

PhD Project Advertisement

Project title: Innovative encapsulation approaches for seed protection and longevity

Project No: FBS2024-068-Hingley-Wilson-sq

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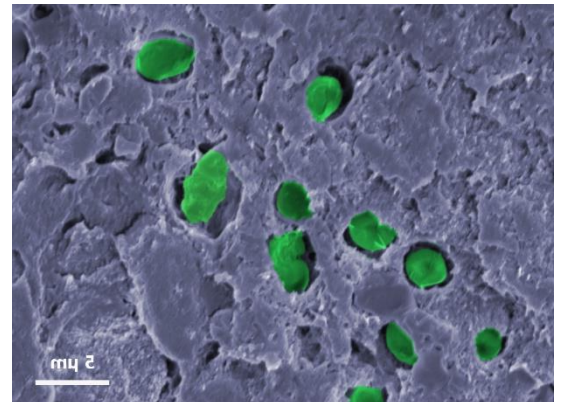
Joseph Keddie, University of Surrey

Giusy Mariano, University of Surrey

Project description:

Biocoatings are a mix of beneficial bacteria and colloidal coatings. They can keep bacteria contained, alive and in contact with key surfaces. Seed storage is often problematic with fungal and bacterial spoilage agents rife. This interdisciplinary project aims to combine key anti-fungal and microbial agents with beneficial bacteria in seed-based biocoatings. Maintaining seed longevity would aid human health and nutrition and reduce anti-microbial resistance.

This novel proposal involves developing seed biocoatings containing protective bacteria and targeted anti-microbial peptides and phages (i.e. bacterial viruses) to achieve seed longevity. This will be based at the University of Surrey and Queens University Belfast, where biocoatings containing key anti-microbial agents and bacilli will be developed and evaluated. These will be tested in collaboration with a world leading industrial partner in seed health Syngenta.



Training opportunities:

The student will receive training at the UofS and QUB, which have a range of doctoral college programmes and offer training in scientific writing, presentation skills, employability, and laboratory safety.

Student profile:

This proposal would suit a student with laboratory experience and a biology background. Some prior physics background would also be desirable.

Stipend (Salary):

FoodBioSystems DTP students receive an annual tax free stipend (salary) that is paid in instalments throughout the year. For 2023/24 this is £18,622 and it will increase slightly each year at rate set by UKRI.

Equality Diversity and Inclusion:

The FoodBioSystems DTP is committed to equality, diversity and inclusion (EDI), to building a doctoral researcher(DR) and staff body that reflects the diversity of society, and to encourage applications from under-represented and disadvantaged groups. Our actions to promote diversity and inclusion are detailed on the [FoodBioSystems DTP website](#).

In accordance with UKRI guidelines, our studentships are offered on a part time basis in addition to full time registration. The minimum registration is 50% FT and the studentship end date will be extended to reflect the part-time registration.

References:

- 1)Chen et al., Biomacromolecules. 2020 Nov 9;21(11):4545-4558
- 2)Chen et al., Adv. Sustainable Syst. 2022, 2200312
- 3)Krings et al., Microbiology Spectrum in press

For up to date information on funding eligibility, studentship rates and part time registration, please visit the [FoodBioSystems website](#).