

6th International Conference on Porous Media and Their Applications in Science, Engineering and Industry 2016

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Monday, July 4, 2016

07:00 – 9:00 Breakfast

09:00 - 09:05 Welcome Remarks
Chair: Kambiz Vafai, University of California, Riverside, USA

09:05 - 09:10 Introductory Remarks
ECI Technical Liaison: Lawrence Kabacoff, USA

Oral Session 1: Natural and forced convection in porous media

Chair: Boming Yu, Huazhong University of Science and Technology, China

09:10 – 09:35 **Stokes flow past a two-layers heterogeneous porous sphere with the effect of stress jump condition: An exact solution**
Kun Yang, School of Energy and Power Engineering, Huazhong University of Science and Technology, China

09:35 - 10:00 **Time fractional transport model for flow through tight porous media**
Nadeem A. Malik, King Fahd University of Petroleum and Minerals, Saudi Arabia

10:00 - 10:25 **Modelling the effect of the porous support on the flux through asymmetric oxygen gas separation membranes**
Robert Mücke, IEK-1, Forschungszentrum Jülich, Germany

10:25 – 10:50 **Exact solution for viscous fluid flow in porous medium with magnetic field**
Dinesh PA, M. S. Ramaiah Institute of Technology, India

10:50 – 11:15 Coffee break

Oral Session 2: Material processing applications

Chair: Nadeem A. Malik, King Fahd University of Petroleum and Minerals, Saudi Arabia

11:15 – 11:45 **The influence of cold rolling on the pore morphology and flow resistivity of porous aluminum**
Nicolas Lippitz, Institute for Materials – TU Braunschweig, Germany

11:45 – 12:10 **Experimental research on internal convection heat transfer of supercritical pressure CO₂ in porous media**
Le Zhang, Tsinghua University, China

12:10 – 12:35 **Micro-nano scales flowing simulation in shale gas**
Boming Yu, Huazhong University of Science and Technology, China

Oral Session 3: Experimental and measuring techniques

Chair: Robert Mücke, IEK-1, Forschungszentrum Jülich, Germany

12:35 – 13:00 **Experimental investigation of combined transpiration and jet cooling of sintered metal porous struts**
Gan Huang, Tsinghua University, China

13:00 – 19:30 Lunch on your own / *ad hoc* sessions / free time

Monday, July 4, 2016 (continued)

19:30 – 21:30 Dinner

21:30 – 22:30 Technical discussion and social hour

Tuesday, July 5, 2016

07:00 – 09:00 Breakfast

Oral Session 4: Combined heat and mass transfer in porous media

Chair: Markus Nordlund, Philip Morris Products S.A., Switzerland

09:00 – 09:25 **Reservoir simulations of shale gas in tight rocks using a non-linear transport model with fully pressure dependent model parameters**
Nadeem Malik, King Fahd University of Petroleum and Minerals, Saudi Arabia

09:25 – 09:50 **Numerical simulation of thermal energy storage with phase change material and aluminum foam**
Oronzio Manca, Seconda Universita' degli Studi di Napoli, Italy

09:50 – 10:15 **Combined effects of internal heat generation and viscous dissipation for double diffusive with Forchheimer fluid model** &
Nalinakshi Girish, Atria Institute of Technology, India

10:15 – 10:40 **Internal heat generation effect on mixed convection heat and mass transfer over a vertical heated plate with Soret and Dufour effects.....**
P.A. Dinesh, Ramaiah Institute of Technology, India

10:40 – 11:10 Coffee break

Oral Session 5: Industrial and environmental heat transfer and flow in porous media

Chair: Oronzio Manca, Seconda Universita' degli Studi di Napoli, Italy

11:10 - 11:35 **Proposal of utilizing uni-directional porous copper for extremely high heat flux removal.....**
Kazuhisa Yuki, Tokyo University of Science, Japan

11:35 - 12:00 **Generation of simple extended porous surface expression from results of pore-level conjugate heat transfer in spherical-void-phase porous blocks**
Anthony Gerald Straatman, Western University, Canada

12:00 - 12:25 **Effects on the pore structure and permeability change by coke deposition during crude oil in-situ combustion**
Qianghui Xu, Tsinghua University, China

12:25 – 12:50 **Effect of the variable porosity on the heat transfer process in solar air receiver.....**
Pei Wang, Hohai University, China

Tuesday, July 5, 2016 (continued)

12:50 – 14:45

Poster session with light lunch

1. **Gas hydrate inhibition and its unique thermodynamic behaviors within the Porous clay sediment**,
Yun-Ho Ahn, KAIST, South Korea

2. **Boiling heat transfer enhancement by nano-particles-assembled bi-porous layers**
Kazuhisa Yuki, Tokyo University of Science-Yamaguchi, Japan

3. **Experiments of water's effect on mechanical properties of shale rocks**
Fuquan Song, Zhejiang Ocean University, China

4. **An experimental investigation on effect of pores per inch in compact heat exchanger with aluminum foam**
Oronzio Manca, Dipartimento di Ingegneria Industriale e dell'Informazione
Seconda Università di Napoli – DIII, Italy

13:30 – 19:30

ad hoc sessions / free time

19:30

Dinner on your own

Wednesday, July 6, 2016

07:00 – 09:00 Breakfast

Oral Session 6: Bio transport in porous media

Chair: Kun Yang, School of Energy and Power Engineering, Huazhong University of Science and Technology, China

09:00 – 09:25 **Effective transport properties of drug delivery systems: Porous granules and tablets.....**
Frantisek Stepanek, University of Chemistry and Technology, Prague, Czech Republic

09:25 – 09:50 **Modeling flow, heat and mass transfer in a porous biomass plug - when used in an electrically heated tobacco system**
Markus Nordlund, Philip Morris Products S.A., Switzerland

09:50 – 10:15 **An innovative culture technique for microalgae using hollow fiber membranes**
Yoshihiko Sano, Shizuoka University, Japan

10:15 – 10:40 **Effect of Newtonian heating on bioconvection of nanofluid over stretching sheet with gyrotactic microorganisms.....**
Aminreza Noghrehabadi, Shohadaye Hoveizeh University of Technology, Iran

10:40 - 11:10 Coffee break

Oral Session 7: Advances in numerical techniques

Chair: P.A. Dinesh, Ramaiah Institute of Technology, India

11:10 – 11:35 **Direct numerical simulation of reactive flow through a fixed bed of catalyst particles (**
Abdelkader Hammouti, IFP Energies Nouvelles, France

11:35 – 12:00 **Numerical investigation of the phase change in transpiration cooling with the VOF method.....**
Xiao-Long Ouyang, Tsinghua University, China

12:00 – 12:25 **A mini-review on the Fractal-Monte Carlo method and its applications in porous media.....**
Boming Yu, Huazhong University of Science and Technology, China

12:25 – 19:00 Lunch on your own / *ad hoc* sessions/ free time

19:00 - 21:30 Reception and Conference Banquet