

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: Mark Dorris (Email: M.Dorris@napier.ac.uk)
- 2ND SUPERVISOR: Norman Harris

Subject Group: Engineering & mathematics

Research Areas: Music Technology, Acoustics Engineering, Nanotechnology, Polymers

Project Title: Sustainable seaweed based gels for audio speaker technologies

Project description:

In speaker technologies silicone rubber products are used to dampen vibration and direct audio signals to the listener. Silicone is not biodegradable and breaks down slower than plastics. Sustainable gels made from seaweed based nanocellulose has been shown to have vibration damping while amplifying and directing certain audio frequencies.

This project will evaluate various sustainable seaweed nanocellulose gel composites for their vibration damping and audio signal qualities. Prototype

speaker products will be designed and manufactured incorporating the new material and assessed in comparison to existing speaker technologies.

References:

Candidate characteristics

Education:

A second class honour degree or equivalent qualification in Engineering, or Design.

Subject knowledge:

Materials

Essential attributes:

- A sound knowledge of engineering design principles.
- Good numeracy and computer skills.
- Good communication skills.
- A knowledge of material properties.
- An understanding of manufacturing processes and construction methods.
- Good problem-solving skills.

Desirable attributes:

• Creative flair.