

#### **CURRICULAM VITAE**

Dr. NIRMALA B **Associate Professor Department of Studies and Research in Chemistry University College of Science Tumkur University** Tumkur, Karnataka State, India – 572 103

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#### **TEACHING EXPERIENCE**

25years

#### **EXAMINATION QUALIFIED**

Qualified UGC-CSIR National Eligibility test

#### Ph.D

TOPIC: Crystal Growth and Morphology of Neodymium doped Rare Earth Vanadates by Hydrothermal Technique, University of Mysore, Mysore.

# DAE -NLP Junior Research and Senior Research Fellowship

> TOPIC: Crystal growth of Rare Earth doped ortho vanadates and phosphates under in-situ conditions by hydrothermal technique" sponsored by the Department of Atomic Energy, National Laser Programme, Indore for 3 years Under the guidance of Prof. K.M..Lokanatha Rai, and Byrappa K, Mysore University

#### **AREA OF RESEARCH**

Material Chemistry, Nanomaterials, Inorganic Chemistry, Environmental Chemistry

# **PUBLICATIONS**

- Crystal Growth of Nd:RVO<sub>4</sub> (where R=Y, Gd) under mild hydrothermal conditions. K.Byrappa, B.Nirmala and M.Yoshimura, Materials Science Forum, Switzerland, Vol.315-317, 506-513 (1999).
- Crystal Growth of Nd:RVO<sub>4</sub> (where R=Y,Gd) under mild hydrothermal conditions. K.Byrappa, B.Nirmala, K.M.Lokanatha Rai and A.B.Kulkarni, Proceedings of the National conference on Electronic Materials, Devices and Systems, Jan 18-20, 248-255 (1999).
- Study of crystallization processes in some rare earth vanadate, tungstate and phosphate systems under hydrothermal conditions.
  - K.Byrappa and **B.Nirmala**, *Ind.J.Physics* 73A(5), 621-632 (1999).
- Crystal Growth of rare earth vanadate laser hosts and their in-situ fabrication of crystal morphology under mild hydrothermal conditions.
  - K.Byrappa and B.Nirmala, Indian National Science Academy, New Delhi, PINSA, 68, A, No.3, 193-200 (2002).

- Crystal Growth Mechanism for Rare Earth Vanadates under mild Hydrothermal Conditions
   K. Byrappa, B. Nirmala, K.M. Lokanatha Rai and S. Anada, Proceedings of the International
   School on Electronic Materials [ISCGTEM 2003], Mysore University, Mysore (India), 337 –
   366 (2003).
- Physico-Chemical analysis of ground water of selected area of Mysore city, Karnataka, India in World Rural Observations, 2011;3(3):88-91]; ISSN: 1944-6543 (Print); ISSN: 1944-6551 (Online) by B.Nirmala and N.J.Ranjitha.
- Structure report on N-(Benzoyl)-2-nitrobenzenesulfonamide", in Acta Crystallographica Section E(2012), E68.0339 by P. A. Suchetan, Sabine Foro, B. Thimme Gowda and B. Nirmala.
- Synthesis, characterization and comparative antimicrobial studies of some novel chalcones and pyrazolines containing naphthofuryl substituents by Shet Prakash M, V. P. Vaidya, K. M. Mahadevan, M. K. Shivananda, P. A. Suchetan, B. Nirmala and Madavi Sunitha in *Journal of Chemical and Pharmaceutical Research*, 2012, 4(2):1179-1184
- Assessment of the physico-chemical status of ground water taken from four zones of Mysore
  District, Karnataka, India, by B.Nirmala, Pavithra.V, shet Prakash M, Suchetan P.A., in Vijnana
  Prabha, Journal of Sciences, Vol.1, No.4, Dec.11-Feb., 2012, pp 37-44
- Seasonal variations of physico chemical characteristics of groundwater samples of Mysore city, Karnataka, India, by B.Nirmala, B.V.Suresh Kumar, Suchetan P.A., Shet Prakash in *International Research Journal of Environmental Sciences*, ISCS-IRJEvsS-2012-074, 2012, vol.1(4), 1-7.
- Crystal growth of R: YVO<sub>4</sub> (where R=Nd,Eu) single crystals under mild hydrothermal conditions by Nirmala B in conference proceedings, National Conference on "Challenges and Opportunities for Chemical Sciences in 21<sup>st</sup> Century", ISBN; 978-81-923301-9-8, 38-46, 08 January 2013.
- Physico-Chemical Analysis of Selected Groundwater Samples of Tumkur District, Karnataka by Nirmala B, P.A.Suchetan, D.Darshan, A.G.Sudha, T.N.Lohith, E.Suresh, G.R.Mamatha in International Journal Chem.Tech Research, CODEN( USA): IJCRGG ISSN: 0974-4290, Vol.5, No.1, pp 288-292, Jan-Mar 2013.
- Synthesis and Characterization of aluminophosphate zeolites with triethyl amine as template using microwave-assisted technique, **Nirmala B,** Sudha A.G., Suresh E, *International Archive of Applied Sciences and Technology*, **2013**, Vol.4(3), 45-51, ISSN: 2277-156.
- Physico-Chemical analysis of ground water samples of selected areas in Tumkur district, Karnataka, Nirmala B, Chethan B.S., Srilakshmi B.P., International Journal of Ecology, Environment and Biology, 2014, Vol.2(1), 93-96, ISSN:0142-7253.
- Synthesis and Characterization of aluminophosphate zeolites with tributyl amine as template
  using microwave-assisted technique, Nirmala B, Sudha A.G., Suresh E, in UGC sponsored
  two days national conference on "Recent trends in Chemical Biology" from 25 to 26<sup>th</sup>
  October 2013 organized by Department of Chemistry and Biochemistry, Teresian College,
  Mysore, in association with KSOU, Muktha Gangotri, Mysore.
- Cationic Dye (Methylene Blue) Removal From Aqueous Solution By
   Adsorption On Aluminophosphate Zeolites, Nirmala B, Suresh Kumar B.V, Chethan B.S,
   Srilakshmi B.P, Sudha A.G, Suresha E in *International Journal of Pharmaceutical, Biological and Chemical Sciences (IJPBCS*) , JUL-SEPT 2014, VOLUME 3 , ISSUE 3 , pp 89-94; e-ISSN:
   2278-5191
- Microwave-assisted crystallization of Aluminophosphate zeolites using Isopropylamine as template, Nirmala B, Chethan B.S., Srilakshmi B.P., Deepthi.C, Shreeraksha Bhardwaj in Journal for Advanced Research in Applied Sciences Vol.2.Issue1 2015 pp 18-25 E-ISSN: 2394-8442
- Removal of cationic dye from aqueous solution onto microwave-assisted synthesized aluminophosphate zeolites having isopropylamine as template, Nirmala B, Deepthi C, Shreeraksha Bhardwaj in conference proceedings on Application of Nanotechnology in Environmental Remediation organized by Department of Studies and Research in

