Name : Dr. S. ALWIN

Designation : Assistant Professor

Department : Chemistry

Date of Joining : 18.11.2020

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EDUCATIONAL QUALIFICATIONS

Degree	Subject	College/University	Year
Ph.D	Science	Anna University, Chennai	2018
M.Sc	Chemistry	The American College, Madurai	2006
B.Sc	Chemistry	St. Xavier's College, Palayamkottai	2004

EXPERIENCE (TEACHING& RESEARCH)

Institution	Position	Period	Nature of work
The American College, Madurai	Assistant Professor	November 2020 onwards	Teaching
VSB Engineering College, Karur	Assistant Professor	June 2019 – October 2020	Teaching
Sri Shakthi Institute of Engineering and Technology, Coimbatore	Assistant Professor	June 2017 – Dec. 2017	Teaching
PSN College of Engineering and Technology, Tirunelveli	Senior Research Fellow	June 2013 – March 2017	Research
CECRI-Madras Unit	Project Fellow	Feb. 2008 – March 2013	Research

Specialisation in Teaching: Organic Chemistry

Research Interest:

- Fuel Cells
- Dye-Sensitized Solar Cells
- Energy Materials

Fellowship:

- Junior Research Fellow-Board of Research in Nuclear Sciences(DAE)
- Senior Research Fellow- Board of Research in Nuclear Sciences(DAE)

PROJECTS WORKED ON

1. **DAE-BRNS Project : June 2013 – March 2017**

   Project Title : Fabrication of solid state dye sensitized solar cells (DSSCs) based on plasma surface modified titania aerogels

2. **CSIR-New Millenium Indian Technology Leadership Initiative (NMITLI) – April 2012 to March 2013**

   Project Title : Development and demonstration of polymer electrolyte fuel cell stacks for stationary Applications

3. **CSIR-Net Work Project (NWP) – August 2010 to March 2012**

   Project Title : Hydrogen energy initiative overcoming material challenges for the generation storage and conversion of hydrogen using fuel cells

4. **CSIR-Supra Institutional Project (SIP) - February 2008 to August 2010**

   Project Title : Energy for cleaner and greener environment

ARTICLES PUBLISHED IN INTERNATIONAL JOURNALS

1. S. Santhiya, P.Ram Kumar, **S. Alwin**, X. Sahaya Shajan, P. Sri Renganathan, J. Angel Mary Greena, "Solid state synthesis of ternary semiconductor zinc titanate-metal organic framework composite as photoanode material: Electronic properties and photovoltaic performance, *Journal of inorganic and organometallic polymers and materials*" 34, 9 (2024). **(IF: 4)**
2. P Ramkumar. **S. Alwin**, X. Sahaya Shajan, oxygenated carbon functionalized TiO_2 aerogel surface: Facile synthesis, surface structural and photovoltaic investigations, Surfaces and Interfaces (2023) 37, 102727. **(IF: 6.2).**

3. **S Alwin**, X Sahaya Shajan, Aerogels: promising nanostructured materials for energy conversion and storage applications, *Materials for Renewable and Sustainable Energy* (2020) 9:7. **(IF:4.5)**
4. R.J. Swikker, K.H. Kanagasabapathy, I. Neethi Manickam, N. Vijay Ponraj, **S. Alwin**, Effect of sintering temperature on grain growth and mechanical properties of Copper/Graphene nanosheet composite, *Diamond and Related Materials* (2020) 110, 108111. **(IF:4.1)**
5. **S Alwin,** V Ramasubbu, X Sahaya Shajan, TiO_2 aerogel-metal organic framework nanocomposite: a new class of photoanode material for dye-sensitized solar cell applications, *Bulletin of Materials Science* (2018) 41:27. **(IF:1.9)**
6. G. Sahaya Dennish Babu, X. Sahaya Shajan, **S. Alwin**, V. Ramasubbu & Gopal M. Balerao, Effect of Reaction Period on Stoichiometry, Phase Purity and Morphology of Hydrothermally Synthesized Cu_2NiSnS_4 Nanopowder, *Journal of Electronic Materials* (2017) 1-11. **(IF:2.1)**
7. **S Alwin**, X Sahaya Shajan, K Karuppasamy, K.G.K. Warrier, Microwave assisted synthesis of high surface area TiO_2 aerogels: A competent photoanode material for quasisolid dye-sensitized solar cells, *Materials Chemistry and Physics*, 196 (2017) 37-44. **(IF:4.6)**
8. V. Ramasubbu, **S. Alwin**, E.M. Mothi, X. Sahaya Shajan, "TiO_2 aerogel–Cu-BTC metal-organic framework composites for enhanced photon absorption**"** *Materials letters*, 197 (2017) 236–240. **(IF:3)**
9. **S Alwin**, X Sahaya Shajan, "Facile synthesis of 3-D nanostructured zinc oxide aerogel and its application as photoanode material for dye-sensitized solar cells**"** *Surfaces and Interfaces* 7 (2017) 14–19. **(IF:6.2)**
10. **S Alwin**, X Sahaya Shajan, Ranjini Menon, P.Y Nabhiraj, P.V Ananthapadmanabhan, "Plasma treated TiO_2 aerogel nanostructures as photoanode material and its influence on the performance of quasi-solid dye-sensitized solar cells" *Materials Research Bulletin* 86 (2017) 201–208. **(IF:5.4)**
11. **S Alwin**, X. Sahaya Shajan, Ranjini Menon, P.Y. Nabhiraj, K.G.K. Warrier, G. Mohan Rao, "Surface modification of titania aerogel films by oxygen plasma treatment for enhanced dye adsorption" *Thin Solid Films* 595 (2015) 164–170. **(IF:2.1)**

