

External funded projects

Sl. No.	Name of the Faculty & Department	Title of the project	No. of research projects completed / in progress	Sponsoring Agency	Funds received (In lakhs)
1.	Dr. Tanusree Sengupta	Structural and functional characterization of R372 and E375 variants of ZPI (Protein Z-dependent Protease Inhibitor)” funded by (2024 Mar-2027 Feb) in the DST-WOS category.	Ongoing	DST, Department of Science & Technology. Govt of India	25.32
2.	Dr. A. Murugesan	Upcycling Technology: Converting post-consumed plastics into value-added materials for electrochemical storage devices and energy conversion, as Project Leader, 2025-2027	Ongoing	Shiv Nadar Foundation Inter Institution Collaboration Grants	37.8
3.	Dr. Tanusree Sengupta	Exploring Flexible UV LED for Disinfection of Secondary Treated Municipal Wastewater, as Co-PI, 2024-2027.	Ongoing	Shiv Nadar Foundation Inter Institution Collaboration Grants	36.73
4	Dr. Tanusree Sengupta	Characterization of Novel Mutants of Human Protein Z-dependent Protease Inhibitor (ZPI): Potential Therapeutics for Hemophilia” (2022 Feb-2025 Feb) in the CRG (Core Research Grant) category.	Completed	funded by DST-SERB, Department of Science & Technology. Govt of India.	60.46
5.	Dr. Tanusree Sengupta	Understanding the Structure Function Relationship of the Natural Anticoagulant ZPI, a Member of Serpin Superfamily (2018 Jun-2022 Jan) in the ECR (Early Career Research) category.	Completed	DST-SERB, Department of Science & Technology. Govt of India.	34.62
6.	Dr. A. Murugesan	Production and commercialization of 3D-Printing Filaments from Recycled Plastic, (Feb – Dec 2019) as PI.	Completed	Canadian Natural Resources Ltd. (CNRT) Recycle3D, Canada	7.50

7.	S.I.Davis Presley	Development of GPS based comprehensive mobile app for water quality Assessment and monitoring for promoting water security, farm security urban development and civic improvement” Funded by DST-SERB, Department of Science & Technology, Govt.of India. (2019-2022). Role : Co-PI.	Completed	DST-SERB	47.57
8.	Dr. Arun Luiz	Near UVexcitable, rare earth/transition metal ions activated Ba ₂ CaZn ₂ Si ₆ O ₁₇ Phosphor for White Light Emitting Diode Applications, 2017~2021;	Completed	DST-SERB	17.94
9.	Dr. M. Siluvai Michael	Nanocatalyst embedded. hierarchically porous carbon AIR Cathode for Li/Air Rechargeable batteries, 2015-2018.	Completed	Nanomission, DST	39.01
10.	Dr. M. Siluvai Michael	Investigation on Thermally stable Poly- anion electrodes for Li- ion batteries, 2015-2018	Completed	NRB, DRDO	24.91
11.	Dr. M. Mahalakshmi	Visible light active metal and non-metal doped mesoporous TiO ₂ nanoparticles for photocatalytic applications, 2012-2015	Completed	DST	26.00
12.	Dr.M.Siluvai Michael	Hybrid capacitor with nano materials for zero emissions vehicles, 2008-2010	Completed	DST	14.09
13.	Dr. A. Murugesan	Financial Assistance under "Assistance to Professional Bodies Seminar / Symposia Scheme", Anusandhan National Research Foundation (ANRF), DST-SERB, for 3 rd International Conference on Functional Materials for NextGen Applications ICFMNA-25 , 2024-25	Completed	DST-SERB (To organize an International conference)	4.00

Internal funded projects (Funded by SSN Trust)

S.N o.	PI	Title of the Project and Date of Sanction	Budget (in Rs) & Duration	Status
1.	Dr. A.S.Shanmugharaj	➤ Manipulating the corrosion resistance properties in steel substrates using mxene based nanocomposite coatings with self-healing attributes.	3.5 lakhs (2024-2027)	Ongoing
2.	Dr. V. Tamilmani	Lanthanide-doped scandates as a down/up conversion luminescence probe for bioimaging applications	4.0 lakhs 3 Years (2024-2027)	Ongoing
3.	Dr. A. Murugesan	Tuning Electrical, Electromagnetic and Adsorption Behaviour of Functional Aromatic High-performance polymers based on Electron Donor and Acceptor Substituted Triphenylamines (2019-2021) as Project Leader.	Completed.	Rs. 5.00 Lakhs.
4.	Dr. A. Murugesan	Design and fabrication of cost-effective polymer composite based FSS microwave absorbers (2019-2021) as Co-Project Leader, Project.	Completed.	Rs. 2.20 Lakhs.
5.	Dr. A. Murugesan	Synthesis and Properties of Thermally Rearranged Novel Polymeric Membranes for Gas Separation (2017-19), as Project Leader.	Completed.	Rs. 3.70 Lakhs.
6.	Dr. S.I. Davis Presley	Approaches to asymmetric synthesis of pipecolic acid and alpha nathyl ethyl amine	2.5 Lakhs 2 Years (2016- 2018)	Completed

