Melanie Randall-Evans

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Fourth year funded chemistry PhD student with studentship support at the University of Lincoln seeking new opportunities to join this industry and share a passion for battery innovation. Current work centered on exploring novel and innovative approaches to the synthesis of manganese-based cathode materials for zinc batteries and the evaluation of the subsequent performance, alongside a research assistant position delving into the emerging technology of calcium-air batteries. Experienced in various computing languages, academic studies, and practical laboratory skills.

Experience

2018 – PRESENT

University of Lincon

PhD Studentship (funded) 2021 - present

- Operate and calibrate standard lab equipment
  - Such as centrifuges, standard and vacuum ovens, balances, titrators, blast and tube furnaces
- Perform material analysis with multiple characterization techniques
  - Including X-ray Diffraction, Scanning Electron Microscopy and Inductively Coupled Plasma
- Manufacture and assembly of battery systems in different configurations
  - Including coin, MTI, Swagelok and pouch cells
- Perform electroanalysis of battery performance and mechanism investigation
  - Including galvanostatic testing, cyclic voltammetry and ex-situ X-ray Diffraction
- Prepare clear and regular reports of progress in a concise manner
- Took on supervision and leadership responsibilities within research group
  - Identified gaps in information for standard procedure and resolved them
  - Provided guidance in technical laboratory situations
  - Supported the supervision of multiple junior PhD students and undergraduate classes
- Presented research at academic conferences such as Recent Appointees in Materials Science 2023 and Electrochem2024

Research assistant Oct 2024 – March 2025

- In collaboration with the Defense Science and Technology Laboratory (DSTL)
- Experienced with controlled environment chemistry processes and battery manufacture
- Guided two masters' students in field of electrochemical energy storage
  - Within lab environment and data collection and analysis
- Delivered frequent technical reports and presentations on progress to funding body

UROS research project Summer 2021

- PVD coating for the manufacturing of smart glass
- Trained on and utilized a variety of technology
  - Physical Vapor Depositon system
- Strengthened electrochemical processes

June 2017

Rolls Royce Engineering

Work Experience

- Work undertaken with the Defence Future Programmes Engineering team exploring the process of designing an engine
- Introduction to DFMEA, PFMEAs, Control Plans and associated documentation

Education

BSc (Hons) Physics Degree 2018-2021

- Experienced with mathematical and physics topics including Fluid Dynamics, Statistical Mechanics, Geometrical optics, Quantum Mechanics and Condensed Matter physics
- Chaired group projects
  - Organized regular meetings, ensured work was allocated equally, completed to a high standard and within the allotted time
  - Dealt with any issues that arose and worked to find a solution that would best benefit the project and teammates

High School for Girls, Gloucestershire 2011 - 2018

- A Levels – Mathematics, Physics, History, Extended Project Qualification
- As Levels – Politics
- 12 A-C GCSEs including Mathematics, English language and English literature

Technical Skills

- Proficient with data analysis and graphing software – OriginLab
- Microsoft packages – Excel, Word, PowerPoint and One Note
- Versed in computing languages - MATLAB, Maple, Python, C++ and LaTeX
- Experienced with COSHH and Risk Assessment procedures
- Extensive use and understanding of different battery testing systems – Neware, WonATech,

Professional Skills

- Strong troubleshooting and mechanical capability
- Attention to detail
- Academic writing
- Knowledge of laboratory procedures
- Excellent ability to work under pressure
- Thrive facing new challenges
- Self-starter
- Intermediate BSL