- Environmental Science, Tumkur University, ISBN:978-93-82694-23-6, pp 56-58, on  $7^{th}$  October 2015.
- Microwave-assisted synthesis and characterization of aluminophosphate zeolites with AIPO4
   –tridymit framework structure by Shalini K.S, Nirmala B, in International Journal of Applied Research and Studies, ISSN:2278-9480 volume VI, issue 1 (Jan 2017): 1-12.
- Removal of methylene blue from aqueous solution by adsorption on th AlPO4-tridymit by Shalini K.S., Nirmala B in Research Journal of Chemical and Environmental Sciences, Online ISSN 2321-1040, CODEN: RJCEA2 [USA], Vol.5[1], (Feb 2017):47-53.
- "Microwave Assisted Green Synthesis, Characterization of Alanine Templated Alumino phosphate Zeolite and Study of Its Application as Adsorbent" by Shalini K.S., Nirmala B in Applied Ecology and Environmental Sciences, (Dec 2019) Vol. 7, No. 6, 231-237.
- Microwave-assisted green synthesis of ZnO-AlPO composite and its adsorption studies in Chemical Science and Engineering Research, Chem. Sci. Eng. Res.,2(5), 17-23, 2020
- Multifunctional applications of Nickel oxide (NiO) nanoparticles synthesized by facile green combustion method using *Limonia acidissima* natural fruit juice" by M.S. Sunil Kumar , T.L. Soundarya , Udayabhanu , G. Nagaraju , G.K. Raghu , N.D. Rekha , Fahad A. Alharthi , B. Nirmala in "Inorganica Chimica Acta", 515 (2021) 120059.
- Microwave assisted green synthesis of ZnO-AIPO composite and its adsorption studies by Shalini K.S, Nirmala B, Nagaraju G in Chemical Science and Engineering Research, *Chem. Sci. Eng. Res.*, 2020, 2(5), 17-23. DOI: 10.36686/Ariviyal.CSER.2020.02.05.024, ISSN: 2582-3353
- Combustion Synthesis CuO Nanoparticles: Application to Photocatalytic Activity by Sunil Kumar M S, Harini H V, Nagaraju G, Nirmala B in Materials Today Proceedings, Volume 49, Part 3, (2022), 860-864.
- HRSL supported fabrication of LiZnVO4 nanoparticles: Applications to photoluminescence, dye elimination and biosensing by T.L. Soundarya, B. Nirmala, Fahad A. Alharthi, B. Nagaraj, G. Nagaraju in *Materials Science and Engineering B* 280 (2022) 115718. https://doi.org/10.1016/j.mseb.2022.115718
- Green synthesis of LiZnVO4 nanoparticles and its multiple applications towards the electrochemical sensor, supercapacitor, humidity sensing, photoluminescence and antioxidant activities by T. L. Soundarya, Udayabhanu, Y. T. Ravikiran, B. Nirmala, and G. Nagaraju in *Journal of Materials Science: Materials in Electronics* 33, no. 14 (2022): 10902-10918. https://doi.org/10.1007/s10854-022-08070-7
- Facile combustion derived synthesis of copper oxide nanoparticles: Application towards photocatalytic, electrochemical and DNA cleavage studies by. In *Nano-Structures & Nano-Objects*, 32, (2022), 100923
- Pt-doped TiO<sub>2</sub> nanotubes as photocatalysts and electrocatalysts for enhanced photocatalytic H<sub>2</sub> generation, electrochemical sensing, and supercapacitor applications by T.L. Soundarya, R. Harini, K. Manjunath, Udayabhanu, B. Nirmala, Nagaraju G in *International Journal of Hydrogen Energy*, Volume 48, Issue 82, 30 September (2023):31855-31874. https://doi.org/10.1016/j.ijhydene.2023.04.289
- A novel one-pot synthesis strategy for β-Mn2V2O7 nanorods synthesized via 1-(3,6-dioxa heptane) 3-methyl imidazolium methane sulfonate-assisted hydrothermal route for sustainable and on-demand advanced supercapacitor electrodes and as negative electrode materials for Li-ion batteries by T.L. Soundarya, M. Jayachandran, T. Maiyalagan, B. Nirmala, G. Nagaraju, H.N. Anil Rao in *Journal of Energy Storage*, 85(2024)111076. https://doi.org/10.1016/j.est.2024.111076
- Artemisia pallens assisted synthesis of CeO<sub>2</sub>-NiO nanocomposite for the removal of hazardous Rose Bengal dye and voltammetric sensing of heavy metals by Shreelakshmi K R Soundarya T L Megha N Manohara G Nirmala B, G.Nagaraju in *Chemistry Africa*,1-18(2024) https://doi.org/10.1007/s42250-024-00933-2
- Limonia acidissima fruit juice mediated eco-friendly synthesis of pervoskite ZnSnO₃ nanoparticles: Applications to photocatalytic, electrochemical, antioxidant and antibacterial activities by M.S.Sunil Kumar, T.O.Raghavendra, M, Shashank, Ramith Ramu, C.Mallikarjunaswamy, R Harini, Saud Alarifi, G.Nagaraju, B.Nirmala in Inorganic Chemistry