7.	Dr. S.I. Davis Presley	Synthesis of selective non-steroidal antiinflammatory drugs	4.0 lakhs 2 Years (2019-2021)	Completed
8.	Dr. M. Mahalakshmi	An investigation on sensitizer and counter electrode materials to enhance the efficiency of the quantum dot sensitized solar cell(QDSSC)	4.5 lakhs 2.5 Years (2019-2022)	Completed
9.	Dr.Tanusree Sengupta	Structural characterization of a human serpin and its natural variants	4.5 lakhs 3 Years (2019-2022)	Completed
10.	Dr.N.Priyadharshini	Development of novel functionalized titanium dioxide based nanomaterial and nanocomposite for effective and specific removal of Uranium (VI)	4.0 lakhs 3 Years (2019-2022)	Completed
11.	Dr. T. Arun Luiz	Synthesis, characterization and application of transition metal ion doped ZnO nanoparticles	4.0 lakhs 3 years (2015-2018)	Completed
12.	Dr. M. Mahalakshmi	Modified TiO ₂ and perovskite SrTiO ₃ nanocomposite materials for the production of clean energy fuel H ₂ by solar water splitting.	4.10 Lakh 3 years (2015-2018)	Completed
13.	Dr.V.S.Gayathri, Dr.Sunita Nair, Dr.K.Yamuna	To identify economic, eco friendly and effective corrosion inhibitors	8.25 Lakh 2 year (2006 – 2008)	Completed

Industry Collaboration and Consultancy

1. Inventus Battery Energy Technologies (P) Ltd (Formerly Inventus Bio Energy (P) Ltd) has signed MoU with the Chemistry Department for conducting Collaborative research in August 2021. As the outcome of MoU.
 - i. received Rs 1 lakh as testing charges in May 2023.
 - ii. received Rs 3.5 lakh as testing charges from the NRDC -TDVC grant sanctioned to Inventus Battery Energy Technologies (P) Ltd, during the period of June 2024– March 2025.
2. A consultancy project has been sanctioned under EDII-TN Innovation Voucher Program, Unlocking Purity and Profitability ; The market potential of shortpath Distillation in extraction of Bioactive from essential oils. Role : Principal Investigator Duration : 12 Months (March 2025- February2025) Amount : 2 Lakhs.
3. Consultancy work done for M/s.Jasmine Concrete, Chennai. “ Lab trial for Palmarosa oil”. Amount Rs. 35,400. Role : PI.(Duration;Jan.2021-June 2021).
4. The treatability studies on the optimization of ozone and carbon dosages for the effective removal of contaminants from secondary treated effluent” L &T ltd, Construction, Chennai-89, Amount: Rs. 10,10,000/-, Duration: Dec.2020 to March 2021. Co-PI.

