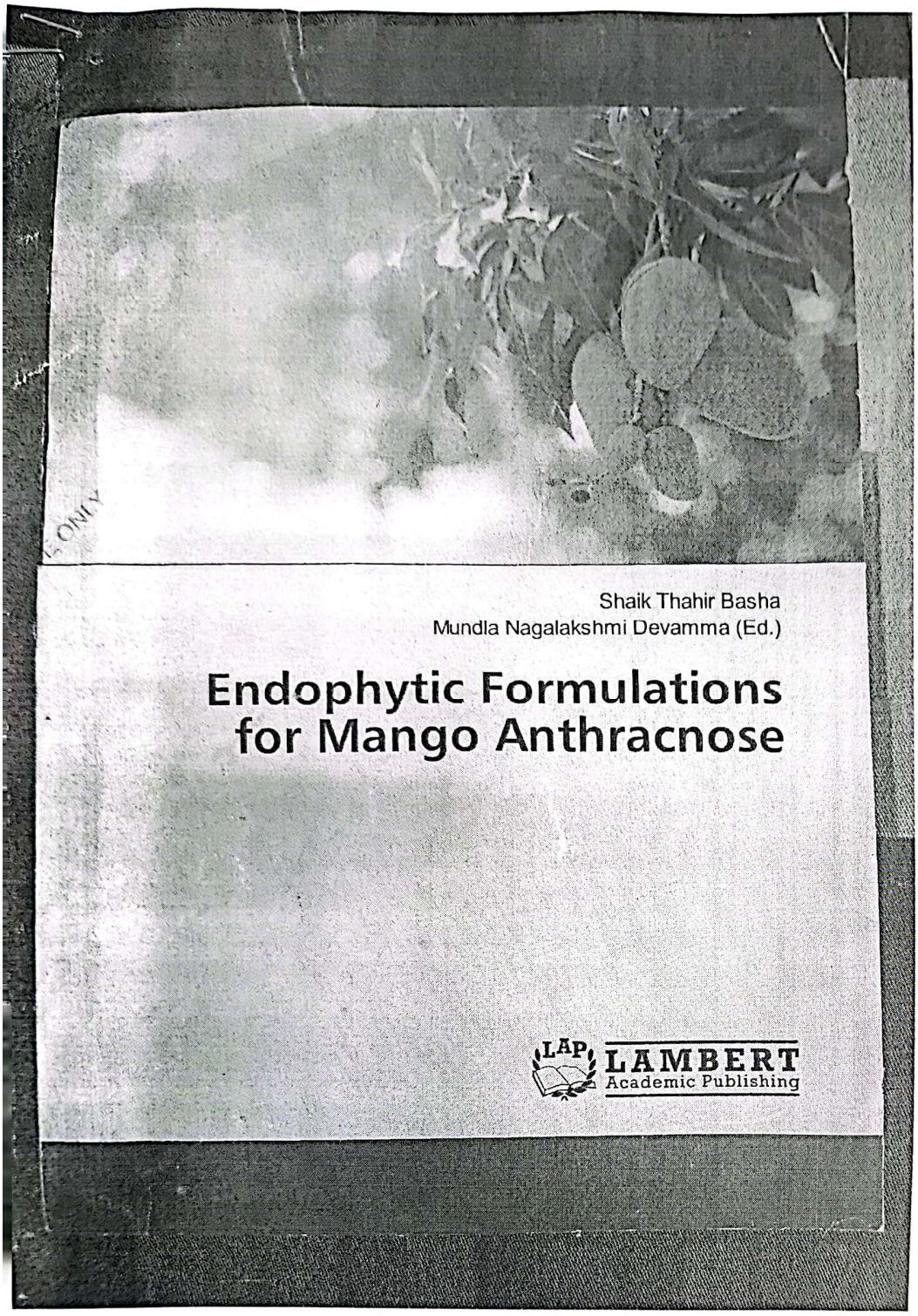

Shaik Thahir Basha
Mundla Nagalakshmi Devamma (Ed.)

# Endophytic Formulations for Mango Anthracnose

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The intent of this book is to provide insights into the enormous benefits of leaf endophytes, the products they make, and how some of these organisms assure to show potential use in agriculture that draws much attention as a sustainable alternative to synthetic fungicides and resistance related issues. Efforts are made in order to reduce inputs of fungicides and add value to ecofriendly agriculture, development of region specific formulations of potential leaf endophytes that can easily adapt the particular agro climatic conditions. In view of the above, a strategy has also been chalked out in this book in order to ensure biological suppression and disease management of mango anthracnose by novel leaf endophytes.



Dr M. Nagalakshmi Devamma Ph.D is currently working as Associate Professor in the Department of Botany of Sri Venkateswara University, Tirupati. She has published sixty research papers in national and international journals, eleven book chapters and has guided students for their Ph.D degree. She received many awards like Talented Scientist Award.

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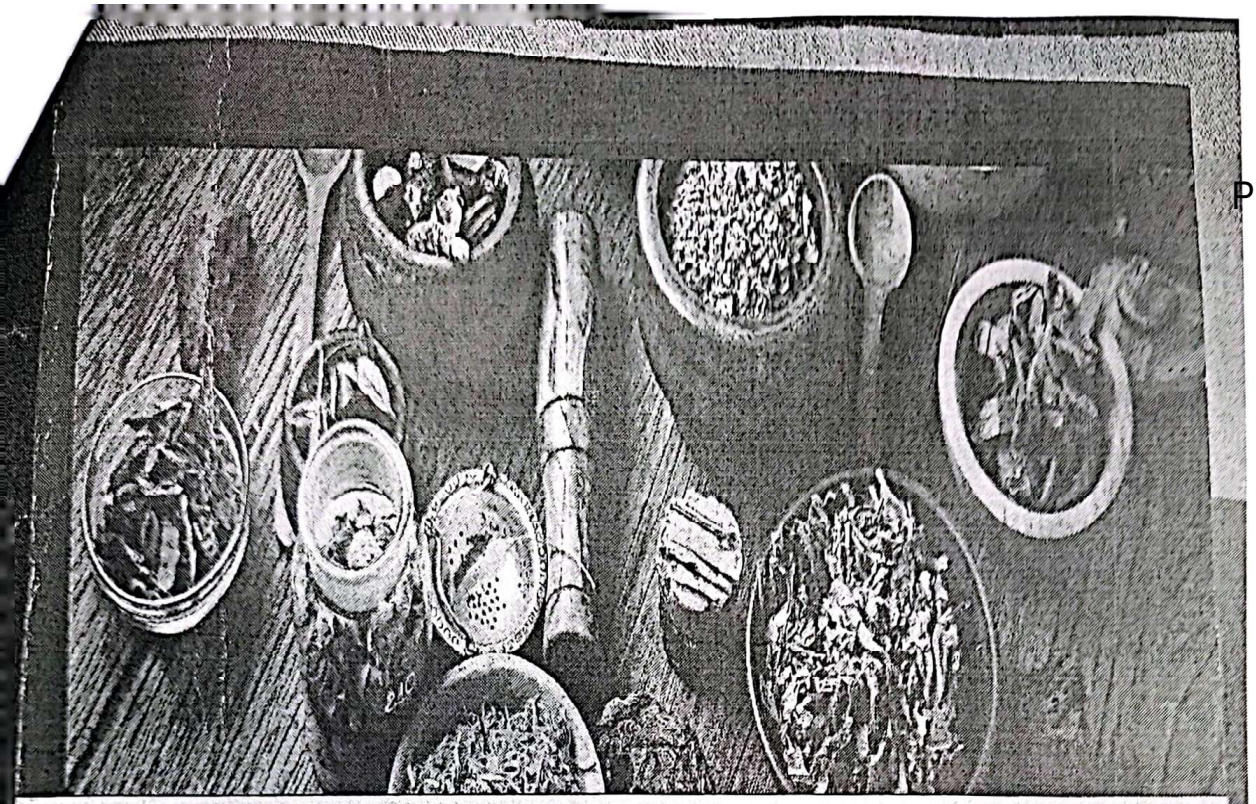

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# Medicinal Plants as Veterinary Therapeutics

## With Special Reference to Rayalaseema Region of Andhra Pradesh, India

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Livestock provides a wide range of services and products including animal power, wool and supplementary nutrition. In spite of environmental compulsions and hardships of remote areas, the spectrum of livestock diversity in India is rich and varied, Rayalaseema region of Andhra Pradesh, India was selected for documentation of Ethno-Veterinary Medicine (EVM). In line with above, this book provides you with the 183 species of medicinal plants that were used as veterinary therapeutics which includes 158 genera and 70 families that were being exploited by the farmers, pet owners, vaidyas, gurus and traditional/road-side healers, local veterinary officers, veterinary graduate students and veterinary assistants for their animal healthcare practices.



Dr M. Nagalakshmi Devamma Ph.D is currently working as Associate Professor in the Department of Botany of S.V.University, Tirupati. She has published more than sixty research papers in national and international journals, more than eleven book chapters and has guided students for their Ph.D. She received many awards like Talented Scientist Award.

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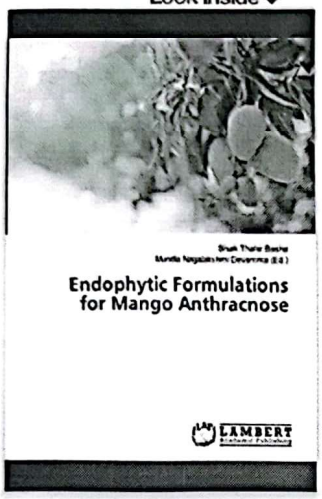


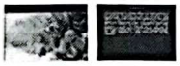

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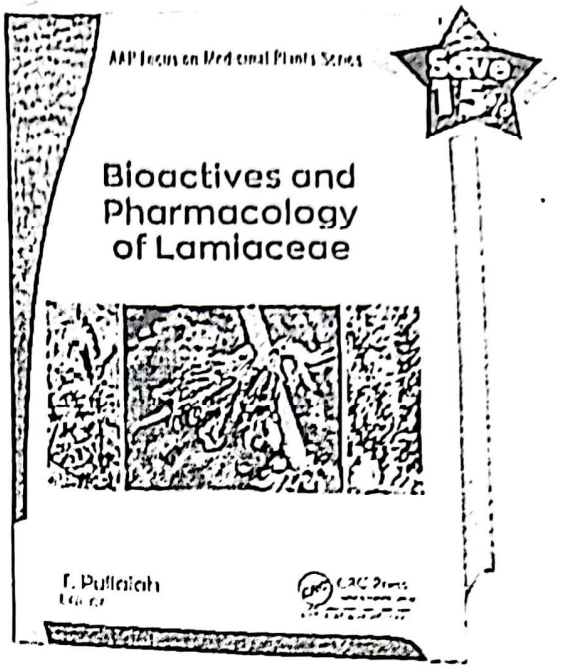
AAP **New Book Announcement**

# Bioactives and Pharmacology of Lamiaceae

Available April 2023




Editor: T. Pullaiah, PhD
Former Professor, Department of Botany, Sri Krishnadevaraya University, Andhra Pradesh, India

This new book, **Bioactives and Pharmacology of Lamiaceae**, provides a wealth of information on plants in the Lamiaceae family, noted for their essential oils bioactives, and pharmacological properties. The chapters investigate a wide variety of species, providing for each an introduction, characteristics, properties, distribution, traditional uses, and current and potential pharmacological applications.

Aiming to be a resource for the development of new drugs based on species within the Lamiaceae family, the volume includes 26 species discussed, including bungleweed (*Ajuga*), Malabar catmint (*Anisomeles malabarica*), beechwood (*Gmelina arborea*), Brazilian mint (Hyptis crenata), rosemary (*Rosmarinus officinalis* L.), holy basil (*Ocimum tenuiflorum*), and many more.

Edited by the noted botanist T. Pullaiah, PhD, this new volume under his AAP Focus on Medicinal Plants book series, will be a valuable reference for those in drug discovery, botany, and fragrance chemists.

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Chapter 9

# Pharmaceutical significance and recent developments in utilizing bacterial enzymes

Srinivasa Rao Vulichi[a,e], Kumar Rupak[b], Appa Rao Chippada[a,c], Durga Srinivasa Murthy Sistla[c], Venkata Rao Chunduri[d], Kapur Suman[e], and Krishna Murthy Naidu Galla[f]

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## 1 Background

Microorganisms comprise a typical group of living creatures on this earth with an active and substantial contribution in a diverse array of bioprocesses. Most of the times microbes are considered as noxious/pathogenic because of their disease-producing tendency in plants and animals. However, various fields linked to agriculture, health, food, pharmaceutical, and organic chemicals have been constructively utilizing the services of an extended variety of microbes for decades. This ability is mainly conferred on them by certain specialized cellular components with catalytic properties called enzymes. The end products of cellular events coordinated by the enzymes could crudely be typed into primary and secondary metabolites. These metabolites have a remarkable identity in the aspects like antibiotic production, stress resistance, ecological balance, Though the enzyme concept has got ancient records, its existence was perceived in 18th century by the pioneering work of scientists like Payen, Berzelius (Ullmann, 2007), Pasteur (Wang and Liu, 1996), and Buchner (Bennett and Frieden, 1969). The initiative taken up by James B Sumner, Cornell University along with Northrop and Stanley led to the isolation of urease from jack beans in the year 1947. It is their accomplishment indeed which has paved the way for large-scale production of several useful enzymes. Pioneering advances in molecular biology and recombinant DNA technology have facilitated researchers to manipulate the enzyme expressions in a specific organism eventually modulating both the nature and yield of metabolites as per the requirement.

Bacterial enzymes of pharmaceutical significance are briefly classified into three main types (Fig. 1) including *therapeutic*, *druggable*, and *metabolic enzymes*. Therapeutic enzymes are employed for the intervention of ailments like cancers, gout, clotting disorders, inflammation, ulcers, and viral infections. Druggable enzymes are the ones which take part in various cellular events like cell wall synthesis, DNA replication, and resistance, in turn, serving as drug targets in treating a plethora of aggravating bacterial infections. Several bacterial species survive as commensals at various regions in the human body and gut is one such crucial region. The sum-total of gut bacteria comprises the *gut microbiome*. These bacteria secrete a diverse array of enzymes which specifically take part in xenobiotic/drug biotransformations thereby modulating their kinetic and dynamic properties.

This chapter attempts to highlight and elucidate some of the interesting aspects of bacterial enzymes concerned with antibiotic resistance, therapeutic utility, and metabolic potential.

## 2 Antibiotics and resistome: A concept of druggable targets

Globally the therapeutic outcome of the majority of the bacterial borne infections is being confronted by the emergence of "Antibiotic Resistance" at a rapid and high frequency. Bacterial cells, when exposed to an intolerable concentration of antibiotics trigger an adaptive response to resist the insult and improve their survival. This feature in bacteria is inherent as well as acquired through chromosomal mutations and gene transfer (Blair et al., 2015). For example, *triclosan* is known to be effective against a broad range of Gram-positive and Gram-negative strains but failed to inhibit members of *Pseudomonas* which is due to encoding

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# Role of various retardants in delaying of senescence in wheat plants

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In this book, an attempt has been made to analyze the possible protection mechanism against the aging process in wheat leaves. To achieve this a comparative study has been performed using metal ions, phytohormones, and polyamens. Among metal ions, there is an valancey dependent protection in photosynthetic reaction during dark incubation of wheat primary leaves. Among phytohormones, kinetin seems to be giving more protection when compared to the auxins and gibberellins. Among polyamines, spermidine is giving more retardation effect of chlorophyll when compare to spermin and putrescine.

Dr. G. Fareeda received her degree from the Department of Biochemistry Sri Venkateswara University, Tirupati, under the guidance of Prof. S.D.S. Murthy. At Present she is working as an assistant professor in Acharya Ranga Agricultural College, Mahanandi, A.P. To her credit she has ten research papers in both national and international journals.

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Motireddy Srinivasulu Reddy
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# Protein and Energy Requirements for Growth and Maintenance L. vannamei

Evaluation Protein and Energy Requirements for Growth and Maintenance of tropical penaeid prawn Litopenaeus vannamei

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This book deals with Shrimp aquaculture, presently approximately one million metric tons of shrimp produces annually. While some 20 species are cultured in various parts of the world, the majority of production is based on eight species. For the eastern hemisphere, the fast growing giant tiger shrimp Penaeus monodon is the most important, while in the western hemisphere, the white shrimp Litopenaeus vannamei is the leading production species. The present investigation was designed to find out Length-Weight relationship and condition factor in-situ for the penaeid prawn, a potential candidate species of Aquaculture of Andhra Pradesh. No research has yet been done on the long-term growth performance of L. vannamei in freshwater in the Tropical regions especially in the Coast of Andhra Pradesh. This study aims to compare the length–weight relationship and condition state in growth stage penaeid prawn cultured in freshwater. The results provide practical data on growth, survival and organism condition for these culture conditions and provide valuable information for the Fishery Biologists and Aquaculture specialists trying to develop the Aquaculture practices of L. vannamei.



Prof. Motireddy Srinivasulu Reddy, currently working as Senior Professor and Chairman, BOS Zoology in the Dept of Zoology, SV University, Tirupati. His area of research includes Aquaculture & Nutrition, Reproductive & Insecticide Toxicology, Bioinformatics. He published 120 research papers in reputed journals and guided 20 Ph.D.,12 M.Phil. Degrees

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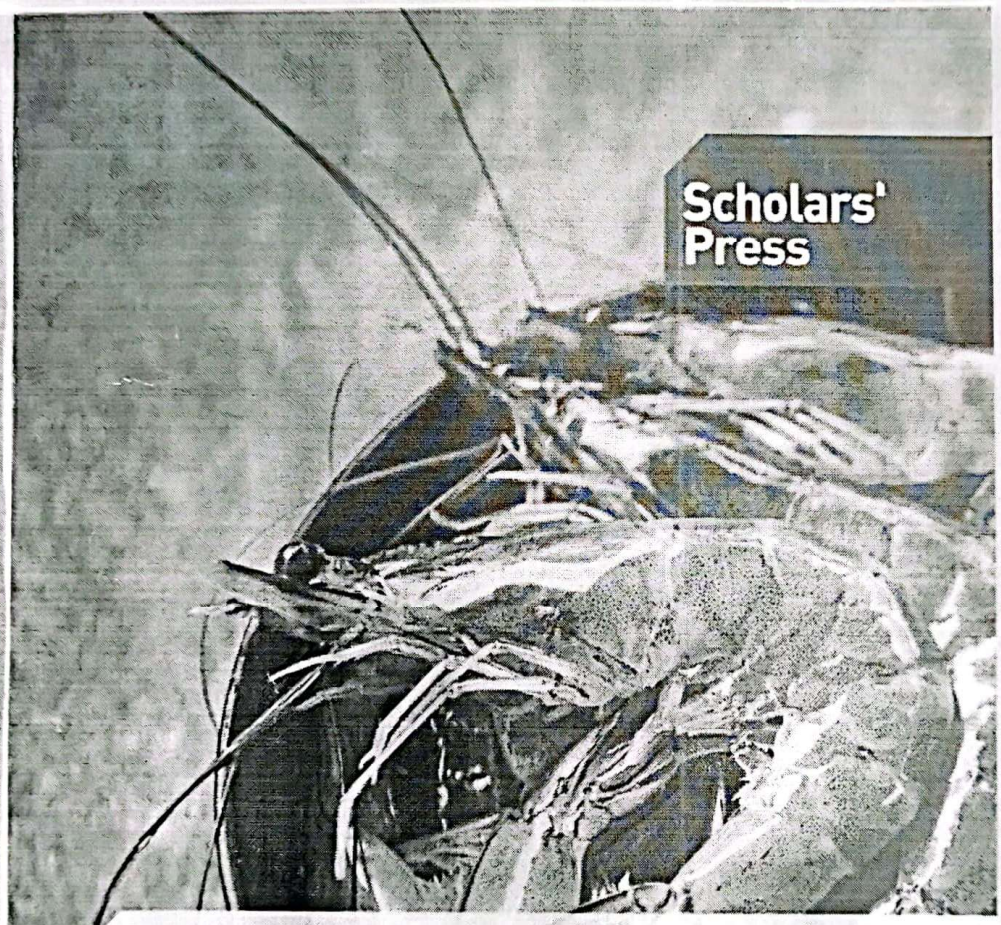


Motireddy Srinivasulu Reddy (Ed.)
Kutagolla Peera
K. Sarada Kumari

# Formulation of Feeds for the Penaeid Prawn through Protein Requirement

Protein Requirements for the Maintenance and Growth Potentials for the Penaeid Prawn Penaeus monodon by feed Formulation

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# Formulation of Feeds for the Penaeid Prawn through Protein Requirement

Shrimp farming has increased over the years, culture methods becoming more intensive. Intensification of the culture system means higher dependence on the use of manufactured dry feed that may represent an important or be the single greatest expense, of the variable cost of the operation. The increased input of nutrients, has the potential of producing negative impacts on aquaculture operations.In order to insure long-term sustainability of the aquaculture industry, environmental impacts have to be minimized. Feed represents one of the primary costs associated with the production of shrimp under semi-intensive and intensive conditions. Hence, over feeding or quality feeds can severely impact Water quality, Production and Economics. In this work, our research team attempted to understand the Penaeus monodon nutrient requirements through adoption of several internationally accepted methodologies. The nutrient evaluation studies including determination of protein requirements, utilization of essential Aminoacids and Nitrogen, Regulation of Aminoacid Catabolism, Protein replacement by Plant protein sources duly formulation of feeds will pave way better understanding of prawn nutrition.



Prof.M.Srinivasulu Reddy, is the Senior Faculty in Zoology with 32years of Teaching and Research experience. His area of research viz., Aquaculture & Nutrition, Reproduction, Toxicology, Aquatic Genomics. He served in several administrative positions and published 130 research papers. he received 16 projects, Guided 20 Ph.D and 12 M.phil.

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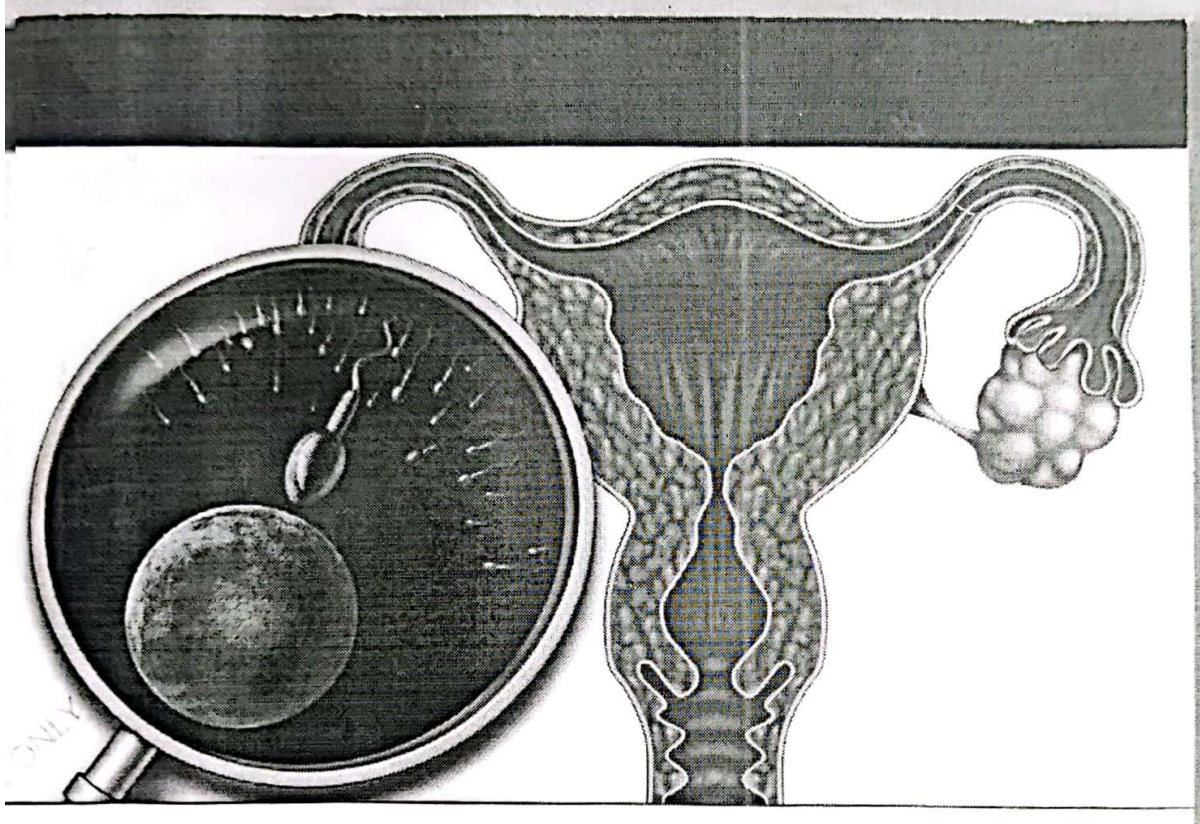

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# Effect of *Ocimum sanctum* linn. leaf extract and Eugenol in female rats

A comparative study on *Ocimum sanctum* linn. leaf extract and Eugenol for screening of fertility potentials in female rat

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The investigation is currently trying to study the antifertility and hepetotoxicity of Eugenol and Ocimum Sanctum Linn. Leaf extract in adult Wistar female rats. In this study administered with Eugenol's pure compound (99%) at a dose of 0.4 ml/day for 15 days with intramuscular injection and administered with Ocimum sanctum leaf extract at a dose of 500 mg /kg body weight/day for 15 days with a gastric gavage, Reproductive tissues such as ovaries, uterus & vagina, vital organs such as liver and serum are taken for learning. Administration of the Eugenol leaf extract and Ocimum Sanctum change the phase of the different estrous cycles. The female reproductive tract is a very dynamic organ system. It experienced many sequential morphological changes during the oestrous cycle, driven by cyclic fluctuations in several reproductive hormones. On this basis of observation, it can be concluded that the administration of Eugenol and Ocimum Sanctum Linn. Leaf extract because of its effective antiestrogenic properties change the biochemical milieu of the reproductive tract, which leads to change the normal status of reproduction in female and thus produces significant antifertility effects.



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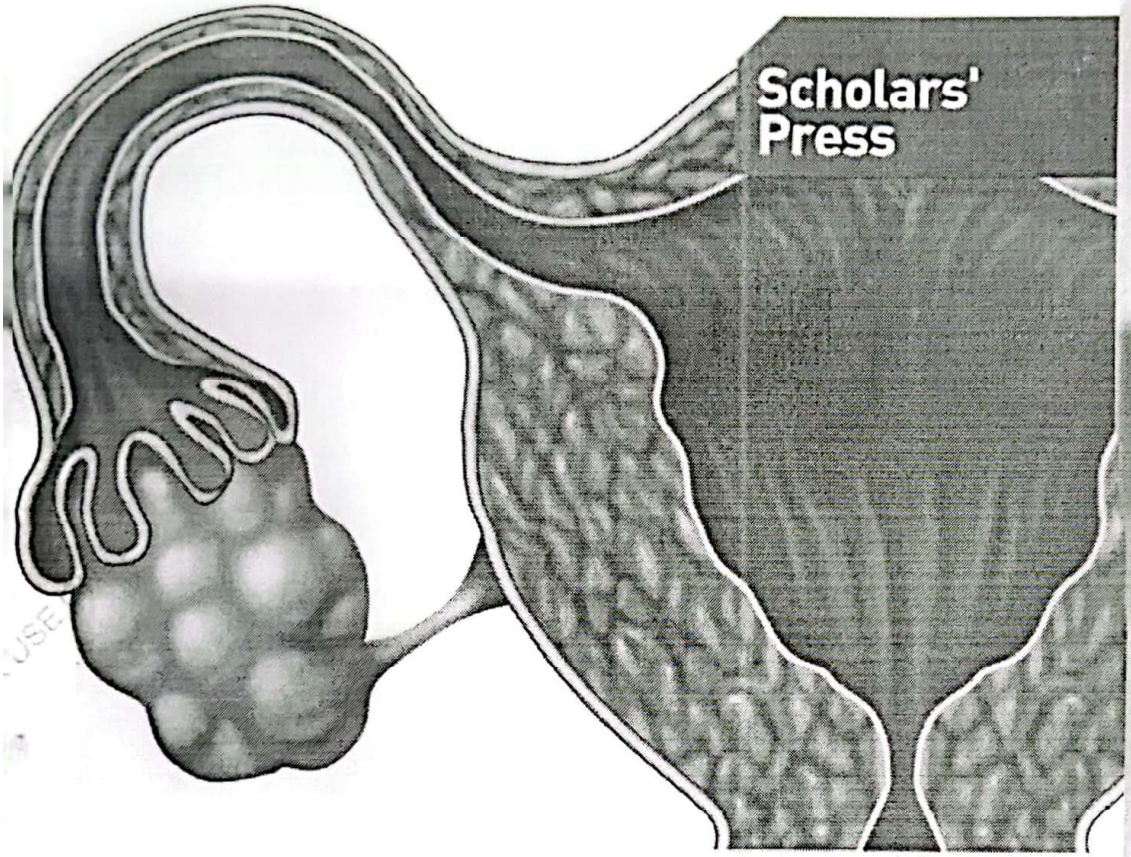
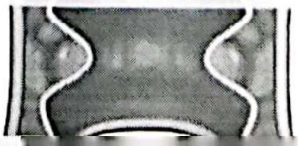



Venkataramanaiah P
M Srinivasulu Reddy

# Role of *Ocimum sanctum* linn. leaf extract in female albino rats

Impact of *Ocimum sanctum* linn. leaf extract on lipid metabolites in female albino rats



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## Role of *Ocimum sanctum* linn. leaf extract in female albino rats

The influence of Ocimum sanctum Linn. leaf extract on some biochemical parameters with reference to antifertility potential in female albino rats. The healthy female albino rats were administered with Ocimum sanctum Linn. leaf extract orally at different dose (100, 200, 300mg/kg body weight/15days) and duration (300mg/kg body weight/30days). The total proteins, total carbohydrates, total lipids, cholesterol, phospholipids and triglycerides were estimated using standard biochemical methods in control and experimental female albino rat tissues like ovary, uterus, vagina, liver and plasma.The ovarian and uterine lipids were enhanced as the dose and duration of the extract increases. The elevated cholesterol levels observed in ovary and uterus but at higher and prolonged dose and duration uterine cholesterol levels were depleted. The enhanced phospholipids can be correlated to decreased oxidative metabolism owing to low level of estrogen in circulation. On the basis of these observations it may be concluded that the extract of Ocimum sanctum leaf at higher dose and prolonged duration owing to its potent antiestrogenic nature and alters the biochemical milieu of the reproductive tract.



