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### **Research Contributions:**

- Published a Patent Titled “Sea Water Desalination Apparatus using Solar Energy”, Design No:389758-001, Dated 06.07.2023
- Published a Patent Titled “Nanotech Based Metal Oxide Identifying Gloves”, Design No: 381085-001 Dated 09.03.2023
- Received funded project as Co-Principal from TNSCST- S&T Project on “Reduced graphene oxide, Titanium oxide A novel hybrid materials for Hydrogen Storage” sanctioned Rs. 2,00,000 and for two years.
- Recognized as an approved Research Guide under Manonmaniam Sundaranar University Ref.MSU/RES/Ph.D. GUDIDESHIP/R2/2022.

### **Papers Publications:**

1. Christian Raja, A. A., Sinthiya, A. S. I., **Selvam, V.**, Anitha, C., & Malathi, B. (2025). Fabrication of Gd<sub>2</sub>O<sub>3</sub>-Loaded nitrogen-rich C<sub>3</sub>N<sub>5</sub>@ PANI hybrid nanocomposites: Unlocking efficient photocatalysis for long-Term organic dye degradation in wastewater treatment. *Physica B Condensed Matter*, 698, 416758.
2. Shanthini, K., **Selvam, V.**, Anitha, C., Alphonse, N. R., Malathi, B., & Pushpavalli, K. S. (2024). Dynamic Trio: CuWO<sub>4</sub>@ C<sub>3</sub>N<sub>5</sub>/Polypyrrole nanocomposites Combat Chlorpyrifos and Rhodamine B in waste water. *Surfaces and Interfaces*, 51, 104673.
3. Valli, K. P., Kala, S. M. J., **Selvam, V.**, Anitha, C., Malathi, B., Prakash, K. S., & Pandian, S. K. (2024). Novel hierarchical nanocomposites of g-C<sub>3</sub>N<sub>4</sub>/MXene-Sm<sub>2</sub>O<sub>3</sub> for enhanced cefixime degradation under visible light. *Journal of Physics and Chemistry of Solids*, 190, 112011.

4. Anciya, S., Sree Devi, R., Joy Sinthiya, A. S. I., **Selvam, V.**, Selvarajan, P., & Martin Britto Dhas, S. A. (2024). Mild shock waves and enhanced optical characteristics of sulphamic acid single crystals doped with pyridine-2-carboxylic acid. *Journal of Materials Science: Materials in Electronics*, 35(16), 1107.
5. Raja, A. A. C., Sinthiya, A. J., Anciya, S., **Selvam, V.**, & Velmurugan, K. (2024). Exploiting the combined power of  $C_3N_4/Ti_3C_2/Gd_2O_3$  nanocomposites for advanced ciprofloxacin and pathogen degradation in wastewater. *Optik*, 299, 171577.
6. **Selvam, V.**, Sarika, R., Silambarasan, D., Mary, S. S. L., & Prakash, K. S. (2024). Fundamentals of nanoceramics and their composites. In *Industrial Applications of Nanoceramics* (pp. 329-346). Elsevier. (Book Chapter).
7. Shanthini, K., **Selvam, V.**, Anitha, C., Alphonse, N. R., Pushpavalli, K. S., & Gomathinayagam, V. (2024). Designing  $Ti_3C_2/C_3N_4$ -embedded chitosan nanocomposites for efficient antibiotic degradation and antibacterial activity. *Optical Materials*, 147, 114731.
8. Shanthini, K., Anitha, C., Alphonse, N. R., Velmurugan, K., & **Selvam, V.** (2023). GO-CNT/AgI nanocomposites: A facile synthesis and environmentally friendly method to removal of organic pollutants. *Journal of Molecular Structure*, 1286, 135500.
9. **Selvam, V.**, Jeyapaul, T., Prakash, K., Shanthini, K., & Anitha, C. (2023). Metal-free and fully recoverable MWCNT/g- $C_3N_4$ /chitosan nanocomposite thin film with excellent photocatalytic activity against organic pollutant degradation. *Physica B: Condensed Matter*, 655, 414726.
10. Velmurugan, K., Prakash, K., Ponmari, G., **Selvam, V.**, Anitha, C., & Sinthiya, A. J. (2023). Hierarchical fabrication of GO@  $Dy_2MoO_6$  heterojunction for catalytic performance and effective wastewater treatment. *Optical Materials*, 136, 113422.
11. Navaneethakrishnan, G., Karthikeyan, T., **Selvam, V.**, & Saravanan, S. (2023). Effects of MWCNTs/g- $C_3N_4$  on mechanical and thermal properties of epoxy hybrid nanocomposites. *Journal of Engineering Research*, 11(1B).
12. Prabhu, C. A., Silambarasan, D., Sarika, R., & **Selvam, V.** (2022). Synthesis and characterization of  $TiO_2$ . *Materials Today: Proceedings*, 64, 1793-1797.

