

## PROFILE

As a dedicated PhD scholar in solid-state hydrogen storage, I aim to apply my expertise in materials science, specifically in the design and development of polymerhydride composites, to contribute to cutting-edge energy storage solutions. With a strong foundation in experimentation and material characterization, I seek to apply my skills in advancing sustainable hydrogen storage technologies. My objective is to work in a dynamic, innovative environment where I can contribute to the development of safe, efficient, and scalable hydrogen storage systems, ultimately supporting the global transition to clean, renewable energy.

# CONTACT

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# **SKILLS**

Material Characterization-

- Scanning Electron Microscopy (SEM-EDS), Optical Microscopy
- X-ray Diffraction (XRD)
- Surface hardness and roughness Test

Material Development and **Composite Fabrication** SolidWorks, Ansys Python

# MOHAMMAD ALTAF

# **Doctoral Researcher**

## **EDUCATION**

#### Technological University of Shannon (TUS), Moylish

#### Campus (Ireland)

Doctor of Philosophy (PhD) [June 2024 – Pursuina]

Developing Mg-based polymer composites for efficient solid-state hydrogen storage

#### Indian Institute of Technology (IIT), Ropar (India) [7.71 CGPA]

Master of Technology Specialization in Manufacturing [August 2020- July 2022] Developed Metal-Ceramic Composite using Laser based Additive Manufacturing (Multi-Material Additive Manufacturing)

#### Dr. APJ Abdul Kalam Technical University (AKTU), Uttar Pradesh (India) [73.96%]

Bachelor of Technology (Mechanical Engineering) [August 2015- July-2019] Comparative Study of Alloys ≻

### WORK EXPERIENCE

#### TUS [Tutor]

Feb 2025- Aug 2025

[Worked as a tutor assisting students in mathematics and mechanical engineering subjects.]

#### TUS [Research Assistant]

April 2025–June 2025

[Design, static and thermal analysis of battery enclosure]

#### TUS [Research Assistant]

Sep 2024-Nov 2024

[Feasibility study, design, and CFD simulation of a novel Underground Pumped Hydro Storage (UPHS) system for clean electricity.]

#### Jupiter International Limited (Graduate Engineering Management) Aug-2022-Jan 2023

Worked as a Process Engineer to improve solar cell efficiency during [manufacturing.]

## PARTICIPATION AND ACHIEVEMENTS

- Awarded First Prize in three competitions during TUS Research Week  $\geq$ 2025 for presenting my research on solid-state hydrogen storage.
- > Achieved Runner-Up position in the poster presentation on hydrogen storage organized by RUN-EU.
- Participated in the poster presentation during TUS Research Week 2025.  $\geq$ 
  - Qualified GATE with a 97.09 percentile and received the GATE
- Fellowship. Won First Prize in the Marble Run event at the Inter-College Competition.
- Published a review paper in IOP Conference Series: Materials Science and Engineering