

Faculty Profile of Dr. T. Selvaraju



Dr. T. Selvaraju
Associate Professor
Department of Chemistry

Email:selvaraju@buc.edu.in

Phone No:0422-2428315

Mobile No:94430-23600

Research Area

- Electrodicts
- New Materials
- Water Splitting

Education & Career

Education

Ph. D.

Subject : Chemistry

Institution : Madurai Kamaraj University

Affiliated University : Madurai Kamaraj University

Year of Award : 2006

M.Phil.,

Subject : Physical Chemistry

Institution : University of Madras

Affiliated University : University of Madras

Year of Award : 2000

M. Sc.,

Subject: Chemistry

Institution : Guru Nanak College, Chennai

Affiliated University : University of Madras

Year of Award : 1999

Career**At Bharathiar University (Reverse Order)**

Associate Professor : 2016 to Till date

Past Experience

Postdoctoral Fellow : 2007 to 2008 at Pusan National University, Busan, S. Korea

Postdoctoral Fellow : 2008 to 2009 at Pusan National University, Busan, S. Korea

Assistant Professor (Selection Grade) : 2009 to 2016 at Karunya University, Coimbatore

Awards

- **CSIR-Senior Research Fellowship**, CSIR-New Delhi, **April, 2004**.
- **Brain Korea 21 (BK21) Fellowship**, S. Korea, For Postdoctoral Research, **January, 2007**.
- **SERB-ITS travel grant Award 1.2 lakhs** – P. Gnanaprakasam, S.E. Jeena, T. Selvaraju*, NANOTECH FRANCE, International Nanotechnology

Conference held at PôleUniversitaire Léonard de Vinci, La Défense Paris, France, **JUNE 2016**,

- **Best Achievers Award**, Karunya University, Coimbatore, For External Funding, **July, 2016**.
- **Best Outstanding Scientist Award**, Venus International Research Foundation, For Significant Contribution in Research, Chennai, **November, 2016**.
- **Certificate of Appreciation as Reviewer** – American Chemical Society, Royal Chemical Society & Elsevier Journals.

Membership

Visits

Collaborators

Others

Projects

Funded Projects (National Level)

- [Ongoing-03](#)
- [Completed-02](#)

1.Design and development of low cost electrocoagulation batch reactor system for efficient industrial effluent treatment,

Principal Investigator: Dr. T. Selvaraju

Co-Investigator: Dr. S.J. SardharBasha, D. Nataraj, P. Sakthivel
TANSHE Project, Department of Higher Education, Government of Tamil Nadu

Time Period: 2021 – 2024

Sanctioned Amount, (Rs.87.58 Lakhs)

2. Synthesis and application of anticancer compounds,

Principal Investigator: Dr. T. Selvaraju, Co-Investigator: NIL

RUSA 2.0: BCTRC, Bharathiar University

Time Period: 2021-2022

Sanctioned Amount, (Rs.7.43 lakhs)

3. Development & commercialization of high tensile strength bioplastics,

Principal Investigator: Dr. T. Selvaraju, Co-Investigator: NIL

RUSA Phase-II: Bharathiar Entrepreneurship, Innovation & Career Hub, 2019

Time Period: 2020-2021

Sanctioned Amount, (Rs.6 lakhs)

1. Hybrid reduced graphene oxide supported bimetallic porous nanostructures syntheses and its applications,

Principal Investigator: Dr. T. Selvaraju, Co-Investigator: NIL

DST-SERB, New Delhi under EMR Scheme,

Time Period: 2016-2019

Sanctioned Amount, (Rs.32.59 lakhs)

2. Synthesizing functionalized biocompatible core-shell nanoparticles for potential applications,

Principal Investigator: Dr. T. Selvaraju, Co-Investigator: NIL

DST-SERB, New Delhi - Start up grant,

Time Period: 2012-2016

Sanctioned Amount, (Rs.25.30 lakhs)

Consultancy Projects

- [Ongoing](#)
- [Completed](#)

Ongoing Consultancy Project Informations

Completed Consultancy Project Informations

Research Guidance

- [Post Doc.](#)
- [Ph.D.](#)
- [M.Phil.](#)
- [M.Sc.](#)

Ongoing

Title

Name

Completed

Title

Name

Ongoing

Sample Data.

Completed

Sample Data.

Ongoing

Sample Data.

Completed

Sample Data.

Ongoing

Sample Data.

Completed

Sample Data.

Research Publication

- [International](#)
- [National](#)
- [Patents](#)
- [Conferences](#)
- [Books / Chapters](#)
- [Database](#)

1. [Anchoring \$\gamma\$ MnO₂ within \$\beta\$ NiCo\(OH\)₂ as an interfacial electrode material for boosting power density in an asymmetric supercapacitor device and for oxygen evolution catalysis,](#)

A. Gowrisankar and T. Selvaraju*,
Langmuir, 37, 5964–5978 (2021).

2. [Hexacyanoferrate complex derived NiFe₂O₄/CoFe₂O₄heterostructures-MWCNTs for efficient oxygen evolution reaction,](#)

T. Saravanakumar, S. Sathiyabama, T. Selvaraju,* and S. J. SardharBasha,
EnergyFuels, 35, 5372–5382 (2021).

3. [Visible light sensitive hexagonal boron nitride \(hBN\) decorated Fe₂O₃photocatalyst for the degradation of methylene blue,](#)

A. Sakunthala, Manjula R Shenoy, B. Vidhya, S. Rajesh, R. Nandhakumar, P. Senthil Kumar, M. Sasikumar, K. Govindan, T. Saravanakumar, T. Selvaraju, J.

