The Multi-Phase Flow Research Theme brings together a range of interests in numerical and experimental modelling of fluid and thermal processes that underpin many of the key challenges of science and engineering.

We are particularly interested in applying our knowledge of complex mixtures of liquids, solids and gases to processes that deliver sustainable production of materials and energy. Our research into crystallisation, chemical looping, and CO₂ capture typify the application of this research where we are developing techniques to manufacture novel chemical products, to enhance combustion of fuel and efficient separation of CO₂. New modelling techniques for fluids are developed and applied to a range of challenging problems.

Laboratory scale facilities are supported by a range of instrumentation, both for model validation and detailed monitoring of experimental conditions. Larger scale experimental facilities provide our research team with opportunities to work with industry, examples of which include a large scale kettle reboiler, a unique tilting packed column absorber, oil and gas separator, continuous reactors, and fluidised bed reactors.