Industrial Sponsored PhD: A ‘Lab on a Bench (LoB)’ setup equipped with Machine Learning (ML) as a high throughput (HTP) for formulation design and validation.

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In association with the Formulation Engineering CDT
Croda

Tax free bursary of £27,380 per annum plus fees paid.

Project Description:
Most of chemical products consist of multiple compounds that are formulated together, of which the development process is iterative, laborious, and complex. The formulated products sector, contributing over £149bn to the Gross Value Added of the UK economy, requires innovative method to accelerate the innovation pace and to enhance the corresponding sustainability profile.

The aim of this project is to develop a highly innovative ‘Lab on a Bench (LoB)’ setup, integrated with Machine Learning algorithm, as a high throughput method for screening and developing formulated products that are used in a broad range of applications. The project has the following objectives: i) to further develop the LoB setup that incorporates microfluidics with miniaturized characterization techniques; ii) to validate the accuracy and efficiency of the LoB method; iii) to integrate the ML algorithm with the LoB operation, forming a closed feedback loop; iv) to apply the LoB setup in investigating a range of formulated products with high throughput efficiency. The knowledge will be used to guide the development of new formulated products.

Working closely with the industrial partner Croda, the doctoral candidate will develop a wide range of skills in colloidal and interface science, computer science, and instrumentation, establishing a broad appreciation of formulation engineering. They will develop a portfolio of transferrable skills such as project management, communication and team working, which ensures excellent employability upon completion of the project.
If you have a background in Chemistry, Physics, or Chemical Engineering and are passionate about sustainability and instrumentation, this is an excellent opportunity.

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 please complete the application form here:
https://forms.office.com/Pages/ResponsePage.aspx?id=z8oksN7eQUKhXDyX1VPp863-WCp3uuhNrrA2d90woT1UMkVGMjA0UzVJOUw5VENGMDUyQzRWUlpWVi4u

For details on the Engineering Doctorate scheme visit the homepage.