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# TECHNOLOGY AND WOMEN EMPOWERMENT

Prof. G. Sandhya Rani • Dr. V. Jagadeeswari



# TECHNOLOGY AND WOMEN EMPOWERMENT

Irrespective of the language, nationality, religion, status, women are playing multiple roles in their way of life. Since 1970s, women have been benefited from women's liberation movements and taken ever grater leads in business education, politics and public life. When compared with pre-independence era, now-a-days women are educated and are participating in all fields on par with men, viz., Economic, Political, Social, Sports, Educational, Entrepreneurship, Navy, Air force, Army, Space Technology, etc. and are contributing a considerable part to the economy. As women became aware of technology they are empowering themselves and enjoying the fruits of technological progress in all domains. Having access to technology, control of it and ability to create and shape it is a fundamental issue. The major aim of any technology is to help end the gender technology gap and empower women and girls to create, innovative solutions to advance for equality in the society. One way or the other technological revolution has changed the lifestyle of human beings. But it has both positive and negative effects on women and girls. On the positive side it is supporting women to have a better standard of living and to participate in decision making processes. On the negative side it is misused to degrade women's status and leading towards raising violence against women. As technology is treated as a knife with sharp edges on both sides, it is the responsibility of everyone to make use of it with right sense so as to promote the wellbeing of human kind.

Hence articles relating to Technology for Women Empowerment in different areas viz., Education, Health, Employment, Children, Politics, Industry, Agriculture, Social, Safety, etc. are invited from academicians, Government Officials, NGO Personnel, Project Directors and Programme Coordinators.

## THE EDITORS



**Prof. G. Sandhya Rani** has been working as Professor and Head of the Department of Women's Studies, Dean of Examinations and Convener of Department of Statistics, Sri Padmavathi Mahila Visvavidyalayam (SPMVV), Tirupati. She obtained her first Post Graduate Degree in Economics from Sri Krishnadevaraya University, Anantapuramu, Andhra Pradesh. She was awarded M.Phil. and Ph.D. degrees in the field of Economics of Sericulture from the same University. She has also obtained post graduate degrees in Women's Studies and Education from Mother Teresa Women's University, Kodaikanal and University of Madras respectively. She has 27 years of experience in Teaching, Research, Training and Extension activities. She has published 60 research papers in reputed journals and books. She has also participated and presented papers in 141 national and international seminars, workshops and conferences and published four books on Sericulture and Rural Development, Development of Women - Issues and Challenges, Asia Pacific Journal of Social Sciences.



**Dr. V. Jagadeeswari** is working as Academic Consultant in Sri Venkateswara University, Tirupati. She did M.Com(Cost Accountancy), M.A. (Eng), M.A., M.Phil., Ph.D. in Adult Education, M.Ed, M.L., B.Li.Sc. and certificate course in COBOL. She was recipient of Raghava Reddy Memorial Gold Medal for securing highest marks. She contributed in the fields of Teaching, Research, Administration and Extension activities. She taught the subjects, Financial Accountancy, Managerial Economics, Entrepreneurship, Management Accountancy, Cost Accountancy, Human Resource Management, etc. She worked as District Manager in APWCFC, Teaching Assistant for Graduation and Post-Graduation courses, Project Officer, Nodel Officer, Placement Officer, Vice-principal of Higher Secondary Institution, NSS Programme Officer, etc. She has received Best Officer award while working as District Manager in APWCFC at district level. She has organized several programmes for the students and community especially for women and children on personality Development, Guidance and Counselling, etc,. She has participated and presented more than 75 papers in National and International Conferences and won one best research paper award. She has published 30 research papers and a book 'Higher Education for Women' as co-author.

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**Technology and Women Empowerment**

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# Empowerment of Women through MGNREGS *Issues and Challenges*

Dr. D. Subramanyam, Dr. D. Yuvaraju and Ms. Guri Rajani

## Introduction

Empowerment is a process aimed at changing the nature and direction of systematic forces, which marginalize women and other disadvantaged sections in a given context. A large segment of Indian womanhood still suffers deprivation and discriminatory attitudes. It is necessary to mobilize the vast women power, if the country has to progress in all sphere of development. Empowerment of women is a long and difficult process which is to be promoted with full public support and this could be successful only when those women living at the lower strata who have been suppressed by the male dominated society taking undue advantage of their lack of education and poverty can rise up to claim their rightful place in their own society. In spite of the draw backs in the implementation of the legislation, significant benefits have already started accruing to women through better access to local employment, at minimum wages, with relatively decent and safe work conditions.

Gender is the inevitable push factor for growth and development of a nation like India. In India women constitute a major share of chronically poor population. The Government has framed different programmes/ schemes to uplift the women from poverty and vulnerability of life. One such women friendly programme is Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) which was enacted in 2005. MGNREGA has provided a unique opportunity to people from rural India to earn their own income without any discrimination of caste or gender.

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# Economic Independence of Women – *A Case Study of Women Self-Help Groups in Andhra Pradesh*

Dr. D. Subramanyam, Dr. D. Yuvaraju and Ms. Guri Rajani

## Introduction

Women as mother of the nation should be strong, aware and alert. The Government of India has continuously been formulation strategies and initiating process to bring women in to the mainstream. In addition, the government has brought about specific legislation to protect and safeguard the rights of women. Women constitute nearly half of the nation's population. They have tremendous talent potential to contribute in harnessing technology for human and social development. Women empowerment concept was introduced at the international women's conference in 1895 at Nairobhi. Empowerment means individual acquiring the power to think and act freely, exercise choice and fulfill their potential as full and equal members of the society. Women's empowerment principally aims at enhancing their social functioning by a quantitative and qualitative change particularly in the field of education, health and employment, which will bring the desired level of change. The government and voluntary organizations are providing many income generating schemes to raise the economic status of women. Women's empowerment is very essential for the development of the society.

## Is it Need of the Day?

Persistence is what makes the impossible possible. Empowerment of women is the pressing need of the day. Empowerment is an active multi dimensional process which should enable women to realize their full identity

Pages: 100-107

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# Empowerment of Tribal Women through Self-Help Groups in Pulicherla Mandal of Chittoor District

Dr. D. Yuvaraju, Dr. D. Subramanyam and Ms. Guri Rajani

## Introduction

Empowerment of tribal women is a challenging issue in the present situation. Without empowering tribal women, meaningful inclusive growth of the country is not possible. Empowerment of tribal women can be measured through the power they have over economic resources to earn income and' their per capita income, access to education, access and availability of professional opportunities and participation in economic decision making and their access to political opportunities. Access to education is the key for economic, social and political empowerment of tribal women. Tribal women empowerment through education is a possible means for inclusive growth. It has direct impact on various aspects of tribal development. Educational attainment increases women's understanding on the present socio-political structure and the existing hurdles on their development Empowering the marginalized tribal women through education will contribute a lot to national development. The educational status of tribal women is very low compared their counterparts in other communities. Education is a powerful tool for country development. Education has the power to raise the status of tribal women. It is a meaning to empowerment the marginalized tribal women around 35 Tribal communities are residing in Andhra Pradesh with different socio-economic background. The present topic make an attempt to analyse the current educational status of Scheduled Tribal women in Andhra Pradesh and the

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# Women Empowerment through SHGs – *A Case Study in Pulicherla Mandal of Chittoor District*

**Mr. M. Sreenivasulu, Ms. Guri Rajani and Dr. D. Subramanyam**

## Introduction

Women empowerment through self-help group constitutes an emerging and fast growing trend towards social and economic development of the nation. Self Help Groups (SHGs) are one of the innovative and much needed schemes to accelerate the women entrepreneurship, women's self-employment and women empowerment. This concept was successfully implemented in Bangladesh and now in India. It has become the wise tool to improve the social and economic. development. Government also provides various financial and non- financial assistance to promote the Self Help Groups for women empowerment. Banks and financial institutions have also realized the impact of the Self Help Groups. Hence they are channelizing their funds for women and rural development through Self Help Groups.

Women Self Help Groups were formed based on the motives like social and economic welfare, awareness of women's rights and duties, building leadership qualities, skill development, etc. Andhra Pradesh Women Empowerment and Poverty Reduction Project was launched to reduce poverty and empower the women. Apart from regular savings, Self Help Groups are engaged in business activities to uplift themselves financially and economically. Self Help Groups in the state are engaged in giving training for sewing, manufacturing of soaps, manufacturing of toys and wires, bringing up of mushrooms etc. Many workshops were conducted

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# Urban Women Entrepreneurs
## *A Case Study in Chittoor District of Andhra Pradesh*

Ms. Guri Rajani, Dr. D. Yuvaraju and Dr. D. Subramanyam

### Introduction

Development of any nation to a great extent depends on the successful organization of productive economic activities, a perspective for which is the presence of good quality entrepreneurs. In other words, in any nation the responsibility of pulling the tempo of economic development ahead falls ultimately on entrepreneur.

Government of India followed the policy for development of entrepreneurship among human e-sources of the country in general and women in particular during post-liberalization regime. Government has set up large number of institution to provide financial and other supportive measures for the growth of entrepreneurship among women. Under the new economic regime, the women entrepreneurs are engaged in small businesses. The major factor responsible for increase in participation of women in economic activities has been spread of general and technical education, growth of IT sector and entrepreneurship as a career.

Entrepreneurship development among women may be looked at from two angles: one is to create the involvement needed for healthy and sound entrepreneurship and the other is to organise more and more rational motivational campaigns for the women entrepreneurship when they take on challenging role and want to adjust their personality needs, family and social life.

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Dr. V. Jagadeeswari

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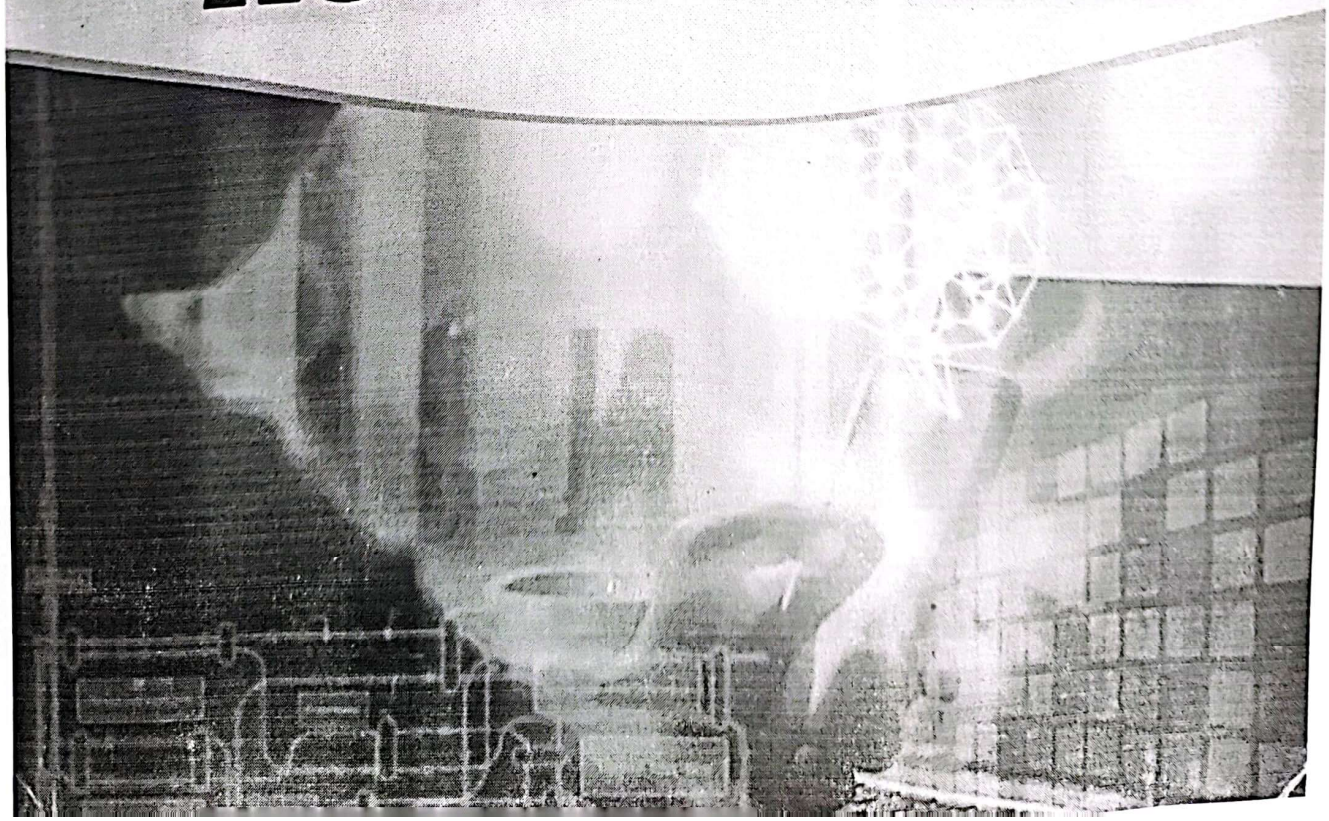

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# FINANCIAL ACCOUNTANCY

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Financial Accountancy is designed to meet the scope and requirements of accounting courses that covers the fundamentals of financial accounting. This book is specifically designed to appeal accounting majors, exposing students to the core concepts of accounting in familiar ways to build a strong foundation that can be applied across business fields. Thoughtfully designed examples are presented throughout each chapter, allowing students to build on emerging accounting knowledge. I strongly believe that the text book 'Financial Accountancy' definitely helps the readers to acquire the strong and thorough knowledge of Financial Accountancy.

This book focuses on theoretical and problematic explanation to understand the Financial Accountancy easily. The book is written in a simple and accessible manner. This book adheres to the scope and sequence requirements of accounting courses nationwide. I have endeavored utmost care to include the core concepts and practical applications of accounting in the book which is relevant and understandable easily by the readers.

## CONTENTS

Introduction to Accountancy; Double Entry System and Accounting Cycle; Journal and Ledger; Subsidiary Books; Cash Book; Petty Cash Book; Bank Reconciliation Statement; Trial Balance; Final Accounts; Rectification of Errors; Bills of Exchange and Promissory Notes; Types of Business Organizations - Part A; Types of Business Organizations - Part B Joint Stock Companies; Ratio Analysis

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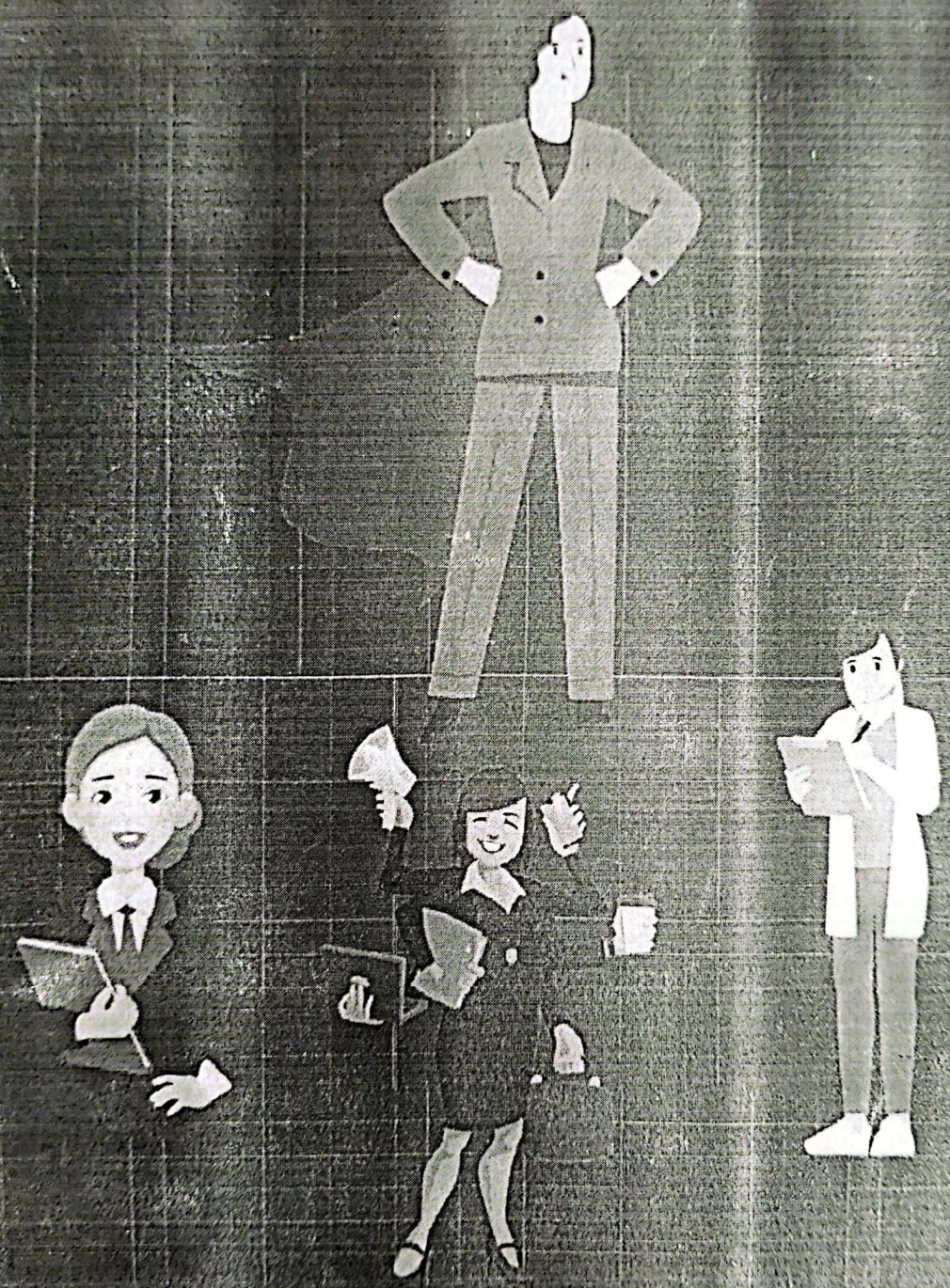
# CONSTRUCTING WOMEN EMPOWERMENT

Prof. G. Sandhya Rani & Dr. V. Jagadeeswari



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# CONSTRUCTING WOMEN EMPOWERMENT


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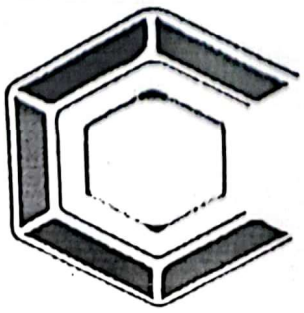


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# 5

# Women Empowerment through SHG Concept

*Dr. P. Suneetha*

## Introduction

"Nothing, arguably, is as important today in the political economy of development as an adequate recognition of political, economic, and social participation and leadership of women" (AmartyaSen, 1999).

Women empowerment is a much-debated issue. Empowerment in true sense means that women can realize their dreams, can take decisions and have access to the resources of the country. Bennet (2002) defines empowerment as "the enhancement of assets and capabilities of diverse individuals and groups to engage, influence and hold accountable the institutions which affect them". Women's empowerment can lead to Economic development and there exists a bi-directional relationship between the two. Women's empowerment means women have equal earning opportunities, political participation and access to other constituents of development like health and Education (Duflo, 2011). Women empowerment leads to economic development. Expenditures on children go up when transfer payments are given to women and not their husbands. Higher spending on education promotes human capital accumulation which in turn leads to economic growth (Doepke and Tertilt, 2011).



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# 8

## Education is a mode for Women Empowerment

*Dr. V. Jagadeeswari*

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*"The roots of education are bitter, but the fruit is sweet"*– Aristotle.

*"Education, Leading To Financial Independence, Has Surely Made Women More Empowered"*– Sudha Murty.

### Introduction

Human Resources are the base for development of any country. Human resources contribute for the National Production and Economic Development. Human Resources include workforce, entrepreneurs, business people, employees, etc. Human Capital sometimes referred as Human Resources. The investment in Human Resources means nothing but expenditure incurred for Educational Programmes. In India, Education Sector comes under Ministry of Human Resource Development (HRD). HRD execute educational programmes without any bias. But some gaps are found in the execution of such programmes in Indian social context. This gap lies in family as well as in society and are diversified in all fields such as education, health, income, securing jobs, social status, etc. With regard to education the gap lies based on gender. The statistics relating to enrolment of students from Primary to Higher



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**Technology and Women Empowerment**

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# TECHNOLOGY AND WOMEN EMPOWERMENT

Irrespective of the language, nationality, religion, status, women are playing multiple roles in their way of life. Since 1970s, women have been benefited from women's liberation movements and taken over grater leads in business education, politics and public life. When compared with pre-Independence era, now-a-days women are educated and are participating in all fields on par with men, viz., Economic, Political, Social, Sports, Educational, Entrepreneurship, Navy, Air force, Army, Space Technology, etc. and are contributing a considerable part to the economy. As women became aware of technology they are empowering themselves and enjoying the fruits of technological progress in all domains. Having access to technology, control of it and ability to create and shape it is a fundamental issue. The major aim of any technology is to help end the gender technology gap and empower women and girls to create, innovative solutions to advance for equality in the society. One way or the other technological revolution has changed the lifestyle of human beings. But it has both positive and negative effects on women and girls. On the positive side it is supporting women to have a better standard of living and to participate in decision making processes. On the negative side it is misused to degrade women's status and leading towards raising violence against women. As technology is treated as a knife with sharp edges on both sides, it is the responsibility of everyone to make use of it with right sense so as to promote the wellbeing of human kind.

Hence articles relating to Technology for Women Empowerment in different areas viz., Education, Health, Employment, Children, Politics, Industry, Agriculture, Social, Safety, etc. are invited from academicians, Government Officials, NGO Personnel, Project Directors and Programme Coordinators.

## THE EDITORS



**Prof. G. Sandhya Rani** has been working as Professor and Head of the Department of Women's Studies, Dean of Examinations and Convener of Department of Statistics, Sri Padmavathi Mahila Visvavidyalayam (SPMVV), Tirupati. She obtained her first Post Graduate Degree in Economics from Sri Krishnadevaraya University, Anantapuramu, Andhra Pradesh. She was awarded M.Phil. and Ph.D. degrees in the field of Economics of Sericulture from the same University. She has also obtained post graduate degrees in Women's Studies and Education from Mother Teresa Women's University, Kodaikanal and University of Madras respectively. She has 27 years of experience in Teaching, Research, Training and Extension activities. She has published 60 research papers in reputed journals and books. She has also participated and presented papers in 141 national and international seminars, workshops and conferences and published four books on Sericulture and Rural Development, Development of Women - Issues and Challenges, Asia Pacific Journal of Social Sciences.



**Dr. V. Jagadeeswari** is working as Academic Consultant in Sri Venkateswara University, Tirupati. She did M.Com(Cost Accountancy), M.A. (Eng), M.A., M.Phil., Ph.D. in Adult Education, M.Ed, M.L., B.Li.Sc. and certificate course in COBOL. She was recipient of Raghava Reddy Memorial Gold Medal for securing highest marks. She contributed in the fields of Teaching, Research, Administration and Extension activities. She taught the subjects, Financial Accountancy, Managerial Economics, Entrepreneurship, Management Accountancy, Cost Accountancy, Human Resource Management, etc. She worked as District Manager in APWCFC, Teaching Assistant for Graduation and Post-Graduation courses, Project Officer, Nodel Officer, Placement Officer, Vice-principal of Higher Secondary Institution, NSS Programme Officer, etc. She has received Best Officer award while working as District Manager in APWCFC at district level. She has organized several programmes for the students and community especially for women and children on personality Development, Guidance and Counselling, etc,. She has participated and presented more than 75 papers in National and International Conferences and won one best research paper award. She has published 30 research papers and a book 'Higher Education for Women' as co-author.

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# Multiple Abilities Beyond Disability
## *A Study on Empowerment of Differently Abled Women*

Dr. V. Jagadeeswari

### Introduction

India has signed and ratified both CEDAW and the United Nations Convention on the Rights of Persons with Disabilities (CRPD). Article-41 of the Constitution of India which forms part of the Directive Principles of State Policy explicitly mentions "disablement" as a condition for which the State is to strive, to provide assistance in certain matters including education, work, etc. If women cannot access the justice system, they are excluded from rights. Even within the disability sector, the gender gap in access to and utilisation of health related services is stark. Access to treatment services and distribution of aids & appliances is another robust indicator of the extent of gender gap. For instance, data from the Artificial Limbs Manufacturing Corporation of India (ALIMCO), Bhubaneswar reveals a 2:1 ratio among the male and the female users.

### Disability is not a curse, but a blessing for different Ability

The term *differently abled* is sometimes used as a substitute for *disabled* or *handicapped*. *Differently abled* emphasizes the fact that many people with disabilities are quite capable of accomplishing a particular task or performing a particular function, only in a manner that is different from or takes more time than that of people without the disability. On the other hand, *differently abled* is often criticized as an awkward euphemism and in some cases may be taken as offensively condescending by disabled people themselves. Like *challenged*, it is used most frequently in academic,

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# Impact of Information and Science Technologies on Women Empowerment in India

Dr. P. Suneetha

## Introduction

Women in general do not have a strong presence in science and technology. This is attributed to two broad issues: first, women's perception of their role and function in society, and second, society's expectation of their contribution. Women's involvement in science and technology encounters bias in regard to disciplines and academic or professional level of responsibility. Women are divided between two spheres: the management of the home and family, and the fulfillment of job responsibilities. Family commitments, either as the women's choice or as a result of cultural enforcement, have impaired women's capacity to meet their potential, and put them at a disadvantage in many science and technology-related jobs that are dynamic and competitive in nature.

The reality of women's lives remains invisible to men and women alike and this invisibility persists at all levels beginning with the family to the nation. Although geographically men and women share the same space, they live in different worlds. The mere fact that – *Women hold up half the sky* - does not appear to give them a position of dignity and equality. True, that over the years' women have made great strides in many areas with notable progress in reducing some gender gaps. Yet, the afflicted world in which we live is characterized by deeply unequal sharing of the burden of adversities between women and men. Sprawling inequalities persist in their access to education, health care, physical and financial resources and opportunities in the political, economic, social and cultural spheres.

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# Adoption of Science and Technology – *A Study on SHG Women*

Dr. D. Ramana and Dr. D. Raja Rajeswari

## Introduction

The nature and field of technology transfer depends upon the stage of a country's development, its resource endowments, requirements and priorities, on the one hand, and availability of technology which can be transferred and terms and conditions on which it is offered for transfer. The basic features of technology transfer have to be kept in mind while dealing with the transfer of technology to rural areas and selection of technology as appropriate not only from technical point of view but also from socio-economic angle. It has universally been recognized that technology transfer in rural areas is of special importance because scientific and technological knowledge and other factors of production in India are immobile particularly between modern urban sector and traditional rural sector and the latter cannot sustain itself against competition from the former with-out systematic and resolute application of scientific information in the various fields in the rural areas. Even for the programmes for removal of poverty and making life of the rural population better and more meaningful, systematic application of scientific knowledge has become an essential pre-requisite.