12. Karuppasamy K, Antony R, **Alwin S**, Balakumar S, Sahaya Shajan X, A Review on PEO based Solid Polymer Electrolytes (SPEs) complexed with LiX (X=Tf, BOB) for Rechargeable Lithium Ion Batteries, *Materials Science Forum,* Vol. 807 (2015) pp 41-63. (**IF: 0.48)**
13. S.Meenakshi, S.D.Bhat, A.K.Sahu, **S Alwin**, P.Sridhar, S.Pitchumani, "Natural and synthetic solid polymer hybrid dual network membranes as electrolytes for direct methanol fuel cells" *Journal of Solid State Electrochemistry,* 16 (2012) 1709-1721. **(IF:2.5)**
14. **S.Alwin**, S.D.Bhat, A.K.Sahu, A.Jalajakshi, P.Sridhar, S.Pitchumani, A.K.Shukla, "Modified pore-filled PVDF membrane electrolytes for direct methanol fuel cells" *Journal of the Electrochemical Society*, 158 (2011) B91-B98. **(IF:4.3)**

BOOK CHAPTER:

1. **S Alwin**, X Sahaya Shajan "Materials for energy production, conversion and storage: Aerogels based nanostructured materials for energy generation, conversion and storage applications" Edited By Jenitta Johnson M, Nisa Salim, Sabu Thomas, *CRC Press/ April 2024,* ISBN: 9781032313047.

CONFERENCES

- Attended FDP on Advanced Characterization Techniques for Materials & Biology organized by Centre for Biomaterials, at Vellore Institute of Technology (VIT), Vellore, India, from 11th to 15th of December 2023.
- Acted as session chair in International conference on advances in science and engineering" organized by APC Mahalaxmi college for women, Thoothukudi on March 24, 2022
- Participated as Resource Person in short term course on "Role of catalytic converters in automotive industries under National Education Policy organized by NIT, Manipur on December 1, 2021.
- Attended online FDP-Applied chemistry: A catalyst for scientific transformations organized by SGT University, Delhi between 23 – 28th August 2021.
- Attended an international webinar-IV 2021 organized by the Department of Chemistry, The American College, Madurai on 14.08.2021.

- Organized an international webinar-III 2021 at the Department of Chemistry, The American College, Madurai on 28.06.2021 as Co-convenor.
- Presented a poster in the "International Conference on Functional Materials (ICFM-2016)" organized by PSN College of Engineering and Technology, Tirunelveli.
- Presented a poster in the "International Conference on Nanomaterials for Energy, Environment, Catalysis and Sensors (ICNEECS–15)" organized by Madurai Kamaraj University.
- Participated in the "National Conference on Materials Science and Technology (NCMST-2015)" organized by IIST, Thiruvananthapuram.
- Presented a poster in the "National Conference on Materials Science and Technology (NCMST-2014)" organized by IIST, Thiruvananthapuram.
- Presented a paper in the "International Conference on Advanced Functional Materials (ICAFM-2014)" at Thiruvananthapuram Organized by CSIR-NIIST.
- Presented a poster in the "9th International Symposium on Advances in Electrochemical Science and Technology (ISAEST-9)" at Hotel Green Park, Chennai
- Participated in the "6th Asian Conference on Electrochemical Power Sources (ACEPS – 6) organized by IISc, Bangalore and CECRI, Karaikudi at Chennai.

WORKSHOP/TRAINING

- Attended a "Hands-on-Training workshop" on NANOABRICATION TECHNOLOGIES OF PHOTOVOLTAICS conducted by **Center for Nano Science and Engineering (CeNSE)**, **Indian Institute of Science** (IISc), Bangalore in CLEAN ROOM FACILITY between 3 -12 February 2015.
- Trained to fabricate catalyst coated membranes (CCM) by Decal Transfer Method for proton exchange membrane (PEM) fuel cells in **Physical and Materials Chemistry Division**, **National Chemical Laboratory**, Pune between 17 - 27 August 2011.