

Dr. S.SD. Elanchezhiyan, M.Sc., Phd.

Assistant Professor, Department of Chemistry,
Velammal College of Engineering and Technology,
Madurai - 625 009, Tamil Nadu, India.
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Educational Qualification:

Degree	Specialization	Institute/University	Year
B.Sc.,	Chemistry	St. Joseph College, Trichy	2001
M.Sc.,	Chemistry	Alagappa University, Karaikudi	2004
Ph.D.,	Environmental Chemistry	The Gandhigram Rural Institute, Gandhigram	2018

Employment History:

Name of Institution	Designation	Period	Year
Department of Environmental Engineering, Kyungpook National University, Daegu, Republic of Korea - 41522.	Research Associate	2019 to 2020	1 Year
Department of Chemistry, Sethu Institute of Technology, Kariapatti, Pulloor - 626115, Virudhunagar, Tamil Nadu, India.	Associate Professor	2022 to 2023	1 Year
Department of Chemistry, The Gandhigram Rural Institute, Gandhigram - 624 302, Tamil Nadu, India	Senior Research Fellow	2016 to 2018	2 Year
Department of Chemistry, The Gandhigram Rural Institute, Gandhigram - 624 302, Tamil Nadu, India	Junior Research Fellow	2014 to 2016	2 Year

Awards and Honors:

- ☞ 2019 - Awarded as a Postdoctoral Research Associate in Department of Environmental Engineering, Kyungpook National University, Daegu, Republic of Korea - 41522
- ☞ 2017 - Awarded as a Best Student Contributor in International Conference on Biotechnological Aspects of Chitosan and Chito-oligosaccharides (ICBACC) & 6th Indian Chitin and Chitosan Society Symposium (ICCSS) organized by Department of Plant Science, University of Hyderabad, India
- ☞ 2016 - Awarded as a Senior Research Fellow (SRF) in Research Fellowship in Science for Meritorious Students by University Grants Commission - Basic Scientific Research (UGC-BSR), New Delhi, India
- ☞ 2014 - Awarded as a Junior Research Fellow (JRF) in Research Fellowship in Science for Meritorious Students by University Grants Commission - Basic Scientific Research (UGC-BSR), New Delhi, India

Research Interests:

- ☞ Synthesis, characterization and surface modification of hybrid materials, particularly inorganic composites
- ☞ Development of various strategies for the attachment of nanoparticles on chitosan surface
- ☞ Investigation of surface chemistry of surfactant modified nanomaterials and their characterization
- ☞ Morphology controlled preparation and characterization of polymeric materials on biopolymer surface
- ☞ Development of one-pot method for synthesizing biopolymer composites towards toxic ions removal
- ☞ Examined synthetic polymer/biopolymer blends for the application of hazardous pollutants removal

Research Publications

- 1.** Murugan Murugapandi, **S.SD. Elanchezhiyan**, Tae Hwan Oh, Subramaniyan Ramasundaram, N. Muniyappan
An evaluation of the pharmacological responses of metal nanoparticles derived from aqueous extract of *Caralluma adscendens* R. Brown var. Bicolor
Journal of Molecular Liquids, 401 (2024) 124618.
- 2.** Yeonji Yea, **S.SD. Elanchezhiyan**, R. Saravanakumar, Govindan Jagan, Jong Uk Choi, Karunamoorthy Saravanakumar, Chang Min Park
All-solid-state Z-scheme ZnFe-LDH/rGO/g-C₃N₅ heterojunction for enhanced sonophotocatalytic degradation of ciprofloxacin: Performance and mechanistic insights
Environmental Research, 247 (2024) 118209.
- 3.** M. Nikitha, **S.SD. Elanchezhiyan**, S. Meenakshi
Photodegradation of rhodamine-B in aqueous environment using visible-active gC₃N₄@CS-MoS₂ nanocomposite
Environmental Research, 238 (2023) 117032.
- 4.** Murugan Murugapandi, **S.SD. Elanchezhiyan**, Tae Hwan Oh, Subramaniyan Ramasundaram, N. Muniyappan
Pharmacological applications of metal nanoparticles derived from *Caralluma sarkariae* species
Process Biochemistry, 132 (2023) 166.
- 5.** Taeyeon Kim, Keunyoung Yun, Nahyun Kim, Byungjun Cha, Jonghun Han, Lewis Kamande Njaramba, **S.SD. Elanchezhiyan**, Chang Min Park
Synthesis of gelatin aerogel-containing Al-metal organic framework for the removal of phenolic contaminants from aqueous solutions
Journal of Water Process Engineering, 51 (2023) 103341.
([Corresponding author](#))
- 6.** Nahyun Kim, Byungjun Cha, Yeonji Yea, Lewis Kamande Njaramba, Sivakumar Vigneshwaran, **S. SD. Elanchezhiyan**, Chang Min Park

