InterPore2021



Contribution ID: 281

Type: Poster (+) Presentation

Fluid-structure interactions in a soft-walled Hele-Shaw cell

Wednesday, 2 June 2021 09:00 (1 hour)

The interaction of viscous and interfacial flows with soft materials has recently attracted substantial interest from a variety of different perspectives. Here, we study these interactions in the context of a model problem: Flow in a deformable Hele-Shaw cell, where one wall is rigid and the other is soft. Combining experiments with mathematical modelling, we consider the coupling of flow and deformation as air is injected into a cell initially filled with viscous fluid. We examine how deformation affects the viscous fingering instability and discuss the implications of our results for related physical systems.

We acknowledge financial supports from EPSRC EP/P009751/1 and ERCH2020 805469.

Time Block Preference

Time Block A (09:00-12:00 CET)

References

Acceptance of Terms and Conditions

Click here to agree

Newsletter

Student Poster Award

Primary authors: CUTTLE, Callum (University of Oxford); Dr PRAMANIK, Satyajit (University of Oxford); Dr GUAN, Jian Hui (University of Oxford); Prof. MACMINN, Chris (University of Oxford)

Presenter: CUTTLE, Callum (University of Oxford)

Session Classification: Poster +

Track Classification: (MS6-B) Interfacial phenomena in multiphase systems