Objective
The main objective of the project is to demonstrate that microfluidic devices can be utilised to visualise and quantify solid-fluid phase behaviour of hydrocarbon systems.

Project Details
Knowledge of the phase behaviour of hydrocarbon systems is crucial for the oil and gas industry to optimise production, transportation and processing and to minimise greenhouse gas emissions. Phase behaviour involving solid formation is particularly important as the formation of solids results in restricted flow, or worse a complete blockage.

In this project, the student will work on the development and testing of a microfluidic platform for rapid visualisation and quantification of hydrocarbon phase behaviour (Fig. 1). The work will also involve the development of a cooling/heating elements for the microfluidic platform. The student will then work to demonstrate that the device can be utilised for phase behaviour visualisation and quantification.

Prerequisites
This project is ideal for students studying Civil, Environmental, Resources, Mechanical or Chemical Engineering who have completed a unit in Fluid Mechanics and preferably Thermodynamics &/or Heat Transfer.

Additional Information
Applicants may be required to attend an interview.