

Faculty Profile



Dr. S. Rahul, M.Sc., Ph.D.,
Assistant Professor - Physics

HIGHLIGHTS:

- Number of Journal Publications: 14
- H-Index: 09

PROFESSIONAL LINKS:

- Scopus ID: 58032966100
- Scopus Link: <https://www.scopus.com/pages/feedback/author/review-profile?authorIds=58032966100>
- Google Scholar ID: <https://scholar.google.com/citations?user=OuIGODEAAAJ&hl=en>
- Anna University Faculty ID: 2786251997
- AICTE Faculty ID: 1-47889381742
- Anna University Supervisor ID:
- LinkedIn: <https://www.linkedin.com/in/rahul-s-140506389/?isSelfProfile=true>

AREA OF SPECIALIZATION:

- Synthesis and fabrication of metal Oxide Nanoparticles & Nanocomposite: Hydrothermal, Solvothermal, Sol–gel, Microwave irradiation, Sonication-assisted, Reflux, and Green synthesis methods
- Thin-film development and characterization: SILAR and Dip-Coating techniques.
- Crystal growth: S-R Method & Slow Evaporation Method
- Photocatalytic applications and reaction mechanisms
- Antimicrobial applications

ACHIEVEMENTS AND AWARDS:

Awarded **Best Ph.D. Research Scholar (Science)** at Sacred Heart Research Day 2025, held on 20th December 2025 at Sacred Heart College (Autonomous), Tirupattur.

PUBLICATIONS:

1. **Rahul, S.,** George, A., Savio, C.D., Saravanan, P., Raj, A.D.,... 2024. "Time-Dependent Hydrothermal Synthesis of La₂O₃ NPs for Effective Catalytic Activity of Ionic Dye." Luminescence, 39(10), p.e4915. **(Impact Factor: 3.2)**
2. **Rahul, S.,** George, A., Vinoth Kumar, J., Shankar, R., Raj, A.D., Babu, R.S., 2025. A comparison of photocatalytic degradation of six organic dyes by pH-modulated La₂O₃ nanoparticles. Journal of Materials Science: Materials in Electronics, 36(17), p.1051. **(Impact Factor: 2.9)**
3. **Rahul, S.,** George, A. and Jayakumar, G., 2025. Unraveling the Photocatalytic Performance of La₂O₃ Nanoparticles for the Degradation of Six Organic Dyes. Langmuir, 41(25), p.16378. **(Impact Factor: 3.9)**
4. **Rahul, S.,** George, A., Savio, C.D., Raj, A.D., Rag, S.A. and Lawrence, D.D., 2026. Unveiling Radical Trapping in La₂O₃ Nanoparticles Under Hydrothermal Temperature Variations for Enhanced Photocatalysis. Materials Chemistry and Physics, p.132415. **(Impact Factor: 4.7)**
5. George, A., **Rahul, S.,** Raj, A.D. and Yang, Q., 2024. Gas sensing response and photocatalytic efficiency of pH tuned NiV₂O₆ nanorods. Sensors and Actuators B: Chemical, 413, p.135809. **(Impact Factor: 8)**
6. George, A., **Rahul, S.,** Raj, A.D., Yang, Q., Jayakumar, G., and Kumar, J.V., 2024. Photocatalytic degradation of dyes using Cu₃V₂O₈ nanorods. Inorganic Chemistry Communications, 168, p.112890. **(Impact Factor: 4.4)**

7. George, A., **Rahul, S.**, Raj, A.D., Irudayaraj, A.A., Senthilkumar, M., and Kaviyarasu, K., 2023. Surfactant assisted synthesis of nickel vanadium oxide nanostructures with strong visible-light-induced photocatalytic activity. *Results in Surfaces and Interfaces*, 12, p.100129. **(Impact Factor: 5.7)**
8. Wilsonamalraj, D., Raj, A.D., **Rahul, S.**, Savio, C.D., Prabhu, H.J.,... and Kumar, J.V., 2025. Tunable band gap engineering and photocatalytic efficiency of $\text{Mn}_3\text{O}_4/\text{CuO}/\text{ZnO}$ ternary nanocomposites for efficient photocatalytic degradation. *Inorganic Chemistry Communications*, p.115894. **(Impact Factor: 5.4)**
9. Venci, X., George, A., **Rahul, S.**, Raj, A.D., Irudayaraj, A.A., Josephine, R.L., Sundaram, S.J. and Kaviyarasu K., 2023. Investigation on the formation of self-assembled CdSe dendrite structures and their photocatalytic efficiency. *Inorganic Chemistry Communications*, 148, p.110309. **(Impact Factor: 4.4)**
10. Arumugam, J., George, A., Saravanan, P., **Rahul, S.**, Raj, A.D.,...and Kumar, J.V., 2024. Fabrication of one-dimensional Zn-doped Bi_2S_3 nanorods for photodiode applications. *Luminescence*, 39(9), p.e4901. **(Impact Factor: 3.2)**
11. Venci, X., George, A., Alsawat, M., **Rahul, S.**, Singh, S., Ganesan, S., Savio, C.D., Raj, A.D., Sundaram, S.J. and Jayakumar, G., 2025. Tailoring CdSe nanoparticles at different pH levels for improved methylene blue photodegradation. *Environmental Geochemistry and Health*, 47(12), p.534. **(Impact Factor: 3.8)**
12. Dominic Savio, C., **Rahul, S.**, Saravanan, P., Daniel Lawrence, D., Dhayal Raj, A., Pazhanivel, T., 2026. Impact of Thermal Treatment on Bandgap and Morphological Properties of $\alpha\text{-Fe}_2\text{O}_3$ Nanoparticles for Photocatalysis. *Topics in Catalysis*, pp.1-11. **(Impact Factor: 3)**
13. George, A., **Rahul, S.**, Dhayal Raj, A., Yang, Q.,..., 2024. Surfactant-assisted hydrothermal synthesis of FeVO_4 nanoparticles for supercapacitor applications. *Canadian Journal of Chemistry*. **(Impact Factor: 1.1)**
14. Savio, C.D., Kumar, J.V., **Rahul, S.**, Vigneshwaran, B., Raj, A.D.,..., 2026. Effect of calcination temperature on the structural, optical, and photocatalytic properties of $\text{Fe}_2\text{O}_3/\text{ZnO}$ nanocomposites. *Journal of Materials Science: Materials in Electronics*, 37(12), p.890. **(Impact Factor: 2.9)**

CONFERENCES / SEMINARS PRESENTED:

International Conferences / Seminars

1. 2025 – **Best Paper Presentation Award**, 5th IEEE International Conference on Innovations in Power and Advanced Computing Technologies (I-PACT 2025), jointly organized by the Faculty of Advanced Technology and Multidiscipline, Universitas Airlangga, Surabaya, Indonesia; Faculty of

Engineering, Universiti Malaya, Kuala Lumpur, Malaysia; and School of Electrical Engineering, Vellore Institute of Technology (VIT), Vellore, India (25–26 September 2025).

2. 2025 – **Best Paper Presentation Award**, XXII Control Instrumentation System Conference (CISCON-2025), organized by the Department of Instrumentation and Control Engineering, Manipal Institute of Technology, Manipal Academy of Higher Education (MAHE), Manipal, India (1–2 August 2025).
3. 2025 – **Best Paper Presentation Award**, International Conference on Interdisciplinary Approach for Sustainable Development (ICIASD-2025), organized by the PG & Research Department of Physics and the Department of Life Sciences, MKJC for Women, Vaniyambadi, Tamil Nadu, India (18 February 2025).
4. 2024 – Paper Presented & **Best Paper Presentation Award**, 3rd One-Day International Conference on Advanced Material Science & Nanotechnology (ICMSN-2024), organized by the Department of Physics, St. Joseph College of Arts and Science for Women, Pagalpatty, in association with Crystal Growth Centre, Chennai, Tamil Nadu, India (25 September 2024).
5. 2024 – Paper Presented & **Best Paper Presentation Award**, International Conference on Emerging Trends in Material Science and Application (ICEMA-2024), organized by the Department of Physics, Auxilium College, Vellore, Tamil Nadu, India (12 September 2024).
6. 2024 – Paper Presented, International Seminar on Opportunities for You in Combined Cycle Power and Sea Water Desalination, Department of Physics, Islamiah College (Autonomous), Vaniyambadi, Tamil Nadu, India (31 July 2024).
7. 2024 – Paper Presented & **Best Paper Presentation Award**, International Conference on Emerging Advanced Materials (ICEAM-2024), organized by the PG & Research Department of Physics and the PG Department of Chemistry, MKJC for Women, Vaniyambadi, Tamil Nadu, India (12 March 2024).
8. 2024 – Paper Presented, International Conference on Advanced Materials (ICAM-2024), organized by the Department of Physics, Loyola College, Chennai, Tamil Nadu, India (26 February 2024).
9. 2024 – Paper Presented, International Conference on Advanced Materials (ICAMA-2024), organized by the Department of Physics, SRM Institute of Science and Technology, Ramapuram, Chennai, Tamil Nadu, India (26 October 2024).
10. 2023 – Paper Presented, Two-Day International Conference on Advanced Materials Science and Biomedical Applications, organized by the PG & Research Department of Physics and Chemistry, Adhiyaman Arts and Science College for Women, Uthangarai, Tamil Nadu, India (11–12 October 2023).
11. 2023 – Paper Presented & **Best Paper Presentation Award**, 2nd International Virtual Conference on Material Science and Nanotechnology (ICAMN-2023), organized by St. Joseph College of Arts and Science for Women, Pagalpatty, Salem, Tamil Nadu, India (28 February 2023).

12. 2023 – Paper Presented & **Best Paper Presentation Award**, Two-Day International Conference on Multifunctional Materials and Radiation Measurements (ICMMRM-2023), organized by the Department of Physics, Sri Sivasubramaniya Nadar College of Engineering (Autonomous), Chennai, Tamil Nadu, India (27–28 January 2023).
13. 2022 – Paper Presented, One-Day International Webinar on Advanced Functional Materials, organized by the PG & Research Department of Physics, Gonzaga College of Arts and Science for Women, Krishnagiri, Tamil Nadu, India (28 September 2022).
14. 2022 – Paper Presented, International Conference on Material Science and Nanotechnology (ICMSN-2022), organized by the Department of Physics, St. Joseph College of Arts and Science for Women, Pagalpatty, Salem, Tamil Nadu, India (28 February 2022).

National Conferences / Seminars

1. 2024 – Paper Presented & **Best Paper Presentation Award**, 2nd National Conference on Recent Advances in Materials (NCRAM-2024), organized by the PG & Research Department of Physics, PG Department of Chemistry & Department of Biochemistry, Gonzaga College of Arts and Science for Women, Krishnagiri, Tamil Nadu, India (27–28 September 2024).
2. 2024 – Paper Presented, National Conference on Emerging Trends in Chemical Sciences for Sustainable Future (NCECSSF-2024), organized by the PG & Research Department of Chemistry, Sacred Heart College (Autonomous), Tirupattur, Tamil Nadu, India (20 September 2024).
3. 2024 – **Best Paper Presentation Award**, 16th National Seminar on Crystal Growth and its Applications (NSCGA-2024), organized by the Department of Physics, Bharathidasan University, Tiruchirappalli, Tamil Nadu, India (29–31 August 2024).
4. 2023 – Paper Presented & **Best Paper Presentation Award**, National Conference on Materials Synthesis and Environmental Sustainability (NCMSES-2023), organized by the PG & Research Department of Physics, Sacred Heart College (Autonomous), Tirupattur, Tamil Nadu, India (26 September 2023).
5. 2023 – Paper Presented, National Conference on Recent Advances in Materials (NCRAM-2023), organized by the PG & Research Department of Physics, PG Department of Chemistry & Department of Biochemistry, Gonzaga College of Arts and Science for Women, Krishnagiri, Tamil Nadu, India (21–22 September 2023).
6. 2023 – **Best Paper Presentation Award**, National Level Seminar on Recent Advances in Solar Energy Materials and Photocatalysis (RASEP-2023), organized by the Research Department of Physics, Gobi Arts and Science College, Gopichettipalayam, Erode, Tamil Nadu, India (21 January 2023).

7. 2022 – Paper Presented, Second National Conference on Advanced Materials and Applications (NCAMA-2022), organized by the Department of Physics & ISPA, Auxilium College, Vellore, Tamil Nadu, India (13–14 October 2022).
8. 2022 – Paper Presented, National Conference on Advances in Materials Research, organized by the PG & Research Department of Physics, Sacred Heart College (Autonomous), Tirupattur, Tamil Nadu, India (30 September 2022).

COURSES CERTIFIED:

1. Completed NPTEL MOOC course on "Nanomaterials and Their Properties" conducted by IIT Kanpur (Jul – Oct 2021).
2. Completed NPTEL MOOC course on "Nature and Properties of Materials" conducted by IIT Kanpur (Feb – Apr 2022).
3. Completed NPTEL MOOC course on "Properties of Materials (Nature and Properties of Materials : III)" conducted by IIT Kanpur (Feb – Apr 2022).

FACULTY DEVELOPMENT PROGRAMMES:

1. FDP on Advanced Materials for Technological Applications, Sathyabama Institute of Science and Technology (24 Mar–4 Apr 2023)