Suryakanth, M. V. Reddy, Venkatesh Reddy,
Journal of Materials Science: Materials in Electronics, 32, 4766–4783 (2021).

4. [In situ integrated 2D reduced graphene oxide nanosheets with MoS₂ for hydrogen evolution reaction and supercapacitor application,](#)

A. Gowrisankar, J. Antonette Luciana Sherryn, T. Selvaraju*,
Applied Surface Science Advances, 3, 100054(2021).

5. [One pot in situ synthesis of nano Au–Pd core-shells embedded on reduced graphene oxide for the oxygen reduction reaction,](#)

P. Gnanaprakasam, A. Gowrishankar, S. Senthil Kumar, A. Murugadoss and
T. Selvaraju*, R.V. Mangalaraja,
Mater.Sci. Eng. B 264, 114924(2021).

6. [The effect of morphology dependent surface charges of iron oxide on the visible light photocatalytic degradation of methylene blue dye,](#)

A. Sakunthala, J. Aroutchelvan, K. Govindan, M.V. Reddy, T. Selvaraju, Manjula.R.
Shenoy, T. Saravanakumar, Stefan Adams,
Journal of Materials Science: Materials in Electronics, 31, 17703 – 17717(2020).

7. [Bifunctional CoSn\(OH\)₆/MnO₂ composite for solid-state asymmetric high power density supercapacitor and for an enhanced OER,](#)

A. Gowrisankar and T. Selvaraju*,
Electrochim.Acta, 344, 136141(2020).

8. [Exploring the synergistic effect of Ni₃Sn₂S₄ thiospinel with MWCNTs by the enhanced performance at dye sensitized solar cells, hydrogen evolution reaction and as supercapacitor,](#)

T. Saravanakumar, T. Selvaraju*, K.B. Bhojanaa, M. Ramesh, A. Pandikumar, R.
Akilan, R. Shankar, and S.J. SardharBasha*,
Dalton Trans., 49, 5336-5351(2020).

9. [Impact of morphological variation by phase oriented MnO₂ based hierarchical ternary composites for the fabrication of solid state symmetric supercapacitor,](#)

A. Gowrisankar, J. Antonette Luciana Sherryn, T. Selvaraju*,
Ionics 26, 2563-2579 (2020).

10. [Preparation and characterization of porous iron oxide dendrites for photocatalytic application,](#)
A. Sakunthala, J. AroutChelvane, K. Govindan, M.V. Reddy, T. Selvaraju, Manjula.R. Shenoy, T. Saravanakumar, Stefan Adams,
Solid State Sciences, 95, 105939(2019).
11. [Enhanced electrocatalytic and photocatalytic activity of ball milled copper tin sulphide by incorporating GO and rGO,](#)
V. Maheskumar, I. Sheebha, B. Vidhya, J.P. Deebasree, T. Selvaraju, and Akash Krishnan,
Applied Surface Science, 484, 265-275 (2019).
12. [Exploring the corrosion inhibition of magnesium by coatings formulated with nano CeO₂ and ZnO particles,](#)
T. Saravanakumar, V. Kavimani, K. SooryaPraksh and T. Selvaraju*,
Progress in Organic Coatings, 129, 32-42(2019).
13. [Influence of solvent in solvothermal synthesis of Cu₃SnS₄: morphology and band gap dependantelectrocatalytic hydrogen evolution reaction and photocatalytic dye degradation,](#)
V. Maheskumar, T. Selvaraju and B. Vidya,
International Journal of Hydrogen Energy, 43, 22861-22873(2018).
14. [Investigation on the electrocatalytic activity of hierarchical flower like architected Cu₃SnS₄ for hydrogen evolution reaction,](#)
V. Maheskumar, P. Gnanaprakasam, T.Selvaraju and B. Vidya,
Journal of Electroanalytical Chemistry, 826, 38-45 (2018).
15. [Comparative studies on the electrocatalytic hydrogen evolution property of Cu₂SnS₃ and Cu₄SnS₄ ternary alloys prepared by solvothermal method,](#)
V. Maheskumar, P. Gnanaprakasam, T. Selvaraju and B. Vidya,
International Journal of Hydrogen Energy, 43, 3967-3975(2018).
16. [Unusual attempt of architecturing the direct growth of Pt by electroless Cu exchange at bimetallic Ag@Cunanorods on electrochemically reduced graphene oxide nanosheets for an efficient alcohol oxidation,](#)
S.E. Jeena, P. Gnanaprakasam and T. Selvaraju*,
Journal of Nanoparticle Research, 19, 1-13(2017).
17. [Electroreduction of nitroaromatic compounds at electrochemically reduced graphene oxide supported bimetallic Ag@Pdnanorods modified electrodes,](#)

S.E. Jeena, P. Gnanaprakasam and T. Selvaraju*,
Electroanalysis, 28, 1984-1991(2016).