Effective sequestration of tetracycline and ciprofloxacin from aqueous solutions by Al-based metal organic framework and reduced graphene oxide immobilized alginate biosorbents

Chemical Engineering Journal, 450 (2022) 138068.

([Corresponding author](#))

- 7.** Yeonji Yea, Gyuri Kim, Dengjun Wang, Sewoon Kim, Yeomin Yoon, **S.SD. Elanchezhian**, Chang Min Park

Selective sequestration of perfluorinated compounds using polyaniline decorated activated biochar

Chemical Engineering Journal, 430 (2022) 132837.

([Corresponding author](#))

- 8.** **S.SD. Elanchezhian**, J. Preethi, Karthik Rathinam, Lewis Kamande Njaramba, Chang Min Park

Synthesis of magnetic chitosan biopolymeric spheres and their adsorption performances for PFOA and PFOS from aqueous environment

Carbohydrate Polymers, 267 (2021) 118165.

- 9.** P. Karthikeyan, **S.SD. Elanchezhian**, H.A. Thagira Banu, M. Hasmath Farzana, Chang Min Park

Hydrothermal synthesis of hydroxyapatite-reduced graphene oxide (1D-2D) hybrids with enhanced selective adsorption properties for methyl orange and hexavalent chromium from aqueous solutions

Chemosphere, 276 (2021) 130200.

- 10.** **S.SD. Elanchezhian**, P. Karthikeyan, Karthik Rathinam, M. Hasmath Farzana, Chang Min Park

Magnetic kaolinite immobilized chitosan beads for the removal of Pb(II) and Cd(II) ions from an aqueous environment

Carbohydrate Polymers, 261 (2021) 117892.

- 11.** P. Karthikeyan, **S.SD. Elanchezhian**, S. Meenakshi, Chang Min Park

Magnesium ferrite-reinforced polypyrrole hybrids as an effective adsorbent for the removal of toxic ions from aqueous solutions: Preparation, characterization, and adsorption experiments

- Journal of Hazardous Materials**, 408 (2021) 124892.
- 12. S.SD. Elanchezhian**, S. Muthu Prabhu, P. Karthikeyan, Chang Min Park
Efficient and selective sequestration of perfluorinated compounds and hexavalent chromium ions using a multifunctional spinel matrix decorated carbon backbone N-rich polymer and their mechanistic investigations
Journal of Molecular Liquids, 326 (2021) 115336.
- 13. P. Karthikeyan, S.SD. Elanchezhian**, J. Preethi, Kristy Talukdar, S. Meenakshi, Chang Min Park
Two-dimensional (2D) Ti_3C_2Tx MXene nanosheets with superior adsorption behavior for phosphate and nitrate ions from the aqueous environment
Ceramics International, 47 (2021) 732-739.
- 14. S. Vigneshwaran, Byung-Moon Jun, S. Muthu Prabhu, S.SD. Elanchezhian**, Yong Sik Ok, S. Meenakshi, Chang Min Park
Enhanced sonophotocatalytic degradation of bisphenol-A using bimetal sulfide-intercalated MXenes, 2D/2D nanocomposite
Separation and Purification Technology, 250 (2020) 117178.
- 15. S.SD. Elanchezhian**, S. Muthu Prabhu, Jonghun Han, Young Mo Kim, Yeomin Yoon, Chang Min Park
Synthesis and characterization of novel magnetic Zr-MnFe₂O₄@rGO nanohybrid for efficient removal of PFOA and PFOS from aqueous solutions
Applied Surface Science, 528 (2020) 146579.
- 16. Byung-Moon Jun, S.SD. Elanchezhian**, Yeomin Yoon, Dengjun Wang, Soonhyun Kim, S. Muthu Prabhu, Chang Min Park
Accelerated photocatalytic degradation of organic pollutants over carbonate-rich lanthanum-substituted zinc spinel ferrite assembled reduced graphene oxide by ultraviolet (UV)-activated persulfate
Chemical Engineering Journal, 393 (2020) 124733.
(The first two authors contributed equally).
- 17. S. Muthu Prabhu, Keiko Sasaki, S.SD. Elanchezhian**, G. Paruthimal Kalaigan, Chang Min Park