The innovative technologies already developed in different fields for generating rural economy in agriculture, forestry, poultry, fishery, animal husbandry and for making rural life better by providing better health practices, modern medical treatment, etc. since independence have not been meager. However, there has not been sufficient mobilization of the

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# Role of Sports in Empowering Mary Kom
## *A Case Study*

Dr. K. Srilatha Kishori

### Introduction

The word "Empowerment refers to increasing the spiritual, political, social, educational, gender, or economic strength of individuals and communities. Today sports and physical activity as a strategy for the empowerment of girls and women has been gaining recognition worldwide. Women could be empowered through education, sports and physical activities and by giving them equal opportunities in different walks of life. A woman is both 'Mahamaya' and 'Maha Shakti' and holds the key of the world. As "Swami Vivekananda" wrote that it is very difficult to understand why in this country so much difference is made between men and women, whereas the Vedanta declares that one and the same Conscious self is present in all beings. In short, woman empowerment is the breaking of personal limitations. Sports and Physical Education play important and major role in all these segments of women Empowerment.

Empowerment can be defined as a "multi-dimensional social process that helps people gain control over their own lives. It is a process that fosters power in people, for use in their own lives, their communities, and in their society, by acting on issues that they define as important" (Page and Czuba, 1999). In the same way, women's empowerment refers to "women's ability to make strategic life choices where that ability had been previously denied them". Accordingly, empowerment is central to the processes of maintaining the benefits of women at individual, household, community and broader levels (Malhotra et al., 2009). It involves the action

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Ramana Dabbara

# GENDER EQUALITY AT HOME - A STUDY ON WORKING MEN AND WOMEN

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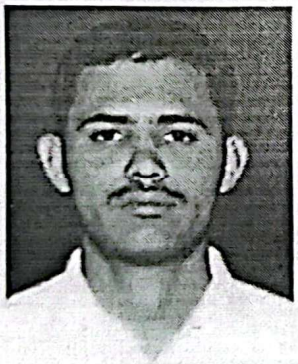
# GENDER EQUALITY AT HOME - A STUDY ON WORKING MEN AND WOMEN

The present study analyzed Gender Equality at home because gender equality begins at home, and families are at the front lines of change. For the next generation, the examples set at home by parents, care-givers and extended family are shaping the way they think about gender and equality. An exclusive questionnaires was prepared for the purpose of data collection through online survey tool of Google form survey tool, the sample of the present study was taken from the both working men and women thorough online survey with purposive convenience method. Results : Majority 63% of men and 50% of women respondents also agree with the statement of woman's most important role in care of home and children. Majority 67% of men and 65 % of women respondents are agree with the statement of Household expenses are the responsibility of the man, even if his wife can help him. Half of the both (50% of men and 50% women) respondents are agreed with the statement of Taking care of cleaning is a responsibility for women.



Dr. D. Ramana did M.A. Ph.D. in Women's Studies; he is working as Academic Consultant in Centre for Women's Studies, S.V. University, Tirupati Since September, 2012. Published 30 papers in various National and International journals and authored 7 Books. He had Life Membership in IAWS and member in editorial Board of IJWD.

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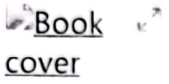


Bioenergy Research: Basic and Advanced Concepts pp 73–91



# Influence of Significant Parameters on Cellulase Production by Solid-State Fermentation

M. Subhosh Chandra, P. Suresh Yadav, Pallaval Veera Bramhachari & Narasimha Golla

Chapter | First Online: 23 March 2021

217 Accesses | 1 Citations

Part of the Clean Energy Production Technologies book series (CEPT)

## Abstract

Cellulases become an area of unique attention in bioremediation methods owing to their capability to breakdown cellulose. Development of cost-effective, high titer of attractive enzymes by fungi is a challenge. The overproduction of dynamic enzymes which cut various β-1,4-glycosidic bonds still wreck a challenge and is the key blockage for the cellulosic biomass transformation. Microbes are an eye-catching topic for production of cellulases because of their enormous prospective for production of cellulase, enzyme intricacy, and severe habitation variability. Microbial cellulolytic



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Bioenergy Research: Basic and Advanced Concepts pp 93–117



# Influence of Xenobiotics on Fungal Ligninolytic Enzymes

B. S. Shanthi Kumari, Kanderi Dileep Kumar, K. Sai Geetha, G. Narasimha & B. Rajasekhar Reddy

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Part of the Clean Energy Production Technologies book series (CEPT)

## Abstract

White rot fungi (WRF) (belonging to the Basidiomycota family) are considered as the most efficient microorganisms to degrade lignin polymer through secretion of lignin-modifying enzymes such as oxidases (laccase) and peroxidases (lignin peroxidase and manganese peroxidase). Non-specific nature of these LMEs has a wide range of industrial and environmental applications including biodegradation and bioremediation of xenobiotics. Environmental pollution was generally caused by the extensive use of xenobiotics in the ecosystem.

https://link.springer.com/chapter/10.1007/978-981-33-4611-6_4

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Cost Effective Technologies for Solid Waste and Wastewater Treatment

Advances in Environmental Pollution Research

2022, Pages 25-37

# Chapter 3 - Bioremediation approach for treatment of soil contaminated with radiocesium

M. Srinivasulu [a b], G. Narasimha [c], A.J. Francis [a d]

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https://doi.org/10.1016/B978-0-12-822933-0.00006-1

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## Abstract

Radioactive cesium contamination of the environment due to nuclear weapons testing, nuclear reactor accidents, and past waste disposal practices at nuclear facilities is a major concern. Much attention is given to $^{137}Cs$ because of its γ-radiation, long half-life, and solubility in water. Cs contamination of the soils at Chernobyl and Fukushima was mainly confined to the topsoil layer. Several remediation methods such as physical (soil excavation), chemical extraction, and bioremediation using plants and microorganisms have been proposed. To date, no cost-effective techniques for cleaning the soils contaminated with cesium have been found. Microorganisms play a key role in the transformations of toxic metals and radionuclides in contaminated soils and wastes. In this chapter, we review the potential bioremediation of Cs contamination using microorganisms such as bacteria, fungi, mycorrhizae, and algae and microbial by-products.

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## Keywords

Radiocesium; Soil contamination; Remediation; Microorganisms; Bacteria; Fungi; Algae

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Cost Effective Technologies for Solid Waste and Wastewater Treatment

Advances in Environmental Pollution Research

2022, Pages 115-134

# Chapter 11 - Recent trends in bioremediation of pollutants by enzymatic approaches

M. Srinivasulu [a], M. Subhosh Chandra [b], Naga Raju Maddela [c], Narasimha Golla [d], Bellamkonda Ramesh [e]

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## Abstract

Microbial enzymes play a tremendous role in the bioremediation of xenobiotics/pollutants. In these days, the use of pesticides has become a major need to improve the crop productivity in order to meet the demand for food for the growing population all over the world. Therefore, the pesticides have become an integral part of the modern agriculture. Rapid industrialization also becomes an important source of pollution due to the release of untreated/partially treated waste materials from different industries globally. Therefore, in addition to pesticides other pollutants such as antibiotics, heavy metals, and industrial wastewater pollutants, i.e., hydrocarbons, aromatic substances, diphenylmethane, chlorine compounds, surfactants, and dyes, also dramatically pollute the environment. In this chapter, we mainly focused on the recent advancements in enzyme technology for the bioremediation of pollutants from the environment and bioconversion of agro-based wastes into value-added products.

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## Keywords

Enzymes; Bioremediation; Pollutants; Pesticides; Heavy metals; Agricultural wastes

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Cost Effective Technologies for Solid Waste and Wastewater Treatment

Advances in Environmental Pollution Research

2022, Pages 265-290

# Chapter 20 - Cost-effective biogenic-production of inorganic nanoparticles, characterizations, and their antimicrobial properties

Kishore Kumar Kadimpati [a], Narasimha Golla [b]

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## Abstract

Biogenic synthesis is known to be a safer alternative to conventional physical and chemical methods of nanosynthesis due to its ecofriendly nature and low cost. Inorganic nanoparticles are considered a secure, inexpensive, green technology as biologically supported development does not release harmful materials and is useful in developing multifunctional nanoparticles to aid in biomedicine, water treatments, and nanobiotechnology in the foreseeable future. Agro, fruit, and pulp waste were used as capping/reducing agents for biogenic production. Nanomedicine uses biocompatible nanomaterials as diagnostic and therapeutical tools. Nanomaterials are of much interest and utilized in several fields, including aesthetic dental applications, antibacterial coatings, hydro fiber dressings, antioxidant formulations, antiinflammatory applications, suppressing autacoid release in inflammatory reactions, food packaging and preservation applications, etc. In this view, various biogenic capping/reduction agents used for nanoparticle synthesis with their antibacterial, antiinflammatory, antitumor, antimicrobial, and other biological applications have been addressed.

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## Keywords

Nanobiotechnology; Green biosynthesis; Characterization; Antibacterial activity; Antifungal activity

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Copper Nanostructures: Next-Generation of Agrochemicals for Sustainable Agroecosystems

Nanobiotechnology for Plant Protection

2022, Pages 45-80

# Chapter 3 - Biosynthesis and characterization methods of copper nanoparticles and their applications in the agricultural sector

G. Bhagavanth Reddy [a], K. Girija Mangatayaru [a], D. Madhusudan Reddy [b], Suresh Babu Naidu Krishna [c], Narasimha Golla [d]

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## Abstract

Among several nanomaterials copper nanoparticles (CuNPs) are gaining much attention due to their special properties such as flexibility, ductility, high surface area-to-volume ratio, and high yield strength. Copper is inexpensive and abundant in nature. CuNPs have a wide range of applications such as antimicrobial, antioxidant, and catalytic activities in biomedical and agricultural sectors. This chapter presents a detailed account of CuNPs by physical, chemical, and biological methods, characterization, techniques, and their prospective applications in the agricultural sector.

Previous Next

## Keywords

Copper nanoparticles; Synthesis and characterization methods; Applications biomedical agricultural sector

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2022, Water Science and Technology



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## ఆచార్య నాగోలు కృష్ణారెడ్డి

శ్రీవేంకటేశ్వర విశ్వవిద్యాలయం

తిరుపతి.


1. "చరిత్ర అధ్యయనం, పరిశోధన, బోధనారంగాల్లో కొన్ని దశాబ్దాలుగా కృషి చేస్తూ, అనేక గ్రంథాలను, అనేకానేక పరిశోధన వ్యాసాలను, పరిశోధక విద్యార్థులకు పర్యవేక్షణ వహించడం, చరిత్ర సంస్థలకు చేయూత, సహకారం యివ్వడం, ఇవి సాధారణ విషయాలు కావు. వీటిని తనలో యిమిడ్చుకొని వినయంతో ప్రలోభాలకు, పదవులకు పాకులాడకుండా, నిబద్ధ అధ్యాపకుడిగా వుంటూ వస్తున్న ఆచార్య నాగోలు కృష్ణారెడ్డికి పదవీ విరమణ సందర్భంగా శుభాకాంక్షలతో పాటు, తన అధ్యయన వ్యాసంగాన్ని కొనసాగించాలని కోరుకుంటున్నాను".

– వకుళాభరణం రామకృష్ణ

2. "మిత్రుడు కృష్ణారెడ్డి చాలా విలక్షణమైన యాసతో మాట్లాడేవాడు. తెలుగు పద్యాన్ని మొదట నుండి గాక, చివరి నుంచి మొదటికి అప్పజెప్పేవాడు. ఆ విధానం మాకెంతో నవ్వు తెప్పించేది. అవి మేము ఎం.ఏ. తెలుగు చదివే రోజులు. అది మాకు కాలక్షేపంగా ఉండేది. దాంతో పాటు కథలు రాసే వారిని గురించి, కవిత్వం రాసేవారిని గురించి విశ్లేషణాత్మకంగా మాట్లాడేవాడు. కాపీ రచనల్ని ప్రత్యేకంగా పడపోయాలని చెప్పేవాడు. కారణం వాళ్ళకు చోర విద్య, అనుకరణ విద్య వల్ల వచ్చి ఉంటుందని, వాళ్ళ రచనలు చదివేవాళ్ళు జాగ్రత్తగా ఉండాలని, వాళ్ళకు అంక్షలు విధించాలని చెప్పి నవ్వించేవాడు. చాలా కలివిడిగా ఉండేవాడు".

– తుమ్మల రామకృష్ణ

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ఆచార్య నాగోలు కృష్ణారెడ్డి ఉద్యోగ విరమణ ప్రత్యేక సంచిక

సంపాదకులు డా॥ ఎల్వీకే, డా॥ పి.సి. వెంకటేశ్వర్లు

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( తెలుగు భాష, సంస్కృతి, సాహిత్య విమర్శ వ్యాసాలు )



సంపాదకులు

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ప్రాచ్య పరిశోధన సంస్థ
శ్రీవేంకటేశ్వర విశ్వవిద్యాలయం, తిరుపతి

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జన్మనిచ్చింది : పాస్నగంటి రమణయ్య, శేషమ్మ
పుట్టింది : శ్రీపాటి శ్రీరాములు నెల్లూరు జిల్లా, కావలి మండలం, ముసునూరు గ్రామం
చదువుకుంది : బి.ఏ. జవహర్ భారతి కళాశాల, కావలి
ఎం.ఏ. (తెలుగు), ఎం.ఏ. (సంస్కృతం), పిహెచ్.డి. శ్రీ వేంకటేశ్వర విశ్వవిద్యాలయం, తిరుపతి.
తొలి ఉద్యోగం : తెలుగు లెక్చరర్, జవహర్ భారతి కళాశాల, కావలి (1999-2007)
చేస్తున్న ఉద్యోగం : అసోసియేట్ ప్రొఫెసర్, శ్రీ వేంకటేశ్వర విశ్వవిద్యాలయం, తిరుపతి.
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విలోకనం-2 (ఆధునిక సాహిత్య విమర్శ) డా॥ పి.సి. వెంకటేశ్వర్లు

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(ఆధునిక సాహిత్య విమర్శ)

డా॥ పి.సి. వెంకటేశ్వర్లు

ప్రాచ్య పరిశోధన సంస్థ
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# కర్మవిపాకము



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శ్రీ వేంకటేశ్వర విశ్వవిద్యాలయం, తిరుపతి – 2021

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# కర్మ విపాకము

## ప్రథమాశ్వాసము

1 కం. శ్రీ సీతా హృద్వల్లభ, వాసవ భోగీశ వినుత వారిజ నేత్రా!
వాసవ పుత్ర విమర్దన! దాసాఘ విరామభీమ దశరథరామా!

తాత్పర్యం: సీతాదేవి హృదయాన్ని పాలించేవాడా! ఇంద్రుడు, వేయి తలలుగల ఆదిశేషుడు వంటి వారిచే స్తుతింపబడేవాడా! కమలలోచనా! ఇంద్రుని కుమారుడైన వాలిని శిక్షించిన వాడా! నీ దాసులను హింసించే వారిపట్ల భయంకరుడా! ఓ దశరథా రామా! (నీకు శుభము).

2 వచనం: మహనీయ గుణ గరిష్ఠుండగు శంకరుండు నా శాంకరి కెరింగించినట్లుగా కర్మవిపాకంబు సవిస్తారముగా నెరింగించు వాడయిన నగస్త్యుం డాత్రేయున కిట్లనియె.

తాత్పర్యం: మహనీయమైన గుణాలతో ఒప్పారే పరమేశ్వరుడు పార్వతికి చెప్పిన విధంగా, అగస్త్యుడు ఆత్రేయునికి కర్మవిపాకాన్ని గురించి, అనగా–సత్కర్మలకు ఎటువంటి ఫలితాలు లభిస్తాయి, అలాగే చెడ్డపనులు చెయ్యటంవల్ల కలిగే ఫలితాలు ఎటువంటివో – తెలియ జెప్పదలచి ఇలా అన్నాడు.

3 కం. విప్పెద ధర్మాధర్మము, చెప్పెద తద్విధములెల్ల చెవివడ్డయు నీ
కొప్పిదముగ మదివినుమా!, గుప్పెద లోకంబు నిండ కోవిదవినుతా!

తాత్పర్యము: పండితులచే పొగడబడే ఆత్రేయ మహర్షీ! ధర్మం అంటే ఏంటో అధర్మమంటే ఏంటో వివరంగా చెబుతాను. శ్రద్ధగా వినుము.

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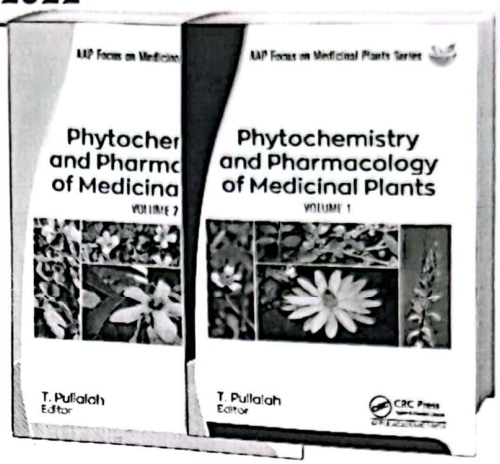


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This volume, published under the AAP Focus on Medicinal Plants book series, edited by the accomplished editor, T. Pullaiah, who has taught, researched, written, and published on medicinal plants for over 35 years, will be an important reference resource for years to come for both new and experienced medicinal researchers.

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**T. Pullaiah, PhD,** is a former Professor at the Department of Botany at Sri Krishnadevaraya University in Andhra Pradesh, India, where he has taught for more than 35 years. He has held several positions at the university, including Dean, Faculty of Biosciences, Head of the Department of Botany, Head of the Department of Biotechnology, and Member of Academic Senate. He was President of the Indian Botanical Society (2014), President of the Indian Association for Angiosperm Taxonomy (2013), and Fellow of Andhra Pradesh Akademi of Sciences. He was awarded the Panchanan Maheshwari Gold Medal, the Dr. G. Panigrahi Memorial Lecture Award of the Indian Botanical Society, the Prof. Y.D. Tyagi Gold Medal of the Indian Association for Angiosperm Taxonomy, and a best teacher award from the Government of Andhra Pradesh. Under his guidance, 54 students obtained their doctoral degrees. He has authored over 50 books, edited 20 books, and published over 330 research papers, including reviews and book chapters. His books include *Advances in Cell and Molecular Diagnostics; Ethnobotany of India* (5 volumes); *Red Sanders: Silviculture and Conservation*; *Monograph on Brachystelma and Ceropegia in India; Flora of Andhra Pradesh* (5 volumes); *Flora of Eastern Ghats* (7 volumes); *Flora of Telangana* (3 volumes); *Encyclopaedia of World Medicinal Plants* (7 volumes, 2nd edition); *Encyclopaedia of Herbal Antioxidants* (3 volumes); *Global Biodiversity* (4 volumes); and *Handbook of Research on Herbal Liver Protection*. He also has several books in preparation now. Dr. Pullaiah was a member of the Species Survival Commission of the International Union for Conservation of Nature (IUCN). He received his PhD from Andhra University, India, and attended Moscow State University, Russia.

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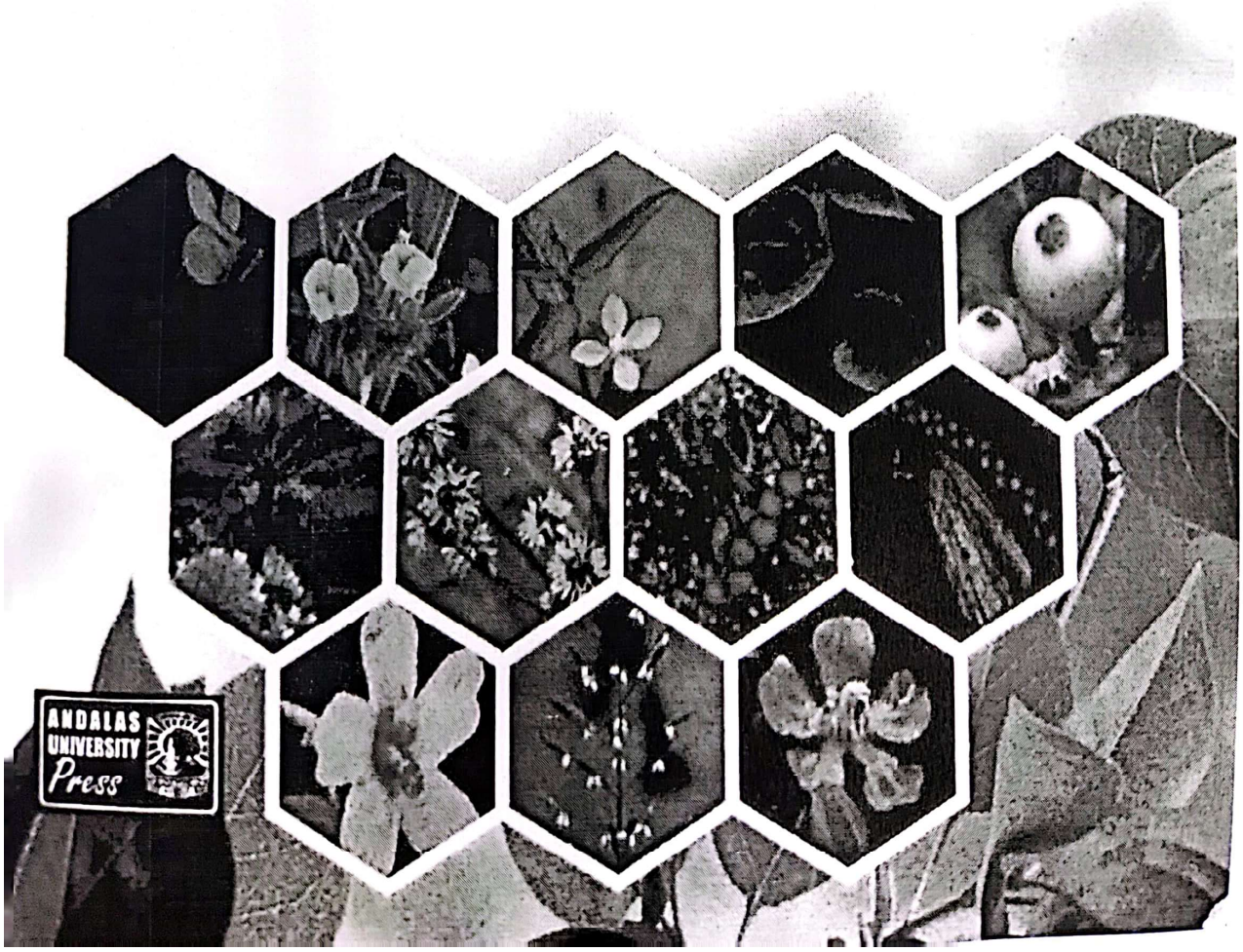

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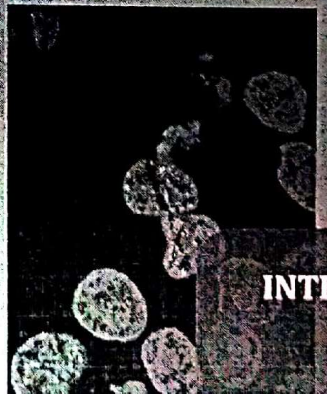

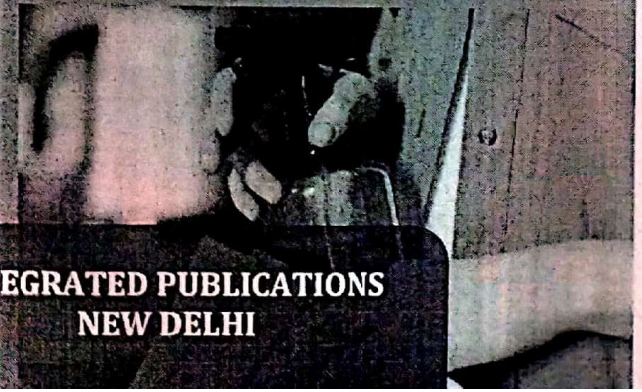

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# Impact of Parenting Styles on Behaviour of Pre School Children According to Mother's Variables


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# Chapter - 7

## Impact of Parenting Styles on Behaviour of Pre School Children According to Mother's Variables

M. Usha Rani, Dr. B. Swaroopa Rani and Prof. K. Anuradha

**Abstract**

Parenting is that prepares children to meet the demands of the specific culture or subculture in which they live. Parenting style refers to the normative patterns of behaviour and practices that parents use to socialize and control their children.

According to Baumarind (1971) there are three types of parenting styles

1) Authoritarian
2) Authoritative
3) Permissive

The aim of the present study was to know the relationship between the parenting styles and behaviour of pre-school children. Tools used were Parenting Style Questionnaire (PSQ) (Swaroopa Rani and Anuradha, 2016)) and Behaviour Problems Check List (Anuradha and Bharathi, 2004)). The sample were pre-school children who were studying in Govt and private schools of Kadapa and Tirupati towns. The children studying in eight pre-schools (5 Govt and 3 Private) in two districts were identified randomly and thus 30 girls and 30 boys and their mothers constituted the sample. Results of the study revealed that mothers did not differ significantly in exercising of parenting style according to their education but differed according to their occupation. The mothers who were doing Government jobs were found to be adopting less authoritarian parenting styles when compared of mothers who were doing private jobs. It was found that the children whose mothers were adopting authoritative parenting style had exhibited low behaviour problems.

**Introduction**

Parenting refers to the normative patterns of behaviour and practices that parents use to socialize and control their children and it is the most important factor contributing to a child's development. Parenting style is a psychological



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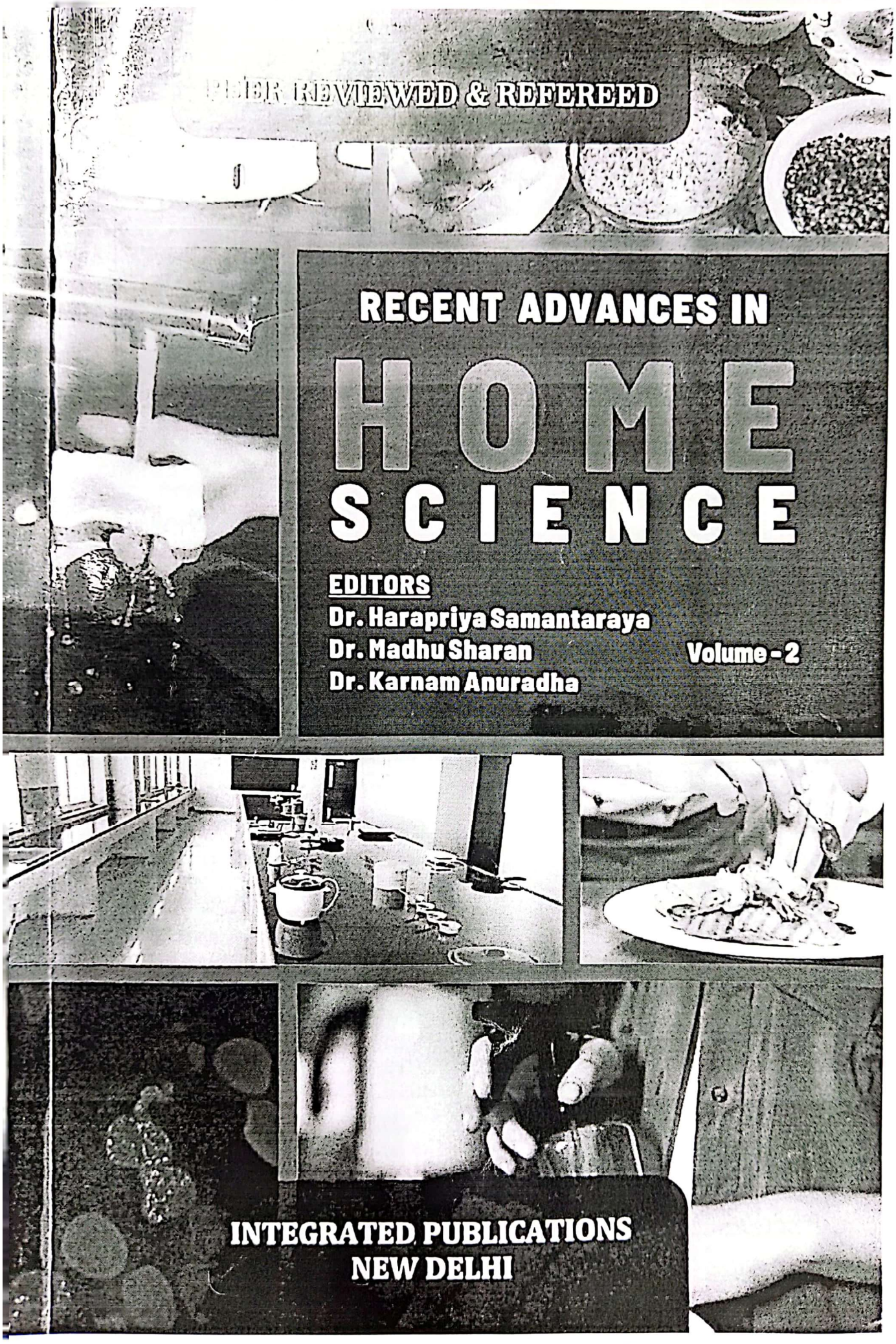


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# Chapter - 3

## Pomegranate: The Super Food

Syamala Boreddy and Sucharitha K.V.

