Dr. Gokul G

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Academic qualification

2019 – 2025	Ph.D. (Physics), Karunya Institute of Technology and Sciences, Coimbatore, Tamil Nadu, India
2017 - 2019	M.Sc. (Physics), Karunya Institute of Technology and Sciences, Coimbatore, Tamil Nadu, India
2014 - 2017	B.Sc. (Physics), Govt. Victoria college Palakkad, Kerala, India

Details of Doctoral Research (Ph.D)

Thesis title	:	Preparation and characterization of Magnesium ion conducting biodegradable polymer electrolytes enhanced with nanofillers for Electric Double Layer Capacitor application
Supervisor	:	Dr. A. Sakunthala Assistant Professor, Division of Physical sciences, Karunya Institute of Technology and Sciences, Coimbatore, Tamil Nadu, India
Status	:	Degree awarded on 17.05.2025

Research interests

- Development of polymer electrolytes for energy storage applications
- Development of eco-friendly materials for enhanced energy storage performance
- Synthesis and development of electrode materials for energy storage systems
- Design, fabrication, and electrochemical evaluation of thin-film electrodes for high-performance energy storage devices

List of publications

Total No. of publications	:	10
First author publications	:	04
Co-author publications	:	06
h-index	:	05
i10-index	:	03
Citations	:	82

First author publications

1. **Gokul Gopinath**, Sakunthala Ayyasamy, Pavithra Shanmugaraj, Rajesh Swaminathan, Kavitha Subbiah, Senthilkumar Kandasamy. Effects of biopolymers in energy storage applications: a state-of-the-art review. Journal of Energy Storage, 70, 108065, 2023 https://doi.org/10.1016/j.est.2023.108065 (**Impact Factor: 9.8**)
2. **Gokul Gopinath**, Pavithra Shanmugaraj, M Sasikumar, Matbiangthew Shadap, Sakunthala Ayyasamy. Cellulose acetate-based magnesium ion conducting plasticized polymer membranes for EDLC application: advancement in biopolymer energy storage devices. Applied Surface Science Advances. 18, 100498, 2023 https://doi.org/10.1016/j.apsadv.2023.100498 (**Impact Factor: 8.7**)
3. **Gokul Gopinath**, Sakunthala Ayyasamy, Matbiangthew Shadap, Pavithra Shanmugaraj, A Banu, M Hema. Cellulose acetate-based polymer electrolyte for energy storage application with the influence of BaTiO3 nanofillers on the electrochemical properties: A progression in biopolymer-EDLC technology. International Journal of Biological Macromolecules. 281, 136416, 2024, https://doi.org/10.1016/j.ijbiomac.2024.136416 (**Impact Factor: 8.5**)
4. **Gokul Gopinath**, Sakunthala Ayyasamy, Pavithra Shanmugaraj, Kavitha Subbiah, Development of Sustainable Plasticized Cellulose Acetate - Mg2+ conducting biopolymer electrolytes: Role of Graphene Oxide Nanofillers in electrochemical enhancement for high performance EDLC application. Ionics https://doi.org/10.1007/s11581-025-06733-z (**Impact Factor: 2.6**)

Co author publications

1. M Hema, **Gokul Gopinath**, A Sakunthala, Senthilkumar Krishnasamy, D Aravind, Jyotishkumar Parameswaranpillai, N Venkateshan, Varagunapandiyan Natarajan. Gum Arabic-based blend biopolymer electrolyte for electric double layer capacitor applications. International Journal of Biological Macromolecules. 307, 141956, 2025, https://doi.org/10.1016/j.ijbiomac.2025.141956 (Impact Factor: 8.5)
2. Archana Ashok, T Raguram, R Jeba Beula, **Gokul Gopinath**, Sakunthala Ayyasamy, A Abiram, A Mohan, Beril Ramolin CB, B Vidhya.Synergistic effects of Co-Mn co-doping on the structural and optical properties of TiO2 nanospheres: dual functions for DSSC photoanodes and degradation photocatalyst. Journal of Alloys and Compounds.

1005, 176024,2024, https://doi.org/10.1016/j.jallcom.2024.176024 (Impact Factor: 6.3)

3. Gayathri Unnikrishnan, Senthilkumar Muthuswamy, Elayaraja Kolanthai, M Megha, Jibu Thomas, M Haris, **Gokul Gopinath**, Rojin Varghese, Sakunthala Ayyasamy.Synthesis and analysis of multifunctional graphene oxide/Ag2O-PVA/chitosan hybrid polymeric composite for wound healing applications. International Journal of Biological Macromolecules. 277, 134301, 2024 https://doi.org/10.1016/j.ijbiomac.2024.134301 (Impact Factor: 8.5)
4. Priyanka Pachiannan, **Gokul Gopinath**, Rajesh Swaminathan, Sakunthala Ayyasamy. Effect of structural alignment on the electrochemical performance of reduced graphene oxide-single-walled carbon nanotube hybrid for supercapacitor application. Journal of Materials Science: Materials in Electronics. 34, 2198, 2023, https://doi.org/10.1007/s10854-023-11639-5 (Impact Factor: 2.8)
5. Matbiangthew Shadap, Sakunthala Ayyasamy, Lathewdeipor Shadap, J Suryakanth, **Gokul Gopinath**. An elaborative study on the influence of alkali lignin in the absence of salts on the structural, morphological and electrochemical properties of polyvinyl alcohol (PVA): A potential novel polymer matrix material for energy storage. International Journal of Biological Macromolecules. 308, 142588, 2025, https://doi.org/10.1016/j.ijbiomac.2025.142588 (Impact Factor: 8.5)
6. Rojin Varghese, V Shobin Vijay, Gayathri Unnikrishnan, **Gokul Gopinath**, Rajesh Swaminathan, Sakunthala Ayyasamy. Enhancing symmetric supercapacitor performance through spin-coated lithium trivanadate films modified with carbon. Applied Physics A. 130, 861, 2024, https://doi.org/10.1007/s00339-024-07989-4 (Impact Factor: 2.5)

Conferences

1. Influence of solvents in the Mg ion conducting polymer membranes for EDLC applications, 2nd International Conference on Frontiers in Chemical Sciences (ICFCS-2023). Department of Applied Chemistry, School of Sciences, Arts and Media, Karunya Institute of Technology and Sciences Coimbatore. 26th and 27th October 2023.
2. Cellulose acetate/PEG based Mg ion conducting polymer membranes for EDLC applications. in the Indo-South Korea – Thailand 2nd International e-Conference on “Nanoscience and Nanotechnology for Energy, Environment and Biomedical

Applications" (iNEEBA2022), organized by Vinayaka Missions Kirupananda Variyar Arts and Science College, India in association with Gyeongsang National University, Republic of Korea and Chulalongkorn University, Thailand during on 24 - 25 November, 2022.

Skills

Device fabrication	• Supercapacitor • Battery • Glove box
Coating Technique	• Doctor blade • Spin Coating Method • Spray Pyrolysis • Physical Vapor deposition (PVD)
Electrochemical Workstation	• Computer controlled CH electrochemical workstation
Software	• EIS analyser • Origin
Leadership and Management	• Designed and managed my own research project to completion. • Mentored PhD and Master's students to complete research project

Achievements

May 2019	**First Rank Holder - M.Sc Physics** Department of Physics, Karunya Institute of Technology and Sciences, Coimbatore, Tamil Nadu, India

Website and Links

Google Scholar	https://scholar.google.com/citations?hl=en&user=jvk2jTsAAAAJ
Linkedin	https://www.linkedin.com/in/gokul-g-b02319373/

References

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Declaration

I do hereby declare that all the statements made in the above application are true and correct to the best of my knowledge and belief.

Dr. Gokul. G