Self-tuning tetragonal zirconia-based bimetallic nano (hydr) oxides as superior and recyclable adsorbents in arsenic-tolerant environment: Template-free in and ex situ synthetic methods, stability, and mechanisms

Chemical Engineering Journal, 390 (2020) 124573.

- 18.** P. Karthikeyan, S.SD. Elanchezhiyan, J. Preethi, S. Meenakshi, Chang Min Park
Mechanistic performance of polyaniline-substituted hexagonal boron nitride composite as a highly efficient adsorbent for the removal of phosphate, nitrate, and hexavalent chromium ions from an aqueous environment
Applied Surface Science, 511 (2020) 145543.
- 19.** S.SD. Elanchezhiyan, S. Muthu Prabhu, Yejin Kim, Chang Min Park
Lanthanum-substituted bimetallic magnetic materials assembled carboxylate-rich graphene oxide nanohybrids as highly efficient adsorbent for perfluorooctanoic acid adsorption from aqueous solutions
Applied Surface Science, 509 (2020) 144716.
- 20.** S. Muthu Prabhu, K. Pandi, S.SD. Elanchezhiyan, Jae-Young Choi, G. Paruthimal Kalaignan, Chang Min Park
Ethylene glycol-induced metal alkoxides via phase-transfer catalyst as multi-talented adsorbents for boosted adsorption performance of toxic anions/oxyanions from waters
Separation and Purification Technology, 235 (2020) 116247.
- 21.** S.SD. Elanchezhiyan, S. Meenakshi
Encapsulation of metal ions between the biopolymeric layer beads for tunable action on oil particles adsorption from oily wastewater
Journal of Molecular Liquids, 255 (2018) 429–438.
- 22.** S.SD. Elanchezhiyan, S. Muthu Prabhu, S. Meenakshi
Effective adsorption of oil droplets from oil-in-water emulsion using metal ions encapsulated biopolymers: Role of metal ions and their mechanism in oil removal
International Journal of Biological Macromolecules, 112 (2018) 294–305.
- 23.** S.SD. Elanchezhiyan, S. Meenakshi

Facile fabrication of metal ions-incorporated chitosan/ β -cyclodextrin composites for effective removal of oil from oily wastewater
Chemistry Select, 2 (2017) 11393 -11401.

- 24. S.SD. Elanchezhiyan, S. Meenakshi**
Synthesis and characterization of chitosan/Mg-Al layered double hydroxide composite for the removal of oil particles from oil-in-water emulsion
International Journal of Biological Macromolecules, 104 (2017) 1586-1595.
- 25. S.M. Prabhu, S.SD. Elanchezhiyan, G. Lee, S. Meenakshi**
Defluoridation of water by Tea-bag model using La^{3+} modified synthetic resin@chitosan biocomposites
International Journal of Biological Macromolecules, 91 (2016) 1002-1009.
- 26. S.M. Prabhu, S.SD. Elanchezhiyan, G. Lee, S. Meenakshi**
Assembly of nano-sized hydroxyapatite onto graphene oxide sheets via in-situ fabrication method and its prospective application for defluoridation studies
Chemical Engineering Journal, 300 (2016) 334-342.
- 27. S.M. Prabhu, S.SD. Elanchezhiyan, G. Lee, S. Meenakshi**
Defluoridation of water by graphene oxide Supported needle-like complex adsorbents
Journal of Inorganic and Organometallic Polymers and Materials, 26 (2016) 834-844.
- 28. S.SD. Elanchezhiyan, S. Meenakshi**
Facile synthesis of metal incorporated chitin for the recovery of oil from oil in water emulsion using adsorptive method
Journal of Cleaner Production, 139 (2016) 1339-1350.
- 29. S.SD. Elanchezhiyan, S.M. Prabhu, S. Meenakshi**
Treatment of emulsified oil using biopolymer assisted materials
Polymer Composites, 39 (2018) E261-E270.
- 30. S.SD. Elanchezhiyan, N. Sivasurian, S. Meenakshi**
Enhancement of oil recovery using zirconium-chitosan hybrid composite by adsorptive method
Carbohydrate Polymers, 144 (2016) 103-113.

- 31. S.SD. Elanchezhian, N. Sivasurian, S. Meenakshi**
Efficacy of La³⁺ entrapped chitosan bio-polymeric matrix for the recovery of oil from oil-in-water emulsion
Journal of Applied Polymer Science, 133 (2016) 43218.
- 32. N. Sivasurian, S.SD. Elanchezhian, S. Meenakshi**
Adsorption behavior of cutting oil on lanthanum coordinated chitosan flakes from oil-in-water emulsion
Journal of Chitin and Chitosan Science, 3 (2015) 11-20.
- 33. S.SD. Elanchezhian, N. Sivasurian, S. Meenakshi**
Recovery of oil from oil-in-water emulsion using biopolymers by adsorptive method
International Journal of Biological Macromolecules, 70 (2014) 399-407.

National/International Conferences/Workshops Participated/Presented

1. Presented a paper entitled “**Synthesis of graphene based spinel-ferrite hybrid nanocomposite and their superior performance for the removal of aqueous perfluorooctanoic acid (PFOA)**” in the **International Conference on 5th International Water Industry Conference (IW/IC-2019)** on 3rd to 6th September – 2019, EXCO, Daegu, **Republic of Korea**.
2. Participated in two days workshop on “**National Level Workshop on Nuclear Magnetic Resonance Spectroscopy**” organized by the Department of Chemistry, **The Gandhigram Rural Institute – Deemed to be University, Gandhigram, Dindigul District, Tamil Nadu, India** on 8th and 9th March 2018.
3. Presented a paper entitled “**Removal of oil from oil-in-water emulsion using Fe(III) immobilized organic inorganic hybrid composite beads**” in the National Conference on Recent Advances in the Applications of Macromolecular Materials (RAAMM – 2017) conducted by **The Gandhigram Rural Institute, Deemed University, Gandhigram, Dindigul District, Tamil Nadu, India** on 2nd and 3rd March 2017.
4. Presented a paper entitled “**Adsorptive removal of cutting oil from oil-in-water emulsion using chitosan/hydrotalcite hybrid composite**” in the International Conference on 11th Asia Pacific Chitin and Chitosan Symposium & 5th Indian Chitin and Chitosan Society Symposium on 28th to 30th September 2016 at **Kochi, Kerala, India**.
5. Participated in one day workshop on “**National Workshop on Optical Characterization of Materials**” organized by the Department of Physics, **The Gandhigram Rural Institute – Deemed University, Gandhigram, Dindigul District, Tamil Nadu, India** on 24th October 2016.
6. Presented a paper entitled “**Retrieval of cutting oil from oil-in-water emulsion using chitosan supported lanthanum modified resin**” in InDA-APDA Conference 2016, Silver Jubilee Celebration Conference & Mini Expo, Clean India Technologies: Role of Desalination and Water purification organized by **Indian Desalination Association, Chennai, Tamil Nadu, India** during 11-13th February 2016.