### Background

The pomegranate tree is one of the oldest fruit trees known to humans (4000 and 3000 BCE). Pomegranate blooms as a symbol of life, permanence, wellbeing, femaleness, fertility, knowledge, immortality and holiness. In efforts to figure out the best source of phenolic compounds in the human diet, pomegranate receives a great amount of popularity owing to the biological effects exert through free radical scavenging capabilities by its phenolic compounds. Pomegranate has risen to fame for its medical applications since ancient times. Antioxidant, immunity-boosting, and anti-carcinogenic properties are the major virtues of the pomegranate as a fruit that can be applied as an herbal cure.

The present review is aimed to study the different parts of the pomegranate along with their characteristics and components, chemical compositions, medicinal applications.

**Abbreviations:** *PJ - Pomegranate Juice, PP - Pomegranate Peel, PPE - Pomegranate Peel Extracts, PE - Pomegranate Extracts*

### Introduction

Phytotherapy is considered as a complementary approach for preventing and treating simple diseases, although well-grounded in medical tradition; it often lacks proper scientific validation (Cravatto *et al.*, 2010). The edible part of the fruits contains acids, sugars, vitamins, polysaccharides, polyphenols and minerals, however, several factors may contribute to the chemical changes, including cultivars, environmental conditions, ripening, storage, and postharvest treatments, which may affect fruit quality and health beneficial compounds (Schwartz *et al.*, 2009a). The chemical constituents of diverse parts of *P. granatum* as well as their potential for prevention and treatment of inflammation and cancer.

Pomegranate is now harvested in many counties like India, Pakistan, Israel, Afghanistan, Egypt, China, Japan, the USA, Russia, Australia, South



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The reactive extraction of levulinic acid (0.4686 – 0.781 mol/L) using tri-n-butyl phosphate (0.3652 – 1.461 mol/L) and tri-n-octylamine (0.2264 – 0.9059 mol/L) in 1-hexanol, 1-octanol and 1-decanol from their dilute aqueous solutions are carried out. The physical equilibrium, chemical equilibrium or reactive extraction, and effect of pH studies are investigated. Using the equilibrium experimental data, the distribution coefficient (KD), extraction efficiency (E%), loading ratio (Z), stoichiometric loading factor (ZS) and modified separation factor (Sf) are evaluated. The effects of the initial concentration of acid in the aqueous phase, initial extractant concentration in the organic phase, type of extractant, type of diluent and pH on the distribution coefficient and extraction efficiency are studied. The kinetic studies were carried out for the extraction of levulinic acid using 40% TOA in 1-hexanol at different speeds of agitation (50 rpm to 80 rpm) and the volume ratio of organic to aqueous phase (0.8 to 1.2).

Nampally Meenakshi is a PhD Research Scholar in the Department of Chemical Engineering at Sri Venkateswara Univesity College of Engineering, Tirupati. She completed her undergraduate from JNTU, A. P and Post-graduate from Sri Venkateswara University College of Engineering. She is currently working on Reactive extraction of Levulinic acid.

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Reactive Extraction of Levulinic Acid

Meenakshi, Sarath Babu

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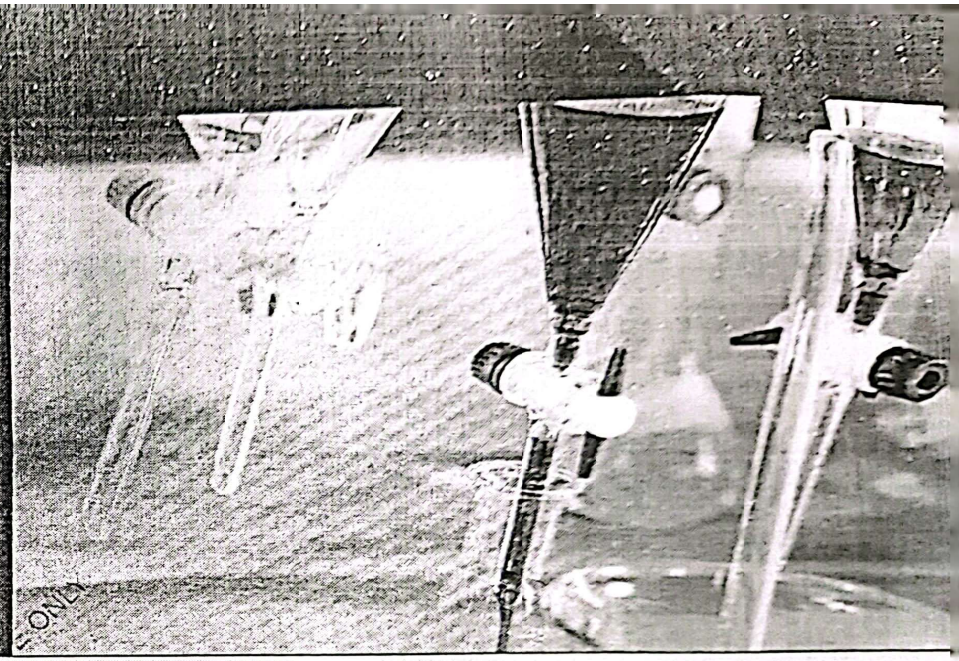

N. Meenakshi
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# Reactive extraction of Levulinic acid

## Reactive extraction of levulinic acid using tri-n- butyl phosphate and tri-n-octylamine in different diluents

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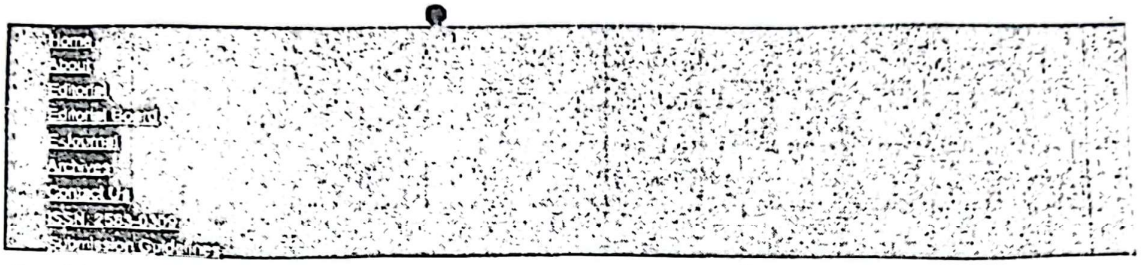

## Garbha Kṛti-s of 'Saṅgīta Sāhitya Kaḷānidhi' Śrīmān. N. Ch. Kṛṣṇamāçārya

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# Garbha Kṛti-s Of 'Saṅgīta Sāhitya Kaḷānidhi' Śrīmān N. Ch.Kṛṣṇamāçārya

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**Abstract**

South Indian music with its peculiarities, characteristics, has a very rich tradition, culture from ancient times. Carnatic music underwent many changes in the hands of different musicologists who gave it the status of a Śāstra. Vāggēyakāra-s are composers who exhibited the richness of Carnatic music through their compositions. The efforts of Lakṣaṇakāra-s (Musicologists) and Vāggēyakāra-s combined together helped the art to preserve its divinity and tradition. One of such great Vāggēyakāra-s of modern times was – 'Saṅgīta Sāhitya Kaḷānidhi' Śrīmān N.Ch.Kṛṣṇamāçārya (1924-2006).

'Garbha kṛti-s' are a unique contribution of Śrī Kṛṣṇamāçārya to the field of music, wherein the same lyrics of a kṛti could be set to more than one tāḷa structure by reducing a few sāhityākṣara-s and still making meaningful sāhitya, completely adhering to the prosodic rules.

The present paper focuses on the concept, structure and analysis of these Garbha kṛti-s of Śrīmān Kṛṣṇamāçārya.

Keywords: Vaggeyakara, Krishnamacharya, Garbha Kriti-s, Tala, Raga

## Introduction

Saṅgīta Sāhitya Kaḷānidhi, Harikathā Çūḍāmaṇi, Saṅgīta Kaḷā Sāgara and Gāna Kaḷā Prapūrṇa Śrīman Nallān Çakravartula Kṛṣṇamāçārya was an eminent Scholar, Musician, Musicologist, Harikatha exponent, Vāggēyakara and a great Guru.

Born on 15th September, 1924, at Jaggayyapeta in Krishna district of Andhra Pradesh, he was the first-generation disciple of legendary Guru and musician par excellence, 'Gāyaka Sārvabhauma' Śrīmān Pārupalli Rāmakṛṣṇaiah Pantulu, who belongs to the lineage of Śrī Tyāgarāja (Sadguru Śrī Tyāgarāja Swāmi – Śrī Mānambuçāvaḍi Venkaṭa Subbayyar – Śrī Susarla Dakṣiṇāmūrty Śāstry – Śrī Pārupalli Rāmakṛṣṇaiah Pantulu – Śrīmān N.Ch.



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# INNOVATIVE TRENDS IN HYDROLOGICAL AND ENVIRONMENTAL SYSTEMS

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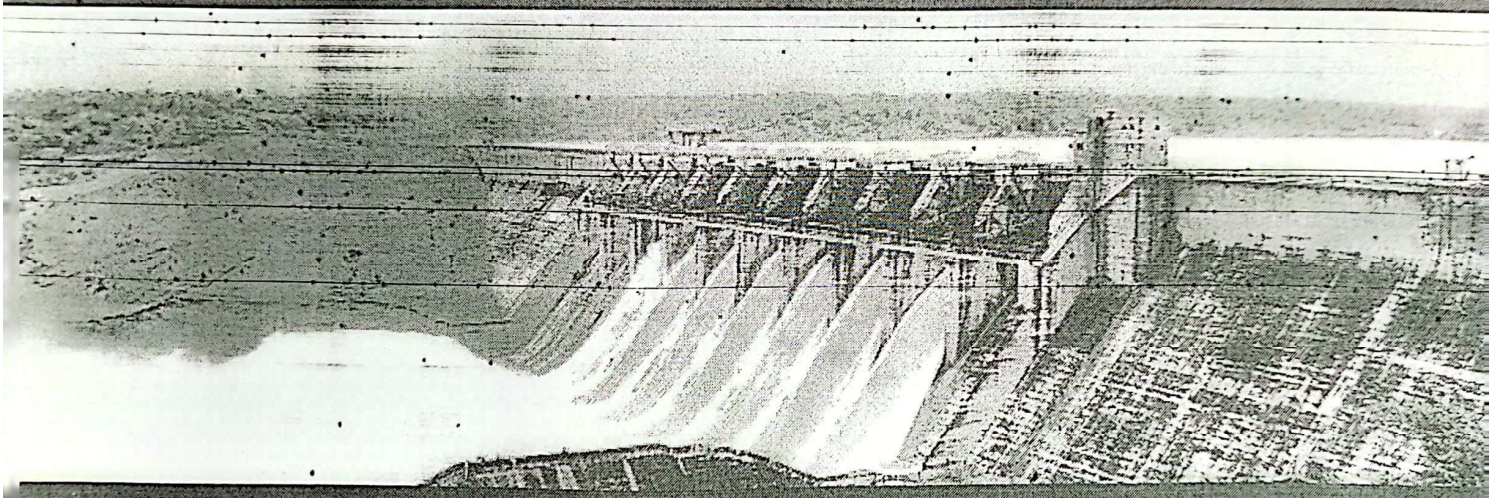

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# Evaluation of spatial indices of groundwater quality – A case study

Shanmukha Srinivas G [1*], Prudhvitej I [2], Pradeep Kumar G N [1]
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## Introduction

Water has been, is, and will be one of the most important resources for the survival of mankind. Most of the cities and towns are built on the banks of rivers or some water bodies. Water is required for drinking, irrigation, industrial and commercial purposes. Sustainable Development Goal, No. 6, aims to "Ensure availability and sustainable management of water and sanitation for all" (UN Resolution). Various physical, geological, morphological and hydrological properties of the surface determine the groundwater environment (Maitre, 1999). Neeva River is one of the major tributaries of the Ponnai River that flows through the Chittoor district, Andhra Pradesh, India. It flows for 16.3 km around Chittoor town and joins Ponnai River, Tamil Nadu, India. The total catchment area of Neeva River is 131 sq.km. Watershed of the Neeva River is considered as the study area as it would encompass the effects rapid urbanization, commercial and domestic usage in Chittoor town and the agricultural usage in the surrounding mandals using Geographic Information System (GIS).

## Materials and Methods

### *Estimation of Groundwater Quality Index (GWQI)*

GWQI is a comprehensive mathematical tool to evaluate all the physico-chemical parameters of groundwater. It is one of the aggregate indices that have been accepted as a rating that reflects the composite influence on the overall quality of groundwater effectively (APHA 1998). GWQI is computed as follows:

Relative weight (Wi) of each quality parameter is computed:

$$W_i = \frac{w_i}{\sum_{i=1}^{n} w_i} \quad (1)$$

where, Wi is the relative weight, $w_i$ is the weight of each parameter and n is the number of parameters from 1 to 5. Quality rating scale ($q_i$) of each parameter is determined by dividing its concentration in each water sample by its respective standard. As per BIS, the values of $q_i$ are computed,

$$q_i = (C_i / S_i) * 100 \quad (2)$$

where $q_i$ is the quality rating, $C_i$ is the concentration of each quality parameter in each water sample in mg/l and $S_i$ is the Indian Standard for drinking water of that quality parameter in mg/l. $S_i$ value for each parameter is computed using

$$S_i = W_i * q_i \quad (3)$$

Finally, GWQI for each location is computed as

$$GWQI = \sum S_i \quad (4)$$

Based on the value of GWQI, the water may be good (GWQI < 100), moderate (100 > GWQI > 200) or poor (GWQI > 200) in quality.

## Results and Concluding Remarks

This paper presents the results of a study on application GWQI computed using GIS for demarcating the areas having good quality of groundwater in Neeva basin. Impact of landuse changes due to urbanization and industrialization are the major factors effecting groundwater quality in the basin (Figure 1). National Sanitation Foundation method was applied for evaluating groundwater quality index in the basin at 43



Department of Civil Engineering

observation wells and samples were tested for physico chemical analysis for eight parameters as per BIS standards (BIS, 2012) as shown in Table 1

Table 1 Relative Weight of physico chemical parameters

| S.No | Chemical Parameters | WHO Standards | Weight | Relative Weight |
|---|---|---|---|---|
| 1 | pH | 7.0-8.5 (8.5) | 1 | 0.094 |
| 2 | Chlorides (mg/l) | 250 (mg/l) | 5 | 0.156 |
| 3 | Fluorides (mg/l) | 1.5 (mg/l) | 2 | 0.063 |
| 4 | Calcium (mg/l) | 75 (mg/l) | 4 | 0.125 |
| 5 | Magnesium (mg/l) | 30 (mg/l) | 4 | 0.125 |
| 6 | Sulphate (mg/l) | 200 (mg/l) | 4 | 0.125 |
| 7 | Total Hardness (mg/l) | 200 (mg/l) | 5 | 0.156 |
| 8 | Total Dissolved solids (mg/l) | 500 (mg/l) | 5 | 0.156 |
| | | Total | 32 | 1.000 |

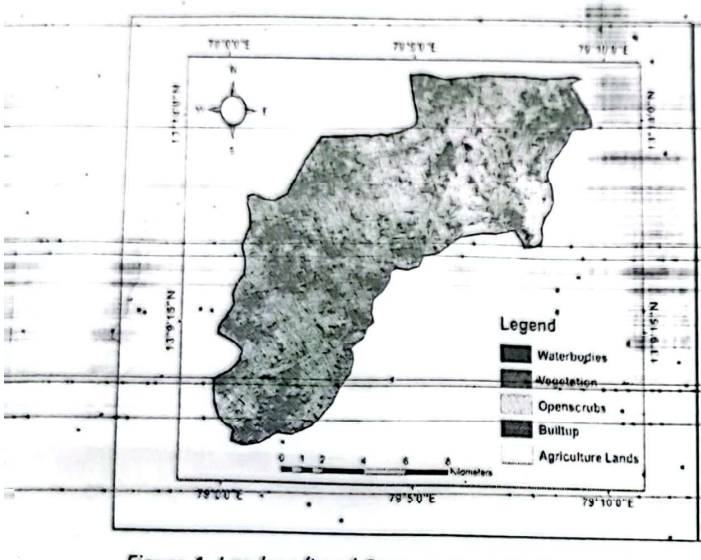


Figure 1. Landuse/Land Cover pattern in the basin

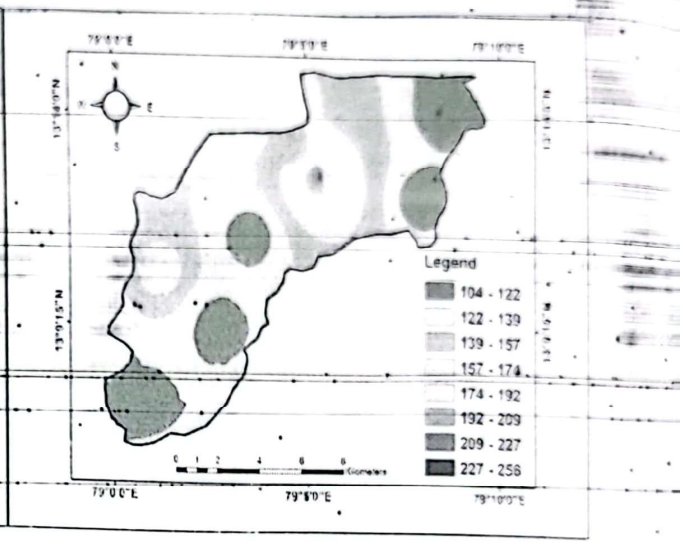


Figure 2. Groundwater quality index map in the basin

Study revealed that 20.93%, 74.42% and 4.65% of area has good, moderate and poor quality of groundwater respectively as shown in Fig. 2. Presence of industries and improper sludge management in the basin are found to be the reasons for deterioration of quality of groundwater. Practical use of these maps is to assist planners and decision makers to develop efficient action plans for management of groundwater resources in the basin. Further, it will also assist them for necessary legal and administrative measures that have to be taken regarding the use of land affecting the quality of groundwater (such as chemicals used in agricultural areas). Results lead to proper environmental management plan that must be adopted to control drinking water pollution.

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THE CIRCULAR ECONOMY IN SUSTAINABLE SOLID AND LIQUID WASTE MANAGEMENT

# Circular Economy in the Construction Industry

Edited by
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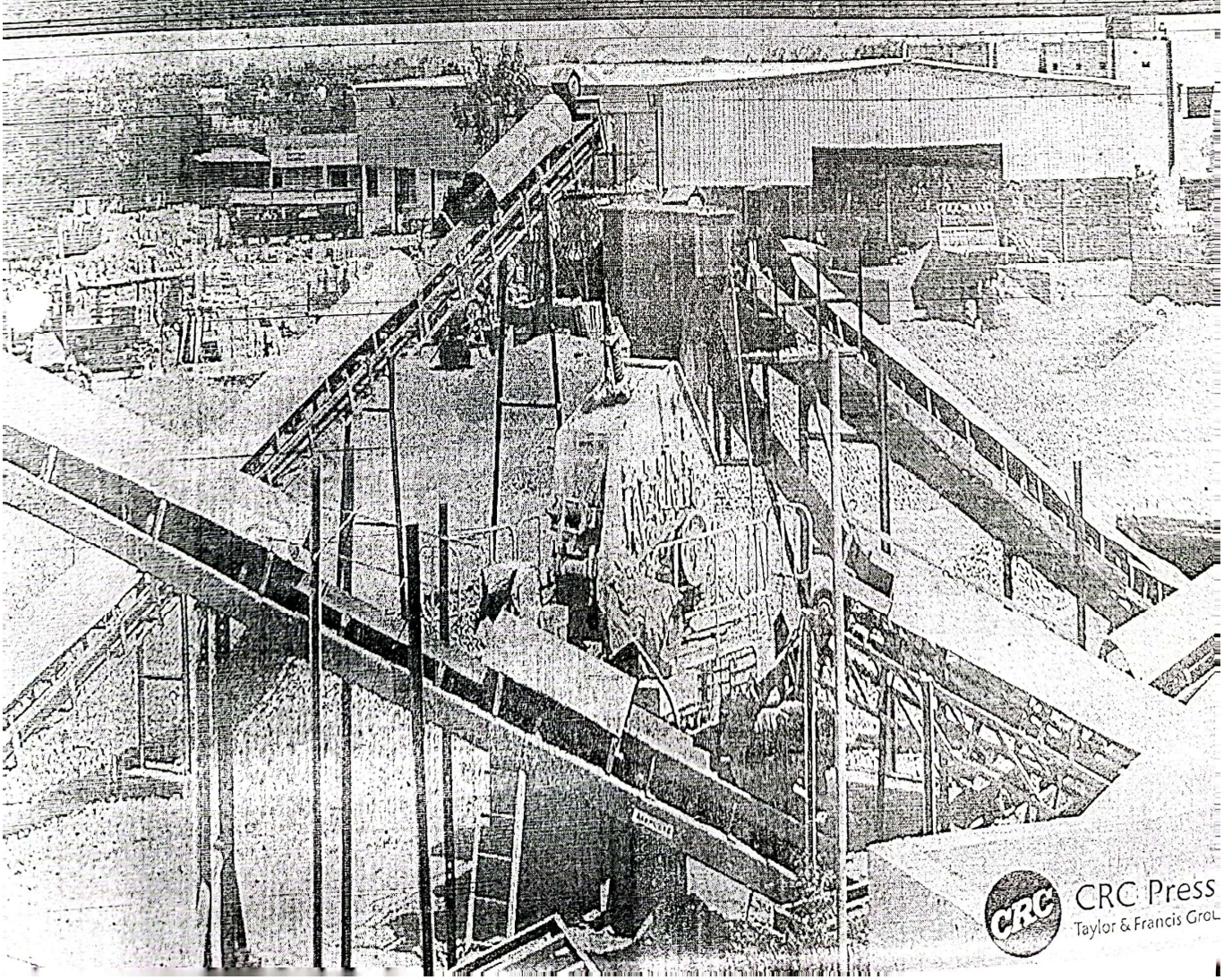

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# 25

# A Study on Tensile Strength and Modulus Properties of Concrete Using Industrial Waste Vermiculite and Granite-Fines

**Damodhara Reddy Budda, Kiran Kumar Narasimhan, and Jyothy S. Aruna**
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## 25.1 Introduction

### 25.1.1 General

There is no doubt that with the development of human civilization, concrete will continue to be the dominant construction material in the future. Unfortunately, depleting levels of natural sand is forcing us to search for alternatives for natural sand. Recently, Andhra Pradesh government has imposed restrictions on sand removal from river-beds. As the cost of sand is increasing, the need for focus on an alternative cheaper material is gaining its prominence. Around 18 million tonnes of granite powder is produced by Indian Granite Industry and these are accumulating year by year and causing environmental pollution. In the present investigation, an attempt is made in the direction of choosing an alternative to natural sand in the form of crushed granite powder.



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### 25.1.3 Research Objectives

1. To determine the degree of tensile strength improvement in concrete obtained after addition of granite powder at proportions 0%, 10%, 20%, 30% and 40%.
2. To determine the modulus of elasticity in concrete obtained after addition of granite powder at proportions 0%, 10%, 20%, 30% and 40%.
3. To determine properties of granite fines concrete using XRD testing.

### 25.1.4 Review of Literature

Olawuyi et al. (2012), during their study on the effect of replacing sand with granite fines on the compressive and tensile strength of palm kernel shell concrete, also revealed that 100% of replacement of natural sand by crushed granite fines is possible, and tensile strength increases with increase in crushed granite fines and with the curing age.

Rahoria et al. (2013) opined that natural sand can be replaced partially with waste products like rock flour (40%) and also recommended usage of 20% replacement of natural sand by crushed granite fines when laying rigid concrete pavements.

Prince Arulraj et al. (2013) opined that for M30 and M40 grade concretes with 15% replacement of sand by granite powder resulted in optimum results. For grades M15, M20, and M25, the replacement levels are slightly greater, and M30 and M40 grade concretes with 20% replacement of sand by granite powder resulted in optimum results.

Hameed &Sekar (2009) studied the applicability of quarry dust and marble powder as possible replacements for natural sand in concrete with 50% replacement of sand by marble sludge and quarry rock dust in higher split tensile strength. They have also emphasized that with decrease in the content of crusher dust, split tensile and flexural strength increased.

BaharDemitrel (2010) studied the effect of the using waste marble dust as replacement for fine-sand at proportions of 0%, 25%, 50% and 100% by weight at curing ages of 3, 7, 28 and 90 days and the compressive strength and dynamic modulus of elasticity increases at particular properties between 25% an 50% on the mechanical properties of concrete.

Shirulea et al. (2012) studied partial replacement of cement with marble dust powder revealing that t split tensile strength of concrete in which cement is partially replaced with marble dust powder result in increased compressive strength at 10%.

Raman et al. (2007),during their study on non-destructive evaluation of flowing concretes incorpo ing quarry waste, explained that dynamic modulus of elasticity varies linearly with compressive stren

Uchikawa&HaneharaHirao (1996),when studying theinfluence of microstructure on the physical p erties of concrete prepared by substituting mineral powder for part of aggregate, revealed that with a tion of mineral powder the viscosity of concrete increased, and fluidity of concrete reduced. You modulus decreased because of fractures in cement paste and dynamic Young's modulus was only that of aggregate.

Safiuddin et al. (2007), during their study about utilization of quarry waste as fine-aggregate in crete mixtures, revealed that the dynamic modulus of elasticity and slump increased marginall concluded that quarry dust can be used as replacement for natural sand.

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According to Kanmalai William et al. (2008), during their study on mechanical properties of high performance concrete incorporating granite powder as fine-aggregate, has opined that modulus of elasticity for both 7 and 90 days show higher values for all proportions of 25%, 50%, 75% and 100% of replacement of sand with granite fines, compared to 0% replacement of sand. However, he disclosed that a 25% replacement level resulted in a higher modulus of elasticity when compared with other proportions.

## 25.2 Materials and Methods

### 25.2.1 Materials

The physical-chemical properties of cement, sand, gravel made ofvermiculiteand water used in the investigation were analyzed based on, and also using, thestandard experimental procedure laid down in the standard code, IS 2386 (Part1): 1963. These standard experimental procedures were adopted for the determination of split tensile strength test and modulus of elasticity of cement concrete. The materials used in the experimental investigation include ordinary Portland cement., granite fines, fine aggregate, coarse aggregate, and water.

The granite fines are used to replace the natural sand in our present sand. The granites are obtained from a stone crushing unit located near KongareddiPalli, Chittoor. The physical and chemical properties of granite fines are listed in Table 25.1 and Table 25.2.

**TABLE 25.1**

Range of Properties of Granite

| S.No | Properties | Values |
|---|---|---|
| 1 | Water Absorption | 1 % |
| 2 | Specific Gravity | 2.6 |
| 3 | Crushing Strength | 2,500kg/m² |
| 4 | Color | Mostly Light Colored |
| 5 | Fineness Modulus | 2.35 |

**TABLE 25.2**

Composition of Granite

| Composition Name | Percentage Present |
|---|---|
| $SiO_2$ | 72.04% |
| $Al_2O_3$ | 4.12% |
| $K_2O$ | 4.12% |
| $Na_2O$ | 3.69% |
| CaO | 1.82% |
| FeO | 1.68% |
| $Fe_2O_3$ | 1.22% |
| MgO | 0.71% |
| $TiO_2$ | 0.30% |
| $P_2O_5$ | 0.12% |
| MnO | 0.05% |

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### 25.2.2 Methods

#### *25.2.2.1 Split Tensile Strength*

As per IS specifications IS 516: 1999, split tensile test is to be conducted. The cylinder of size is 150mm diameter and 300mm length is made and cylinders were placed horizontally between the loading plate surfaces of a compression testing machine. Then the load was applied to the cylinder until failure of the vertical diameter along the cylinder length. The maximum load on the cylinder was to be observed.

$$\sigma_{ct} = 2P/\pi dl \qquad (25.1)$$

Where

$\sigma_{ct}$ = indirect tensile strength,
$d$ = diameter of cylinder in mm,
$l$ = length of cylinder in mm and
$P$ = maximum load applied to the cylinder

#### *25.2.2.2 Test on Modulus of Elasticity*

Fix both top and bottom frame by positioning the spacers and position the pivot rod on screws in locked position and keep tightening screws of bottom and top frame unscrewed. Position the specimen on flat surface, Place the compressometer on the center of the specimen such that tangent screws of both the frames are at equal distance. Later tighten screws and by unscrewing the spacer screws remove spacers.

Specimen assembly is placed in the compression testing machine at center and load is applied at a rate of 140kg/cm²/minute until a stress of (l + 5)kg/cm² is reached where l is one third of the average compressive strength of cubes calculated to the nearest 5kg/cm² (a load of 12.4 tonnes) and for one minute the load is maintained and then gradually reduced to an average stress of 1.5kg/cm² (a load of 0.3 tonnes). The load is applied again at the same rate until an average stress of (e + 1.5) kg/cm² is reached (a load of 11.8 tonnes) and the compressometer reading at this load is taken. Reduce the load gradually to 0.3 tonnes and take the readings. Repeat this process for a third time and take the values.