Internal Student Project details

1. Moisture enabled self-charging device (MESD) using conductive superhydrophilic carbon fiber electrode; Budget: Rs.35000; Duration: 2023~2025; Guide: Dr. Shanmugharaj, Status: On-going
2. Unravelling the electrochemical performances of interface engineered Mbenes for OER reactions in seawater; Budget Rs.35000; Duration: 2024~2026; Guide: Dr. Shanmugharaj, Status-On-going.
3. Multifunctional sensor from upconversion lanthanide nanoparticles, Guide: Dr. V. Tamilmani, Budget: Rs.32,000, Duration: December 2024- December 2025, Status: Ongoing.
4. Fabrication of wearable thermoelectric generator from antimony sulphides, Guide: Dr. V. Tamilmani, Budget: Rs.32,000, Duration: December 2024- December 2025, Status: Ongoing.
5. Synthesis of Palladium-doped hydroxyapatite from Egg shell biowaste for the remediation of Cr(VI) from aqueous solutions, Guide: Dr. N. Priyadarshini, Budget: Rs. 28,000, Duration: Jan 2025 to Jan 2026, Status: Ongoing.
6. Extraction of Hexavalent chromium from aqueous solution using hydroxyapatite based composite materials: A sustainable approach Guide: Dr. N. Priyadarshini, Budget: Rs. 28,000, Duration Jan 2025 to Jan 2026, Status: Ongoing.
7. Thermocatalytic pyrolysis of polyethylene and polypropylene polymers into value-added heavy oil and light oil, (2024-2025), Guide: Dr. A. Murugesan; SSN Trust, Rs. 0.32 Lacs (Ongoing)
8. Development of High –Performance polymer for removal of dyes from wastewater (2024-2025) Guide: Dr. A. Murugesan; SSN Trust, Rs. 0.28 Lacs (Ongoing)
9. Targeting D4 and D5 dopamine receptors for drug development, (2024-2025)), Guide: Dr. A. Murugesan; SSN Trust, Rs. 0.35 Lacs (Ongoing)
10. Development of thermal properties of highperformance co-polyamides for material applications, (2024-2025) Guide: Dr. A. Murugesan; SSN Trust, Rs. 0.32 Lacs (Ongoing)
11. Investigation of a new novel metal organic framework for sensor applications, (2024-2025), Guide: Dr. A. Murugesan; SSN Trust, Rs. 0.35 Lacs (Ongoing)
12. Synthesis of Metal oxide (Fe_2O_3 , Cu_2O_4)@C-Based Quantum Dots as Photocatalysts for Antibacterial Activity and Estrone Degradation under UV-Visible Illumination: (2024-2025), Guide: Dr. A. Murugesan; SSN Trust, Rs. 0.32 Lacs (Ongoing)
13. $\text{Cu}_2\text{O}/\text{ZrO}_2/\text{g-C}_3\text{N}_4$ heterostructure nanocomposite for the efficient visible light-driven hydrogen production by the photocatalytic water splitting (2024-2025) Guide: Dr. M.Mahalakshmi; SSN Trust, Rs. 28000 (Ongoing)
14. Binary hetero-structural Nitrogen-doped $\text{Nb}_2\text{O}_5/\text{CuO}$ photocatalytic system for the solar light-induced hydrogen production, (2023-2024) Guide: Dr. M.Mahalakshmi; SSN Trust, Rs. 25000 (Completed)
15. Fabrication of wearable thermoelectric generator from transition metal dichalcogenides, Guide: Dr. V. Tamilmani, Budget: Rs.35,000, Duration: December 2023- December 2024, Status: Completed.
16. Synthesis of Lead-Free Inorganic Halide Phosphors for Night Vision Imaging, Guide: Dr. V. Tamilmani, Budget: Rs.35,000, Duration: December 2023- December 2024, Status: Completed.
17. Synthesis of Polymer Coated Super-hydrophobic Magnetic Nanoparticles for Removal of Microplastics from Waste Water, Guide: Dr. N. Priyadarshini, Budget: Rs.30,000, Duration: March 2020- March 2021, Status: Completed.
18. Synthesis and characterization of rare-earth doped with manganese oxide for supercapacitor applications, Guide: Dr. N. Priyadarshini, Budget: Rs. 28,000, Duration: Feb 2023- Feb 2024, Status: Completed.
19. Non-metal Doped Biowaste Derived Carbon for Chromium Removal from Contemporary Water, Guide: Dr. N. Priyadarshini, Budget: Rs. 28,000, Duration: Dec 2023- Dec 2024, Status: Completed.

