

FDRG Seminar

The Shape and Dynamics of Taylor Bubbles in Steady and Pulsatile flow of Newtonian and Non-Newtonian liquids

presented by

Dr Abishek Sridhar

Fluid Dynamics Research Group, and
Dept. Mechanical Engineering, Curtin University

In the present research, a fundamental study is carried out to understand the dynamics of Taylor bubbles in co-current steady and pulsatile flow of Newtonian and non-Newtonian liquids. The presentation will elucidate some results from an ongoing computational study, carried out using the VOF modeling approach in OpenFOAM. The broad objective of the research is to isolate the effects of non-Newtonian fluid behaviour on the shape and dynamics of the Taylor bubbles in pulsatile flows; with particular focus on the effects of localised viscosity variation due to shear thinning behaviour of the liquid phase. The detailed parametric studies revealed some new and interesting type of oscillations in the liquid-bubble interface under non-Newtonian pulsatile flow conditions that appear to be different from the known capillary waves that propagate on shorter bubbles in Newtonian flows.

Date: Friday 8th August
Time: 4pm – 5pm
Location: 216:207
Curtin University, Bentley Campus

No RSVP required. For queries please email:
fdrg@curtin.edu.au