Young's modulus or tensile modulus can be expressed as

$$E = \text{stress/strain} = (F/A)/(dL/L) \qquad (25.2)$$

where

E = Young's modulus (N/m²) (lb/in², psi)
F = force (N) (lb)
A = area of object (m²) (in²)
dL = elongation or compression (offset) of the object (m) (in)
L = length of the object (m) (in)

## 25.3 Research Methodology

The following research methodology is adopted (Table 25.3).

1. Collection of materials for preparation of concrete like cement, sand, gravel, granite fines, and water and carrying out preliminary tests on materials and fresh concrete.
2. Using Molds, concrete cubes and cylinders are cast, based on mix design and cured for the specified 28 days.

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**TABLE 25.3**

Test Specimens

| Material Properties at 28 days | Shape and Dimensions of Specimens | No of Specimens |
|---|---|---|
| XRD test | Cube 150mm × 150mm × 150mm | 9 |
| Split Tensile Strength | Cylinder 150mm × 300mm | 15 |
| Modulus of Elasticity | Cylinder 150mm × 300mm | 15 |

3. Cured samples are tested for split tensile strength, and modulus of elasticity. Cured samples tested for resisting acid are soaked in acid for 32 days after 28 days water curing, and later tested for XRD test.

## 25.4 Results and Discussion

### 25.4.1 General

The results of the present investigations are presented both in tabular and graphical forms. In order to facilitate the analysis, interpretation of the results is carried out at each phase of the experimental work. This interpretation of the results obtained is based on the current knowledge available in the literature as well as on the nature of results obtained. The significance of the result is assessed with reference to the standards specified by the relevant IS Codes. Test results of split tensile strength, and modulus of elasticity are displayed.

### 25.4.2 Effect of Granite Fines on Split Tensile Strength

The split tensile strength values in N/mm² at curing period of 28 days reveal that GF10, GF20, and GF40 have given 1.698, 1.98, 1.28 against a reference mix, GF0, whose value is 2.265. Only GF30 has given a value 2.27, which is slightly greater than the value of reference mix GF0. The values obtained are shown in the Figure 25.1 in which reference line for GF0 and values of GF10,GF20,GF30 and GF40 are shown clearly. It is evident from the graph that only GF30 has crossed the split tensile strength of that of reference mix GF0 slightly. These values are in accordance with the study carried out by Kanamalai Williams et al.

### 25.4.3 Modulus of Elasticity

The modulus of elasticity value for 0% is 49,006N/mm², for 10% is 38,215N/mm², for 20% is 49,249N/mm², for 30% is 51,000N/mm², and for 40% it is 16,984N/mm², respectively. The modulus of elasticity data is plotted. The measurements were performed at age of 28 days. The tests show that modulus of elasticity of all the concrete mixtures were almost a bit higher than reference mix except for GF40 for 28 days (especially 30% granite fines has given higher values than reference mix GF0).

Interestingly, load-bearing capacity of cylindrical specimens for GF40 has drastically come down when compared to GF30 by 67%, which clearly reveals that a 30% of replacement of natural sand by granite fines yields a modulus of elasticity value greater than the reference mix GF0 and that of codalmodulus of elasticity value of 22,500 ($5{,}000\sqrt{f_{ck}}$).

From the study it is clear that at 30% of replacement of natural sand by granites yield higher modulus of elasticity values. The test results are supported by the study of Kanamalai et al.

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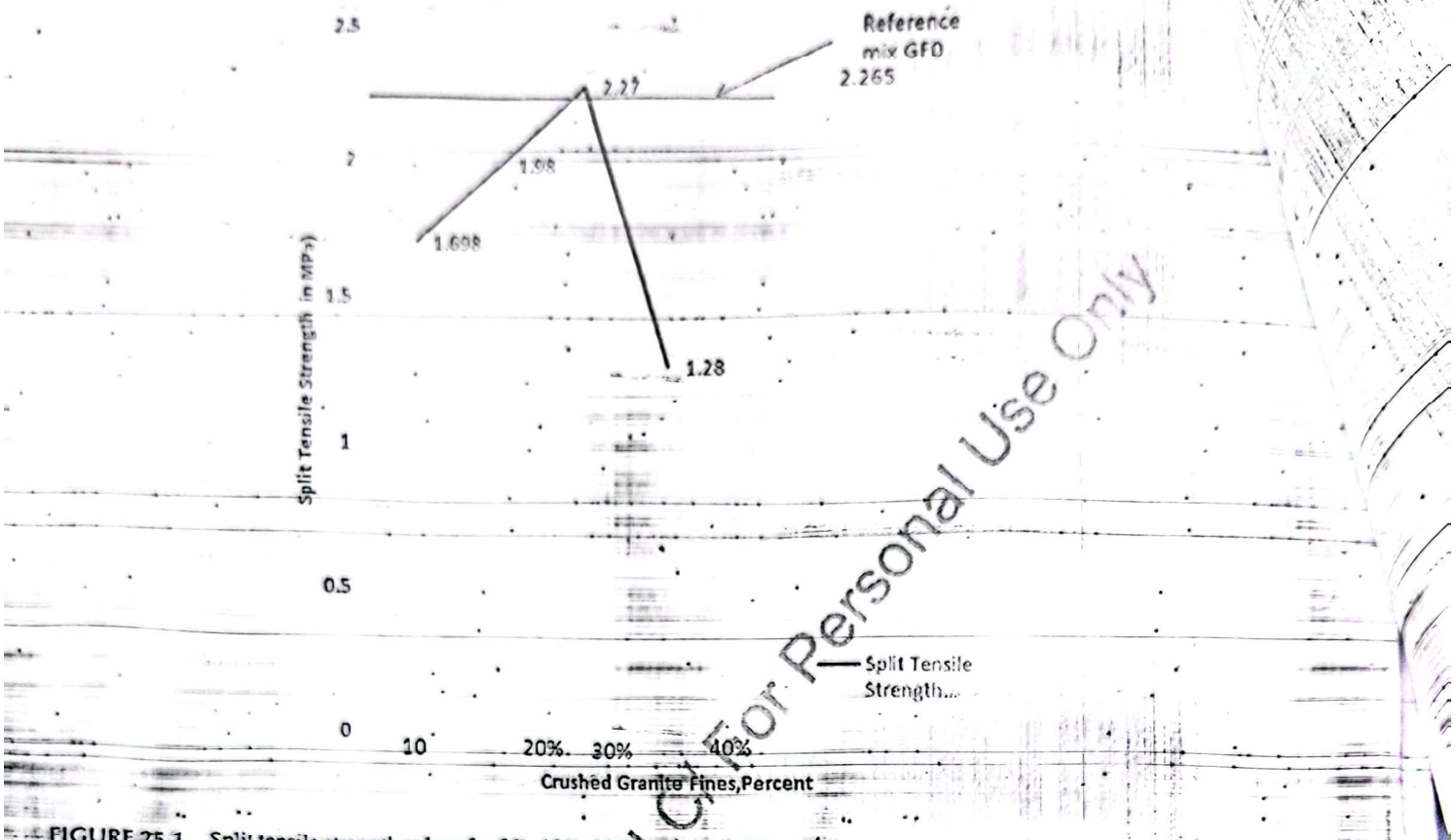


FIGURE 25.1 Split tensile strength values for 0%, 10%, 20%, 30% and 40% replacement of natural sand with granite fines.

### 25.4.4 X-Ray Powder Diffraction Analysis

X-ray diffraction (XRD) analysis has been used for the fingerprint characterization of pozzolanic material and for the determination of the crystal structures. The basis of the diffraction phenomenon is that the wavelength of the incident radiation (i.e., X-rays) is in the order of magnitude of the inter atomic distance in the crystalline solids. Therefore, when an X-ray beam falls on a crystalline material, it will be diffracted by the incidence angle given by Bragg's law:

$$2d \sin\theta = n\lambda \tag{25.3}$$

Where d is the interplanar spacing, λ is the wavelength of the X-ray, n is an integer and θ is the diffraction angle. For different 2θ values, the interplanar spacing d is calculated, the 2θ values used are those that give the highest intensities (i.e.,peaks) when the sample, in the form of a powder, is scanned. Each crystalline structure is characterized by a univocal set of θ-values that corresponds to their crystal planes, thereby allowing the identification of the different crystallographic phases of the material. In the case of amorphous materials, the scattering of the X-ray beam is diffuse and the XRD pattern shows broad humps rather than sharp peaks. A standard database (JCPDS database) for X-ray power diffraction enables phase identification for a large variety of crystalline phases in a sample. The various figures of XRD analysis illustrate the XRD diffractograms for various investigated samples. The results of the diffraction peaks of the various samples are highly varied indicating that the samples contain variety of crystalline phases. The intensity of XRD peaks of different additives are compared with standard Portland slag cement and ordinary Portland cement samples. The results indicate that the peaks are broadened or slightly decreased diminished depending up on the additive chemical constituents reactions with $Ca(OH)_2$.

The XRD results of ordinary Portland cement with partial replacement with 20%, 30% by granite fines presented in Figure 25.3 and Figure 25.4 and for control mix represented in Figure 25.2. XRD results presented in Table 25.4.

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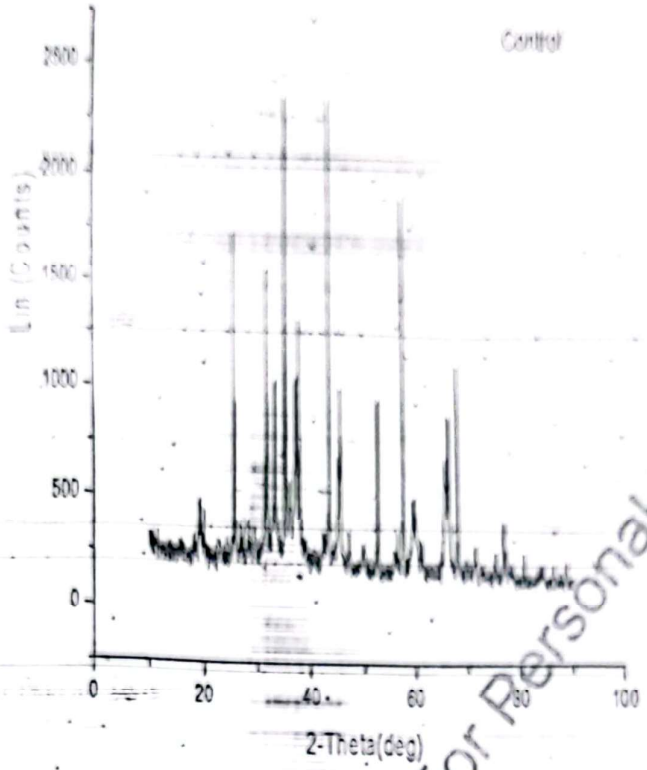


FIGURE 25.2 XRD results for control concrete mix.

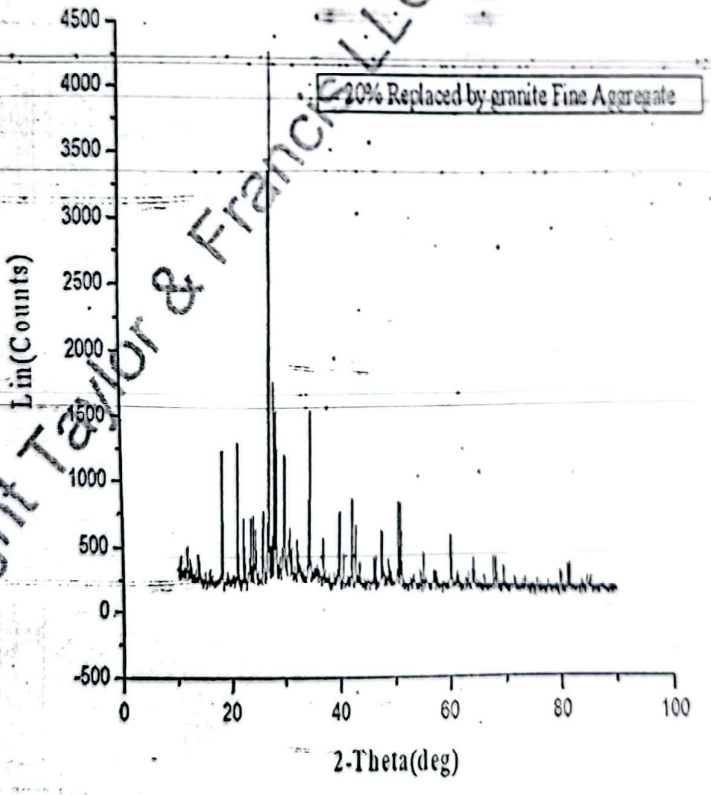


FIGURE 25.3 XRD results for 20% replaced by granite fine aggregate.

From the XRD results presented in Table 25.4, it is shown that the hexagonal structure is changed to orthorhombic or anorthic, with the inclusion of granite fine aggregate with replacement of 20%, 30% by weight, and the 2θ angle is around 26° in both the cases, which are identified by comparing the results with standard JCPDS data. From the various results discussed in the previous sections, it can be understood that the increase in the compressive strengths up to certain level (ie., 20%) and the decrease in the

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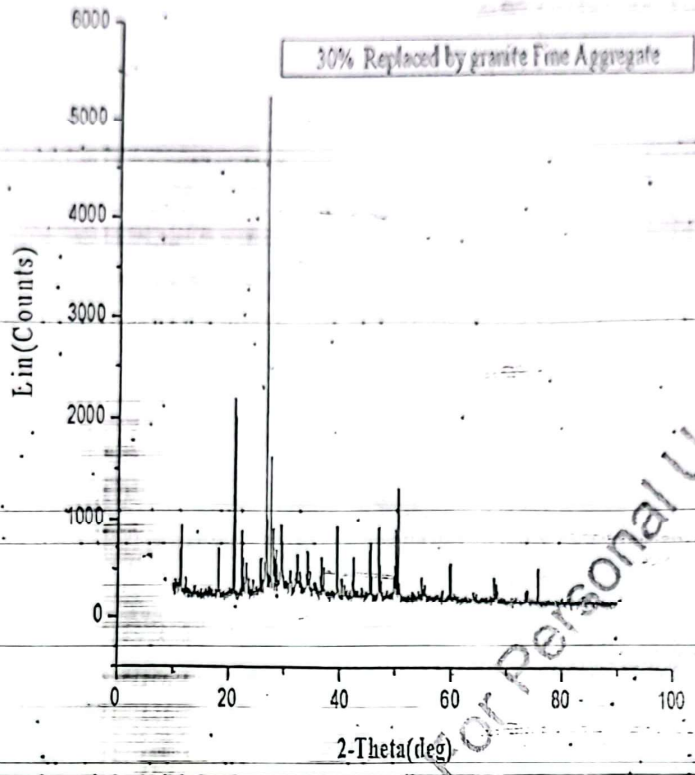


FIGURE 25.4 XRD results for 30% replaced by granite fine aggregate.

TABLE 25.4

XRD Patterns

| S.No. | Cement+ Replacement material | 2θ Angle (degrees) | Structure | Wavelength (A0) | Possible Compound | JCPDS Number |
|---|---|---|---|---|---|---|
| 1. | OPC | 35.164 | Hexagonal | 1.54060 | $CaAl_4Si_2O_{11}$ Calcium Aluminum Silicate | 51-0093 |
| 2. | OPC+20% replacement of granite fine aggregate | 26.6864 | Orthorhombic | 1.54060 | $Al_2(SiO_4)O$Aluminum Silicate | 89-0890 |
| 3. | OPC+30% replacement of granite fine aggregate | 26.6864 | Anorthic | 1.54060 | $Na(AlSi_3O_8)$ Calcium Aluminum Oxide | 89-6429 |

compressive strengths up to certain level (ie., 30%) of replacement and enhancement in the durability properties, are occurring because of the partial replacement of granite fine aggregate in coarse aggregate. The changes in the structure and formation of various compounds and filling of the pore spaces with C-S-H further accelerates the pozzolanic actions which are matching with the results presented in XRD analysis.

The XRD patterns in this study were obtained as shown in above figures and possible compounds are shown in Table 25.4.

## 25.5 Conclusion

From the test results it is clearly evident that granite powder as a partial replacement of sand proves to be beneficial when mechanical properties of strength are considered. Concrete mix with 30% addition of granite fines proves to be better when compared with other proportions. The following conclusions can be arrived after comparing GF30 with the reference concrete mix GF0.

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# PREDICTION OF CO, $PM_{10}$ AND $PM_{2.5}$ FROM VEHICULAR POLLUTION

## BY USING CALINE4 - CASE STUDIES


**Authors**

**Dr. N. MUNILAKSHMI**

**P. HARI PRASAD**

**N. SARASWATHI**



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## Volume III




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# HYPOXIA: ORIGIN, CONSEQUENCES AND CONTROLS IN AQUATIC ECOSYSTEMS

**Ch. Vivek[1], B. Sujatha[1], G. Bupesh[2] And Matcha Bhaskar*[1]**

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**Abstract:**

Hypoxia refers to a state where there is not enough oxygen at the tissue level to maintain sufficient homeostasis. This may be due to insufficient blood supply or low oxygen content in the blood (hypoxemia) resulting in insufficient oxygen delivery to the tissues.Generally, hypoxic waters have dissolved oxygen concentrations of less than 2 or 3 ppm. When large stretches of open water become hypoxic they are unable to sustain life, and are thus known as dead zones. Anthropogenic emissions of carbon dioxide in the atmosphere have generated rapid variations in atmospheric composition which drives major climate changes. Climate change related effects include changes in physico-chemical proprieties of sea and freshwater, such as variations in water temperature, salinity, pH/$pCO_2$ and oxygen content, which can impact fish critical physiological functions including reproduction. In this context, the main aim of the present review is to discuss how climate change related effects (variation in water temperature and salinity, increases in duration and frequency of hypoxia events, water acidification) would impact reproduction by affecting the neuroendocrine axis (brain-pituitary-gonad axis).

**Key words:** Hypoxia, Causes, Consequences and Aquatic Ecosystems.

## Introduction:

Fish form an extremely diverse group of vertebrates. At a conservative estimate at least 40% of the world's vertebrates are fish. On the one hand they are united by their adaptations to an aquatic environment and on the other they show a variety of adaptations to differing environmental conditions often to extremes of temperature, salinity, oxygen level and water

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## NEUROMODULATORY ROLE OF GALANTAMINE DRUG ON ALBINO MICE

This book aims to study the possible neuromodulator effects of Galantamine hydrobromide on a couple of neurotransmitter such as i.e., cholinergic and glutamatergic in different areas of mice brain which resulted in the overall perceptible changes in the behaviour of the animal. From the results on morphometric and behavioural aspects, neurotransmitter system and drug validation studies, it is finally concluded that, even though intake of memory-enhancing drugs for short-term period improves all cognitive skills thus the overall performance of mice, but consumption of these drugs without Alzheimer's disease has not been recommended as it may lead to impairment of cognitive functions at later stages of life.





**Dr. B. NIRMALA KUMARI** born in 1981 and received her M.Sc., PhD. From SV University, Tirupati. Her area of research focused on Neurobiology and Toxicology.

**Dr. K. Peera**, received his PhD from SV University, Tirupati. He has completed his postdoc and currently is working as Research Scientist. His research areas are Neuroinformatics, Drug Discovery.

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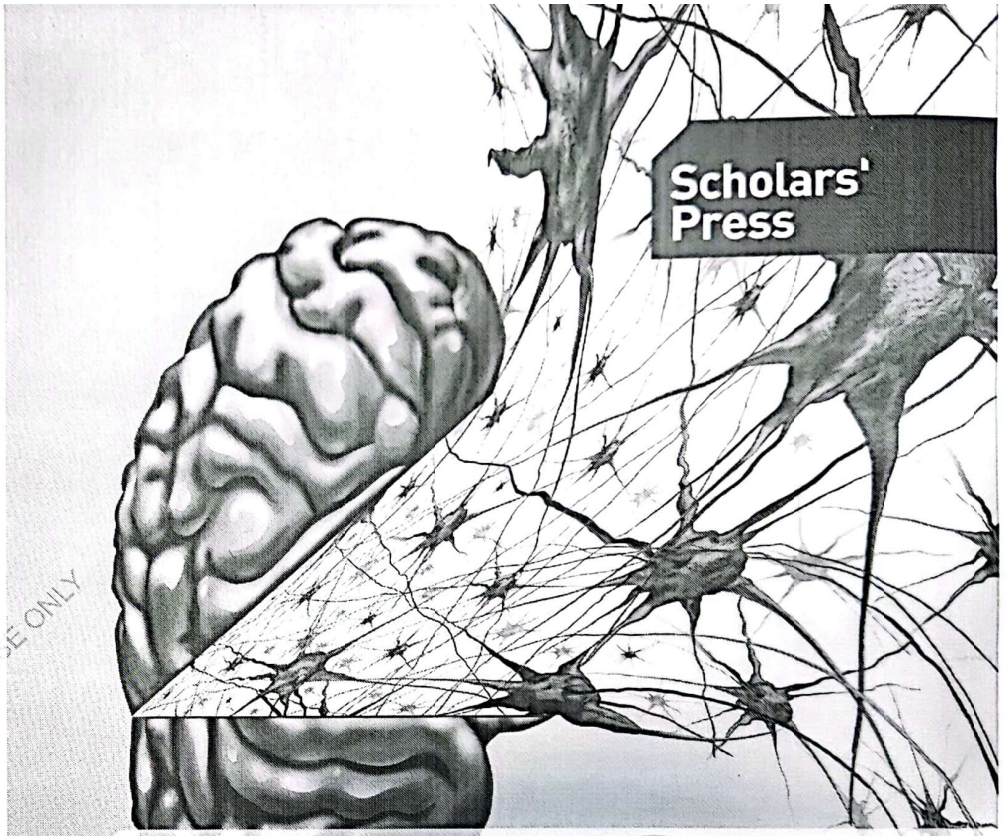


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# NEUROMODULATORY ROLE OF GALANTAMINE DRUG ON ALBINO MICE

Modulatory Role Of Galantamine Hydrobromide Memory Enhancing Drug On Neurotransmitters In Albino Mice

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## GENOTYPE ANALYSIS OF HUMAN HEPATITIS-C VIRUS BY RFLP

This book deals with Hepatitis-C virus shows substantial nucleolide sequence diversity distributed throughout the viral genome. In this study genotyping for HCV infected patients was based on RFLP analysis of 5 UTR and using type specific primers of NS5B regions. It was observed that, 60% of the patients (30 patients with chronic hepatitis) were infected with variants of genotype 1 and 40% of the patients (4 chronic hepatitis patients, 12 patients with chronic renal failure and 4 cirrhosis) were infected with variants of type-3 of HCV. None of the cirrhotic patients and patients with chronic renal failure in the present study, were infected with type-I of HCV. While PCR-RFLP, typing was rapid in conjunction with the primers used for RTPCR, NS5 typing was helpful in determining the subtype. There was good correlation between the two typing methods and this method can be used as a cost effective method for studying large number of samples. The study shows that predominant genotypes of HCV in South India include type-1 and 3. Type-3 seems to be transmitted nosocomially as suggested by the results, chronic renal failure has to exposed more medical investigations.

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**Dr. K. Peera**, currently workings as a Research Scientist with 14 years of Research and teaching experience. His research intrest on Bioinformatics, Neurobiology, Molecular biology, Drug discovery.

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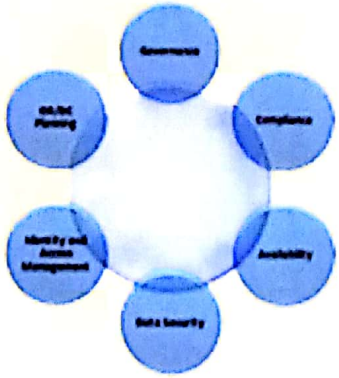

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time to generate summed up related authentication information. The maximal time is approximately 18 minutes for Test 8, which is as considered as expected. For verifying a proof, it takes less time than the proving process which is about 14 minutes for Test 8 so that it found that verification time is highly similar to block size and total number of blocks

## V. .CONCLUSION

In this paper, first time revealed a association between secure network coding and secure cloud storage. A systematic way is proposed based on the relationship to build a generic secure cloud storage protocol that depends on secure network coding protocol. First publicly verifiable secure cloud storage protocol that is secure without using the random oracle heuristic as a result. Further, to support user anonymity and third-party public auditing, enhanced generic construction. And opensourced prototype will make secure utilization of secure cloud storage protocols. In future work, it is interesting to design new and efficient secure cloud storage protocols based on our generic construction which is interesting to study the reverse direction.

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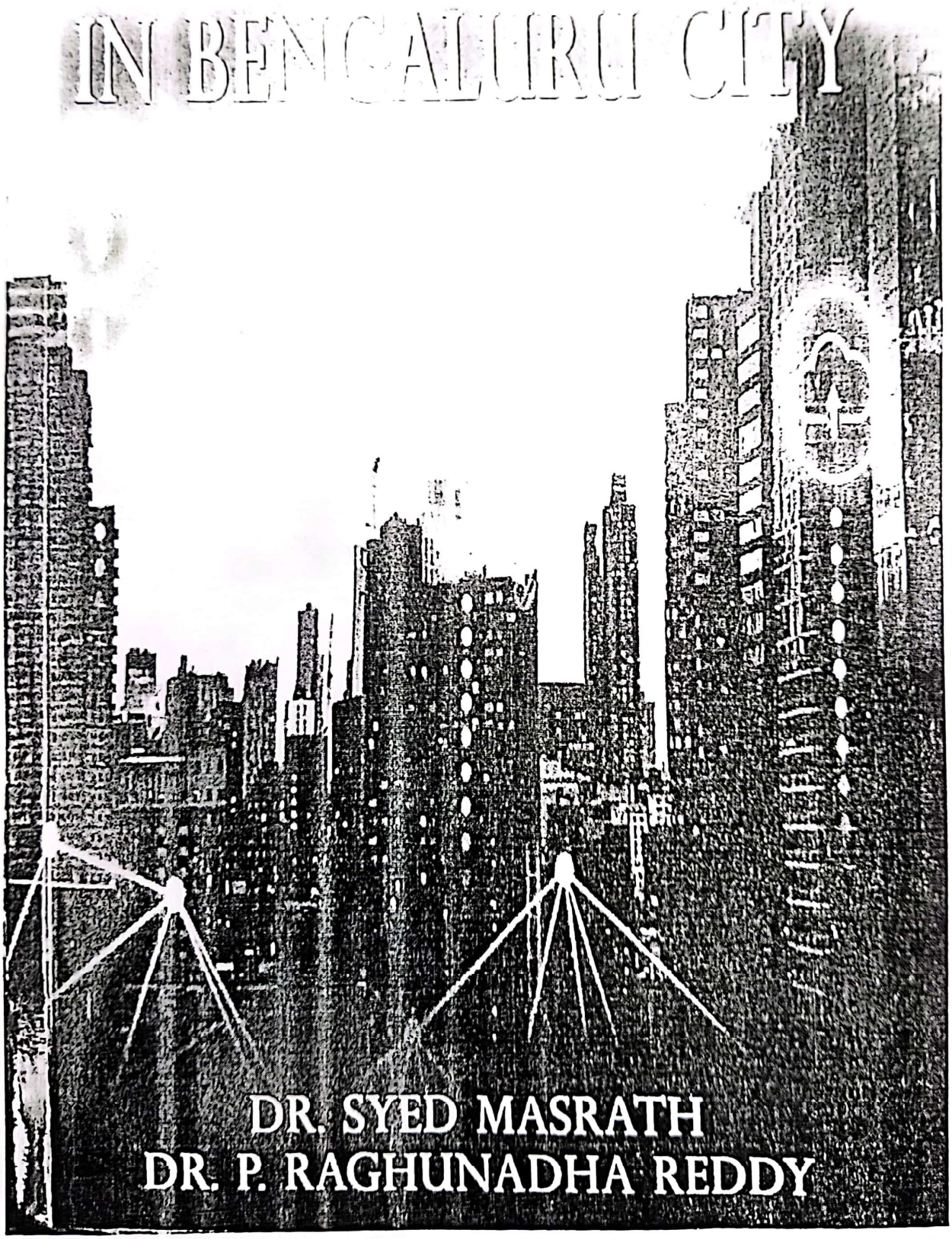

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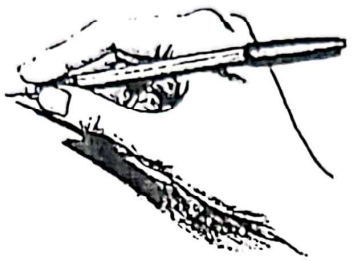

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# PREFACE

Employees constitute the major proportion of the mass and they are monitored through different types of evaluation methods. Evaluation is also called as appraisal process. These appraisal processes are also named such as performance appraisal, performance rating, performance evaluation, performance review, employee evaluation ratings, potential appraisal or merit ratings etc. Performance appraisal is a part of career development within an organisation. Appraisal practices in Indian organisations are quite varied. They vary from almost 'no appraisal' to 'sophisticated multipurpose, multi component based appraisal systems'.