13. Prakash, K., **Selvam, V.**, Babu, S. G., Meena, S., & Karuthapandian, S. (2021). Rational design of novel 3D flower-like praseodymium molybdate anchored graphitic carbon Nitride: An efficient and sustainable photocatalyst for mitigation of carcinogenic pollutants. *Applied Surface Science*, 569, 151104.
14. Navaneethakrishnan, G., Karthikeyan, T., Saravanan, S., & **Selvam, V.** (2020). Influence of boron nitride on morphological, mechanical, thermal and wear characteristics of epoxy nanocomposites. *Materials Research Innovations*, 24(5), 257-262.
15. Fadlalla, M. I., Kumar, P. S., **Selvam, V.**, & Babu, S. G. (2020). Emerging energy and environmental application of graphene and their composites: a review. *Journal of Materials Science*, 55(17), 7156-7183.
16. Jeyapaul, T., Latha, P., Prakash, K., & **Selvam, V.** (2020). Facile synthesis of Bi<sub>2</sub>O<sub>3</sub>/Nylon NCTF and its superior photocatalytic activity against dye degradation. *Materials Today: Proceedings*, 21, 445-448.
17. Navaneethakrishnan, G., Karthikeyan, T., Saravanan, S., **Selvam, V.**, & Parkunam, N. (2020). Development and investigation of Pongamia pinnata epoxy composites. *Materials Today: Proceedings*, 21, 130-132.
18. Navaneethakrishnan, G., Karthikeyan, T., Saravanan, S., **Selvam, V.**, Parkunam, N., Sathishkumar, G., & Jayakrishnan, S. (2020). Structural analysis of natural fiber reinforced polymer matrix composite. *Materials today: proceedings*, 21, 7-9.
19. Navaneethakrishnan, G., Karthikeyan, T., **Selvam, V.**, & Saravanan, S. (2019). Effect of cordia obliqua wild particles on mechanical and fracture toughness of epoxy nanocomposites. *Materials Research Express*, 6(11), 115038.
20. Fadlalla, M. I., Senthil Kumar, P., **Selvam, V.**, & Ganesh Babu, S. (2019). Recent advances in nanomaterials for wastewater treatment. *Advanced nanostructured materials for environmental remediation*, 21-58.
21. **Selvam, V.**, Kumar, M. S. C., & Vadivel, M. (2018). Synthesis and Characterization of Silane-Modified Chitosan/Epoxy Composites. *Functionalized Engineering Materials and Their Applications*, 69.
22. Annalakshmi, M., Sangili, A., Chen, S. M., Chen, T. W., Liu, X., & **Selvam, V.** (2018). Novel electrochemical sensor for highly sensitive detection of adenine based on vanadium pentoxide nanofibers modified screen printed carbon electrode. *International Journal of Electrochemical Science*, 13(7), 6218-6228.

