Controls on the Distribution and Type of Organic Rich Facies and its ultimate maturation to yield hydrocarbons in an evolving sedimentary basin: A case study Offshore West of Ireland

Fully funded PhD studentship

Host University: University of Manchester
Supervisors: Prof Jonathan Redfern, James Armstrong

Funded by: PIPCO RSG CLG

Duration: 3.0 years

A fully funded PhD studentship to start in Sept 2020. The project has access to a large offshore database to examine the controls and processes that are active in an evolving sedimentary basin that impact on the deposition of organic rich mudrocks, working towards developing a predictive model for source rock distribution.

The project will access 2D (and possibly 3D) seismic lines, well data and the comprehensive suite of samples, plus integrate recent geochemical, stratigraphic and related studies compiled by PIP (Petroleum Infrastructure Programme) for the West of Ireland. There are three objectives, the first being to create an up-to-date assessment of the distribution, organic richness, source rock kinetics and type of mudrocks in the sedimentary section in the basins West of Ireland. This will be integrated with a study of the basin style and evolution to address the mechanisms that control organic richness and its location (both temporal and spatial). This will then be integrated with an evaluation of the basin style and evolution to better understand the control and processes that are active, allowing development of a predictive model for the source rock distribution. The study will conclude with extensive 1D basin modelling to address timing, type and volume of fluid charge to allow an understanding of hydrocarbon generation/expulsion from multiple locations within basins offshore west of Ireland.

The project offers access to an important dataset as a case study for developing improved workflows and models to address organic facies prediction in sedimentary basins. The student will work closely with a large group of researchers in the Basins Studies Group at the University of Manchester, with access to unrivalled workstation, software and laboratory facilities. This project, funded by PIPCO, also offers the student with an opportunity for close links to industry.

The PhD candidate should be from the UK or EU, and have a good 2.1 or 1st is Geology / Geochemistry, with strong background in basin studies. Experience of interpreting seismic data and of undertaking basin modelling would be an advantage. We would like to start the PhD in Sept 2020 or soon thereafter.

Full scholarship: 3.0 years funding, includes all fees, living allowance and field expenses.

Apply online: https://www.manchester.ac.uk/study/postgraduate-research/admissions/how-to-apply/. Please use this advert as the research proposal.

Application Deadline: August 28th

Online Interviews: 4th Sept

For further information contact: Prof Jonathan Redfern: jonathan.redfern@manchester.ac.uk