

School of Computing, Engineering, and the Built Environment Edinburgh Napier University

PHD STUDENT PROJECT

Funding and application details

Funding status: Self-funded students only

Application instructions:

Detailed instructions are available at https://www.napier.ac.uk/research-and-innovation/research-degrees/how-to-apply

Prospective candidates are encouraged to contact the Director of Studies (see details below) to discuss the project and their suitability for it.

Project details

Supervisory Team:

- DIRECTOR OF STUDY: Neil Shearer (Email: N.Shearer@napier.ac.uk)
- 2ND SUPERVISOR:

Subject Group: Engineering & mathematics

Research Areas: Metallurgy, Physical Chemistry, Manufacturing Engineering, Mechanical Engineering

Project Title: Alloyed metallic grain control and tribological characterization

Project description:

Metallic material properties can be attributed to various mechanisms such as grain refinement and precipitation hardening. In additive manufacturing the alloy, grain size and subsequent heat treatment is of great interest for their tribological properties and through the potential for architecture by manufacturing improved properties could be realized.

This study into the resultant properties of AM produced samples involving post manufacture heat treatment including modelling of grain size orientation and composition [precipitates] will allow materials engineers to advance the knowledge of this manufacturing opportunity.

References:

Candidate characteristics

Education:

A second class honour degree or equivalent qualification in Materials / metallurgy engineering, or mechanical engineering

Subject knowledge:

- Metallurgy
- Processing /additive manufacture

Essential attributes:

- Metallurgy
- Computational / mathematical modelling in materials
- Good written and oral communication
- Strong motivation, with evidence of independent research skills.

Desirable attributes:

- Materials characterization techniques
- Mechanical / tribology testing and analysis