

JEFFINA S

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PROFILE

Enthusiastic and innovative Nanotechnology graduate with a solid foundation in materials science and hands-on experience in synthesizing nanoparticles for supercapacitor applications. Adept in advanced characterization techniques such as XRD and FESEM. Seeking to leverage my expertise in developing high-efficiency nanocomposites to contribute to cutting-edge research and development in the field of energy storage solutions.

KEY SKILLS

Scientific Analysis | Adaptability | Detailed Analysis | Escalation Management | Team Management | Time Management | Technical Analysis | Critical thinking | Creative Thinking | Problem Solving | Engineering Analysis | Conflict Management | Credit Reconciliation | Extensive Analysis | In-depth Research | Interpersonal skills | Electrochemical Analysis | Supercapacitor and Energy Studies |

Technical Skills | Origin | MS Office | FESEM Analysis | SEM Analysis | TEM Analysis | XRD Analysis | MATLAB | Image J |

PROJECT EXPERIENCE

M.tech Nanoscience And Technology, ACT Campus, Anna University.

Jan 2023 – May 2024

“Exploring the composite $\text{Cu}_2\text{O}/\text{Co}_3(\text{PO}_4)_2$ for Energy Storage Application”

The project explores the synergistic potential of Cobalt Phosphate($\text{Co}_3(\text{PO}_4)_2$) and Cuprous Oxide(Cu_2O), resulting in a remarkable enhancement in specific capacitance. Through meticulous research and experimentation, my work has demonstrated the extraordinary capacity of this nanocomposite material to store energy efficiently and sustainably. By harnessing the unique properties of Cobalt Phosphate and Cuprous Oxide, we have not only achieved high specific capacitance(1,694.2F/g) but also high power density that laid the foundation for transformative advancements in energy storage technology. This project underscores my commitment to innovation and sustainability, offering a glimpse into the promising future of renewable energy solutions. The study of two materials Cuprous oxide(Cu_2O) and Cobalt Phosphate($\text{Co}_3(\text{PO}_4)_2$) as electrode material, Cu_2O synthesized by co-precipitation method and $\text{Co}_3(\text{PO}_4)_2$ by simple precipitation method and $\text{Cu}_2\text{O}/\text{Co}_3(\text{PO}_4)_2$ nanocomposite by in-situ method. XRD studies confirms the formation of cubic Cu_2O and monoclinic phase of $\text{Co}_3(\text{PO}_4)_2$. The SEM studies of Cu_2O shows spherical morphology with porous structure and $\text{Co}_3(\text{PO}_4)_2$ in shows porous 3D flower-like morphology which enhances the porosity and gives high surface area. FESEM is taken to study the morphology of the nano-composite where the metal oxide is deposited on the transition metal phosphate. Application analysis such as Cyclic voltammetry (CV), Galvanostatic charging-discharging (GCD) and Electrochemical Impedance Spectroscopy(EIS) is done to study the electrochemical behaviour of the device.

B.E Electronics and Communication Engineering, Anna University.

Jan 2022 – May 2022

“IoT-based Vehicle Accident Detection and Alert System”

The IoT-based Vehicle Accident Detection and Alert System project aimed to develop an innovative system capable of swiftly detecting vehicular accidents through the integration of sensors, IoT connectivity, and real-time data

processing. By utilizing sensors to detect sudden changes in vehicle motion and impact, the system promptly triggers alerts containing vital accident information, such as location and severity, facilitating rapid response from emergency services and notifying designated contacts. This project not only emphasized the fusion of ECE principles with IoT technology but also aimed to significantly enhance road safety by reducing response times and improving communication during critical situations.

ACHIEVEMENTS AND CERTIFICATIONS

- Actively engaging in learning opportunities like training programs, online courses, or workshops to acquire new technical skills, frameworks, or tools relevant to Energy Storage applications and Nanotech Synthesis
- Supporting the planning phase of projects by conducting research, gathering requirements, and assisting in creating project plans and timelines.
- Certification in completing the Training Program on Robotics conducted by Hiltek Centre for Artificial Intelligence and Robotics Pvt.Ltd
- Certification in Python of C-DAC, GIST PACE programme
- Advanced Diploma in multilingual Computer programming of C-DAC, GIST PACE programme.
- Attended International Conference on Emerging Advanced Materials (ICEAM 2024).
- Attended National workshop and Hands on Training on Solar Cells, Anna University

ACADEMIC QUALIFICATIONS

Jun 2024	M.Tech	Nanoscience and Technology, ACT Campus, Anna University, India	Graduated with a CGPA of 8.61
Jun 2022	B.E	Electronics and Communication Engineering Anna University, India	Graduated with a CGPA of 8.54
Jun 2018	12th	Ponjesly Matriculation Higher Secondary School	Graduated with 91.33 %

LANGUAGES

Tamil	Native speaker
English	Highly proficient
Malayalam	Conversational

HOBBIES

Reading novels and comics | Watching movies | Birdwatching

REFERENCES

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