- **Communications**, 28<sup>th</sup> April 2024, Volume 165, 112476. https://doi.org/10.1016/j.inoche.2024.112476
- Artemisia pallens—mediated synthesis of second-generation CuO/ZnO nanophotocatalyst for rose bengal dye removal and simultaneous detection of heavy metals by Soundarya Patel T. L. H. S. Divyashree · C. Ranjini · Babu Nirmala · G. Nagaraju in Biomass Conversion and Biorefinery, 1-22(2024), https://doi.org/10.1007/s13399-024-05769-x.
- Exploring the synergy of Zn<sub>3</sub>(OH)<sub>2</sub>V<sub>2</sub>O<sub>7</sub> 2H<sub>2</sub>O @Betalains as a promising photoluminescent nanocomposite for sustainable optical and electrochemical applications T.L. Soundarya, Babu Nirmala, Saud Alarifi, G. Nagaraju in Ceramics International, Volume Issue В, October 2024, Pages 36458-36471, 19, part 1 https://doi.org/10.1016/j.ceramint.2024.07.031
- Facile synthesis of heterojunction CdS-TiO2 nanocomposites for energy storage supercapacitors, heavy metal detection, photochemical applications, and forensic science advancements: a comparative study with pure CdS and TiO2 nanoparticles by T. L. Soundarya, K. N. Manukumar, Nirmala Babu, G. Nagaraju in Environment, Development and Sustainability published online 17<sup>th</sup> January 2025, pages 1 to 50. https://doi.org/10.1007/s10668-024-05918-2
- Photoluminescence Analysis and Judd-Ofelt Parameters: Line Strengths, Branching Ratios, and Intensity Metrics of sonochemically synthesized YSO:Dy<sup>3+</sup> by M. Mangala Gowri, B. Nirmala, H. Nagabhushana in Journal of Luminescence, Volume 281, June 2025, 12114 <a href="https://doi.org/10.1016/j.jlumin.2025.121145">https://doi.org/10.1016/j.jlumin.2025.121145</a>
- Advancing in Situ synthesis of Zn3(OH)2V2O7·2H2O/Betalains nanocomposite for simultaneous enhancement of electrochemical performance and green energy storage in high-performance Li-lon batteries and supercapacitors by T.L. Soundarya, M Jayachandran, T Maiyalagan, B. Nirmala, G. Nagaraju in Materials Science & Engineering B, Volume 317, July 2025, 118189 https://doi.org/10.1016/j.mseb.2025.118189
- The influence of Ni impurities on the structural phase of BiVO4 for enhanced binder-free voltammetric vanillin sensing, photocatalysis, and latent fingerprint studies byT.L. Soundarya ,B T JyothiPrasad, J.Sanjay,Mohid Shikr, B. Nirmala, G. Nagaraju Journal of Materials Science: Materials in Electronics, (2025) 36:854
   <a href="https://doi.org/10.1007/s10854-025-14876-y">https://doi.org/10.1007/s10854-025-14876-y</a>.

## **BOOK CHAPTERS**

- Crystal Growth, Size and Morphology Control of Nd:RVO<sub>4</sub> under Hydrothermal Conditions, in Handbook of Crystal Growth Technology edited by Prof.K.Byrappa (India) and T.Ohichi (Japan). K.Byrappa, B.Nirmala. K.M.Lokanatha Rai and M.Yoshimura, Chapter10, 337-366 (2002) eBook ISBN: 9780815516804, Elsevier publications
- Synthesis, characterization, and catalytic applications of NiO-AlPO by Shalini K S, **Nirmala B**, Frontiers of Nano Science, Vol.1(2022), 7-17. ISBN :978-81-951871-3-3, Navanila Maruthi Publication, Coimbatore.
- Cerium Oxide nanoparticles- Green synthesis, Characterization and Biological studies by Nirmala B and Shalini K S, Frontiers of Nano Science, Vol.1(2022), 39-45. ISBN :978-81-951871-3-3, Navanila Maruthi Publication, Coimbatore.
- Nickel metavanadate nanoparticles: Green synthesis, Characterization and applications by Nirmala B and Bhagyalakshmi M,in Emerging Trends in Environmental Sustainability, Volume 1(2022), 159-168, ISBN No: 978-93-94766-27-3, Scieng Publication, Chennai
- Microwave assisted synthesis of CuO nanoparticles using Parmelia perlata leaf extract for biological applications by Nirmala B, Bhagyalakshmi M and Soundarya T.L in Life Sciences: Trends and Technology, Volume II(2023), 82-88, ISBN No: 978-93-94766-44-0, Scieng Publications, Chennai

- An overview on red blood cells and nanoparticles interaction and influence by Bhagyalakshmi M and Nirmala B, Life Sciences: Trends and Technology, Volume II(2023), 103-106, ISBN No: 978-93-94766-44-0, Scieng Publications, Chennai
- A Review on Metal Ion Doped SnO<sub>2</sub> Nanocomposites: Synthesis and Application in Photocatalytic Degradation and Antimicrobial activities by **Nirmala B** and Bhagyalakshmi M Futuristic Trends in Chemical, Material Sciences & Nano Technology(2024) e-ISBN: 978-93-5747-865-6 IIP Series, Volume 3, Book 8, Part 1, Chapter 3.
- An Overview of the Medicinal Potential of Plant Secondary Metabolites, including its Anti-Diabetic, Anti Microbial, and Anti-Cancer properties by Bhagyalakshmi M and Nirmala B Futuristic Trends in Chemical, Material Sciences & Nano Technology(2024) e-ISBN: 978-93-5747-853-3 IIP Series, Volume 3, Book 2, Chapter 3.
- A Brief review of the Electrodes and Electrolytes influencing the Supercapacitor's behavior, by T.L. Soundarya, Nirmala B, G.Nagaraju, in Futuristic Trends in Chemical, Material Sciences & Nano Technology e-ISBN: 978-93-5747-865-6 (2024)IIP Series, Volume 3, Book 8, Part 1, Chapter 2.
- Green Fabrication, Characterization of Nanoparticles of Nickel Oxide Using Seed Extract of Momordica Charantia and Their Biological Activities by Nirmala B & Bhaghyalakshmi. M, in LIFESCIENCES: TRENDS AND TECHNOLOGY VOLUME – III, Chapter 5, 45-52, ISBN: 978-93-94766-85-3(2024), SCIENG PUBLICATIONS, Tamilnadu. (Editors: DR. PRIYANKA SHANKARISHAN DR VISHNU KIRAN MANAM)
- Phytotoxicological Evaluation of Metal Oxide Nanoparticles Via Vigour Index Estimation using Red Onion Roots by Dr. Sunil Kumar M.S, Dr. Rekha N. D, Dr. M. Bhagyalakshmi & Dr. Nirmala B in INNOVATIONS IN BIOTECHNOLOGY AND NANOTECHNOLOGY: CONCEPTS AND APPLICATIONS, Chapter 6,54-57 ISBN: 978-93-94766-82-2, SCIENGPUBLICATIONS, Tamilnadu (Editor- DR. VISHNU KIRAN MANAM).
- An Overview of Thrombolytic Enzymes and Their Mechanism of Action by Dr. Bhagyalakshmi. M & Dr. Nirmala. B in LIFESCIENCES: TRENDS AND TECHNOLOGY VOLUME IV, Chapter 6, 48-54, ISBN: 978-93-94766-56-3, SCIENGPUBLICATIONS, Tamilnadu (Editors: DR. PRIYANKA SHANKARISHAN & DR VISHNU KIRAN MANAM)