Performance appraisal evaluates the employee's performance whether the given job done successfully or not can be reflected through the past performance of the employee. At the same time performance appraisal is an indicator of future potential of an employee. For the purpose of promotion an assumption is made to check the competence in performing the present role is sufficient for higher and different role in the organization. This process may not be exact in case of hierarchical organization as the capabilities differ from one role to another. Therefore, past performance is not a suitable meter for promotion purpose. In promotion, employees are allotted different task which is totally different from their present role and require different skills, responsibilities and role. Potential appraisal is the best method to evaluate employee's skills for promotion, transfer, deputation and increment purpose.



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Dr.P.Rajyalakshmi Reddy, Professor & Head, Department of Management Studies, Sri Venkateswara University, Tirupati started his academic journey at Sri Venkateswara University, Tirupati in October, 1988. During this long illustrious journey spanning a little over three decades, he has held various positions successfully on and off the campus and has contributed a great deal in the field of research. Twenty one of his scholars have successfully completed the doctoral research leading to PhD till to date, while many others are currently pursuing their research. The research work carried out over the years resulted in publication of papers in various international and national journals. He has worked on three joint research projects with Rutgers School of Business, Montclair State University, New Jersy, USA in the area of Public Health Management. He attended numerous conferences, seminars, workshops, FDPs around the globe and served as a Resource Person to many corporate and government entities. Under his stewardship 20 national and international seminars, conferences, workshops and FDPs were organized successfully. He is a national level resource person for Department of Personnel and Training, Govt. of India, New Delhi and conducts TNA and Mentoring training programs for Govt. functionaries. He has travelled extensively across the globe on various academic, government and spiritual assignments and received many national and international awards for his contribution in the field of academics and community service.

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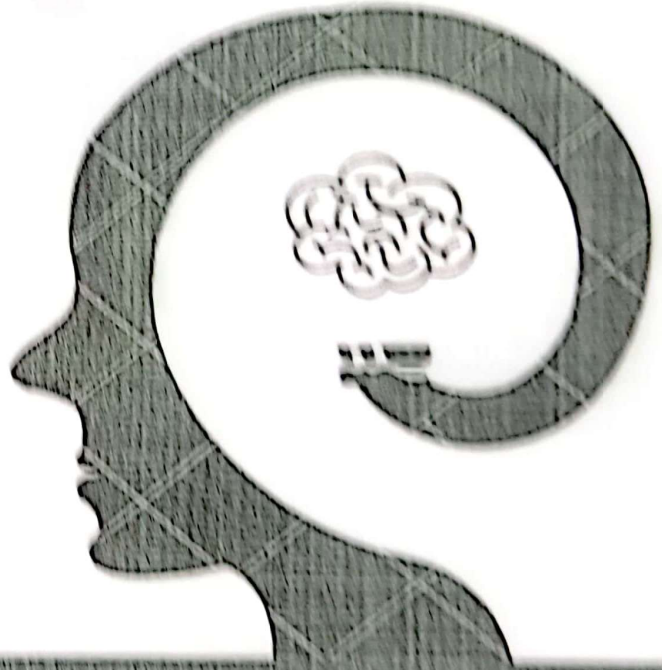

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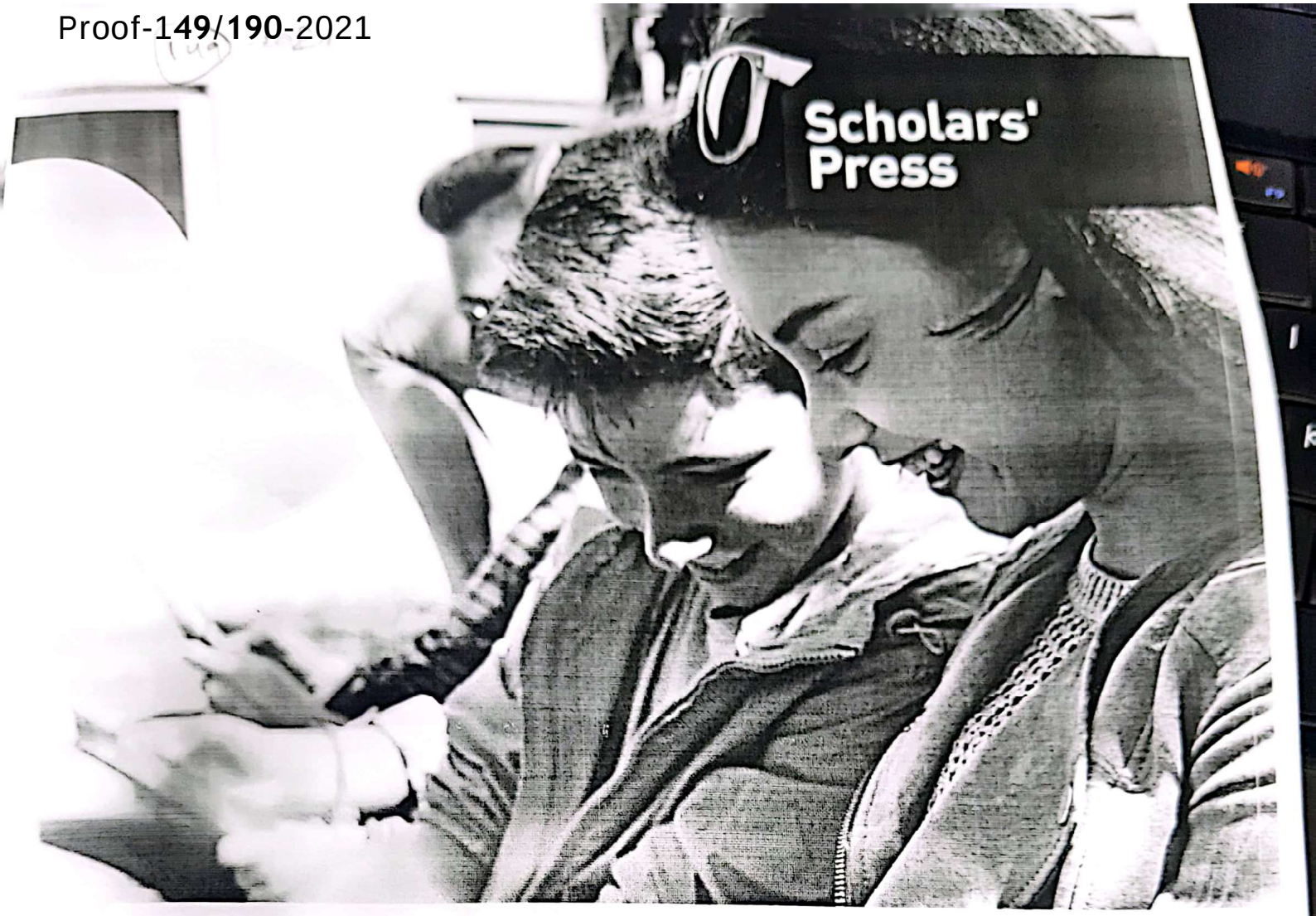


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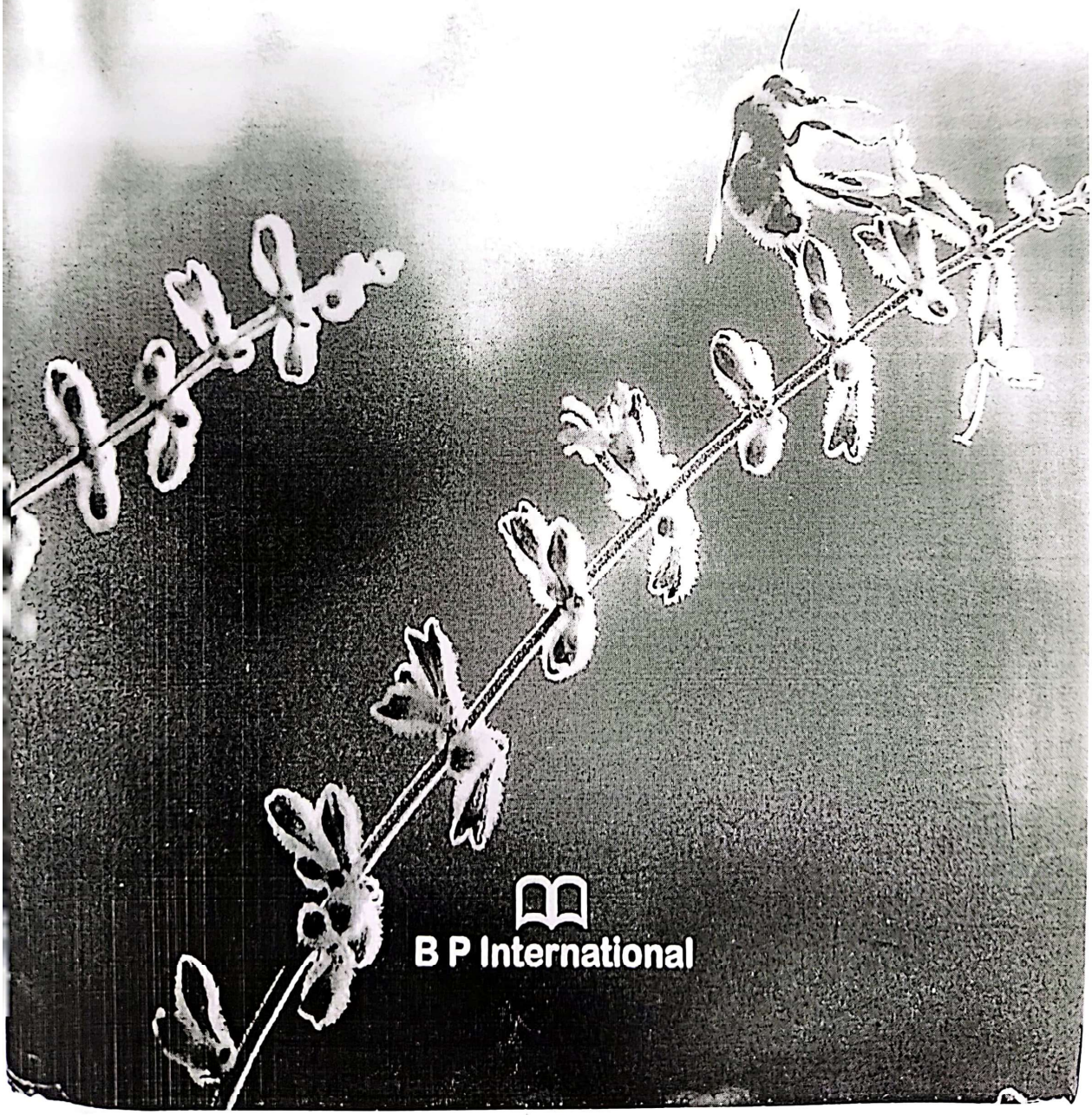
# New Visions in Biological Science

## Vol. 8



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# New Visions in Biological Science

## Vol. 8

India ▪ United Kingdom

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**Editor(s)**

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Chapter 1
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# Influence of Soil Probiotic on Water Quality and Soil Quality Maintenance and Growth of Freshwater Fish *Pangasius hypophthalmus*

Kiran Kumar Bazar [a], Naga Jyothi Pemminati [a*] and Subhan Ali Mohammad [b]

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## ABSTRACT

In recent decades, various procedures have been introduced to improve the conditions of the cultural ponds' conditions in aquaculture. Numerous biological products, including live bacterial inocula, preparation of enzymes, extracts of plant products, and many others, are being promoted to induce water and soil quality conditioners in aquaculture ponds. However, several studies have shown no significant effect of bacterial inoculums, and also the treatment with enzymatic preparation led to an enhancement of microbial mineralization of organic matter, but no effective net production of fish was observed. Probiotics have recently been applied to aquaculture. Probiotics are the live cells or a substrate that induce its benefits by stimulating growth, digestion, and active immune response. Probiotics can also improve water and soil quality. The use of probiotics is increasingly viewed as an alternative source of antibiotic treatment, which controls pathogens through various mechanisms. The current study summarizes the role of commercial probiotic 'Super-PS' on water quality and soil quality maintenance during the culture of freshwater fish *Pangasius hypophthalmus* fingerlings.

*Keywords:* *Water quality maintenance; growth performance; Pangasius hypophthalmus; probiotic Rhodo bacter and Rhodo coccus species.*

## 1. INTRODUCTION

Aquaculture, known as the fastest-growing food-producing sector globally, is heading towards new directions, intensifying and diversifying [1,2]. The industry is now facing many challenges with the increase in the intensification and commercialization of aquaculture production. Pragnya et al., 2020 [3] reported bioaccumulation of heavy metals in different organs of fish *Pangasius hypophthalmus*, from Visakhapatnam, India, because coastal areas are prone to heavy metal pollution. The challenges majorly include combating diseases, broodstock improvement and domestication, development of appropriate feedstuffs and feeding mechanisms, water quality management, etc., [4]. Among these, disease outbreaks are one of the important problems that affect aquaculture production [5,6]. Probiotics in aquaculture have been widely used as an agent for controlling diseases, enhancing immune response, giving nutritional and enzymatic contributions to the host's digestion, and improving soil and water quality [6]. Probiotics are also regarded as an eco-friendly method in aquaculture. The probiotics may be added to experimental diet feed as live microorganisms to create a balanced indigenous microfloral community in the gastrointestinal tract [7,8]. Moreover, probiotics are considered therapeutic agents for usage, and some farmers are already using them, preferably over antibiotics [9]. The use of probiotics is increasingly viewed as an alternative source of antibiotic treatment, which controls pathogens through various mechanisms [10,11].

The term probiotic is derived from a Greek word that means "for life" [12]. It was described as a live microbial feed supplement that benefits the host animal by improving its intestinal microbial balance [9]. Fuller 1989 [9] proposed that a good probiotic has the following characteristics:

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was cultured on a large scale in the state of Andhra Pradesh. Since 2004, its farming has increased due to commercial importance. Striped catfish (*Pangasius hypophthalmus*) is a high-fat fish compared to other freshwater fish like snakehead fish and carp. Striped catfish oil contains unsaturated and polyunsaturated fatty acids that are beneficial for health [16].

The culture of *Pangasianodon* catfish is largely restricted to pond aquaculture systems in India. Information from existing farmers reveals that this fish is cultivated both under monoculture and polyculture with Indian major carps and Chinese carps. However, a monoculture of *Pangasius hypophthalmus* fetches better performance and profit to farmers. Andhra Pradesh is the major producing state for *Pangasius hypophthalmus* where most of the farms are located in Krishna and West Godavari districts of Andhra Pradesh. However, concern has arisen about long-term sustainability due to diseases and their negative impacts on socio- economic aspects and biodiversity. The unregulated culture of *Pangasius hypophthalmus* has been causing concern to environmental safety and warranting a very cautious food.

## 2. MATERIALS AND METHODS

### 2.1 Source of Fish and Acclimatization

Fingerlings of *Pangasius hypophthalmus* (Fig. 1) collected from government fish farm at Tirupati, Chittoor district, Andhra Pradesh, were brought and acclimatized to the laboratory conditions. Fingerlings of fish were collected from the local fisheries department as per the standard pisciculture procedures and were kept in cement tanks for a week with sufficient aeration and dechlorinated water to acclimatize them to laboratory conditions.

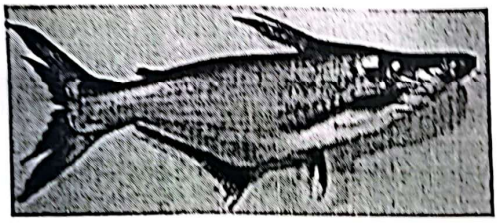
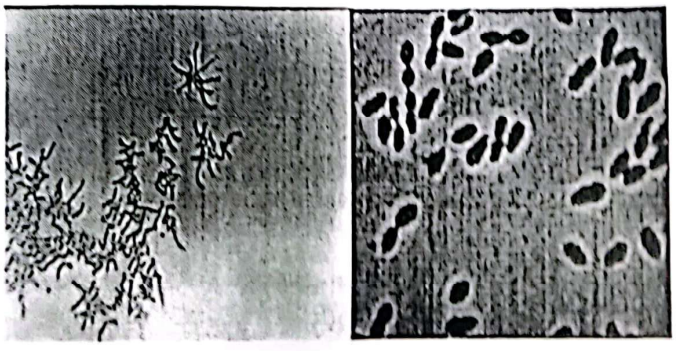


**Fig. 1. *Pangasius hypophthalmus* Probiotic**

This study used commercially available probiotic 'Super PS' manufactured by symbiosis animal feeds, A.D.B road, Peddapuram, East Godavari district, Andhra Pradesh, India. Super PS is a soil probiotic made with beneficial bacteria used to improve pond bottom condition, reduce harmful bacteria, and keep the environment friendly for aquaculture. It is composed mainly of *Rhodobacter species* and *Rhodococcus species* in $10^9$ CFU $mL^{-1}$.



***Rhodococcus Species*** ***Rhodobacter Species***

**Fig. 2. Super PS – Soil Probiotic**



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# CURRENT PROSPECTS AND APPLICATIONS OF NANOTECHNOLOGY

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# AQUACULTURE ADVANCES IN NANOTECHNOLOGY

Dr. P. Nagajyoti
Department of Aquaculture
S.V. University, Tirupati

## Abstract

*Aquaculture is one of the fastest rising sectors in the world today. An Aquaculture system is diversified as fresh, brackish and marine water culture systems. The growth of aquaculture as an industry has accelerated over the past decades, this has resulted in environmental damages and low productivity of various crops .The need for increased disease resistance, growth of aquatic organisms, and feed efficiency has brought about the use of probiotics in aquaculture practices. The first application of probiotics occurred in 1986, to less their ability to increase growth of hydrobionts (organisms that live in water). Probiotics were used to improve water quality and control of bacterial infections. Now a day there is documented evidence that probiotics can improve the digestibility of nutrients, increase tolerance to stress, and encourage reproduction. Currently, there are commercial probiotic products prepared from various bacterial species such as Bacillus sp., Lactobacillus sp., Enterococcus sp., Carnobacterium sp., and the yeast Saccharomyces cerevisiae among others, and their use is regulated by careful management recommendations. The present paper shows the current knowledge of the use of probiotics in aquaculture, its antecedents, and safety measures to be carried out and discusses the prospects for the study in this field.*

*Keywords: Aquaculture, Probiotics, water quality, Disease Control, Growth promoters, reproduction.*

## Introduction

"Nanotechnology is dealing with specific size dependent functional properties of the individual sub-units or of a system of those". Nanotechnology is the future big excitement in the field of Science and Technology.

Nanotechnology manipulates matter at the nanoscale (1-100 nm) (Moore, 2006 and Nel *et al.*, 2006) producing nanoproducts and nanomaterials (NMs) that can have novel and size-related physico-chemical properties differing



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significantly from those from larger particles. Recently, anthropogenic sources have also produced nano-sized materials unintentionally from combustion by- products and intentionally as manufactured nanomaterials. Nanotechnology is undoubtedly one of the most important technologies of the 21st century. With an estimated $147 billion worth of so-called 'nano-enabled' commercial and consumer products sold in 2007 and a projected value of $3.1 trillion by 2015. Nanotechnology has been referred to as the next industrial revolution (Schmidt, 2009). This technology promises scientific advancement for many sectors such as medicine, consumer products, and energy. Governments and investors around the world are therefore keen to explore and exploit the exceptional properties of nanomaterials opportunities which exist within nearly every industrial and technological sector.

## Nano-Concept and History

Nanotechnology is defined as the "design, characterisation, production and application of structures, devices and systems by controlling shape and size at nanometre scale" (Williams *et al.*, 2005). In principle, therefore, any product using compounds that exist as, or are manufactured to, these specifications can be considered as nanomaterials.

**Table 1: Comparison of sizes of biological molecules and structures in nanometers (Gupta and Kompella, 2006)**

| Object | Size (nm) |
|---|---|
| Carbon atom | 0.1 |
| DNA double helix (diameter) | 3 |
| Ribosome | 10 |
| Virus | 100 |
| Bacterium | 1,000 |
| Red blood cell | 7,000 |
| Human hair (diameter) | 80,000 |



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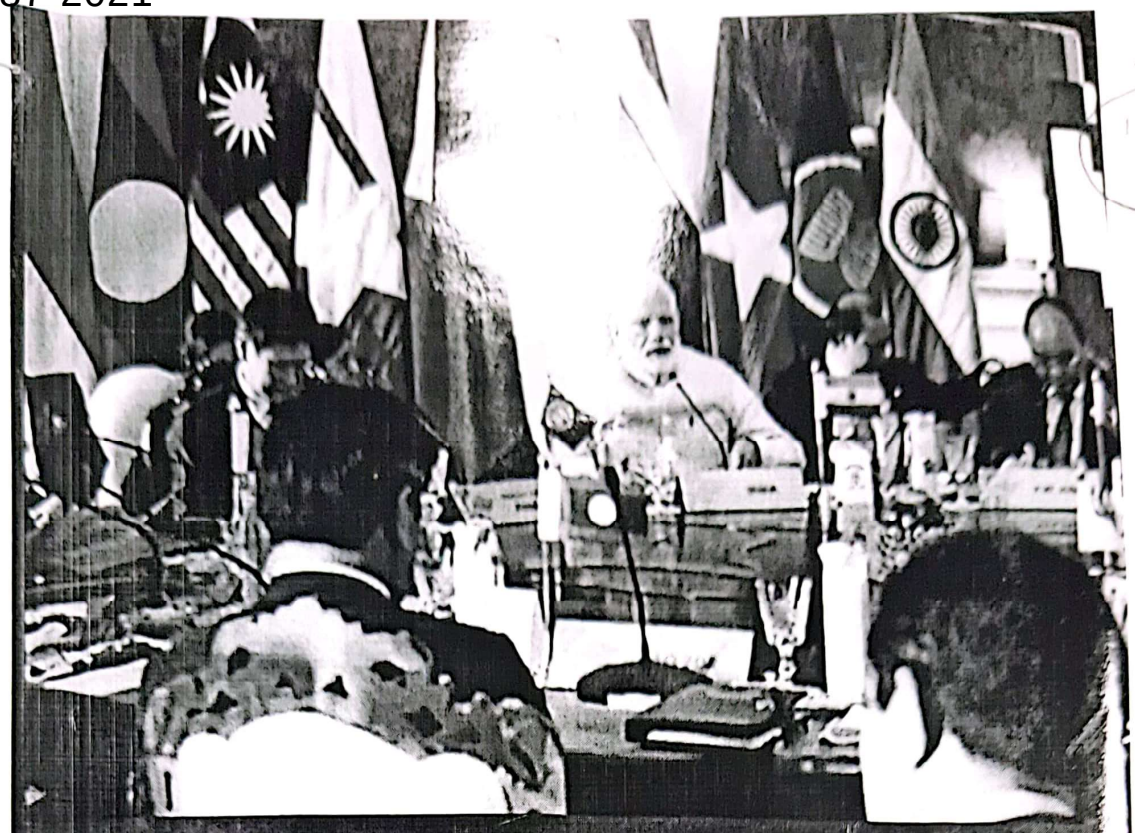

# INDIA-ASEAN

## Partnership

### A Game Changer in the Indo-Pacific

Editor
G. Jayachandra Reddy

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...graphy where ASEAN is at core. In recognition of the ... the Indo-Pacific and in commemoration of the thirty years of ... objective of the current edition of the Delhi Dialogue was to ... ation leading to further strengthening of the strategic ... AN. Both ASEAN and India believe that openness, ... om of navigation and peaceful settlement of disputes ... There is considerable convergence in both the Indian ... and the ... Indo-Pacific. Both India and ASEAN emphasize connectivity in the Indo-Pacific and underline cooperation over rivalry. India is consciously working with ASEAN towards a vision of an open and inclusive Indo-Pacific in tandem with initiatives such as the Act East Policy (AEP), and Indo-Pacific Oceans Initiative (IPOI) to ensure Security and Growth for All in the Region (SAGAR). India and some of the ASEAN countries are also members of the recently launched the IPEF. Therefore, each chapter of the book logically argues the rationale of "why India and ASEAN are so significant in the Indo-Pacific construct?".



**Prof. G. Jayachandra Reddy**, former Director and Chairman, Board of Studies, UGC Centre for Southeast Asian and Pacific Studies, Sri Venkateswara University, Tirupati. His areas of research interests are regional geography, security, strategic and geopolitical issues of Southeast Asia and Pacific regions. He published 43 research papers and 19 books, besides participating in 63 national and international seminars. He was one of the members of the ICWA, New Delhi, delegation to Vietnam in 2017 and to Asia-New Zealand Foundation, Wellington in 2019; he was appointed as a founder member, Executive Council, Allahabad State University, Uttar Pradesh. He is the Editor-in-Chief, Asia-Pacific Journal of Social Sciences and Editor, Area Studies: A Journal International Studies and Analyses. He served as 'Visiting Research Associate' at Manila de Manila University, the Philippines, 2010 and also served as "Visiting Research Fellow" Research Institute for Oriental Cultures, Gakushuin University, Japan, 2012 and an Awardee of the Australia-India Council Fellowship (2012-13), Government of Australia. He served at the Vietnamese Institute for Indian and Southwest Asian Studies, Hanoi, as a Visiting Fellow (2015) and Visiting Scholar, China ...gn Affairs University, Beijing, (2018). He was an Awardee of Vietnam National Day ...d-2018, Embassy of Vietnam, New Delhil; and Outstanding Faculty Award-2015, ... International Foundation, Chennai. International Institute of Organized Research ...nferred Editorial Excellence Award-2017 and Distinguished Researcher Award-2018. ...s the founder Secretary, International Society for Asia Pacific Studies and the ...ociation for Area Studies in India. Prof. Reddy has organized 9 international conferences ...art from 3 workshop-cum-capacity building programmes and has been serving as a ...ember in different committees at national and international level. He visited co... like ...thiopia, Dubai, Singapore, Thailand, Philippines, Taiwan, Japan, Australia, V... and China.

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# Why India and ASEAN are Crucial to the Indo-Pacific?

G. Jayachandra Reddy

**Abstract**

Post-Cold War global setting has brought many opportunities to the middle powers of the world which indirectly prompted the concept of multi-polar world. Globalization has, among various other positive features, brought in unlimited options and opportunities to establish greater connectivity. The consequent phenomenal increase in the free movement of people, goods, services and investment flow has rendered the world a single village. On the flip side, new challenges have also surfaced in the form of rise of China that has begun challenging the hegemony of the US. It is then logical for the US to embark on a prime geopolitical strategy to contain the China's aggressive stance in Asia and at the global level.

The crux of the emerging geopolitical scenario is the Indian Ocean that has evolved as the pivot of the emerging global maritime security architecture. Needless to underscore the fact that the Indian Ocean lies at the centre of all the strategic designs of the US. While revising its Asia-Pacific policy keeping pace with the India's strategy, the US has even rechristened the "US Asia-Pacific Command" as the US Indo-Pacific Command." Undeniably, India and Indian Ocean have become the focal points of the US's Indo-Pacific policy.

Annals of history amply testify to India's geographical advantages and its role in the Indian Ocean. For instance, the strategic advantage of India and the Indian Ocean was also a major factor in expanding Britain colonial empire and maritime trade. In addition, India's focus

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# India and the ASEAN Centrality in the Indo-Pacific Emerging Security Architecture

M. Prayaga

**Abstract**

Fast changing power dynamics in the Indo-Pacific region compelled global attention to the region. Responding to China's alarming military modernization and expansion, its aggressive military manoeuvres and 'wolf warrior strategy', the United States took a slew of initiatives of which the robust was revival of the Quadrilateral Security Dialogue (QUAD). The great power competition between the United States and the Communist behemoth in critical areas such as trade, connectivity, supply chains and security, tuned the region into a theatre of multiple challenges. As a frontline state, India desired to expand its power and influence in the region whose political, economic, security, environmental and strategic importance keeps on growing.

India, joined by the like-minded democracies such as the United States, Japan and Australia, vociferously called for free and open Indo-Pacific. They also supported rule of law and freedom of navigation and overflight. These moves were necessitated by rapidly rising China's economic and military band wagoning postures in the region.

Dictated by the ground realities, India, the US, Japan and Australia preferred to rely on soft power rather than on the hard power to expand their power in the region. These four major powers, with shared interests and shared concerns, formed the Quad with the avowed aim of developing the region. In doing so they felt the need of the

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T.K. Padmaja
Balaji Meriga

# Bauhinia purpurea: A plant with anti-obesity activity

## Anti-obesity activity of B. purpurea

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Obesity is considered as one of the most serious health concerns worldover, as it is a potential risk factor to develop hypertension, cardiovascular disorders, type-2 diabetes, non-alcoholic fatty liver, metabolic syndrome, stroke and cancers. The rich potential of natural resources to combat obesity disorders has not been fully explored. The present study is to investigate anti-obesity and anti-hyperlipidemic properties of Bauhinia purpurea. B. purpurea is an orchid and medium sized deciduous tree found in a variety of habitats in South Asia, south East Asia, Southern China and Japan. Common names include Butterfly tree, Geranium tree and Camels foot tree.Frequently met with in all forests and also cultivated in gardens and identified by deep rose colouredfragrant flowers.

Dr. T. K. Padmaja obtained her Masters and Ph.D., from the Department of Biochemistry, S.V. University, Tirupati. During her Ph.D. program, she has conducted research work on antiobesity activity of *Bauhinia purpurea*. She has attended several conferences and published a good number of research articles in National and International.




