

## Postgraduate Scholarship Information Sheet (Advert)

<b>Scholarship Project Title</b>	Next-Generation Nano-enhanced Alloys Using AI-powered Digital Toolsets (nanoAlloy)
<b>Advert Reference number</b>	<b>TURISE_2024_209</b>
<b>Supervisor(s)</b>	Dr. Ronan McCann (SETU Waterford) Dr. Ramesh Ragavendra (SETU Waterford) Dr. David Culliton (SETU Carlow)
<b>Research Group</b>	SEAM
<b>Department /School/Faculty</b>	<i>Department of Science, Faculty of Science and Computing</i>
<b>Duration</b>	4 Years/48 Months
<b>Status: Full-time / part-time</b>	Full Time
<b>Funding information</b>	TU RISE Scholarship Programme
<b>Value of the scholarship per year for four years</b>	Stipend: €19,000 per annum Fees of €5,750 per annum Research costs- €5,000 per annum with an additional €1,650 awarded for the purchase of a laptop in year 1
<b>Closing date and time</b>	<b>July 17<sup>th</sup> 2024 at 4pm Irish Time</b>
<b>Interview date</b>	<b>TBC</b>
<b>PhD commencement date</b>	<b>02/09/24</b>

**Project Key Words:** Additive manufacturing; material science; nanomaterials.

### Post summary

Fully Funded PhD Scholarship in Additive Manufacturing field to capture new insights on the influence of processing variables and materials properties on end-product characteristics using novel materials based in South East Applied Materials (SEAM) Research Centre.

### Background & Role

SEAM, formally launched in 2009 is now one of the leading Enterprise Ireland Technology Gateway Centres in the country providing innovative materials science & engineering solutions for industries seeking assistance on materials related issues that cannot be solved by utilising their on-site resources and operates in close collaboration with a global network of companies and collaborators.

The project brings together three key enabling technologies, namely advanced manufacturing, advanced materials, and artificial intelligence by examining nanomaterial-enhanced feedstock materials for AM and the use of digital AI-enhanced toolsets for simulation and process data analysis. As integration with manufacturing processes is a critical aspect of this project, the proposed use of digital tools will facilitate seamless integration between the design, testing and optimisation stages, enabling efficient adjustments of the feedstock design and fabrication process parameters based on both online process monitoring, and post-process analysis data.

## **Qualifications**

### **Essential**

- Have attained, or expect to attain by commencement date, an Honours Degree (minimum 2:1) in physics, material science, engineering or other equivalent discipline.

### **Desirable**

- Have experience with nanomaterials and spectroscopic characterisation techniques.

## **Knowledge & Experience**

### **Essential**

- Have demonstrable experience in materials characterisation and spectroscopy.
- Have a good understanding of additive manufacturing processes and relevant analytical characterisation techniques.

### **Desirable**

- Some experience of working on research projects.
- Some hands-on experience in the use of experimental equipment.
- Strong analytical and problem solving skills.

## **Skills & Competencies**

### **Essential**

- Proficiency with document processing tools such as MS Office and Adobe.
- An ability to analyse data and produce technical reports
- In order to be **shortlisted for interview**, you must meet the SETU English speaking requirements so please provide evidence in your application.

### **Desirable**

- Excellent written and verbal communication skills
- An understanding of statistical analysis of data
- Willingness and motivation to learn and experience new theoretical and technological areas.
- Ability to work both as a team member and as an independent researcher

## **Further information**

For any informal queries, please contact Dr. Ronan McCann on email at [ronan.mccann@setu.ie](mailto:ronan.mccann@setu.ie)

For queries relating to the application and admission process, please contact the Postgraduate Admissions Office [researchadmissions@setu.ie](mailto:researchadmissions@setu.ie) or telephone +353 (0)51 302883.

For queries relating to the funding programme, please email [scholarships2024@setu.ie](mailto:scholarships2024@setu.ie)

University Website <https://www.setu.ie/>

## **Application procedure**

Download the [Research Postgraduate Application Form](#) from here and return the completed application to [researchadmissions@setu.ie](mailto:researchadmissions@setu.ie) quoting **TURISE\_2024\_209** in the email subject line.

**Please note that paper submissions will not be accepted.**

**The University may decide to interview only those applicants who appear from the information they provided, to be the most suitable in terms of experience, qualifications and other requirements of the post.**

**The University will short-list and interview those applicants who provide the most suitable information in terms of experience, qualifications and other requirements relevant to the scholarship.**

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