

**The 3rd UK InterPore Conference on Porous Media
and the 1st Monash-Warwick PREFRAC Workshop on Hydraulic Fracturing**

Programme

4 September 2017

4 September 2017		
8.00 – 8:50	Registration and Hanging of Posters	
8.50 – 9.00	Opening and Welcome talk (Dr Mohad Mousavi Nezhad&Professor Ian Guymer)	
9.00 – 9:40	Keynote Lecture 1: Understanding Gas Flow in Shale Gas Resource Plays: Experimental Methods and Numerical modelling	Keynote speaker: Professor Quentin Fisher
Scientific session 1: Fundamental Theories and Modelling Methods for Hydraulic Fracturing (1)		Chair: Dr Mohammad Rezania
9.40 – 9:55	Plane Strain Propagation of a Hydraulic Fracture with Fluid Lag in Permeable Rock	Bin Chen (Swansea University)
9.55 – 10:10	Upscaling a shale pore system from nm-scale to cm-scale: An example from the Haynesville-Bossier Shale, southeast USA	Lin Ma (University of Manchester)
10.10 – 10:25	Destabilisation of Granular Packing due to Fluid Flow	David W. James (Swansea University)
10.25 – 10:40	Revised model of Penny-Shaped Hydraulic Fracture	Daniel T. Peck (Aberystwyth University)
10.40 – 11.00	Break and Poster Viewing	
Scientific session 2: Fundamental Theories and Modelling Methods for Hydraulic Fracturing (2)		Chair: Dr Sina R. Gomari
11.00 – 11:15	A new coupled computational framework for fluid pressurised crack evolution in porous media	Alexander J. Hardcastle (University of Nottingham)
11.15 – 11:30	Analytical solutions of stress and strain and prediction of permeability around a wellbore in elastic-brittle-plastic reservoir	Mohsen S. Masoudian (University of Nottingham)
11.30 – 11:45	3D CFD Modelling of Fluid Flow through Fractured Porous Reservoirs	Yatin Suri (Robert Gordon University)
11.45 – 12:00	CFD-DEM coupled approach for numerical simulation of proppant transport and distribution in hydraulic fractures	Yatin Suri (Robert Gordon University)
12.00 – 12:15	Numerical Modeling of Oil-Water Immiscible Flow and Heat Transfer in a Porous Media	Yakubu Balogun (Robert Gordon University)
12.15 – 12:30	Multiphase Flow Simulation with Application in Proppant Transportation	Beatriz Ramos Barbozar (Swansea University)
12.30 – 13.30	Lunch & InterPore committee meeting	
13.30 – 14.30	Simpleware workshop and WMG Tour	
14.30 – 14.40	Break	
14.40 – 15.20	Keynote Lecture 2: Modelling Gas Transport in Shales	Keynote speaker: Professor Yonghao Zhang
Scientific session 3: Fundamental Theories and Modelling Methods for Hydraulic Fracturing (3)		Chair: Dr Volkan Degirmenci
15.20 – 15.35	On the apparent permeability of rarefied gas flows in porous media	Lefki Germanou (University of Strathclyde)