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S. Varalakshmi
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# Biochemical Studies on Aluminum Toxicity in Tomato Plants

## Aluminum Toxicity in Tomato

Dr.S Varalakshmi did M.Sc. and Ph.D from S.V. University, Tirupati. She published her research work in reputed journals, attended several National and International conferences. Her research area of interest is plant stress physiology and Biochemistry. Presently she is working as a Senior Lecturer in Sri Padmavathi P.G and Degree College, Tirupati.

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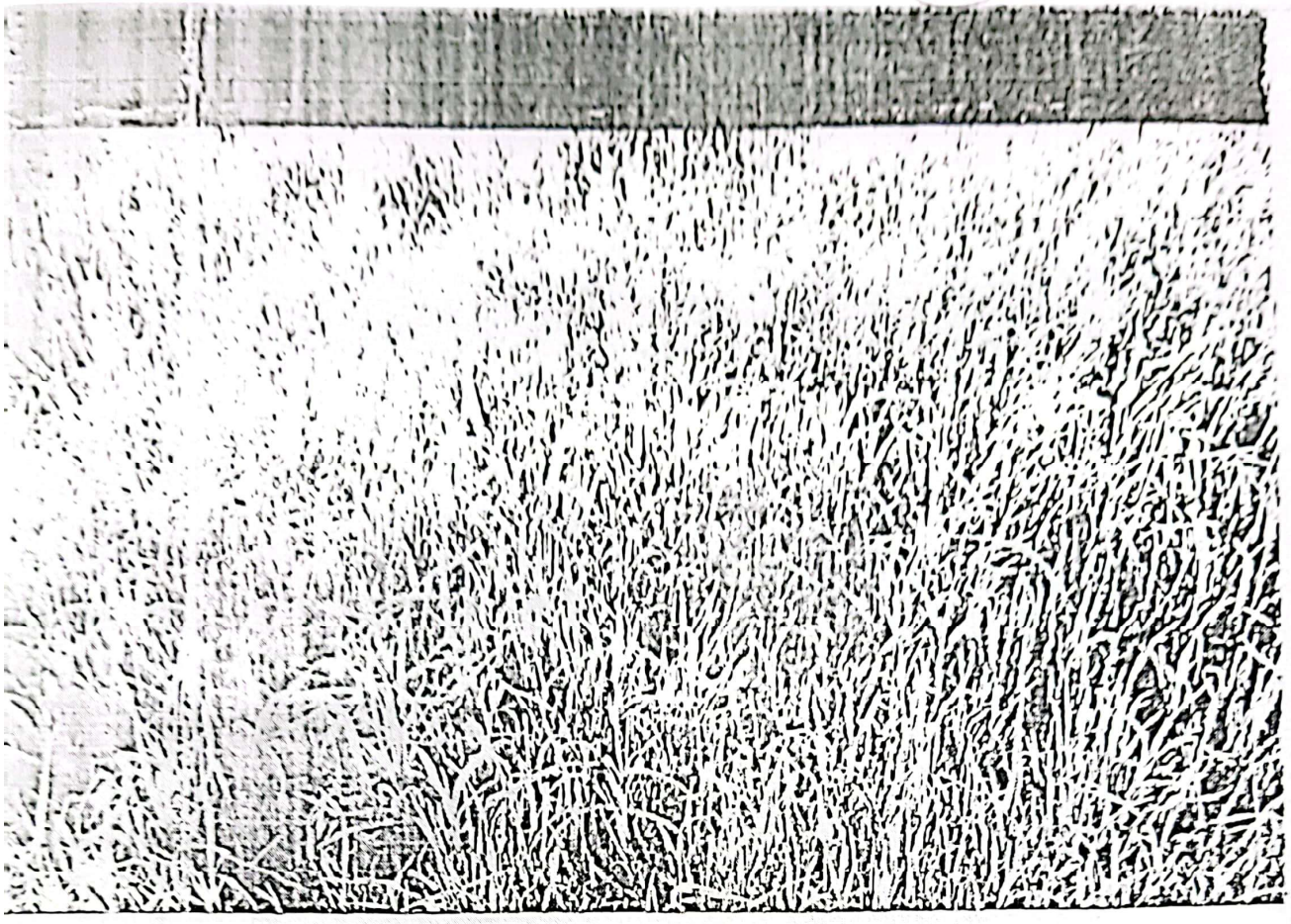

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## Role of Phytohormones as Senescence

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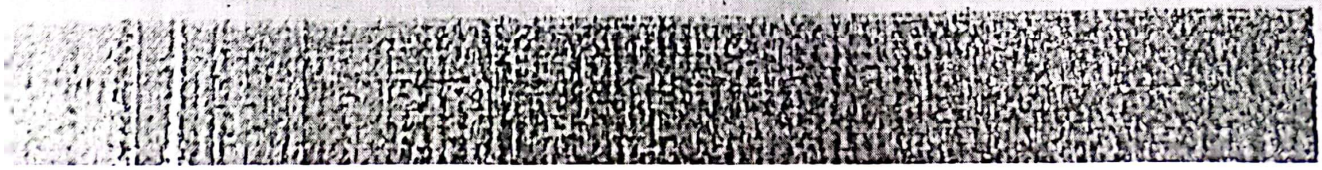

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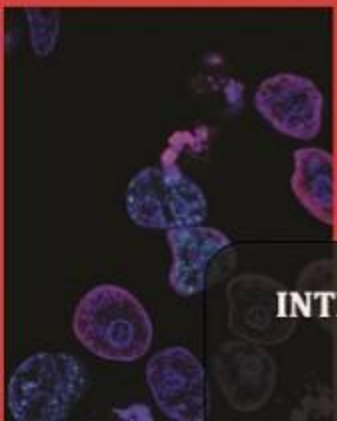




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Dr. B Sarath Babu
Dr. J Udaya Sekhar

# Studies on Enhanced Control of Time Delayed Proesses

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This present book is focused on firstly, control of non-self-regulating process of various problems associated with the time delay in an unstable process is studied also an attempt is made to compare various approximations. To design a controller direct synthesis method was used.

Secondly, "Enhanced performance with PID controllers and lead/lag compensators for unstable processes with time delays" are studied.

Thirdly, "Comparative evaluation of decoupling control schemes for MIMO non-square processes are studied three decoupling schemes for MIMO non-square processor" are designed. Finally, we designed a controller for bioreactor process.



**1. Dr. B. Sarath Babu** is presently working as Asst. Professor in the Dept. of Chemical Engineering, SV University, Tirupati. A.P, India.
**2. Dr. J. Udaya Sekhar** has been awarded doctorate from Dept. of Chemical Engineering in 2022 SV University, Tirupati, A.P, India.

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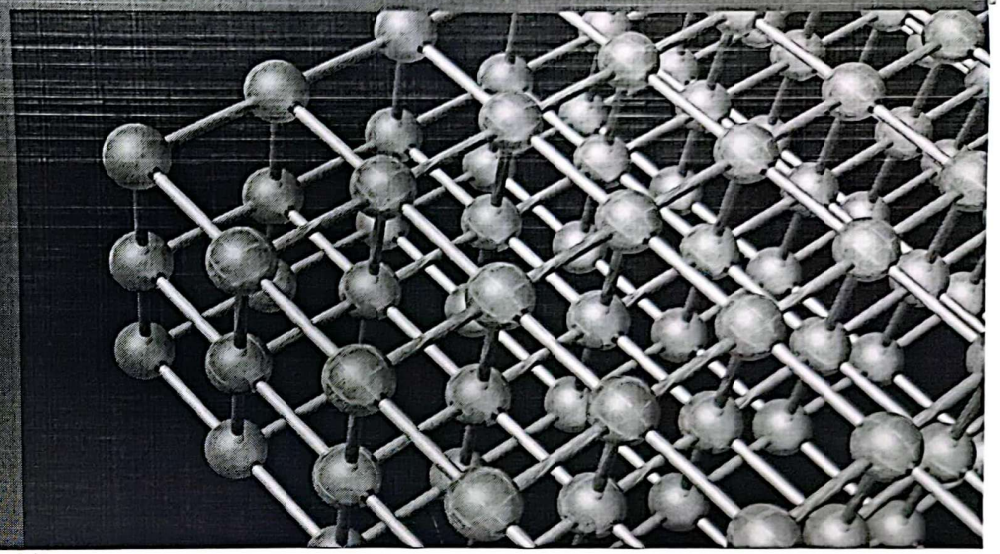
This investigation comprises of the effect of various process parameters like contact time, pH, adsorption dosage and initial concentration of Red F3B dye. The maximum of 85% dye removal is achieved after 100min. of equilibrium time at optimum conditions of pH 6, adsorbent dosage 4g/L and initial dye concentration 20mg/L. Suitability of standard adsorption isotherm models - Langmuir, Freundlich and Temkin models are studied.



Akhila Swathanthra P
Kavitha R.D

2022

# REMOVAL OF RED F3B DYE BY ADSORPTION WITH ZINC OXIDE NANOPARTICLE

## SYNTHESIZED USING TABERNAEMONTANA DIVARICATA LEAF EXTRACT



**Dr P. Akhila Swathanthra** - Sr.Assistant Professor in the Department of Chemical Engineering, SVU College of Engineering, SVU, Tirupati. Teaching Experience 17 Years. Research area is Environmental engineering and Fluidization Engineering.
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D-Limonene is a compound that can be obtained from the peel of citrus fruits such as oranges, limes, mandarins, etc. D-limonene takes its name from the lemon. it is one of the most common terpenes present in nature. Many health care providers have approved the potential benefits of D-limonene claiming that it can prevent or treat some health conditions such as Bronchitis, Cancer, Diabetes, Gall stones, etc. It is also used in industries to makesanitizing liquids, Fragrances, pesticides, etc.
In the present study,D-Limonene is extracted using the peel of oranges, The peel of oranges are boiled in water and the oil extractedis distilled in steam at a temperature less than 100 °C, well below its normal boiling point which is 176°C. The immiscible oil can then be separated from water by simple techniques, This study of extracting D-limonene was made using different solvents such as methanol and distilled water at various temperatures and times of heating which provided us with varied results from which the optimum process was concluded. Thus produced D-Limonene was characterized using Gas chromatography and Mass Spectroscopy.



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Mude Murali Naik
P. Akhila Swathanthra
P. Uma Maheshwari

# EXTRACTION OF D-LIMONENE FROM WASTE ORANGE PEELS

waste to value added products



Mr. M. Murali Naik is currently working as Assistant Professor (Adhoc) at Department of Chemical Engineering, JNTUACEA.
He has 13 years of teaching experience and published 10 journals, 2 book chapters and attended 6 international conferences.
He Got Arekapudi Ramanadam Chowdary and Ponnamma Endowment Award in the year 2010 for M. Tech Program.

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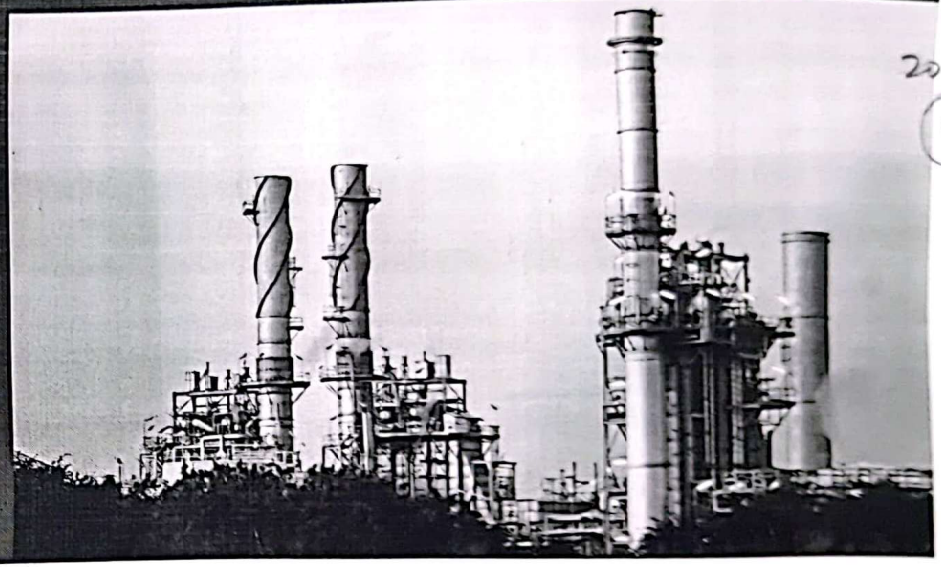
A chemical element Copper with symbol Cu is a soft, malleable, and ductile metal with very high thermal and electrical conductivity. The exposed surface of pure copper has a reddish orange color and is used as a building material and also as a constituent of various metal alloys. Long-term exposure of the metal can cause irritation of the nose, mouth and eyes and it causes headaches, stomachaches, dizziness, vomiting and diarrhea. Adsorption is the process for the removal of copper in drinking water, there were different methods so far tried for the removal of excess copper from water. Adsorption methods by using several adsorbents such as saw dust, fly ash, etc., have been tested in past at different copper concentrations.. Intentionally high uptakes of copper may cause liver and kidney damage and even death. Water pipes made up of copper and bath fixtures made from brass and bronze alloys that contain copper. The removal of toxic metal ion Cu(II) presentsynthetic water using Ficus bengalensis (Banyan tree) bark powder and Cinnamomum.



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Mude Murali Naik
P Akhila Swathanthra

# Studies on Removal of Copper (II) From Synthetic Waste Water

Separation through adsorption



Mr. M. Murali Naik is currently working as Assistant Professor (Adhoc) at Department of Chemical Engineering, JNTUACEA. He has 13 years of teaching experience and published 10 journals, 2 book chapters and also attended 6 international conferences. He Got Arekapudi Ramanadam Chowdary and Ponnamma Endowment Award in the year 2010 for M.Tech Program.

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## Separation through adsorption

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Indian Journal of Women and Development
Vol. 15 Issue : 1 (May, 2022) ISSN : 2231-3974 Page No: 78 to 83

# Factors Influencing Continuing Education of Neo-Literates

Dr. M. Subramanyam

**Abstract**

*The progress of a nation depends upon the quantity and quality of education received by people. In most countries, there is widespread acceptance of the principle that education is a fundamental human right. Article 26 of the Universal Declaration of Human Rights, proclaimed by the General Assembly of the United Nations in 1948, states in its opening paragraph: "Everyone has the right to education. Education shall be free, at least in the elementary and fundamental stages. Elementary education shall be compulsory. Technical and professional education shall be made generally available and higher education shall be equally accessible to all on the basis of merit." Education has a dual function of transmitting to the new generation the heritage of the past with its accumulated wisdom and preparing it for the present and the future that the emergent needs of society and individuals. Alternative education is the essential element of the educational system for its successful utility from the point of view of both the individual and society. In this paper, the importance of non-formal education and its inter relationships with students of adult neo-literates are covered.*

***Keywords :*** *Quality of education, Elementary education, Non-formal education,*

## Introduction

The word education originated from the Latin word Educare which means to nour Some maintain that the word education has been formulated from the word 'Educo'. It sho however, be noted clearly that nothing can be drawn out unless something is put in beforeh Education, thus, means both the acquisition of knowledge and experience as well as development of skills, habits and attitudes which help a person lead a full and worthwhile l this world. It is, in fact, a process of training the individual through various experiences of draw out the best in him.

Swami Vivekananda thinks, "Education is the manifestation of divine perfection, existing in man".

## Types of Education

There are three types of education as mentioned below;

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Dr. D Subramanyam
Dept of Economics

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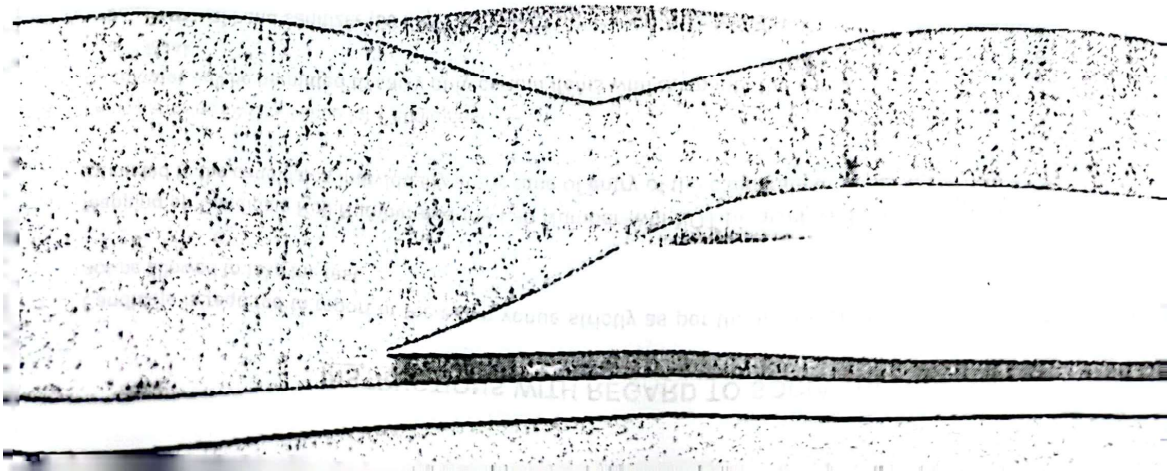

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Indian Journal of Women and Development (Peer Reviewed Journal)
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# Education and Empowerment of Women

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Dr. D. Subramanyam
Dr. D. Yuvaraju

**Abstract**

*The purpose of providing education to women is to make them play a positive role on their own in the development of the nation. It is evident from the empirical research that educational discrimination against women hinders the development process. Expanding educational opportunities for women is desirable for increasing productivity on the farm, greater labour force participation, late marriage, lower futility, child death and serve nutrition. Since females constitute a major proportion of the rural. labour, it is essential that improved education and skill formation become crucial for better development processes. The expansion of educational opportunities for women of all levels can have an important impact on breaking the vicious cycle of poverty by creating a more productive labour force and skills. Women's education can influence the future shape and direction of society in several ways. Educating women is a critical ingredient in breaking the vicious multi-generational cycle of poor child health. It is, therefore, realized that women have to be provided with vital educational inputs to become a powerful force in society and to become part of the development process. This paper discusses the role of education in empowering women.*

**Keywords:** *Education, Development, Discrimination, Opportunity.*

## Introduction

Education is considered an instrument for social and economic change a catalyst in evelopment efforts and a facilitator of a better quality of life. Attempting to achieve economic velopment in the absence of educational development and progress is like trying to achieve pnomic development in a vacuum. Education supplies human resources with the requisite owledge, training and qualifications to meet the demand for economic development. ication is human capital, which plays an important role in enhancing the development ess of the economy. The human capital base of the Indian labour market is not only acterized by the vast majority of illiterates, but the distribution of the human capital is also y skewed against women, SC/ST and rural labour markets. The LFPRS and WPRs tend to



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Indian Journal of Women and Development (Peer Reviewed Journals)
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# MGNREGS and Women Empowerment

Dr. D. Yuvaraju
Dr. D. Subramanyam

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**Abstract**

*There is inequality and vulnerability of women in all sphere of life. They need to be covered in all walks of life. Without the active participation of women, establishment of a social order may not be a successful one, because women constitute half of the population. Women should realize that they have constitutional rights to quality health care, economic equity, access to education and political power. Mahatma Gandhi firmly states that the status of women would not change merely by bringing legislations; it must be supported by change in women's social circumstances and situations and also man's sexist attitude to women. The National Rural Employment Guarantee Act, which entitles rural households to 100 days of wage employment on public works at the statutory minimum wage, contains special provisions to ensure full participation of women. The paper discusses status of women participation in Andhra Pradeshin comparison to other States and issues and challenges for women's participation in MGNREGS.*

**Keywords :** *Inequality and vulnerability, empowerment, National Rural Employment Guarantee*

## Introduction

Women in general perform the role of biological reproduction as well as several other roles. But often, they are not visible. It is their biology and their reproductive role that overwhelms their productive role of earning and meeting livelihood needs. Realizing this, third Millennium Development Goal [MDG] has included women's empowerment and promoting gender equality among the eight MDGs. Empowerment of women is a long and difficult process which is to be promoted with full public support and this could be successful only when the women living at the lower strata who have been suppressed by the male dominated society rise to claim their rightful place in their own society. In spite of the draw backs in implementation of the legislation, significant benefits have already accruing by women through better access to local employment, minimum wages with relatively decent and safe conditions.

Women's empowerment is to give the power to act, participate, make decision, voice against social evils, and fight for right and above all make women conscious of the



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# INDIAN JOURNAL OF WOMEN AND DEVELOPMENT

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**Prof. D. Krishnamoorthy**

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Two-Day National Seminar on "Role of Women in Freedom Movement : Challenges Faced and Milestones Achieved" held on 11th and 12th August, 2022.




"International Day for the Elimination of Violence Against Women" 25th Novermber, 2022

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# Role of Women during India's Freedom Struggle

Dr. K. Srilathakishori & Dr. D. Raja Rajeswari

*Abstract*

*Women in India have always been inspiring, whether it is now or during the times of the Indian freedom struggle. Woman's participation in Indian freedom struggle began as early as in1817. The history of Indian Freedom Struggle would be incomplete without mentioning the contributions of women. The sacrifice made by the women of India will occupy the foremost place. They fought with true spirit and undaunted courage and faced various tortures, exploitations and hardships to earn us freedom. When most of the men freedom fighters were in prison the women came forward and took charge of the struggle. The list of great women whose names have gone down in history for their dedication and undying devotion to the service of India a long one. Women leaders made a significant mark of their valor and will as early as in the 18 century and set the stage for emphasizing that women were in no way willing to be relegated to the backdrop of the freedom struggle.*

**Keywords:** *Freedom Struggle, Sacrifice, Valor.*

## Introduction

As India celebrates 75 years of Independence from British Rule, here we take a look at some of the eminent freedom fighters who fought equally hard but never got any share of the limelight in Indian history. An Indian independence activist Aruna Asaf Ali is widely remembered for hoisting the Indian National flag at the Gowalia Tank maidan in Bombay during the Quit India Movement in 1942. She also held the position of Mayor in Delhi post-Independence. A key member of the Indian Independence movement Madam Bhikaji Cama was an influential figure for gender equality Freedom activist Kamaladevi Chattopadhyay is known for her contribution to the Indian independence movement. She is the first woman ever in Indian history to run for a legislative seat and was also the first Indian woman to be arrested by the British.

## Women Freedom Fighters

World War II veteran Lakshmi Sahgal was an Indian National Army officer who was given the Ministry of Women's Affairs in the Azad Hind government. She also led the Rani

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# Role of Women in Indian Freedom Movement

Dr. P. Suneetha

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**Abstract**

*The history of the Indian freedom struggle would be incomplete without mentioning the contribution of women. The sacrifice made by the women of India's newline will occupy the foremost place. The history of freedom struggle is replete with the saga of sacrifice, selflessness, and bravery of women. Many of us don't know that there were hundreds of women who fought side by side with their male counterparts. They fought with true spirit and undismayed courage. The Indian women broke away from various restrictions and got out of their traditional home-oriented roles and responsibilities. So, the participation of women in the freedom struggle and National awakening is simply incredible and praiseworthy. However, it is not easy for women to fight as warriors in the male dominating society. Even though females tried to change the perception of such orthodox people who thought women are meant to do only household chores. Moreover, females not only sacrifice their lives but also combat such issues. Rani Laxmi Bhai was one of such women who fought against the British role by mitigating all odds; hence this paper entitles to highlight the legacy that women showed in history by showing their fierce nature.*

**Keywords:** *Indian Women, Freedom struggle, Position of women, counterparts.*

## Introduction

In the pre-independence period, the status of women within the country was not satisfactory. The main reason for this was the prevalence of male dominance. The major responsibilities of women were devoted to domestic work and taking care of the family. They were not allowed to participate in other tasks and activities, they were not allowed to express their views and perspectives. During this period, several systems were implemented those adversely affected women. These include child marriage, a ban on widow remarriage, female feticide, the purdah system, Sati and polygamy. During the period of the East India Company, many social reformers such as Raja Ram Mohan Roy, Ishwar Chander Vidya Sagar and Jyotiba Phule faced many challenges that were associated with bringing about a change in the status of women within Indian society. Women's participation in India's freedom struggle began as early as 1817 when Bhima Bai Holkar fought against the British. Madam Bhikaji Cama was the first

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# Schemes to Empower the Deserted Women

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**Dr. J. Reddy Pavani**
**Dr. D. Ramana**
**Dr. V. Jagadeeswari**

***Abstract***

*Women's empowerment can be defined as promoting women's sense of self-worth, their ability to determine their own choices, and their right to influence social change for themselves and others. It is a process of building confidence among women in different dimensions such as education, economic, political, social, cultural, etc. This process empowers women to take and make life-determining decisions for the different problems faced by them in society. With this, they may have the opportunity to redefine and minimize the gender disparity in multiple roles and freedom to pursue desired goals. Nations are implementing multiple programs and policies executed for the empowerment of deserted women.*

***Keywords:*** *Women's empowerment, Social change, Opportunity, Goals, Freedom.*

## Introduction

The empowerment of women and children is also an important thing in the development of the nation. The empowerment of women and children is necessary in view of the progress of the family as well as in view of the progress of the nation. Empowerment in the view of women is necessary because the women's population contributes more than 49% of the nation. The empowerment of women in the view of the family, because a woman is like a captain of the ship and she is having the responsibility and leading the family, balancing the economic condition of the family and also having the responsibility of educating the children also.

The empowerment of children is also necessary, in view of the progress of the nation, because they are the future citizens of the country. The future of the nation depends on the well-being of the children. If they are physically and mentally fit, then only they can contribute to leading the nation. The empowerment of women and children also refers to the social and economic concept which contributes the leading factor in the progress of any nation.

India is an agricultural country, and the empowerment of women and children automatically takes the highest importance. Women and children constitute 50% of the

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# இசை மற்றும் நடனத்தின் யாத்திரை
## (Yatra of Music & Dance through ages)




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பேரா. சே.செந்தமிழ்ப்பாவை



நுண்கலைத்துறை

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## Introduction

Music has played significant role in establishing the traditions, morals and culture in India. Prof. P. Sambamoorthy observes,

> *"India is a land of hoary musical traditions and culture. Music is part and parcel of life of the nation in India. Not a single event takes place in the life of an individual or society without some kind of music or other. The arts of music and dancing are integrated in India's religious and cultural life."*[1]

In India, music is considered a holy art and highly spiritual in nature. It is not just about ragas and scales, but a means to attain moksa.

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# ANALYSIS OF SRI SUBBARAMA DIKSITAR'S COMPOSITIONS ON HIS HOLINESS SRI SANKARACARYA

**Dr. C.P.S. MADHURI**
Academic Consultant, Department of Performing Arts,
Sri Venkateswara University, Tirupati – 517502. Andhra Pradesh.

**Abstract**

The South Indian Classical Music, popularly known as Carnatic Classical Music, is a very refined and systematic art form having a long and rich history which shaped up into a highly evolved system of music after passing through different phases. This classical art is enriched and strenthened through various Lakshanagrantha-s (Musicological treatises) by many eminent Laksanakara-s (Musicologists) in course of time. In modern times, Sri Subbarama Diksitar (1839-1906) was one of the most prominent and the greatest musicologist of his times, because of whose pioneering efforts, the continuity in the tradition was upheld and handed down to the posterity. Apart from being a great musicologist, Sri Subbarama Diksitar was also a musician as well as a Vaggeyakara, who has many compositions to his credit.

The present paper focuses on the analysis of two such compositions of Sri Subbarama Diksitar composed by him at a very young age in praise of His Holiness Jagadguru Sri Sankaracarya of Sri Kanci Kamakoti (Kumbhakonam) Mutth, highlighting his musical excellence and genius as a Vaggeyakara.

**Key words:** Laksanakara, Vaggeyakara, Raganga raga, Krti, Tana Varna

**Introduction:**

Sri Subbarama Diksitar (1839-1906), the immediate descendant of the illustrious composer Sri Muttuswami Diksitar, is attributed with the Magnum opus, "Sangita Sampradaya Pradarsini" (SSP). He was the adopted son (svikara putra) of Sîri Baluswami Diksitar, the second younger brother of Sri Muttuswami Diksitar. He was born in 1839 as the son of Sivarama Iyer and Annapurni ammal (youngest daughter of Sri Baluswami Diksitar). Under the able tutelage of Sri Baluswami Diksitar, he received training in music, both vocal and vina and learned many Sastra-s, great epics such as Manu Caritra etc., vyakarana and other poetic intricacies from 'Vilattikolam Krsnayamatya', who was an adept in both Sanskrit and Telugu.[1]

He became a composer at a very young age of 17 years and was appointed as the Asthana Vidwan in the Ettayapuram court. He composed the most famous and monumental work on music-SSP with the inspiration of Sri A.M. Cinnaswami Mudaliar.[2]

**'Sangita Sampradaya Pradarsini'**

'Sangita Sampradaya Pradarsini' (SSP), a massive work spanning over 1700 pages, covers a wide range of topics on music and musicology, mostly from Venkatamakhi's time period. It was published in 1904 with the benevolence of the ruler of Ettayapuram, Raja Jagadvira Rama Venkateswara Ettappa Maharaja.