# **CONFERENCE ORGANIZED**

- Treasurer, National Conference on Green and Sustainable Chemistry held on 25<sup>th</sup> February 2012.
- Treasurer of the National Conference on Chemistry of Materials held on 28<sup>th</sup> September 2013
- Organizing Secretary for one day DST sponsored National Conference entitled "Synthetic and Structural Chemistry" on 19<sup>th</sup> March 2015.
- Organizing member in conducting two day Special Lecture Workshop (2015-16) for PG Chemistry students is jointly organized by our Department and KSTA, GoK on 17th and 18'h March, 2016

# NATIONAL AND INTERNATIONAL CONFERENCE/SYMPOSIUM ATTENDED/PAPERS PRESENTED

- State-level seminar organized by Maharani's Science College for Women, Bangalore on Harnessing of Hydrogen on 20-02-09.
- State-level seminar Organized by Dept. of Microbiology, Saraswathipuram, Mysore on "Recent developments in microbiology on 5<sup>th</sup> and 6<sup>th</sup> March 09.
- State-level seminar Organized by Dept. of Microbiology, Saraswathipuram, Mysore on "Recent developments in microbiology on 5<sup>th</sup> and 6<sup>th</sup> March 09.
- Workshop on "Challenges and Opportunities of Autonomous Colleges" on 29-07-2006 at JSS College, Ooty Road, Mysore.

- State level seminar Organized by Dept. of Chemistry, St.Philomena's College, Bannimantap., Mysore On "Emerging Trends in Liquid Crystals and Co-ordination Compounds" on 21<sup>st</sup> and 22<sup>nd</sup> August 2009.
- One day National conference (**Knowledge Utsav**) organized by Jain University on Nano Science —**Presented paper** on Growth, Morphology and mechanism of gadolinium doped yttrium orthovanadates under mild hydrothermal conditions on **28August 2010**.
- International Symposium on Challenges in Drug delivery programme 2011 held at KSOU, Mysore, Feb.16-17, 2011
- Summer School on **Nano materials and their applications** in Chemical Sciences organized by Chemical Society, Dept. of Chemistry, Tumkur university, Tumkur, **April 19, 2011**
- Participated in one day workshop on "Formulation of interdisciplinary project proposals" in Tumkur University on **09 June2011**
- One day workshop on "Formulation of vision document for strategic road map of Tumkur University" in Tumkur University
- One day National seminar on "Comparative Sciences of Cultures: Developing a Research agenda" on 24 August 2011 organized by Centre for Social and Political research and Centre for Education and Research, Tumkur University.
- One day National conference on Chemistry of Materials organized by Centre for Advanced Materials, Tumkur University – Presented Poster on "Assessment of physico-chemical status of ground water taken from four zones of Mysore district, Karnataka, India" on 28 September 2011
- Participated in three day national Vedanta conference in Tumkur University from 26
   December 2011 to 28 December 2011.
- Participated in symposium on 'Social media networks' on 04 February 2012 organized by Centre for Education and Research, Tumkur University.
- Participated in one day workshop on "Classical languages in Higher Education Research Prospects" organized by Karnataka State Higher Education Council, Bengaluru, on 05 June 2012.
- Participated in one day national conference on "Molecular Diagnosis" organized by Department of Studies and Research in Biochemistry, Tumkur University, in association with Indian Council of Medical Research, New Delhi, on 13 July 2012.
- Participated a special lecture on "Persuit of Science innovative young minds" by Dr.Apathukatha Sivathanu Pillai, Scientist and Chief Controller, R&D, DRDO, Brahmos Aerospace, New Delhi on 24 July 2012.
- Participated in one day national conference on "Recent trends in food science and Nutrition research -2012" organized by Tumkur University and Dr.P.Sadananda Maya centre for Food Science and Research, held National College, Bangalore on 30 October 2012.
- Participated in a talk by Prof.Rudolph A.Marcus, Nobel Laureate (1992), California Institute of Technology, USA on "From experiment to theory to experiment-electron transfer reactions in chemistry" on 07 November 2012.
- Participated in two day international conference on Yoga in education organized by the Tumkur University and S-VYASA Yoga University, Bangalore from 27 -28<sup>th</sup> Dec.2012
- Participated in three day National conference on "Contributions of Sri Vidyaranya organized by Tumkur University and Vedantha Bharathi from 18 Dec.2012 to 20 Dec.2012.
- Poster presentation in the national conference on "Challenges and Opportunities for Chemical Sciences in 21st century" held at Karnataka State Higher Education Council, Palace Road, Bengaluru, on 08 January 2013.
- Participated in a special lecture on "Higher education" by S.L.Goel organized by Tumkur University, Tumkur On 02 February 2013.
- Participated in a special lecture on "Higher Education" by Prof.Soudathi and Prof.Talwar organized by Tumkur University, Tumkur, on 18 February 2013.
- Participated in two-day workshop on "Research Methodology" organized by the Department of Business Administration, Tumkur University, Tumkur from 16 -17 February 2013.