20. Synthesis, Characterization, and Properties of Polycarbonate and Copolycarbonates using Monomers Recovered from Plastic Waste via Polycondensation Method, (2023-2024), Guide: Dr. A. Murugesan; Funding: SSN Trust, Rs. 0.28 Lacs. (Completed)
21. Metal-doped Fungi as a catalyst for Depolymerisation of Waste Plastics via Aminolysis and Glycolysis using TCD method, (2023-2024), Guide: Dr. A. Murugesan; Funding: SSN Trust, Rs. 0.28 Lacs. (Completed)
22. Activated Carbon Derived from Tribulus terrestris Seeds with Metal Dopants Used as a Catalyst for Effective Wastewater Treatment, (2023-2024), Guide: Dr. A. Murugesan; Funding: SSN Trust, Rs. 0.28 Lacs. (Completed)
23. Recovery of value-added products from waste plastics by thermocatalytic depolymerization (2023-2024), Guide: Dr. A. Murugesan; Budget Rs. 0.28 Lacs: (completed).
24. Synthesis, Characterization, and Properties of Polycarbonate and Copolycarbonates using Monomers Recovered from Plastic Waste via Polycondensation Method, (2023-2024), Guide: Dr. A. Murugesan; Budget: Rs. 0.28 Lacs: (completed).
25. Metal-doped Fungi as a catalyst For Depolymerisation of waste plastics through Aminolysis and Glycolysis via TCD method, (2023-2024), Guide: Dr. A. Murugesan; SSN Trust, Rs. 0.28 Lacs; (Completed)
26. Activated Carbon Derived from Tribulus Terrestris Seeds with Metal Dopants Used as a Catalyst for Effective Wastewater Treatment (2024), Guide: Dr. A. Murugesan; SSN Trust, Rs. 0.28 Lacs (Completed)
27. Bioactives extraction using hydrotropes. PI.Dr.S.I.Davis Presley, Budget:Rs.12000, Duration:2022-2024 Status: Completed.
28. S Aiswarya, (1st Chem), Arushi Sahu, (1st BME), Keerthana Reddy R and Samyuktha R (1st ECE) Analysis of porous carbon based supercapacitor electrode materials derived from biowaste' (23000) (Jan — Dec 2020) (Mentor Dr.M.Siluvai Michael)
29. V.Krishi divya dharshini, Nethra Prakash, Bharath vishal, (1st, ECE) "Extraction of lithium and other usable metals from spent lithium ion batteries' (23000), Jan — Dec 2020), (Mentor Dr.M.Siluvai Michael)
30. Investigation on the effect of Eu³⁺ doped YVO₄ Phosphor material on the efficiency of quantum dot sensitized solar cells" (Rs.30000/-) Guide: Dr. M. Mahalakshmi, Chemistry and Dr. Muthu Senthil Pandian, SSN RC. Feb. 2020.
31. Enhance the thermomechanical properties of high-performance polyamides with functional co-monomers via polycondensation method (2022-2023), Guide: Dr. A. Murugesan; Funding: SSN Trust, Rs. 0.24 Lacs. (Completed)
32. Recovery of Value-added Products from Waste Plastics by Thermocatalytic Depolymerisation, (2023), Guide: Dr. A. Murugesan; Funding: SSN Trust, Rs. 28000. (Completed)
33. Photocatalytic conversion of CO₂ into value-added organic compounds", 2018 -2019, PI: Dr. M. Mahalakshmi, Budget: 25,000 Duration: 2020, Status: completed
34. Extraction of Lithium and other usable metals from spent Lithium ion Batteries, PI: Dr.M.Siluvai Michael, Budget: 23,000 Duration: 2020, Status: completed.
35. Reclamation of value-added Silica (SiO₂) from waste Class F fly ash, (2019-2020), Guide: Dr. A. Murugesan; Funding: SSN Trust, Rs. 0.24 Lacs. (Completed)
36. Adsorption of dyes from aqueous solution using high performance polymeric membranes (HPMs), (2019-2020), Guide: Dr. A. Murugesan; Funding: SSN Trust, Rs. 0.24 Lacs. (Completed)
37. Investigation of air-water harvesting via absorption-adsorption process using hygroscopic hydrogel materials, (2019-2020), Guide: Dr. A. Murugesan; Funding: SSN Trust, Rs. 0.25 Lacs. (Completed)

38. Analysis of Porous carbon based Supercapacitor electrode materials derived from Biowaste, PI. Dr.M.Siluvai Michael, Budget: 23,000 Duration: 2020, Status: completed.
39. Bioper-Paper from Biowaste, PI: Dr.M.Siluvai Michael, Budget: 14,000 Duration: 2018, Status: Completed.
40. Removal of heavy metal ions & azo dyes from aqueous solution using low molecular weight polymers (2018), Guide: Dr. A. Murugesan; Funding: SSN Trust; Rs. 0.25 Lacs (Completed)
41. Polymers of Intrinsic Microporosity (PIM's) for the removal of cationic dyes from the aqueous solution (2018-2019), Guide: Dr. A. Murugesan; Funding: SSN Trust; Rs. 0.25 Lacs (Completed)
42. Upcycling of polycarbonates derived from CD wastes: Conversion of polycarbonates into value added co-poly(ether-imide)s via one step process (2018-2019), Guide: Dr. A. Murugesan; Funding: SSN Trust, Rs. 0.25 Lacs. (Completed)
43. Systematic study on magnetically separable TiO₂ loaded ferrite nanoparticles for the removal of organic pollutants from Industrial effluents, 2018-2019, Guide: Dr. M.Mahalakshmi; SSN Trust, Rs. 25000 (Completed)
44. Working of an E-bike on Lithium-Ion Batteries coupled with Super Capacitors porous carbon Cathode for Li/Air Rechargeable batteries, PI: Dr.M.Siluvai Michael, Budget:22,000, Duration: 2017, Status: Completed
45. Synthesis of nanostructured activated carbon from Bio-lignocellulosic waste for electrical double layer capacitor. PI: Dr.M.Siluvai Michael, Budget: 22,000 Duration: 2017, Status: completed.