

## Session Program

May 19 - 22, 2025



 **InterPore2025**

Sandia National Laboratories  
Los Alamos NATIONAL LABORATORY  
NEW MEXICO TECH  
THE UNIVERSITY OF NEW MEXICO

**17<sup>th</sup> Annual Meeting  
& Conference Courses**

19 - 22 May 2025  
Albuquerque, New Mexico, *USA*  
Conference Courses 18 & 23 May

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## InterPore2025

### MS09

# Mon, May 19

11:25 AM

## MS09: 1.1 Session

11:25 - 11:40 AM

### A Multiscale Approach to Pore-Network Two-Phase Flow Simulation Applied to a Carbonate Reservoir

**Speaker**

Dr Rafael Arenhart

11:40 - 11:55 AM

### Mechanisms of interface jumps, pinning and hysteresis during imbibition and drainage along an isolated pore

**Speaker**

Animesh Nepal

11:55 AM - 12:10 PM

### Post-breakthrough evolution of viscous fingers

**Speaker**

Bauyrzhan Primkulov

12:25 PM

5:10 PM

## MS09: 1.3 Session

5:10 - 5:25 PM

### Particulate transport in porous media at pore-scale

**Speaker**

Laurez Maya

5:25 - 5:40 PM

### 3D modeling of Ostwald ripening in multi-component carbon storage

**Speaker**

Jacques Franc

5:40 - 5:55 PM

### Pore-scale level-set simulation of drainage-imbibition cycles of trapped gas during decline and incline of reservoir pressure

**Speaker**

Johan Olav Helland

5:55 - 6:10 PM

### Percolation without trapping with time dependency: modelling Ostwald ripening

**Speaker**

Ademola Adebimpe

6:10 PM

## Tue, May 20

11:35 AM

### MS09: 2.2

Session

11:35 - 11:50 AM **The Impact of Anisotropic Reaction Rates on Dissolution Dynamics**

**Speaker**

Siqin Yu

11:50 AM - 12:05 PM

**Multiscale modelling of convection in porous media: experiments, pore-scale and Darcy simulations with dispersion**

**Speaker**

Dr Marco De Paoli

12:05 - 12:20 PM

**Upscale rarefied volatile diffusion in porous media: a probability-based pore network modeling approach**

**Speaker**

sunpeng zhou

12:20 - 12:35 PM

**Pore-scale modeling of reactive transport in complex porous media**

**Speaker**

Sergi Molins

12:35 - 12:50 PM

**Pore-scale reactive transport modeling for heterogenous in-situ carbon mineralization in partially-saturated vesicular basalts**

**Speaker**

Tianxiao Shen

12:50 - 1:05 PM

**A variational phase-field model for porous ice and salty water interactions**

**Speaker**

Junning Liu

1:05 PM

2:05 PM

### MS09: 2.3

Session

2:05 - 2:20 PM

**Improved stochastic pore network generation algorithms for porous media**

**Speaker**

Chengnan Shi

2:20 - 2:35 PM

**Characterizing the Morphology and Permeability of Multiscale Pore System of Carbonate Rocks**

**Speaker**

Celso Peres Fernandes

2:35 - 2:50 PM

**Anisotropic Permeability Prediction at the pore scale: A Lattice Boltzmann and Machine Learning Approach**

**Speaker**

Mr Soumya Shouvik Bhattacharjee

2:50 - 3:05 PM

**A multi-scale multi-step machine learning method for absolute permeability estimation from porous media low resolution medical-CT images**

**Speaker**

Eduardo Bueno

3:05 PM

## Thu, May 22

9:05 AM

### MS09: 4.1

#### Session

9:05 - 9:20 AM

#### **Laminar to Turbulent Convection in Porous Media: The Role of Solid-Fluid Conductivity Ratios and Porosity Variations**

**Speaker**

Dario Schwendener

9:20 - 9:35 AM

#### **Influence of particle shape on packing structure and non-linear hydraulic behavior**

**Speaker**

Jike Li

9:35 - 9:50 AM

#### **Depth-integrated model of immiscible two-phase flow in open rough fractures**

**Speaker**

Prof. Yves Méheust

9:50 - 10:05 AM

#### **Analytical pore-scale modelling of the effect of particle surface roughness on the pressure drop and/or friction factor of granular porous media**

**Speaker**

Rocco Van Velden

10:20 - 10:35 AM

#### **Capillary Pressure-Saturation relation derived from the Pore Morphology Method**

**Speaker**

Dr Fernando Alonso Marroquin

10:35 AM