- Participated in one-day international conference on "Contemporary Human Sufferings:
   Wisdom of Bhagwan Buddha" organized by Tumkur University and Sera Jey Monastic
   University, Bylakuppe, on 06 March 2013.
- Attended UGC sponsored one day National level Seminar on "Recent trends in energy fuels and challenges in their applications" held on 03 August 2013 organized by the Department of Chemistry, SSCASC for Women, Tumkur.
- Participated in "Science Academics" lecture workshop on "Recent trends in Materials
   Science and Materials Research" from 21 to 22<sup>nd</sup> February 2014 organized by the
   Departments of Physical Sciences, Sree Siddaganga College of Arts, Science and Commerce
   in association with Indian Academy of Sciences, Bangalore, Indian National Science
   Academy, New Delhi and The National Academy of Science, Allahabad.
- Poster presentation in one day UGC sponsored National Conference on Conservation of Biodiversity in Deccan Plateau on the topic Removal of Methylene blue from aqueous solutions by Adsorption onto microwave synthesized aluminophosphate zeolites held at University College of Science, Tumkur University, Tumkur on 10<sup>th</sup> October 2014.
- Poster presentation in the UPE project, University of Mysore Sponsored National Conference on Pure and Applied Chemistry(NACOPAC-2014) from 29<sup>th</sup> to 31<sup>st</sup> December 2014 organized by the Department of Studies in Chemistry Manasagangotri, UOM, Mysore on the topic Removal Of Methylene Blue From Aqueous Solution Onto Microwave Assisted Synthesized Aluminophosphate Zeolites Having Templates IPA And TEA A Comparative Study
   Nirmala B, Suresh Kumar B.V, Chethan B.S., Srilakshmi B.P., Deepthi.C, Shreeraksha Bhardwaj
- Participated Science Academics Lecture workshop on "Future Perspective and emerging technologies for sustainable energy resources" organized by Tumkur University in association with Indian Academy of Sciences, Bangalore, Indian National Science Academy, New Delhi, and the National Academy of Sciences, Allahabad on 18<sup>th</sup> and 19<sup>th</sup> August 2015 held at Tumkur University, Tumakuru.
- Participated state level multidisciplinary workshop on "Emerging trends in Basic Sciences and Humanities" on 26<sup>th</sup> August 2015 organized by University College of Science, Tumkur University
- Poster presentation in one day UGC sponsored National seminar on percepectives of Chemistry in Nanotechnology on topic "Microwave Assisted Crystallization of Aluminophosphate Zeolites using Isopropylamine and Tributyl Amine as Template" held at Kalpataru First Grade Science College, Tiptur on 31<sup>st</sup> July 2015 by Nirmala B.
- Poster presentation in SERB, New Delhi, sponsored one day National Conference on "Applications of nanotechnology in environmental remediation" on the topic "Removal of cationic dye from aqueous solution onto microwave assisted synthesized aluminophosphate zeolites having isopropylamine as template" by Nirmala B, Deepthi C, Shreeraksha Bhardwaj.
- Participated in UGC sponsored one day National Conference on "New Materials for Solar Cells and Sensors" on 12<sup>th</sup> April 2016 organized by the Department of Chemistry, University College of Science, Tumkur University, Tumakuru.
- Paper presented in two-day International Conference on Science and Technology: Future Challenges and solutions-2016" organized by Indian JSPS in association with University of Mysore and Dept. of Nanotechnology, VIT on the topic Adsorption studies of Methylene Blue using Aluminophosphate zeolites by Shalini K.S. and Nirmala B on 8th and 9th August 2016.
- Paper presented in two day National conference on "Recent Advances in industrial Engineering and Applied Chemistry (NCRAIEAC-2016)" under TEQUIP-II-1.2 organized by Departments of Chemistry and Industrial Engineering and Management, SSIT, Maralur, Tumakuru on the topic "Microwave synthesis, characterization and antimicrobial studies of

- some transition metal complexes with a-amino acid" by Nirmala B, Gowrishankar B.S, Kavya C.P, Sunil Kumar B.S, Shilphashree B.M on 21st and 22nd October 2016.
- Editor for proceedings of National Conference entitled "Human rights-Contemporary issues and challenges" organized by University College of Science funded by UGC on 28th January 2017.
- Editor for proceedings of National Conference entitled "Health and fitness in modern society" organized by University College of Science funded by UGC on 13th April 2017.
- Participated in two-day National Conference on "Recent Advancements in Nano Science and Technology RANST- 2017" organized by Govt. Science College, Chitradurga funded by UGC on 21st and 22nd April 2017.
- Coordinator for organizing one day workshop on 'Chemistry and Its Importance to Society'
  on 16th August 2017 organized by the Department of Chemistry, UCS, Tumkur in association
  with UGC under the CPE scheme.
- Participated in one day workshop on "IQAC functioning and New methodology of NAAC" organized by IQAC, Tumkur University on 14th October 2017.
- Chaired a session in two days 10<sup>th</sup> National Women's Science Congress organized by Ramaiah College of Arts, Science and Commerce, Bangalore on 6th and 7th November 2017.
- Coordinator for organizing one-day science popularization program in Government High School, organized by the Department of Science and Research In Chemistry, Tumkur University in association with UGC under CPE sponsored scheme at Swadenahali, Tumakuru on 10<sup>th</sup> November 2017.
- Participated in one day workshop on Digital Learning Resources organized by IQAC, Tumur University on 11th November 2017.
- Participated in one day seminar on 'Recent Advances in Chemical Sciences' organized by the Chemical Society, DOSR in Chemistry, Tumkur University on 24th November 2017.
- Participated in one day National conference on "Trends in Advanced Materials and their Applications(TAMA 2017) organized by DOSR in Physics, Tumkur University on 30th November 2017
- Participated in one day workshop on 'Karnataka Civil service rules' organized by the Planning, Monitoring and Evaluation Board, Tumkur University on 08 January 2018
- Participated as delegate in Two-day National seminar on Rejuvenation of undergraduate education in India held at JRD Auditorium, IISc campus, Bengaluru from August 10-11, 2018
- Paper presented in state-level 11<sup>th</sup> KSTA conference on the topic "Growth, Morphology and Properties of trisodium Barium pentachloride dehydrate crystals" held at NMKRV College for Women, Bangalore on 01-02 February 2019.
- Paper presented in three days Advanced Functional Materials for Energy, Environment and Health care(AFMEEHC)International Conference on the topic "Photocatalytic and photoluminescence studies of NiO nanoparticles" held at Centre for Materials Science and Technology, University of Mysore on 18-20, March 2019.
- Paper presented at International Conference on Advanced Functional Materials for Energy, Environment and Health Care organized by UOM, centre for Materials Science and Technology 18-20 March 2019 on the topic "Green synthesis of ceria nanoparticles using Momordica charantia seed extract and their biomedical applications"
- Paper presented at 1st International Conference on Life, Chemical and Health Sciences organized by Ramaiah College, KSTA from 24-26th October 2019 on the topic "Green Synthesis of Nickel Oxide Nanoparticles using Momordica Charantia seed extract and their biological activities"

