

## Session Program

May 22 - 25, 2023



**InterPore2023**

HERIOT WATT UNIVERSITY

15<sup>th</sup> Annual International Conference on Porous Media

22 - 25 May 2023  
Edinburgh, Scotland  
*Short Courses 21 & 26 May*

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## InterPore2023

### MS06-A

# Mon, May 22

10:50 AM

## MS06-A: 1.1

Session

10:50 - 11:05 AM

### Derivation of 2-Phase Darcy Equations from Pore Scale Energy Dynamics using Non-Equilibrium Thermodynamics

**Speaker**

Dr Steffen Berg

11:05 - 11:20 AM

### Homogenized Lattice Boltzmann Model for Simulating Multi-Phase Flows in Heterogeneous Porous Media

**Speaker**

Martin Lautenschläger

11:20 - 11:35 AM

### A Thermodynamically Consistent Model for Compositional Multiphase Flows

**Speaker**

Farid SMAI

11:35 - 11:50 AM

### NAPL dissolution and transport in porous media: Upscaling the Mass Exchange Coefficient

**Speaker**

Anne-Julie Tinet

11:50 AM - 12:05 PM

### Upscaled model for two-phase flow in porous media

**Speaker**

Dr Didier Lasseux

12:05 - 12:20 PM

### Pseudo-Thermodynamics of Immiscible Two-Phase Flow in Porous Media: Differential Geometry and Convenient Coordinates

**Speaker**

Håkon Pedersen

12:20 - 12:35 PM

### Two-phase non-linear flow in Pore Network Model

**Speaker**

Federico Lanza

12:35 PM

5:00 PM

## MS06-A: 1.3

Session

5:00 - 5:15 PM

### Tortuosity-governed droplet transport in a microfluidic porous network

**Speaker**

Elliot SPEIRS

5:15 - 5:30 PM

**A simplified pore-scale model for drainage including film flow effects**

**Speaker**

Dr Paula Reis

5:30 - 5:45 PM

**Model of water drop infiltration in porous media with amphiphilic matter**

**Speaker**

Florian CAJOT

5:45 - 6:00 PM

**Capillary entry pressure in soft porous media**

**Speaker**

Callum Cuttle

6:00 PM

## Tue, May 23

12:00 PM

### MS06-A: 2.2

Session

12:00 - 12:15 PM

#### Rheology and Mobility Critical Exponent of Immiscible Two-Phase Flow in Porous Media with Dual-Wettability Grains

**Speaker**

Hursanay Fyhn

12:15 - 12:30 PM

#### Micromodel of a gas diffusion electrode tracks in-operando pore-scale wetting phenomena

**Speaker**

Sebastian Brosch

12:30 - 12:45 PM

#### New insights into the mechanisms leading to the formation of localised pathways in water-saturated clayey geomaterials exposed to pressurised non-wetting fluid emulating supercritical CO<sub>2</sub>

**Speaker**

Mr Craig Allsop

12:45 - 1:00 PM

#### Characteristics of fluid-fluid displacement in model mixed-wet porous media

**Speaker**

Benzhong Zhao

1:00 PM

2:15 PM

### MS06-A: 2.3

Session

2:15 - 2:30 PM

#### Investigation of factors affecting the performance of surfactant and polymer floods in sandstone cores aided by X-ray CT imaging

**Speaker**

Andrea Rovelli

2:30 - 2:45 PM

#### ET-MIP: A coupled model approach to simulating the fate and transport of CO<sub>2</sub> in overburden

**Speaker**

Nicholas Ashmore

2:45 - 3:00 PM

#### An Experimental Study of Drying in Porous Media Using Novel 2D Micromodels with Dual Porosity

**Speaker**

Dr Yaofa Li

3:00 - 3:15 PM

**Simulation of CO<sub>2</sub>-Brine Primary Displacement in heterogeneous carbonate rocks**

**Speaker**

Omidreza Amrollahinasab

3:15 - 3:30 PM

**Characterisation of multiphase flow in heterogeneous rocks**

**Speaker**

Dr Senyou An

3:30 PM

## Wed, May 24

2:15 PM

### MS06-A: 3.3

#### Session

2:15 - 2:30 PM

#### **Analytical and numerical investigations of imbibition in porous media**

**Speaker**

Mr Akshit Agarwal

2:30 - 2:45 PM

#### **Dissolution of trapped CO<sub>2</sub> in carbonates rock at high pressure and high temperature conditions using X-ray micro-tomography**

**Speaker**

Abdul Hakim Mazeli

2:45 - 3:00 PM

#### **Trapping Behavior of Gases from 4D Pore Scale Imaging**

**Speaker**

Dr Tibi Sorop

3:00 - 3:15 PM

#### **Multiphase flow dynamics effect on microscale phase configuration**

**Speaker**

Dr Ilan Ben-Noah

3:15 - 3:30 PM

#### **Nonequilibrium and cooperative behavior in quasistatic fluid-fluid displacements underpin energy dissipation and hysteresis in the passage through constrictions**

**Speaker**

Ran Holtzman

3:30 PM

## Thu, May 25

9:15 AM

### MS06-A: 4.1

#### Session

9:15 - 9:30 AM

#### Competitive adsorption of CO<sub>2</sub> and CH<sub>4</sub> in functionalized amorphous-silica nanopores

**Speaker**

Mattia Turchi

9:30 - 9:45 AM

#### Bridging the continuum and discrete models developed to simulate solute transport and distribution in drying porous media

**Speaker**

Jing Chen

9:45 - 10:00 AM

#### Dewatering and consolidation of clay slurries

**Speaker**

Mr Ismail Myouri

10:00 - 10:15 AM

#### Effects of molecular details on two-phase flows through nanopores

**Speaker**

Dr Petter Johansson

10:15 - 10:30 AM

#### Melting Kinetics of Permafrost under Overlaying Saline Water

**Speaker**

Yumin Wang

10:30 - 10:45 AM

#### Droplets at Liquid-Fluid Interfaces: Pressure Field and Coalescence

**Speaker**

JOSE LUIZ DAVALOS MONTEIRO

10:45 AM