7. Presented a paper entitled "**Chitosan Anchoring lanthanum modified iminodiacetic acid functionalized macroporous polystyrene blend towards oil retrieval from oily water**" in the International conference on Recent Advances in Materials and Chemical Sciences conducted by Department of Chemistry, **The Gandhigram Rural Institute**, Deemed University, Gandhigram, Dindigul District, Tamil Nadu, India on 14th and 15th December 2015.
8. Participated in two days workshop on **Membrane Technologies for Water Treatment** organized by the Department of Chemical Engineering, **SRM University in association with Indian Desalination Association**, Chennai, Tamil Nadu, India on 21st and 22nd March 2015.
9. Two days workshop on **Integrated Separation Process for Environmental and Biotechnology Applications** organized by the **Department of Chemical Engineering, National Institute of Technology, Tiruchirappalli**, Tamil Nadu, India, 19th and 20th July 2013.
10. Presented a paper entitled "**A Comparative study of oil removal from oil-in-water emulsion using metal entrapped chitosan flakes by adsorption method**" in the UGC sponsored one day National level Seminar on Recent Advances in Chemistry (RAC - 2015) organized by PG and Research Department of Chemistry, **G.T.N Arts College, Dindigul**, Tamil Nadu, India on 18th March 2015.
11. Participated in the National Conference on **Recent Advances in Chemical Sciences** (RACS - 2015), organized by Department of Chemistry, **The Gandhigram Rural Institute**, Deemed University, **Gandhigram**, Dindigul District, Tamil Nadu, India on 5th and 6th March 2015.
12. Presented a paper entitled "**Preparation and characterization of zirconium entrapped chitosan flakes for curring oil removal from oil-in-water emulsion**" in the Indo - French Workshop on Sustainable Water Purification Technologies conducted at the **CSIR - Central Electrochemical Research Institute, Karaikudi**, Tamil Nadu, India during 11-13th February 2015.
13. Participated in one day workshop on **Fundamentals and Applications of Catalysis** organized by the Royal Society of Chemistry and Department of

Chemistry, **The Gandhigram Rural Institute** - Deemed University, **Gandhigram**, Dindigul District, Tamil Nadu, and India held on 17th October 2014.

14. Presented a paper entitled **“Recovery of cutting oil from aqueous solution using La(III) incorporated chitosan polymeric matrix: Equilibrium and kinetic studies”** in the National Conference on Application of the Derivatives of Chitin and Chitosan (ADCC - 2014), jointly organized by the Indian Chitin and Chitosan Society and the Department of Chemistry, **The Gandhigram Rural Institute**, Deemed University, **Gandhigram**, Dindigul District, Tamil Nadu, India on 22nd and 23rd August 2014.
15. Presented a paper entitled **“Recovery of cutting oil from aqueous solution using La(III) loaded carboxylated chitosan beads by adsorption method”** in the National Conference on Recent Advances in Water and Wastewater Treatment (RAWWT - 2014), organized by Department of Chemistry, **The Gandhigram Rural Institute**, Deemed University, **Gandhigram**, Dindigul District, Tamil Nadu, India on 21st and 22nd March 2014.
16. International Conference on **Innovative Technologies and Management for Water Security** organized by **National Institute of Ocean Technology (NIOT)**, **Chennai**, Tamil Nadu, India during 12-14th February 2014.
17. Participated in International Conference on **Advances in Material Science (ICAMS-2013)**, **Department of Chemistry, Sree Sankara College, Kalady, Kerala**, India, 23rd and 24th October 2013.
18. Two days workshop on **Advances in Chemistry** organized by the Department of Chemistry, **The Gandhigram Rural Institute**, Deemed University, **Gandhigram**, Dindigul District, Tamil Nadu, India, 6th and 7th September 2013.

Google Scholar id:

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