- Poster presentation on "Microwave-assisted green synthesis of CuO-NiO nanocomposite for photocatalytic and biological applications" in a two days International Conference on Nanomedicine (ICON), Madurai, Tamil Nadu held on 25-26, February 2019.
- Poster presentation on "Microwave-assisted green synthesis of ZnO nanoparticles for photocatalytic and biological applications" in a three-day 1st International Conference on Life, Chemical and Health Sciences organized by M.S. Ramaiah College of Arts, Science and Commerce held on 24th -26th of Oct 2019.
- Participated in the 107<sup>th</sup> Indian Science Congress held at the University of Agricultural Sciences, Bangalore from 3<sup>rd</sup> to 7<sup>th</sup> Jan 2020.
- Participated in one-day National seminar on "Strategies towards Environmental Decontamination" on 3<sup>rd</sup> March 2020 organized by DOS&R in Environmental Science, Tumkur University.
- participated in the ONE DAY NATIONAL LEVEL WEBINAR titled "HIGHER EDUCATION ON THE THRESHOLD OF VIRTUAL ERA" Organised by IQAC, Government of Karnataka, Department Of Collegiate Education Government First Grade College Magadi on Friday, 8<sup>th</sup> May 2020
- Participated in one day online seminar on Advances in Material Science organized by Maharshi Dayanand College of Arts, Science, and Commerce, Mumbai on 20<sup>th</sup> May 2020
- participated in the Fifth International Conference on Advances in Materials Science (Online) (ICAMS – 2020) organized by Post–Graduate Department of Physics and IQAC of Raje Ramrao Mahavidyalaya,, Maharashtra, on 06th - 07th June 2020
- Poster presentation 1st INTERNATIONAL CONFERENCE ON ACCELERATING INNOVATIONS IN MATERIAL SCIENCE (AIMS 2020) from August 4-7'2020, Organized by the Department of Chemistry, BMS Institute of Technology & Management, Bengaluru, on "A Novel Combustion Synthesis of Copper Oxide Nanoparticles Towards Photocatalytic Activity"
- Oral presentation 1st INTERNATIONAL CONFERENCE ON ACCELERATING INNOVATIONS IN MATERIAL SCIENCE (AIMS 2020) from August 4-7'2020, Organized by the Department of Chemistry, BMS Institute of Technology & Management, Bengaluru, on Novel Synthesis of SnWO4 using Rauvolfia tetraphylla leaves powder for Photo catalytic degradation.
- Poster presentation in Virtual International Conference on Sustainable Energy and Environmental Technologies held from 2<sup>nd</sup> to 4<sup>th</sup> Novem.2020 organized by Reva University, Bengaluru. On "Green Route Synthesis of Zinc Vanadate Nanoparticles using Tinospora cordifolia for Photo degradative and anticoagulant studies"
- Poster presentation in TWO DAY INTERNATIONAL E-CONFERENCE ON DRUG DISCOVERY IN MATERIAL SCIENCE organized by IQAC and Department of Chemistry (UG & PG), JSS College of Arts, Commerce and Science, Ooty Road, Mysuru held on 15-16<sup>th</sup> September 2021 on "Facile combustion synthesis of copper oxide nanoparticles and their photocatalytic and DNA cleavage studies."
- Poster presentation in TWO DAY INTERNATIONAL E-CONFERENCE ON DRUG DISCOVERY IN MATERIAL SCIENCE organized by IQAC and Department of Chemistry (UG & PG), JSS College of Arts, Commerce and Science, Ooty Road, Mysuru held on 15-16<sup>th</sup> September 2021 on "HRSL supported, the non-chemical path for the fabrication of LiZnVO<sub>4</sub> nanoparticles, their augmented applications towards its photoluminescence, dye elimination, and biosensing".
- Poster presentation at Conference on Frontiers in Chemistry (CFC-2021) organized by the
  Department of Chemistry, School of Applied Sciences, REVA University, Bengaluru held on
  21<sup>st</sup>-23<sup>rd</sup> October, 2021, on "Limonia acidissima fruit juice mediated eco-friendly synthesis
  of pervoskite ZnSnO<sub>3</sub> nanoparticles".

- Poster presentation on "Green synthesis of LiZnVO<sub>4</sub> nanoparticles: Applications to Supercapacitors" in virtual International Conference on "New Horizons and Trends in Chemical Sciences (ICNHTCS-2022)"- 25<sup>th</sup>& 26<sup>th</sup> March 2022, Organized by Department of Chemistry, Dada Ramchand Bakhru Sindhu Mahavidyalaya, Nagpur, India.
- Oral presentation on "Eco-friendly synthesis of perovskite ZnSnO₃ nanoparticles: Application towards photocatalytic activity" in the KSTA Sponsored Two-day National Symposium on Material Science conducted by the Department of Chemistry, JSS College of Arts, Commerce and Science, Ooty Road, Mysuru-570025, Karnataka on 11 and 12<sup>th</sup> May 2022
- Oral presentation on "Study of metal oxide-metal sulphide heterojunction nanomaterials for electrochemical and photochemical applications" in the KSTA Sponsored Two-day National Symposium on Material Science conducted by the Department of Chemistry, JSS College of Arts, Commerce and Science, Ooty Road, Mysuru-570025, Karnataka on 11 and 12<sup>th</sup> May 2022 and awarded I prize.
- Poster presentation on "Hydrothermal Synthesis of Novel 3D-Woolen Ball shaped BiOCl Nanostructures towards Highly Efficient Photocatalytic activity" in Two-day National Conference on "Impact of Chemistry and Biology to the Society and Industry (ICBSI-2022)" organized by Kuvempu University, Department of P.G Studies and Research in Industrial Chemistry, Jnana Sahyadri, Shankaraghatta, Shivamogga, Karnataka on 20 and 21<sup>st</sup> May 2022.
- Poster presentation in Two Day National Conference on "Impact of Chemistry and Biology to the Society and Industry" (ICBSI-2022) May 20 & 21, 2022 on "Solution Combustion Synthesis of CeO2-ZnO Nanocomposite: Application to Photocatalytic Activity". organized by Kuvempu University, Department of P.G Studies and Research in Industrial Chemistry, Jnana Sahyadri, Shankaraghatta, Shivamogga, Karnataka on 20 and 21<sup>th</sup> May 2022 by Anandakumar B, Likitha B, Soundarya T L, B Nirmala, G Nagaraju, Mallikarjunaswamy C.
- Poster presentation in Two Day National Conference on "Impact of Chemistry and Biology to the Society and Industry" (ICBSI-2022) May 20 & 21, 2022 on "Green Synthesis of ZnO-NiO Nanocomposite: Application to Photocatalytic Activity" organized by Kuvempu University, Department of P.G Studies and Research in Industrial Chemistry, Jnana Sahyadri, Shankaraghatta, Shivamogga, Karnataka on 20 and 21<sup>st</sup> May 2022 by Sowmyalatha S, Pavana H A, Soundarya T L, Nirmala B, Nagaraju G, Anil Rao H.N.
- Poster presentation participation in 12th National Conference, Science and Technology for Start-ups on July 19-21, 2022 jointly organized by Karnataka Science and Technology Academy (KSTA) and Siddaganga technology business incubator on 'Facile Synthesis of Pure and Hybrid CdS-TiO2 Nanomaterials: Investigations of Photoluminescence, Latent Finger Print, Supercapacitance, Electrochemical Sensing and Dye Elimination Properties' and awarded 1st prize by Soundarya T.L, Manukumar K N, Nirmala B, G. Nagaraj.
- Selected for state-level poster presentation 45th SPP series of Seminar and Exhibition on 12<sup>th</sup> and 13<sup>th</sup> of August 2022 at VTU, Belagavi sponsored by KSCST on Eco-Friendly Green Synthesis Of Metal Oxide Nanocomposites for Electrochemical Detection of Heavy Metals in Water" by Anandakumar B, Sowmyalatha S, Pavana H A, Likitha B, Nirmala B and Nagaraju G.
- Oral presentation in one day National conference EMERGING TRENDS IN CHEMICAL SCIENCE RESEARCH" on 08<sup>th</sup> March 2023 at University College of Science, Tumkur University on Ptdoped TiO₂ Nanotubes as Photocatalysts and Electrocatalysts for Enhanced Photocatalytic H2 Generation and Electrochemical Sensing Soundarya T.L, Nagaraju G, Nirmala B and awarded first prize.