It contains 76 biographies of prominent personalities in the field of carnatic music, alon with extensive information on raga-s, thei



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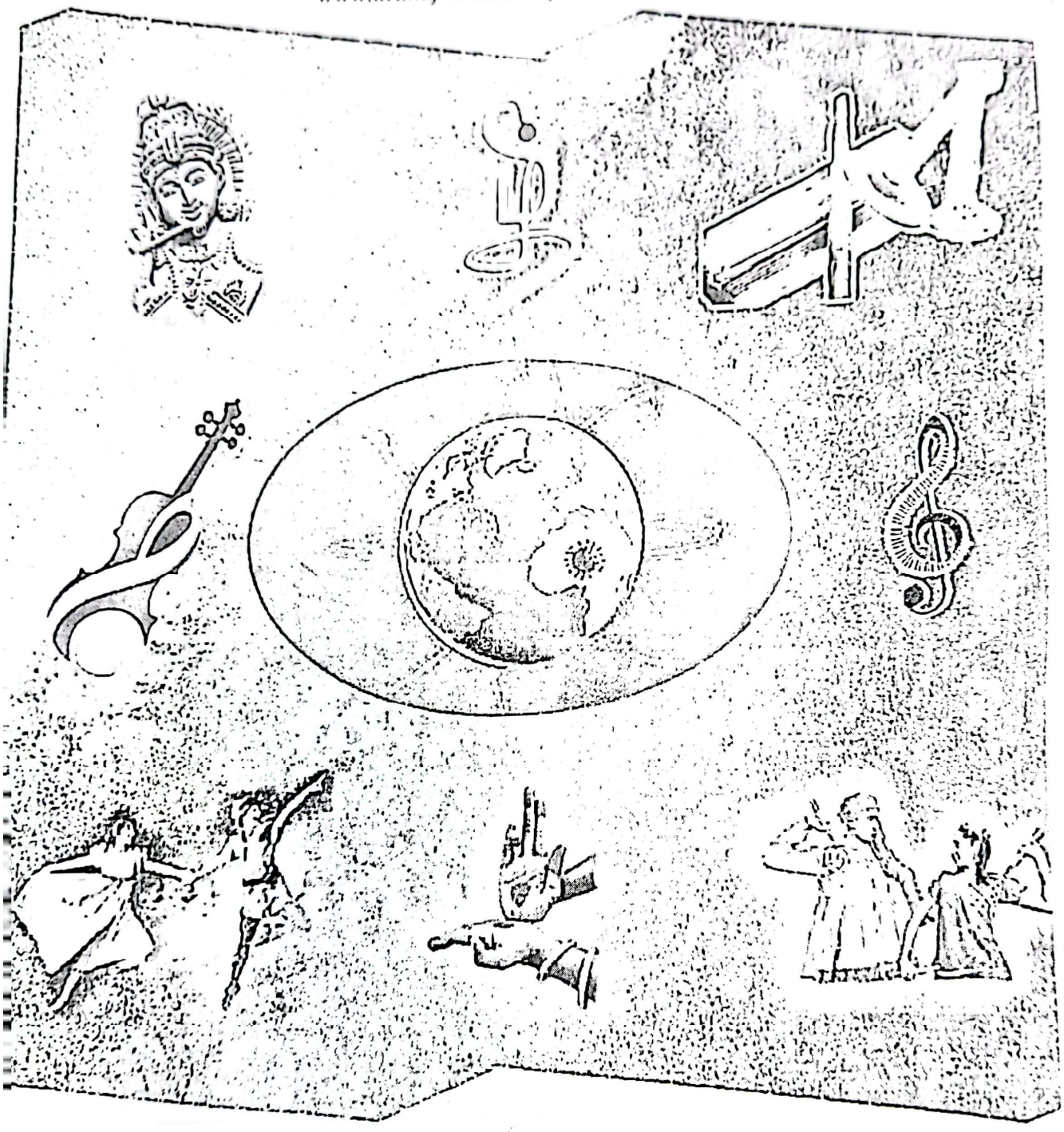

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# AYURVEDIC REMEDIES FOR FUNGAL INFECTIONS

T. Usha Kiran Reddy *, N. Sahana, A. Rajeswari, G. R. Sravani
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## ABSTRACT –

The growth of fungal infections is increasing considerably although the health care facilities are growing. Their incidence rate is not declining. Fungal pathogens are affecting mostly the immunocompromised patients, as their immune system is weakened. These pathogens cause invasive fungal infections which are also known as mycoses. Most occurring fungal infections are tinea pedis, tinea capitis, candidiasis, onychomycosis, ringworm. To treat these fungal infections anti-fungal therapy is given to the patients. As some of the pathogens are resistant to allopathic drugs the recent trends are emerging towards ayurvedic remedies. They show lesser side effects, more efficacies and cost effectiveness when compared to allopathic drugs.

## INTRODUCTION-

Now-a-days the infections due to fungal pathogens are more prevalent due to growth of immunocompromised patients such as organ-transplant recipients, cancer, HIV/AIDS patients [1]. The fungi can enter into the immune system through different processes with recombination, mitosis and expression of genes that are involved in oxidative stress responses.

The fungal infections are also known as mycoses [2]. Mycoses are of two types. They are primary and opportunistic. The other division of fungal infections are systemic and local. The fungal infections affect various parts of the body like hair, lungs, nervous system, nails and skin. The infections caused by fungi May be superficial infections of the skin or mucosal surfaces to invasive infections of internal organs. Generally invasive infections are of lower incidence rate than superficial infections [3]. The four common fungal pathogens that are causing invasive infections are Candida Albicans, Cryptococcus Neoformans, Aspergillus Fumigatus, Histoplasma Capsulatum. Candida Albicans is the major causative pathogen of opportunistic fungal infections [4]. It infects the oral mucosa [5]. The virulence factors of candida albicans gives potential to enter into the host tissues and undergoes molecular interactions between the cells of fungus and the host. Due to this the localized diseases such as oral candidiasis, onychomycosis and vaginitis occurs [6]. When the host is immunocompromised the infections caused by Candida Albicans become systemic and life threatening [7]. Cryptococcus Neoformans are encapsulated by polysaccharides hence it is unique from other human



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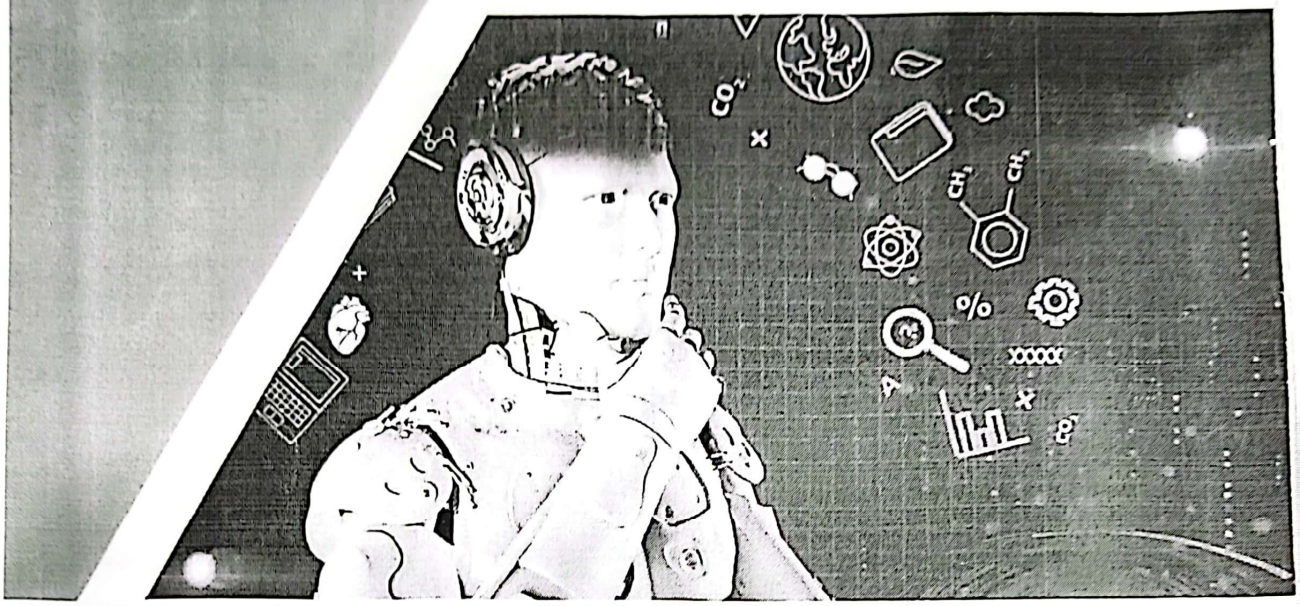

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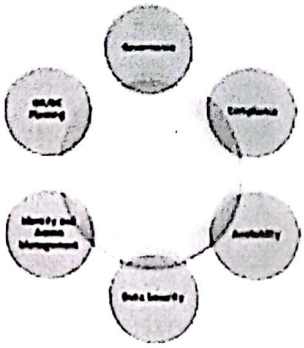

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time to generate summed up related authentication information. The maximal time is approximately 18 minutes for Test 8, which is as considered as expected. For verifying a proof, it takes less time than the proving process which is about 14 minutes for Test 8 so that it found that verification time is highly similar to block size and total number of blocks

## V. .CONCLUSION

In this paper, first time revealed a association between secure network coding and secure cloud storage. A systematic way is proposed based on the relationship to build a generic secure cloud storage protocol that depends on secure network coding protocol. First publicly verifiable secure cloud storage protocol that is secure without using the random oracle heuristic as a result. Further, to support user anonymity and third-party public auditing, enhanced generic construction. And opensourced prototype will make secure utilization of secure cloud storage protocols. In future work, it is interesting to design new and efficient secure cloud storage protocols based on our generic construction which is interesting to study the reverse direction.

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# A STUDY ON PROBLEMS OF LABOURS IN ANANTAPUR DISTRICT

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** **Prof.G.Janakiramaiah,** Head, Dept. of Education, S.V.University, Tirupati

## ABSTRACT

Labors are a way to move from one place to another in order to live and work in the name of migration. Movement of people from their home to another city, state or country for a job, shelter or some other reasons is called migration. Nowadays, many people decide to migrate to have a better life by searching employment opportunities as daily wage labours or contract labours. Except this, lack of opportunities, better education, construction of dams, globalization, natural disaster (flood and drought) and sometimes crop failure forced villagers converted as daily labours for their livelihoods. The study selected 365 labous from Anantapur town of Anantapur District of Andhra Pradesh by using structured questionnaire. More than one third of the respondents (37.50 percent) were in the age group of 31-40 years and followed by more than two fifths (43.0 percent) of the respondents were Illiterates, as against less one fifth (26.30 percent) studied up to Primary level. More than half (57.50 percent) of the respondents were habituated to alcohol and around one third (32.32 percent) of the respondents are inadequate income.

## INTRODUCTION

Land is an indispensable but a passive factor production in economics. No production is possible without the use of labour. Labour is one of the main factors which constitute the material foundation of society. In an economy, where agriculture is the primary occupation and most of the national income is contributed from agriculture, problems related to labour are there but not in a complex form. Labour problems may be considered as social problems which result among different groups where there is absence of cooperative endeavor for the realization of common goal.

With the accelerated growth of population in the last few years, the pressure of population on the available land has increased tremendously in the absence of growing industries at the same pace of absorb the new labour force. The labour ratio being higher, agricultural holdings have become very small and uneconomic. All these factors have brought a radical change in the agrarian Indian society. Consequently various problems are arising out of the new situation e.g. the problem of unemployment; social security and industrial relations etc. are the outcomes of the process of industrialization (Sunitha, C).

Labour sector addresses multi-dimensional socio-economic aspects affecting labour welfare, productivity, living standards of labour force and social security. To raise living standards of the work force and achieve higher productivity, skill upgradation through suitable training is of utmost importance. Manpower development to provide adequate labour force of appropriate skills and quality to different sectors is essential for rapid socioeconomic development (T.M. Suresh, 2014). Employment generation in all the productive sectors is one of the basic objectives. In this context, efforts are being made for providing the environment for self-employment both in urban and rural areas. During the Ninth Plan period, elimination of undesirable practices such as child labour, bonded labour, and aspects such as ensuring workers' safety and social security, looking after labour welfare and providing of the necessary support measures for sorting out problems relating to employment of both men and women workers in different sectors has received priority attention (Ghosh M. & Ghosh A. (2014).

The improvement of labour welfare and increasing productivity with reasonable level of social security is one of the prime objectives concerning social and economic policy of the Government. The resources have been directed through the Plan programmes towards skill formation and development, monitoring of working conditions, creation of industrial harmony through infrastructure for health, industrial relations and insurance against disease, accident and unemployment for the workers and then families. The situation of surplus labour and workers in the organised segment of the economy give rise to unhealthy social practices such as bonded labour, child labour and adverse working conditions.

## METHODOLOGY

The primary objective of this research is to study the problems of labours consists of 365 labours in different sectors were selected purposefully from Anatapur district of Andhra Pradesh by adopting structured questionnaire framing with their problems as labours.



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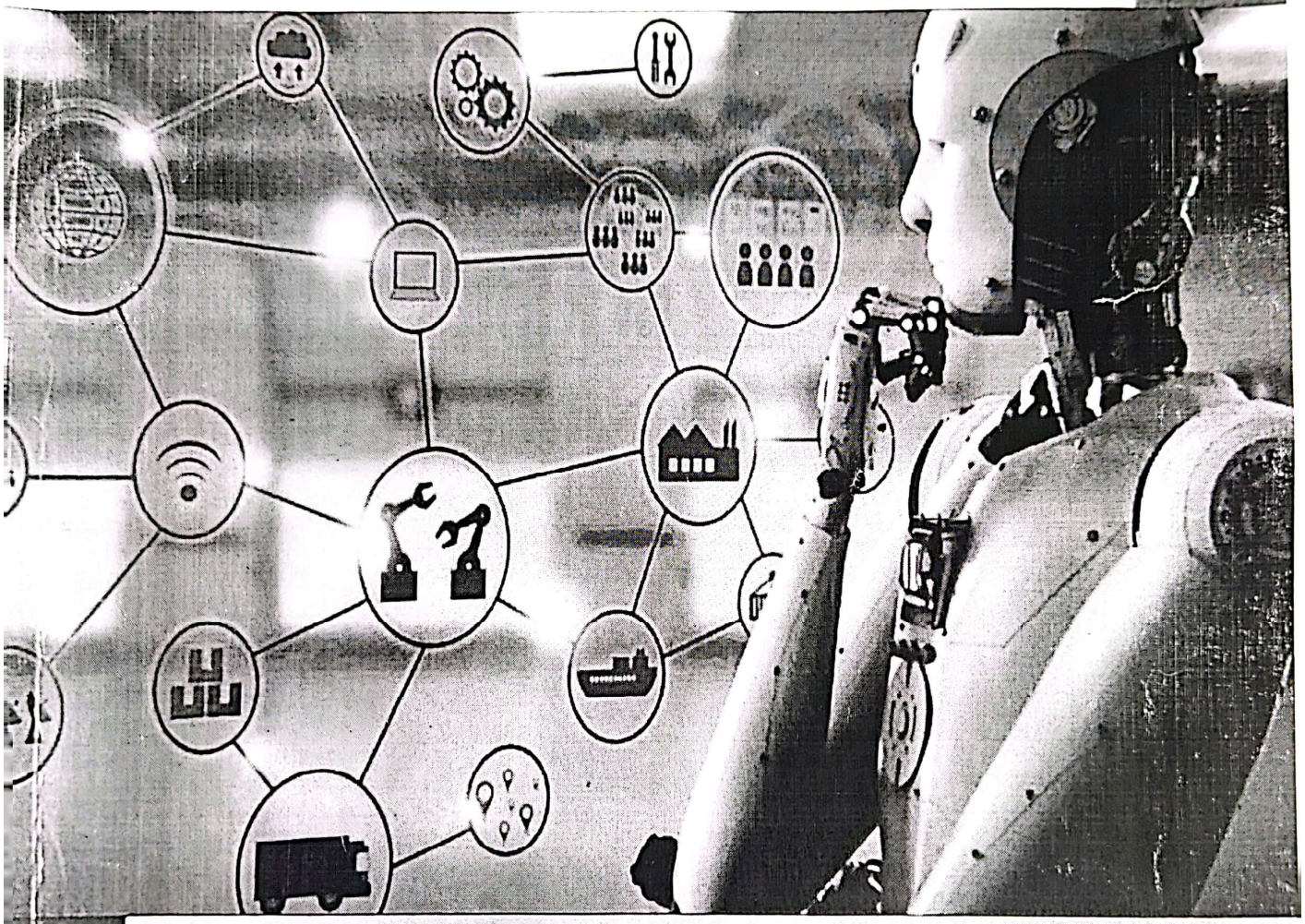

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# INDIAN JOURNAL OF WOMEN AND DEVELOPMENT

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*Editor-in-Chief*

*Prof. D. Krishnamoorthy*

CENTRE FOR WOMEN'S STUDIES
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Indian Journal Of Women And Development (Peer Reviewed Journal ISSN 2231-3974
VOL-14 Issue-1 & 2 (May & November) 2021

# A Study on Issues and Challenges of Women Empowerment in India

P. Suneetha and G. Anand Amruth Raj

## ABSTRACT

*This paper seeks to analyze the state of women empowerment in India and sheds light on its problems and challenges. Today women's empowerment has become one of the most important concerns of the 21st century. Since the beginning of the twentieth century their position has gradually changed. The study found that women in India are relatively underdeveloped and, despite many efforts by the government, are somewhat inferior to men. Gender gaps exist regarding access to education and employment. The power of decision-making at home and the freedom of movement of women vary greatly in their age, education and employment status. It has been found that the acceptance of unequal sex norms by women is still prevalent in the society. Rural women are more likely to experience domestic violence than urban women. The gender gap is also very large in political participation. The study concludes that access to education and employment are the only enabling factors, although the focus on goal attainment depends largely on the attitudes of people towards gender equality.*

Keywords: Women, Empowerment, Issues, Challenges, Violence against Women.

## Introduction

Women empowerment refers to increasing the spiritual, political, social, educational, gender or economic strength of individuals and communities of women. Women's empowerment in India is heavily dependent on many different variables that



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# Significance of Process Parameters on Fungal Cellulase Production

11

Srilakshmi Akula and Narasimha Golla

**Abstract**

The biotechnological production of enzymes from microorganisms was proved to generate enormous wealth that influences significant sectors of the world's economy. Among the microbial enzymes, the potentiality of cellulases in different manufactories including food, paper, biofuel, animal feed, drug, brewery, textile, agriculture and recycling of waste materials has been the compelling factor for the intense limelight on cellulases for the past several decades. Extensive studies were carried out on aerobic fungi producing cellulases and are considered as the leading workhorses in industrial processes. The enzyme production usually depends on distinct governing parameters essentially inoculum size, pH value, temperature, growth, time, aeration, inducers and medium supplements. Therefore, choosing optimum pivotal factors that throw impact on biomass of various microorganisms and build-up of the target product becomes the preliminary criteria for any profitable recovery process. Often the optimisation of multifarious criterions is a laborious and tedious chore. Hence, this chapter highlights the diverse physical and chemical parameters that immensely influence fungal cellulase production.

**Keywords**

Cellulase · Cellulose · Waste biomass · Renewable energy · Biofuels · Fungal microorganisms

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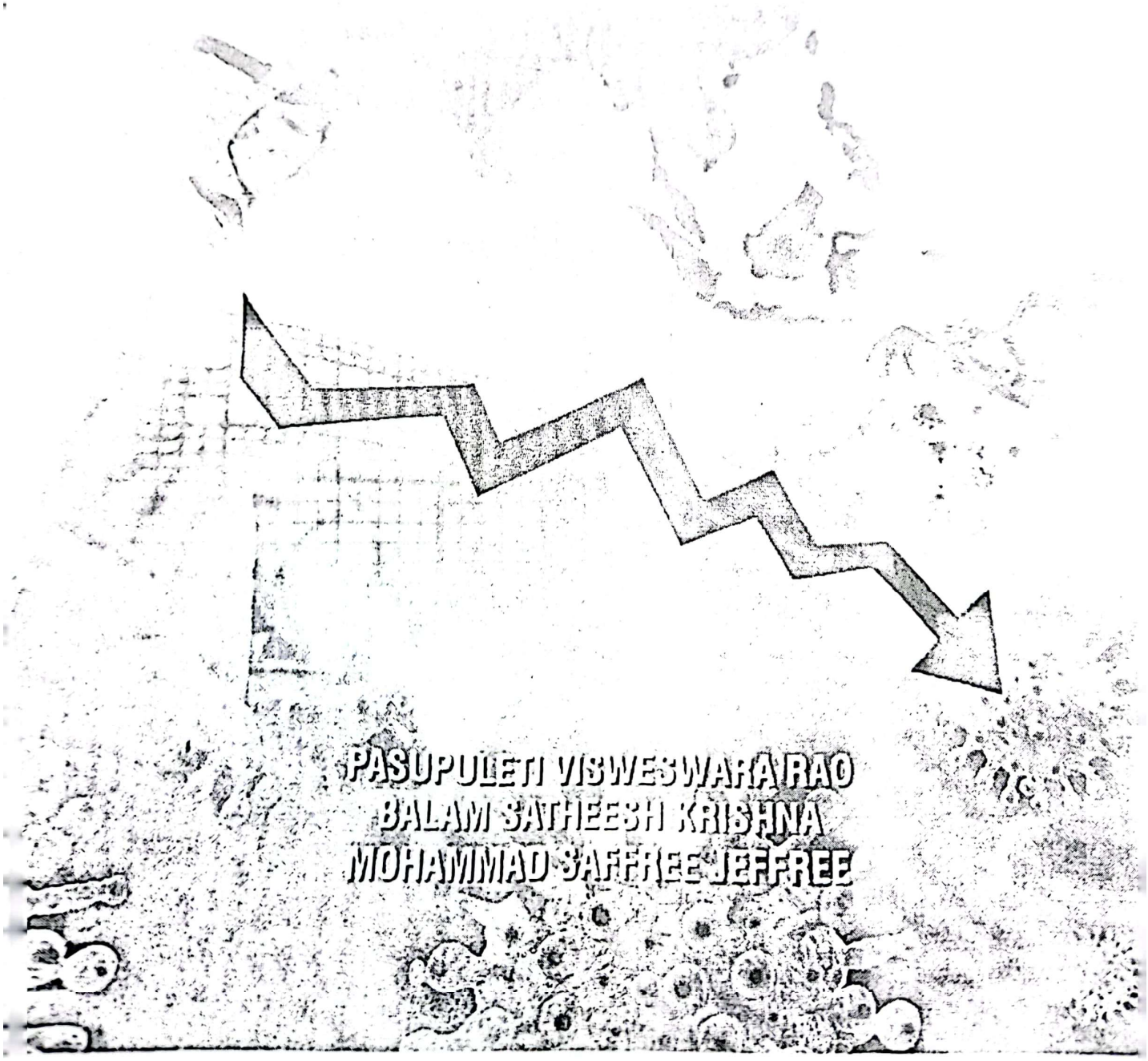

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# CORONAVIRUSES

## Transmission, Frontliners, Nanotechnology and Economy

Pasupuleti Visweswara Rao
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CHAPTER 4

# POLYMERIC AND BIOLOGICAL METALLIC NANOPARTICLES APPLICATION IN ANTIVIRAL ACTIVITY AND DRUG DELIVERY

**Sujatha Sanneboina[a], Kishore Kumar Kadimpati[a], Sridevi Ayla[b], Narasimha Golla[c]***

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**4.1. Abstract.** Nanobiotechnology is science of nanoparticle synthesis by using biotechnological applications in biology, physics, engineering, drug delivery, diagnostics and chemistry. The use of metal/ polymeric nanoparticles as drug delivery systems has become extensive in last two decades. The applications of nanomaterials, especially of silver, zinc, copper, gold and platinum are emerging and nanomedicine is now rapidly growing field that uses nanotechnology to boost applications in pharmaceuticals, drug delivery systems and diagnostic purposes. The need for nanoparticles has been well-observed by scientists in recent times due to their various superior features i.e. controlled release of drugs, low adverse reactions, shielding of active drug from degradation (gut enzymes, liposomal enzymes), targeted drug delivery & improves therapeutic index. Nanoparticulate drug delivery systems may alter the drug release kinetics, improves bioavailability, enhances the efficacy and diminish the treatment costs. In this chapter various phytopharmaceutical, metallic and polymeric nanoparticles for synthetic drugs and their synthetic/ biosynthetic characterization procedures were explained. The drug loaded nanoparticles (polymers) are used to reduce the adverse effects, enhancement in the absorption and increase the bioavailability of the drug (proper dosage and regime) for virus eradication in human beings. The commercialization of developed novel nanoparticles/drug loaded polymeric nanoparticles delivery systems are required to eradicate virus with improved safety measures in the humans with affordable cost.



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# Drinking water consumption pattern among Women College students in association with percent body water, proximate nutrients and BMI

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**Abstract**

Water is an essential compound and most of body organs depend on water to work properly. No study on exclusively drinking water consumption was reported in Kingdom of Saudi Arabia KSA and hence the present study was carried out to assess drinking water consumption pattern among female college students in association with percent body water, proximate nutrients and BMI. A cross sectional study was conducted in Princess Nourah bint Abdurrahman University. The participants enrolled were 180 students in the age from 18-25 years. Mean water and proximate nutrient intake was collected through questionnaire and selected body composition variables was assessed through Seca body composition analyzer. The study results revealed that the subjects consumed plain drinking water less than their DRI (2.7L/day), and the percent deficit was 93%, 111% and 105% for first day of the week, mid-day and end of the week respectively. The mean consumption in liters was 1399±729.9, 1277.7±681.8 and 1315.5±669, respectively. There was a positive relationship between drinking water consumption and percentage body water with p-value 0.9155 which is not significant. The mean water intake was not strongly correlated with BMI with r-value of 0.0425. Total body water has a negative relationship with energy, carbohydrates and fat, and positive with protein which are weak correlations and not significant. The participants are consuming less water than their requirements, although they are aware about the water benefits to their health. This study is first of its kind in KSA and will give an insight in framing intervention policies to enhance the water intake.

**Keywords:** water, BMI, proximate nutrients, DRI, Total body water percentage

## Introduction

Water is an essential compound for all organisms. Water covers more than two-thirds of the earth's surface. Water composition is two hydrogen atoms and one oxygen atom. Body cannot survive few days without water. Human body mass contains 50-60 % of water. All the organs in body have water, but percentage varies from organ to another due their function. Brain has 74.5%, muscles 76%, kidney 83%, blood 83%, bones 22%, and skin 70% [1]. Infant body consist 75 % of water, and 55% of elderly body weight consist of water, and it is important for cellular homeostasis and life [2]. Water requirement changes according to many factors like age, gender, climate, degree of physical activity, and illness. Established Dietary Reference Intake DRI values are based on water obtained from plain drinking water, water from other beverages, and water from foods [3]. Adequate intakes for water are defined based on observed water intakes in various population groups' desirable water volumes per 1000 kcal, and desirable osmolality values in urine [3]. General requirement for adults is 3.7 liters per day for male, and 2.7 liters per day for female [4].

Most of body organs depend on water to work properly. Drinking plenty of water will helps body to control temperature, waste excretion, prevent constipation, and achieve many other important functions. Average drinking water consumption in UK was 1.138 liters per day [5], in USA men consumed an average of 3.46 liters per day, and women consumed 2.75 liters per day [6]. According to the literature review all the studies focused on the total fluid intake in general and water as a therapy for reducing weight. Epidemiological data suggest that water may have different metabolic effects when consumed alone rather than as a component of flavored, sweetened or caffeinated beverages, but available evidence remains inconclusive [7]. Drinking plain water instead of caloric beverages helps to reduce dietary energy density, and may contribute to the regulation of bodyweight [8]. Some studies have also suggested that consumption of plain water is associated with better diets and better health behaviors [9]. No studies have investigated Total Water Intake and its adequacy amongst adults in the Middle-East, a region that is characterized by a hot climate, a high prevalence of dietary inadequacies in young adults and one of the highest burdens of overweight and obesity in KSA. There are no studies focusing on the plain drinking water among Gulf countries.



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The utilization of fixed capacitors (FCs) in shunt connection is one of the common methods to improve the power quality of distribution systems. In this paper, a novel optimization technique called Ant lion optimizer (ALO) is used to determine the optimal generated VARs capacity and locations of FCs. The objective functions are adopted to minimize the total distribution power loss
and to improve the voltage profile. The ALO is performed to medium and large scales radial distribution systems (RDS) such as; IEEE 33-bus and 69-bus test systems. The Numerical results illustrate that the Ant lion optimizer (ALO) offer optimal solutions better than many other heuristic algorithms.



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# Optimal Capacitor Placement In Distribution Systems



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