

JYOTHILAKSHMI S

# Research Scholar

# Indian Institute of Science Education and Research

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# EDUCATION

## PhD

Indian Institute of Science Education and Research, Tirupati Aug 2021 ­ Present

CGPA (Course work) - **9.8/10**

Supervisor:Dr. Vanchiappan Aravindan

Thesis title: "*Synthesis of Electrode Materials for Charge Storage Application"*

## M.Sc in Chemistry

University of Kerala 2017 - 2019

CGPA - **8.6/10**

## B.Sc in Chemistry

University of Kerala 2014 ­- 2017

CGPA - **8.5/10**

**ACHIEVEMENTS**

* Prime Ministers Research Fellowship (PMRF), Cycle 9, August 2022
* CSIR-NET JRF (All India Rank-92) 2020
* Academic Excellence Award 2023 (For exemplary performance in courses of

Ph.D. program in Chemistry

* Best Paper Award for the oral presentation at the National Convention of

Electrochemists (NCE) 2023

**PATENTS**

|  |  |  |  |
| --- | --- | --- | --- |
| **S.No.** | **Title** | **Inventors** | **Status** |
| 1. | Components and Methods for the Fabrication of High-Energy Sodium-Metal Batteries | Vanchiappan Aravindan, **Jyothilakshmi S** | Filed  (Indian Patent application No: 202441011674) |

**PUBLICATIONS**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S.No** | **Author(s)** | **Title** | **Name of Journal** | **Year** |
| 1. | **Jyothilakshmi S**, Pratima Meshram, Abhilash, Yun‐Sung Lee, Vanchiappan Aravindan | [Graphite from Dead Li‐Ion Batteries: A "Powerful" Additive for Fabrication of High‐Performance Li‐Ion Capacitors](https://onlinelibrary.wiley.com/doi/abs/10.1002/admt.202301000)  <https://doi.org/10.1002/admt.202301000> | Advanced Materials Technologies | 2024 |
| 2. | Subramanyan K, **Jyothilakshmi S**, Ulaganathan M, Yun‐Sung Lee, Vanchiappan Aravindan | [An efficient upcycling of graphite anode and separator for Na-ion Batteries via solvent-co-intercalation process](https://scholar.google.com/citations?view_op=view_citation&hl=en&user=JCc16qIAAAAJ&sortby=pubdate&citation_for_view=JCc16qIAAAAJ:d1gkVwhDpl0C)  <https://doi.org/10.1016/j.carbon.2023.118525> | Carbon | 2024 |

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| --- | --- | --- | --- | --- |
| 3. | Akshay M, **Jyothilakshmi S**, Yun‐Sung Lee, Vanchiappan Aravindan | High performance Li-ion and Na-ion based on spinel Li4Ti5O12 Anode and Carbonaceous Cathodes  <https://doi.org/10.1002/smll.202307248> | Small | 2023 |
| 4. | **Jyothilakshmi S**, Subramanyan K, Yun‐Sung Lee, Vanchiappan Aravindan | Scalable green synthesis of bulk  TiO2-B and its Li-storage properties in full-cell assembly with LiNi0.5Mn1.5O4 cathode  <https://doi.org/10.1002/admt.202202036> | Advanced Materials Technologies | 2023 |
| 5. | Manuraj M, **Jyothilakshmi S**, Narayanan Unni, K.N., R. B. Rakhi | MoSe2 nanoflowers as efficient electrode materials for supercapacitors  [doi.org/10.1007/s10854­020­04577­z](https://doi.org/10.1007/s10854­020­04577­z) | Journal of Material Science: Materials in Electronics | 2020 |

# TECHNICAL PRESENTATIONS

* Presented (oral) at 23rd National Convention of Electrochemists (NCE-23) organized by the Society for Advancement of Electrochemical Science & Technology (SAEST) held at SRM University, Chennai
* Presented (poster) at 2nd International Meeting on Energy Storage Devices (IMESD 2023) and Industry-Academia Conclave held at Indian Institute of Technology (IIT), Roorkee
* Participated in the International Conference on 'Battery Science and Technology (ICBST 2022)' organized by IISER Pune and S & T Digital from 2nd to 4th June 2022

# RESEARCH EXPERIENCE

## Project Student

National Institute of Interdisciplinary Science and Technology (CSIR-NIIST), Thiruvananthapuram from Apr 2019 ­ Jun 2019 “Synthesis, fabrication and performance studies on electrode materials for supercapacitors”.

TEACHING EXPERIENCE

* **General Chemistry** for BSMS students, IISER Tirupati - Spring 2023
* **Inorganic Chemistry** for BSMS students, IISER Tirupati – Monsoon 2022
* **Modern Engineering Materials** for first year BTech students, Sri Venkateshwara College of Engineering, Tirupati – 25th November to 31st December, 2022
* **Instrumental Methods and Applications** for first year BTech students, Sri Venkateshwara College of Engineering, Tirupati – 1st January, 2023 (Ongoing)

# RESEARCH INTERESTS

* Metal-ion batteries and capacitors
* Green synthesis of nanomaterials for energy storage
* Recycling of spent Li-ion batteries

**REFERENCE**

**Prof. Vijayamohanan K Pillai**

Registrar (i/c) and Dean (R&D)

J C Bose National Fellow (SERB)

Indian Institute of Science Education and Research (IISER), Tirupati

Email: [vijay@iisertirupati.ac.in](file:///C:\Users\user\Desktop\vijay@iisertirupati.ac.in)

Past Director CSIR-CECRI, Karaikudi (2011-2019)

Honorary Faculty, Department of Chemistry, IIT-Madras, Chennai (2017 onwards)

**Dr. Vanchiappan Aravindan**

Assistant Professor

Swarnajayanti & Ramanujan Fellow

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