23. **Selvam, V.**, Kumar, P. S., Krishnan, G. N., & Andavan, G. S. (2018). Photocatalytic degradation of organic contaminants by g-C<sub>3</sub>N<sub>4</sub>/EPDM nanocomposite film: Viable, efficient and facile recoverable. *Materials Science and Engineering: C*, 84, 188-194.
24. Sakthivel, R., Dhanalakshmi, S., Chen, S. M., Chen, T. W., **Selvam, V.**, Ramaraj, S. K., ... & Leung, W. H. (2017). A novel flakes-like structure of molybdenum disulphide modified glassy carbon electrode for the efficient electrochemical detection of dopamine. *International Journal of Electrochemical Science*, 12(10), 9288-9300.
25. Vinoth Kumar, J., Karthik, R., Chen, S. M., Balasubramanian, P., Muthuraj, V., & **Selvam, V.** (2017). A novel cerium tungstate nanosheets modified electrode for the effective electrochemical detection of carcinogenic nitrite ions. *Electroanalysis*, 29(10), 2385-2394.
26. Karthik, R., Kumar, J. V., Chen, S. M., Kumar, P. S., **Selvam, V.**, & Muthuraj, V. (2017). A selective electrochemical sensor for caffeic acid and photocatalyst for metronidazole drug pollutant-A dual role by rod-like SrV<sub>2</sub>O<sub>6</sub>. *Scientific reports*, 7(1), 7254.
27. Alagarsamy, P., Krishnan, G. N., Chen, S. M., Kokulnathan, T., Chen, T. W., Raja, N., ... & **Selvam, V.** (2017). A disposable single-use electrochemical sensor for detection of resorcinol based on electrochemically activated screen printed carbon electrode in hair dyes. *International Journal of Electrochemical Science*, 12(7), 6842-6852.
28. Kumar, J. V., Karthik, R., Chen, S. M., Raja, N., Selvam, V., & Muthuraj, V. (2017). Evaluation of a new electrochemical sensor for selective detection of non-enzymatic hydrogen peroxide based on hierarchical nanostructures of zirconium molybdate. *Journal of colloid and interface science*, 500, 44-53.
29. Julyesjaisingh, S., **Selvam, V.**, & Sureshkumar, M. (2014). Thermo-mechanical properties of unsaturated polyester toughened epoxy siliconized iron (III) oxide nanoparticles. *I j Engg. Mater. Sci.*, 21, 241-245.
30. Kumar, M. S. C., Selvam, V., & Vadivel, M. (2012). Synthesis and characterization of silane modified iron (III) oxide nanoparticles reinforced chitosan nanocomposites. *Engineering Science & Advanced Technology*, 2, 1258-1263.

## **Papers presented in the international/National Seminars/Conferences :**

- Internatioal Conference : 35
- National Conference : 16

## **Orientation/ Refresher Courses attended**

- Completed *Two-Week MOOC Workshop* for College Teachers on “Management Of Environment and its Resources” Jointly conducted by Department Of Chemistry & Research, Nesamony Memorial Christian College, Marthandam and Department of Chemistry & Research, St. Xavier’s College, Palayamkottai from 19<sup>th</sup> May to 1<sup>st</sup> June 2020.
- Completed “UGC Sponsored Second *Faculty Induction Programme*” Organized by HRDC Pondicherry University from 03.12.2020 to 01.01.2021 with A Grade.
- Attended a *Short Term Course* on “E-Content Development” during 31.05.2021 to 06.06.2021 organized by UGC-HRDC Gujarat University, Gujarat.
- Attended a *Short Term Course* on “ICT” from 14.06.2021 to 20.06.2021 organized by UGC-HRDC Gujarat University, Gujarat.
- Completed UGC Sponsored *Online Two weeks Refresher Course in Chemistry* From 01.06.2022 to 14.06.2022 organized by UGC-HRDC Pondicherry University, Pondicherry with A Grade.
- Completed UGC Sponsored *Online Two weeks Refresher Course in Chemistry* From 30.06.2023 to 14.07.2023 organized by Teaching Learning Centre, Ramanujan College, University of Delhi

## **Extension and Extra Curricular Activities :**

- Serving as a N.S.S. Programme Officer of Unit No:154 from 2019 and co-ordinated NSS activities, including social service initiatives and awareness campaigns.

## **Other Activities**

- Organized an “**International Webinar on Photocatalytic CO<sub>2</sub> Reduction challenges and Prospectives**” on **17.08.2020** and the Resource Person is Dr. Shahzad Ali, Department of Chemical Engineering, Comsats University, Lahore, Pakistan
- *Delivered a Guest Lecture* on “Development of Polymer Nanocomposites for Environmental Applications” on 11.09.2024 at V.H.N. Senthilkumara Nadar College, Viruthunagar, PG & Research Department of Chemistry.