

EPSRC supported EngD:

Structure–Property Relationships in Microcapsule Mechanics: Linking Shell Architecture to Mechanical Performance and Functional Behaviour

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Tax free bursary of £28,505 per annum plus fees paid.

Project Description:

The research will involve synthesizing microcapsules with tailored properties, characterizing their structure using advanced microscopy and imaging methods, and performing mechanical testing at the microscale.

The candidate will also develop theoretical and numerical models (e.g., finite element simulations) to predict capsule behaviour and use data analysis or machine learning approaches to uncover key structure–property relationships.

This project offers:

- The opportunity to work on a cutting-edge topic with strong academic and industrial relevance
- Access to state-of-the-art facilities for microfabrication, imaging, and mechanical testing
- Training in both experimental and computational methods
- A collaborative research environment with potential industry links

We are looking for candidates with a strong background in materials science, mechanical engineering, chemical engineering, or a related discipline. Experience in microscopy, modelling, or programming is advantageous but not essential. Strong analytical skills, curiosity, and the ability to work independently and collaboratively are key.

This project will equip the successful candidate with a unique combination of skills in advanced materials characterization, micromechanics, and predictive modelling—highly valued in both academia and industry.

Applicants should be enthusiastic about tackling complex, interdisciplinary problems and contributing to the development of next-generation functional materials.

Funding Details:

To be eligible for EPSRC funding candidates must have at least a 2(1) in an Engineering or Scientific discipline or a 2(2) plus MSc.

To apply and for more details on the Engineering Doctorate scheme visit the [homepage](#).