15.35 – 15.50	Optimizing the hydraulic fracturing job to govern its environmental impact	Sina R. Gomari (Teesside University)
15.50 – 16.05	Evaluating the non-Darcy flow effect on the short, medium and long term production of a hydraulically fractured well	Sina R. Gomari (Teesside University)
16.05 – 16.30	Break	
Scientific session 4: CO2 Capture and Storage, and Environmental Engineering		Chair: Dr Seyed Shariatipour
16.30 – 16.45	Equivalent relative permeability for CO ₂ injection & storage in the North Sea Captain sandstone	Samuel Jackson (Imperial College London)
16.45 – 17.00	The impact of interbedded rock grains at the reservoir/seal interface on CO ₂ storage and security	Michael U. Onoja (Coventry University)
17.00 – 17.15	Investigating the Effect of Caprock Morphology and Reservoir Boundary on the CO ₂ Storage	Masoud Ahmadinia (Coventry University)
17.15 – 17.30	Geo-electrical Characterisation for CO ₂ Sequestration in Porous Media	Rabiu K. Olawale (Loughborough University)
17.30 – 17.45	Where is the LNAPL mass? Laboratory study on LNAPL dynamics in porous medium under cyclic water table fluctuations	Simiao Sun (ESI Consulting)
17.45 – 18.45	Drink and Poster Session (including judging of best posters)	
18.45 – 21.00	Conference dinner	
5 September 2017		
9.00 – 9:40	Keynote Lecture 3: Darcy Flow in Fractured Porous Media by an Embedded Multidimensional Model.	Keynote speaker: Professor Luca Formaggia
Scientific session 5: Applied Mathematics and Scientific Computing for Porous Media (1)		Chair: Dr Matteo Icardi
9.40 – 9:55	A Numerical Investigation of Stochastic and Deterministic Upscaling Methods for Permeability Fields	Babatunde Lashore (University of Aberdeen)
9.55 – 10:10	Rapid prototyping of complex porous media simulations with DUNE-Python interface	Matteo Icardi (University of Warwick)
10.10 – 10:25	Correlation Analysis between Microstructural Descriptors of Porous Media	Jinlong Fu (Swansea University)
10.25 – 10:40	Model reduction and upscaling for porous electrodes and reactive flows	Matteo Icardi (University of Warwick)
10.40 – 11.00	Break and Poster Viewing	
Scientific session 6: Applied Mathematics and Scientific Computing for Porous Media (2)		Chair: Dr Diganta B. Das
11.00-11.15	A multiscale model for filter efficiency simulations	Galina Printsypar (University of Oxford)
11.15-11.30	Iterative methods for the Stokes/Darcy problem	Marco Discacciati (Loughborough University)
11.30-11.45	Uncertainty evaluation in modelling of matrix acidizing process	Masoud Babaei (University of Manchester)
11.45-12.00	Numerical Homogenization of Non-Local Porous Media	Donald L. Brown (University of Nottingham)

12.00-12.15	Uncertainty quantification for transient ground flow in porous media via spatial-temporal Gaussian process emulation	Wei W. Xing (University of Warwick)
12.15-12.30	Uncertainty Quantification of Darcy Flow through Porous Media Using Deep Gaussian Process	Alireza Daneshkhah (Coventry University)
12.30 – 13.30	Lunch	
13.30-14.10	Keynote Lecture 4: Analysis of Flow Through Porous Media During Composites Manufacturing	Keynote speaker: Professor Andy Long
Scientific session 7: Technological applications		Chair: Dr Masoud Jabbari
14.10-14.25	Mathematical modelling of water filtration and purification devices	Antonios Parasyris (Loughborough University)
14.25-14.40	OCT Assessment of Internal Structure in Thermal Barrier Coatings	Daciana D. Iliescu (University of Warwick)
14.40-14.55	Novel Amorphous Silica and Silica Xerogels as adsorbents for organic pollutants: a Feasibility Study from Synthesis to Regeneration	Andrea Luca Tasca (University of Strathclyde)
14.55-15.10	One-dimensional Creep of Unsaturated Soft Soils	Meghdad Bagheri (University of Nottingham)
15.10 – 15.30	Break	
Scientific session 8: Pore and Particle Scale Theories and Modelling		Chair: Dr Vahid J. Niasar
15.30 – 15.45	Diffusion in random networks	Juan C. Padrino (University of Warwick)
15.45-16.00	Adoptive Pore Network Model with Localization of Time Steps	Mohamed Regaieg (TOTAL)
16.00-16.15	Role of pore geometry in governing the wettability of porous media	Harris Rabbani (University of Manchester)
16.15-16.30	Pore scale modelling of multiphase flow in mixed-wet porous media using a coupled Level Set with Volume of Fluid Method	Amir Golparvar (University of Aberdeen)
16.30-16.45	Unraveling pore-scale mechanisms underlying the non-Fickian transport and mixing in unsaturated porous media	Rimsha Aziz (University of Manchester)
16.45 – 17.00	Award of poster and presentation prizes, and closing	