- Oral presentation on "Facile Synthesis of Pure and Hybrid CdS-TiO<sub>2</sub> Nanomaterials for Enhanced Photochemical, Electrochemical, and Energy Storage Applications" " in the International Conference on Advances in Materials, Ceramics, and Engineering Sciences (AMCES-2023) Organised By Dayanand Sagar College of Engineering, Bengaluru 560078 from 13<sup>th</sup> 15<sup>th</sup> March 2023.
- Paper presented *Limonia acidissima* fruit juice mediated eco-friendly synthesis of perovskite ZnSnO<sub>3</sub> nanoparticles: Application towards photocatalytic and antibacterial activity" in International Conference of Chemical Sciences-ICCS 2023 organised by Department of Science, Christ Academy Institute for Advanced Studies, Bangalore held on 22-23<sup>rd</sup> June 2023
- Paper presented in one-day online National seminar ADVANCED MATERIALS & IT'S
  APPLICATIONS IN SCIENCE AND TECHNOLOGY jointly organized by MRSI-MC & Department
  of Physics and Chemistry, B. K. Birla College (Autonomous), Kalyan on Design and
  development of the 3D woolen ball-shaped Bismuth oxychloride nanoparticles towards
  photo degradative application on 30<sup>th</sup> September 2023.
- Oral presentation in Two day National conference on New and Renewable resources for a sustainable Future-2023 organized by Yogi Vemana University, Andrapreadesh on 7-8<sup>th</sup> December 2023(hybrid mode) on "A novel Zn<sub>3</sub>(OH)<sub>2</sub>V<sub>2</sub>O<sub>7</sub> 2H<sub>2</sub>O/Betalains photoluminescent nanocomposite as an excellent sensor, supercapacitor, and anode material for high-performance Li-ion batteries" by Soundarya T.L, M Jayachandran, T Maiyalagan, Nirmala B, Nagaraju G.
- Oral Presentation in Two days National Conference on Trends in Multidisciplinary Research:
   Challenges and Applications (TMRCA) held at M S RAMAIAH COLLEGE OF ARTS, SCIENCE AND
   COMMERCE BENGALURU on 15-16<sup>th</sup> May 2024 on "A Novel, Sustainable Strategy For The
   Fabrication Of Zn<sub>3</sub>(OH)<sub>2</sub>V<sub>2</sub>O<sub>7</sub> 2H<sub>2</sub>O/Betalains Nanocomposite For Green Energy Storage
   Devices" by Soundarya T.L, M Jayachandran, T Maiyalagan, Nirmala B, Nagaraju G
- An INVITED TALK on the topic entitled "Composite Materials for Environment Protection & Remediation" at the International Conference on Composite Materials for Environment Protection & Remediation (ICCMEPR-2024) held in Online Mode on 2-3 July 2024, organized by Gram Bharti College, Ramgarh, Kaimur, Bihar, India in association with Research Plateau Publishers
- Chaired the session in the 15<sup>th</sup> National Women's Science Congress (For Nagarjuneeyam theme, Chemical, Biological and Materials Sciences) held at Karnataka Samskrit University, Bengaluru from 06-08<sup>th</sup> December 2024.
- Oral presentation in three days 15<sup>th</sup> National Women's Science Congress held at Karnataka Samskrit University, Bengaluru, from 06-08<sup>th</sup> December 2024 on "Green synthesis of ZnO/SnO<sub>2</sub> nanocomposites for biological applications" by Vathsalya P, Nirmala B, Soundaraya T L, Bhagyalakshmi M, Nagaraju G
- Oral presentation in three days 15<sup>th</sup> National Women's Science Congress held at Karnataka Samskrit University, Bengaluru, from 06-08<sup>th</sup> December 2024 on "A brief study on Metalorganic frameworks" by Radha G, Bharath N, Soundaraya T L, Nirmala B.

