

EPSRC supported EngD:

An experimental and computational investigation of inverse micelles

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

Project Description:

Although electric vehicles are starting to gain traction in sectors like heavy trucking and aviation, their market share is only expected to reach 23% by 2050. This is evidence that combustion engines will continue to provide significant transportation energy for decades to come. Fuel additives, normally organic compounds that are surface/interface active, therefore play a vital role in enhancing the sustainability of the transportation sector.

The aim of this project is to develop a fundamental understanding of the molecular configuration and interactions of additives that are present in all fuels, e.g. diesel, biodiesel (FAME), and renewable diesel (HVO).

The project has the following objectives:

- i) To develop a mechanistic understanding of inverse micelles via advanced experimental and computational techniques,
- ii) To investigate the effect of surfactants on inverse micelles
- iii) To understand the impact of high applied pressures on these systems. The knowledge will be used to guide the development of new additives with an enhanced sustainability profile.

Working closely with the industrial partner Innospec, a specialty chemical company, the EngD candidate will develop a wide range of skills in colloidal and interface science, establishing a broad appreciation of formulation engineering. They will build 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 future fuels, 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>

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