

# NON-NEWTONIAN FLUID FLOW IN NATURALLY FRACTURED ROCKS WITH APPLICATION IN FLUID LOSS CONTROL

## MINEX CRC PROGRAM 1

### Drilling Technologies

#### PHD PROJECT

Curtin University

#### PRIMARY SUPERVISOR

Prof. Masood Mostofi

e: [masood.mostofi@curtin.edu.au](mailto:masood.mostofi@curtin.edu.au)

t: +61 8 9266 4989

#### CO-SUPERVISORS

Dr Thomas Richard (Curtin University)  
and Alton Grabsch (CSIRO)

#### PARTICIPATING ORGANISATIONS



#### RESEARCH PROJECT

The dependency of fluid viscosity with shear rate and time provides challenges and opportunities for designing drilling fluid systems. These dependencies are often modelled using simple models which could be fitted with simple experiments. With recent improvements in fluid characteristics, and development of more rapid and precise techniques of fluid properties event outside the controlled environment of lab, the prediction of fluid behaviour and optimisation can be improved.

In this project, we will conduct experimental and numerical work to study of fluid flow in naturally fractured rocks, which are common source of drilling problems in mineral exploration. The project will benefit from state-of-the-art flow loop and dynamic loop of Curtin University and possibilities of collecting field data during National Drilling Initiative.