# TRAINING PROGRAMMES ATTENDED

- 70<sup>th</sup> Orientation Programme at Calicut University from 14 Nov.2011 to 14 Dec.2011
- Three-day induction Programme organized by the Higher Education Council from 19
   September 2011 to 21 September 2011

- Attended a Refresher course in Chemistry organized by Bangalore University from 14<sup>th</sup> March to 04<sup>th</sup> April 2014
- Participated in winter school (Basic Sciences-ID) from 18th January 2018 to 08th February 2018 organized by UGC-Human Resource Development Centre, Bangalore University, Bengaluru
- Participated in NPTEL-AICTE Faculty Development Programme on "Coordination Chemistry" (July-October 2019)
- Attended "23rd Online Short Term Course on E-Content Development" from 28.05.2020 to 03.06.2020, organized by UGC Human Resource Development Centre, GUJARAT UNIVERSITY, Ahmedabad.
- Participated in the Third JNU Workshop for Empowering Teaching through Online Mode (JNU-WETOM III) on the Theme 'Online Assessment and Evaluation' held on 13-14<sup>th</sup> June 2020.
- Participated in **online FDP on "Education 4.0" conducted by PMMMNMTT and Ramanujam College**, University of Delhi. (02-08<sup>th</sup> December 2021).
- Participated in two days of National-level FDP on "Innovative teaching and online resources" conducted by IOT academy, Coimbatore (23-24<sup>th</sup> January 2023)
- Participated in five days of online FDP on Advanced functional materials for Science and Engineering conducted by Don Bosco Institute of Technology, Bangalore, 15-19<sup>th</sup> May 2023.
- Participated in six days of online FDP on "Recent Advancement in Smart Materials for Sustainable Energy Applications" organized by the Centre for Nanoscience and Nanotechnology International Research Center, Sathyabama Institute of Science and Technology, Chennai, from 20 -25<sup>th</sup> November 2023.
- short-term Swayam online course on "Learning Management System-Moodle" conducted by NITTTR, Chennai. (09/09/2020 to 30/11/2020).
- Participated in a six-day online FDP on "Advanced Nanomaterials for Energy and Environmental Applications" organized by the Department of Science and Humanities, Sri Krishna College of Technology, Coimbatore, from 26.02.2024 to 01.03.2024.

# **RESEARCH PROJECTS COMPLETED/ONGOING**

# **Project completed:**

Title: Physico-chemical analysis of groundwater of selected area of Mysore city

**Duration:** 2 years **Funding agency**: UGC

# **Project implemented:**

Title: Alumino phosphate and silicate zeolites synthesized by microwave-assisted in situ

crystallization **Duration**: 2 years **Funding agency:** UGC

Sl. No.	Title	Agency	Period	Grant/amount
1.	Eco-Friendly Green Synthesis of Metal Oxide Nanocomposites for Electrochemical Detection of Heavy Metals in Water	KSCST  45S_MSc_045(student project)	6 months 2022	Rs 10000/-
2	Synthesis of metal oxide nanocomposites: electrochemical detection of heavy metal ions	KSCST  46S_MSc_052(student project)	6 months 2023	Rs 6,500/-
3	Biosynthesis of Metal Oxide/rGO-Based Nanocomposites for Supercapacitor applications	KSCST  48S_MSc_014(student project)	6 months 2024-2025	Rs 5,500/-

#### **EXTENSION AND CONSULTANCIES**

- Organising member of two-day Chemistry awareness program entitled "Chemistry: Our life, Our Future", to rural Government High School students of Tumkur District on 22<sup>nd</sup> and 23<sup>rd</sup> Dec 2011, in view of the International Year of Chemistry
- Taken free classes to P.U. students with poor financial backgrounds
- Taken CET classes for P.U. Students

# **RESEARCH GUIDANCE**

- At present, guiding one student for their PhD degree, and three students have been awarded PhD.
- Guiding M.Sc. students for their project dissertations.

# **POSITIONS HELD**

- BOS (Chemistry) Chairperson for framing undergraduate syllabus in JSS Autonomous College, Mysore during 2007 -2009
- BOE Chairperson in JSS Autonomous College, Mysore during 2007 -2009
- Editor of the "Journal for Advanced Research in Applied Sciences [JARAS]" E-ISSN: 2394-8442
- Member of iJARS Board of Reviewers- Panel of Applied Science, ISSN: 2278-9480

- Organized a day DST-sponsored National Conference entitled "Synthetic and Structural Chemistry" on 19th March 2015.
- Member of the Board of Appointing Examiners for awarding D.Sc., in Chemistry
- External BOS member for undergraduate at JSS College, Ooty Road, Mysore.
- Worked as a BoE member both for UG and PG Chemistry
- Doctoral Committee member for PhD
- Panel of Examiners for evaluating the thesis of Thiruvalluar University, Vellore, Bharathiar University, Coimbatore and Mysore University
- Worked as Treasurer of the Chemical Society
- Coordinated the one-day special lecture series sponsored by UGC under the CPE scheme on 'Chemistry and its importance to Society' on 16th August 2017.
- Coordinator for organizing one day science popularization programme in Government High School, organized by the Department of Science and Research in Chemistry, Tumkur University in association with UGC under the CPE sponsored scheme at Swadenahali, Tumakuru on 10th November 2017.
- BOS member in both the UG (internal and external) and PG departments of Chemistry
- Treasurer of Chemical Society, conducted one-day seminar on "Recent Advances in Chemical Sciences" organized by Chemical Society, DOSR in Chemistry, Tumkur University on 24th November 2017.
- Organizing members and Editors for organizing one day National Conference on "Current Advances in Chemical Sciences" on 16<sup>th</sup> March 2018.
- BOS (PG) member from the academic year 2018.
- Worked as a Member of IQAC 2012-2018.
- Worked as a member of the Anti-ragging Committee.
- Coordinator for Red Ribbon Club.
- Worked as University College Ladies Hostel Warden.
- Member of the AQAR committee in preparing the report from 2005 to 2011.
- Worked as a member of the Women's Counseling Cell.
- Worked as a Convener for Students' Grievance Cell.
- Worked as a member of the sexual harassment prevention cell.
- Additional chief superintendent for conducting B.Sc II/IV/VI sem April/May 2019 exam.
- Guiding M.Sc. students for their project dissertation work
- Subject expert for conducting demo and written test for science at Bishop Sargent School, Tumkur
- BOS member for UG chemistry for GFGC, Gubbi (Autonomous College)
- Worked as organizing Secretary for one day National Webinar on Recent Trends in Chemistry of Materials on March 8<sup>th</sup>,2022.
- Working as UUCMS College coordinator
- NAAC criteria V coordinator
- Worked as BoE chairperson for PG Chemistry
- Worked as BoE external member for PG Chemistry

Nirmala B