18. [Simple and robust green synthesis of Au NPs on reduced graphene oxide for the simultaneous detection of toxic heavy metal ions and bioremediation using bacterium as the scavenger,](#)

P.Gnanaprakasam, S.E. Jeena, D. Premnath and T. Selvaraju*,
Electroanalysis, 28, 1885-1893(2016).

19. [Facile synthesis of Pt at graphene supported Ag based bimetallic nanorods by galvanic displacement for an enhanced hydrazine oxidation,](#)

S. E. Jeena and T. Selvaraju*,
Journal of Chemical Sciences, 128, 357-363 (2016).

20. [Synergistic effect of bimetallic Ag@Cunanorods modified electrode for enhanced electrochemical sensing of thiocyanate ions,](#)

S.E. Jeena, P. Gnanaprakasam and T. Selvaraju*,
Research on Chemical Intermediate, 42, 2539-2551(2016).

21. [Hierarchical electroless Pt deposition at Au decorated reduced graphene oxide via galvanic exchanged process: electrocatalytic nanocomposite with enhanced mass activity for methanol and ethanol oxidation,](#)

P. Gnanaprakasam, Jeena Susan Easow and T. Selvaraju*,
J. Mat. Chem.A, 3, 18010-18018(2015).

22. [Tuning the direct growth of Ag seeds into bimetallic Ag@Cunanorods on surface functionalized electrochemically reduced graphene oxide: Enhanced nitrite detection,](#)

S.E. Jeena, P. Gnanaprakasam, D. Arun and T. Selvaraju*,
RSC Advances, 5, 48236-48245(2015).

23. [Green synthesis of self-assembled silver nanowires decorated reduced graphene oxide for efficient nitroarenes reduction,](#)

P. Gnanaprakasam and T. Selvaraju*,
RSC Advances, 4, 24518-24525(2014).

24. [Signal amplification of dopamine using lanthanum hexacyanoferrate modified electrode,](#)

T. Selvaraju* and R. Ramaraj,
Journal of Chemical Sciences, 126, 11-16(2014).

25. [Unzipped catalytic activity of copper in realizing bimetallic Ag@Cu nanowires as a better amperometric H₂O₂ sensor,](#)
Jeena Susan Easow and T. Selvaraju*,
ElectrochimicaActa, 112, 648–654(2013).
26. [Electrocatalytic reduction of hydrogen peroxide at copper nanoparticles coated glassy carbon electrode,](#)
T. Selvaraju and R. Ramaraj,
Journal of Applied Electrochemistry, 39, 321–327 (2009).
27. [Nanocatalyst-based assay using DNA-conjugated Au nanoparticles for electrochemical DNA detection,](#)
T. Selvaraju, J. Das, K. Jo, K. Kwon, C.-H. Huh, T.K. Kim and H. Yang,
Langmuir,24, 9883–9888(2008).
28. [Ultrasensitive electrochemical immunosensing using magnetic beads and gold nanocatalysts,](#)
T. Selvaraju, J. Das, S. W. Han, and H. Yang,
Biosensors and Bioelectronics,23, 932–938(2008).
29. [Electrochemical and in situ spectroelectrochemical studies of gold nanoparticles immobilized Nafion matrix modified electrode,](#)
T. Selvaraju, S. Sivagami, S. Thangavel and R. Ramaraj,
Bulletin of Materials Science,31, 487–494(2008).
30. [Selective determination of catechol in the presence of hydroquinone at bare indium tin oxide electrodes via peak-potential separation and redox cycling by hydrazine,](#)
Md. A. Aziz, T. Selvaraju and H. Yang,
Electroanalysis, 19, 1543–1546(2007).
31. [Simultaneous detection of ascorbic acid, uric acid and homovanillic acid at copper modified electrode,](#)
T.Selvaraju and R. Ramaraj,
Electrochim.Acta,52, 2998–3005(2007).
32. [Electrochemically deposited nanostructured platinum on Nafion coated electrode for sensor applications,](#)
T.Selvaraju and R. Ramaraj,
Journal of Electroanalytical Chemistry, 585,290–300 (2005).

33. [Nanostructured copper particles-incorporated Nafon-modified electrode for oxygen reduction,](#)

T.Selvaraju and R. Ramaraj,
Pramana – Journal of Physics, 65, 713–722(2005).

34. [Simultaneous determination of ascorbic acid, dopamine and serotonin at poly\(phenosafranine\) modified electrode,](#)

T.Selvaraju and R. Ramaraj,
Electrochemistry Communication, 5, 667–672(2003).

35. [Simultaneous determination of dopamine and serotonin in the presence of ascorbic acid and uric acid at poly\(o-phenylenediamine\) modified electrode,](#)

T.Selvaraju and R. Ramaraj,
Journal Applied Electrochemistry, 33, 759–762(2003).

Alumini Reflections: