

CURRICULUM VITAE

Name: Dr. Sandhya Shenoy U

Department: Chemistry

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Educational Qualification:

- B.Sc. (Botany, Zoology, Chemistry), Mangalore University, Mangalagangothri, 2007.
- M.Sc. (Chemistry), National Institute of Technology Karnataka, Surathkal, 2009.
- Ph.D. (Chemistry), National Institute of Technology Karnataka, Surathkal, 2013.
- P.D.F., Jawaharlal Nehru Center for Advanced Scientific Research, Jakkur, Bangalore, 2014-2017.

Teaching Experience: 2.5 years

Research Experience: 11 years

Research Details:

- Research Area: Thermoelectrics, Synthesis of Nanomaterials and Simulations of Materials for energy and environment.
- Funding sanctioned: ~1.07 crores from Department of Science and Technology, New Delhi under DST INSPIRE Faculty Scheme.
- Publications: 40

List of Publications:

- Bantawal, H., **Shenoy, S.U.** and Bhat, D.K. (2020). "Vanadium-Doped SrTiO₃ Nanocubes: Insight into Role of Vanadium in Improving the Photocatalytic Activity." *Appl. Surf. Sci.*, 513, 145858.
- Sethi, M., **Shenoy, S.U.** and Bhat, D.K. (2020). "Porous Graphene-NiCo₂O₄ Nanorod Hybrid Composite as High Performance Supercapacitor Electrode Material." *New J. Chem.*, 44, 4033 – 4041.
- **Shenoy S.U.**, Bhat, D.K. (2020). "Bi and Zn Co-doped SnTe Thermoelectrics: Interplay of Resonance Levels and Heavy Hole Band Dominance Leading to Enhanced Performance and Record High Room Temperature ZT." *J. Mater. Chem. C*, 8, 2036 – 2042.

- Bhat, D.K. and **Shenoy S.U.** (2019). “Zn: A Versatile Resonant Dopant for SnTe Thermoelectrics.” *Mat. Today Phys.*, 11, 100158.
- Bantawal, H., Sethi, M., **Shenoy, S.U.** and Bhat, D.K. (2019). “Porous Graphene Wrapped SrTiO₃ Nanocomposite: Sr-C Bond as an Effective Coadjutant for High Performance Photocatalytic Degradation of Methylene Blue.” *ACS Appl. Nano Mater.*, 2, 6629 – 6636.
- Perumal, S., Samanta, M., Ghosh, T., **Shenoy, S.U.**, Bohra, A.K., Bhattacharya, S., Singh, A., Waghmare, U.V. and Biswas, K. (2019) “Realization of High Thermoelectric Figure of Merit in GeTe by Complementary Co-doping of Bi and In.” *Joule*, 3, 2565 – 2580.
- Sethi, M., Bantawal, H., **Shenoy, S.U.** and Bhat, D.K. (2019). “Eco-friendly Synthesis of Porous Graphene and its Utilization as High Performance Supercapacitor Electrode Material.” *J. Alloys Compd.*, 799, 256 – 266.
- **Shenoy S.U.**, Bhat, D.K. (2019). “Electronic Structure Engineering of Tin Telluride through Co-doping of Bismuth and Indium for High Performance Thermoelectrics: A Synergistic Effect Leading to Record High Room Temperature ZT in Tin Telluride.” *J. Mater. Chem. C*, 7, 4817 – 4821.
- **Shenoy, S.U.**, Bantawal, H. and Bhat, D.K. (2018). “Band Engineering of SrTiO₃: Effect of Synthetic Technique and Site Occupancy of Doped Rhodium.” *J. Phys. Chem. C*, 122, 27567 – 27574.
- Bantawal, H., **Shenoy, S.U.** and Bhat, D.K. (2018). “Tuning Photocatalytic Activity of SrTiO₃ by Varying the Sr/Ti Ratio: Unusual Effect of Viscosity of Synthetic Medium.” *J. Phys. Chem. C*, 122, 20027 – 20033.
- Sadiq, M.M.J., **Shenoy, S.U.** and Bhat, D.K. (2018). “Synthesis of BaWO₄/NRGO-g-C₃N₄ Nanocomposites with Excellent Multifunctional Catalytic Performance via Microwave Approach.” *Front. Mater. Sci.*, 12, 247 – 263.
- Bhat, D.K. and **Shenoy S.U.** (2018). “Enhanced Thermoelectric Performance of Bulk Tin Telluride: Synergistic Effect of Calcium and Indium Co-doping.” *Mat. Today Phys.*, 4, 12 – 18.
- Sadiq, M.M.J., **Shenoy, S.U.** and Bhat, D.K. (2018). “Novel NRGO-CoWO₄-Fe₂O₃ Nanocomposite as an Efficient Catalyst for Dye Degradation and Reduction of 4-nitrophenol.” *Mat. Chem. Phys.*, 208, 112 – 122.
- **Shenoy, S.U.** and Shetty, N.A. (2018). “A Simple Single Step Approach towards Synthesis of Nanofluids Containing Cuboctahedral Cuprous Oxide Particles Using Glucose Reduction.” *Front. Mater. Sci.*, 12, 74 – 82.

- Perumal, S., Bellare, P., **Shenoy, S.U.**, Waghmare, U.V. and Biswas, K. (2017). “Low Thermal Conductivity and High Thermoelectric Performance in Sb and Bi co-doped GeTe: Complementary Effect of Band Convergence and Nanostructuring.” *Chem. Mater.*, 29, 10426 – 10435.
- **Shenoy S.U.**, Bhat, D.K. (2017). “Enhanced Bulk Thermoelectric Performance of $\text{Pb}_{0.6}\text{Sn}_{0.4}\text{Te}$: Effect of Magnesium Doping.” *J. Phys. Chem. C*, 121, 20696 – 20703.
- Sadiq, M.M.J., **Shenoy, S.U.** and Bhat, D.K. (2017). “NiWO₄-ZnO-NRGO Ternary Nanocomposite as an Efficient Photocatalyst for Degradation of Methylene Blue and Reduction of 4-nitro phenol.” *J. Phys. Chem. Solids*, 109, 124 – 133.
- Sadiq, M.M.J., **Shenoy, S.U.** and Bhat, D.K. (2017). “Enhanced Photocatalytic Performance of N-doped RGO-FeWO₄/Fe₃O₄ Ternary Nanocomposite in Environmental Applications.” *Mat. Today. Chem.*, 4, 133 – 141.
- Bhat, D.K. and **Shenoy S.U.** (2017). “High Thermoelectric Performance of Co-Doped Tin Telluride Due to Synergistic Effect of Magnesium and Indium.” *J. Phys. Chem. C*, 121, 7123 – 7130.
- Sadiq, M.M.J., **Shenoy, S.U.** and Bhat, D.K. (2017). “High Performance Bifunctional Catalytic Activity of Novel Zinc Tungstate - Reduced Graphene Oxide Nanocomposite.” *Adv. Sci. Eng. Med.*, 9, 115 – 121.
- Roychowdhury, S., **Shenoy, S.U.**, Waghmare, U.V. and Biswas, K. (2017). “An Enhanced Seebeck Coefficient and High Thermoelectric Performance in p-type In and Mg co-doped $\text{Sn}_{1-x}\text{Pb}_x\text{Te}$ via the Co-adjutant Effect of The Resonance Level and Heavy Hole Valence Band.” *J. Mater. Chem. C*, 5, 5737 – 5748.
- **Shenoy, S.U.** and Shetty, N.A. (2017). “Direct Synthesis of Nanofluids Containing Novel Hexagonal Disc Shaped Copper Nanoparticles.” *J. Nanofluids*, 6, 11 – 17.
- **Shenoy, S.U.**, Waghmare, U.V., Lingampalli, S.R., Roy, A. and Rao, C.N.R. (2017). “Effects of Aliovalent Anion Substitution on The Electronic Structures and Properties of ZnO and CdS.” *Isr. J. Chem.*, 57, 477 – 489.
- Banik, A., **Shenoy, S.U.**, Saha, S., Waghmare, U.V. and Biswas, K. (2016). “High Power Factor and Enhanced Thermoelectric Performance of SnTe-AgInTe₂: Synergistic Effect of Resonance Level and Valence Band Convergence.” *J. Am. Chem. Soc.*, 138, 13068 – 13075.
- Roy, A., **Shenoy, S.U.**, Manjunath, K, Vishnoi, P., Waghmare, U.V. and Rao, C.N.R. (2016). “Structure and Properties of Cd₄P₂Cl₃, an Analogue of CdS.” *J. Phys. Chem. C*, 120, 15063 – 15069.
- Sadiq, M.M.J., **Shenoy, S.U.** and Bhat, D.K. (2016). “Novel RGO/ZnWO₄/Fe₃O₄ Nanocomposite as High Performance Visible Light Photocatalyst.” *RSC Adv.*, 6, 61821 – 61829.

- Lingampalli, S.R., Manjunath, K, **Shenoy, S.U.**, Waghmare, U.V. and Rao, C.N.R. (2016). “Zn₂NF and Related Analogues of ZnO.” *J. Am. Chem. Soc.*, 138, 8228 – 8234.
- Roychowdhury, S., **Shenoy, S.U.**, Waghmare, U.V. and Biswas, K. (2016). “Effect of Potassium Doping on Electronic Structure and Thermoelectric Properties of Topological Crystalline Insulator.” *Appl. Phys. Lett.*, 108, 193901-1 – 193901-5.
- **Shenoy, S.U.**, Gupta, U., Narang, D.S., Late, D.J., Waghmare, U.V. and Rao, C.N.R. (2016). “Electronic Structure and Properties of Layered Gallium Telluride.” *Chem. Phys. Lett.*, 651, 148 –154.
- Roychowdhury, S., **Shenoy, S.U.**, Waghmare, U.V. and Biswas, K. (2015). “Tailoring of Electronic Structure and Thermoelectric Properties of a Topological Crystalline Insulator by Chemical Doping.” *Angew. Chem. Int. Ed.*, 54, 15241 – 15245.
- Subramanya, B., Bhat, D.K., **Shenoy, S.U.**, Ullal, Y. and Hegde, A.C. (2015). “Novel Fe-Ni-Graphene Composite Electrode for Hydrogen Production.” *Int. J. Hydrogen Energy*, 40, 10453 – 10462.
- Subramanya, B., Ullal, Y., **Shenoy, S.U.**, Bhat, D.K. and Hegde, A.C. (2015). “Novel Co-Ni-Graphene Composite Electrodes for Hydrogen Production.” *RSC Adv.*, 5, 47398 – 47407.
- Banik, A., **Shenoy, S.U.**, Anand, S., Waghmare, U.V. and Biswas, K. (2015). “Mg Alloying in SnTe Facilitates Valence Band Convergence and Optimizes Thermoelectric Properties.” *Chem. Mater.*, 27, 581 – 587.
- **Shenoy, S.U.** and Shetty, N.A. (2015). “A Simple Approach Towards Synthesis of Nanofluids Containing Octahedral Copper Nanoparticles.” *J. Nanofluids*, 4, 428 – 434.
- **Shenoy, S.U.** and Shetty, N.A. (2014). “Simple glucose reduction route for one step synthesis of copper nanofluids.” *Appl. Nanosci.*, 4, 47 – 54.
- **Shenoy, S.U.** and Shetty, N.A. (2013). “A Facile One Step Solution Route to Synthesize Cuprous Oxide Nanofluid.” *Nanomater. Nanotechol.*, 3, 5:2013.
- **Shenoy, S.U.** and Shetty, N.A. (2013). “Copper Nanofluids: A Facile Synthetic Approach.” *J. Nanoeng. Nanomanuf.*, 3, 64 – 69.
- **Shenoy, S.U.** and Shetty, N.A. (2013). “A Facile Ascorbic Acid Reduction Method for Solution Phase Single Step Synthesis of Copper Nanofluids.” *Nano Trends: J. Nanotechnol. App.*, 14, 09734181.

- **Shenoy, S.U.** and Shetty, N.A. (2013). “A Simple Solution Phase Synthesis of Copper Nanofluids Using Single Step Glucose Reduction Method.” *Synth. React. Inorg. Met. Org. Nanomet. Chem.*, 43(3), 343 – 348.
- **Shenoy, S.U.** and Shetty, N.A. (2012). “Synthesis of Copper Nanofluids Using Ascorbic Acid Reduction Method via One Step Solution Phase Approach.” *J.ASTM Int.*, 9(5), JAI104416.

Honors/Awards:

- 🏆 Gold medal, B.Sc. (Botany Zoology Chemistry) at Mangalore University, Mangalagangothri (2007).
- 🏆 Institute gold medal (1st rank) and G.H Kulkarni gold medal, M.Sc. (Chemistry) at NITK, Surathkal (2009).
- 🏆 First 10 pointer (perfect score) of NITK, Surathkal.
