



InterPore News

Issue #09, 30 April 2020

Dear InterPore Friends,

The InterPore Newsletter from two weeks ago sparked something exciting. Questions came from around the globe to help understanding the role of protective masks in preventing COVID-19 infections. Experimental results were sent in with a request to distribute the results amongst the InterPore community, just in case someone might be looking for it. Open Access 2.0! It all resulted in a new forum on our website. All details are in this week's Newsletter.

Wonderful InterPore Community News comes from Mexico with a report on their latest Chapter meeting. Meanwhile, the German Chapter is preparing for their meeting in October.

Under the "InterPore hood", a lot is happening. An online global InterPore meeting? (get a taste through the GeoScience & GeoEnergy Webinars), a renewed website, new InterPore national chapters... We'll keep you posted through our InterPore Newsletter.

Don't forget to check the scientific achievements of some of our InterPore members!

All the best,
 Matthijs de Winter
 Editor-in-Chief
InterPore News

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InterPore involved in COVID-19 research

The previous Newsletter featured an article from Noushine Shahidzadeh discussing protective masks. As a result, we received questions from around the world about masks: How do masks work? How can we make masks? How can we test masks?

Protective masks are considered vital in the global battle against COVID-19, but relies on correct use of the masks and under the given circumstances. We hope that the InterPore community can make a contribution to tune global policies for the use of masks. Therefore, we have set up a [forum](#). We hope

to gather both questions and answers related to masks, such as experimental data (porosity, permeability, wettability, etc.), descriptions of the related physics and chemistry, and simulations of the transport-related processes occurring in and around the masks.

Forum Access

The forum is freely accessible for reading. InterPore members can log in to post messages. If you're not (yet) an InterPore Member, you can [sign up for a "free forum account"](#).

Spread the word! If you find yourself discussing the topic with a colleague during a coffee break (via Skype!) and you realize that he/she could make a valuable contribution, please refer to the forum.

Call for Abstracts: German InterPore Chapter meeting

1-2 October 2020, University of Stuttgart, Germany

The [abstract submission](#) to the German Chapter of InterPore is now open until 1 July 2020.

Details of the scientific program, the invited speakers, the local committee and the important dates can be found [here](#).



Local Organizing Committee: (from l-r) Arndt Wagner, Nikolaos Karadimitriou, Iryna Rybak, Sergey Oladyshkin

6th Annual Meeting of the Mexican InterPore Chapter



The 6th Annual Meeting of the Mexican InterPore Chapter was held in Mexico City on 27-28 February 2020. The meeting was hosted by the Institute of Geology, National University of Mexico (UNAM) at its Geology Museum.

The meeting, called in Spanish RACMI 2020, comprised two invited, 30 oral and 17 poster presentations. The full [scientific program](#) comprised four sessions: Artificial Porous Systems, Soils and Aquifers, Environmental Systems and Porous Systems in Energy Resources.

For a full report of the meeting, see [here](#).



InterPore Awards

Time Capsule Award 2020 to Ghislain de Marsily



Photo credit: Antoine Meyssonnier

The InterPore Time Capsule Award 2020 goes to Prof. Ghislain de Marsily for his outstanding contribution to science. Under normal circumstances, the interview would have been recorded and published now. Due to COVID-19, the interview has been rescheduled until after the summer.

The list of previous Time Capsule Award winners can be found on our website and the interviews can be directly viewed from the InterPore YouTube channel.



Community News

GeoScience & GeoEnergy Webinars

InterPore members Hadi Hajibeygi and Sebastian Geiger have initiated an online webinar series called “GeoScience & GeoEnergy Webinars”.

Every Thursday, 16.00-17.00 (CET), a well-known researcher gives an online lecture. The kick-off was last week with Prof. Martin Blunt. The lectures are stored in the [GeoScience & GeoEnergy Webinars YouTube channel](#). Check it out!

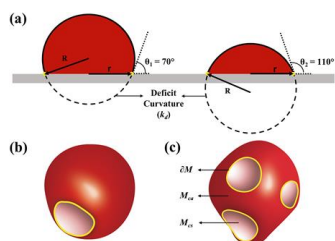


InterPore In Journals

Probing Effective Wetting in Subsurface Systems

Chenhao Sun, James E. McClure, Peyman Mostaghimi, Anna L. Herring, Steffen Berg, and Ryan T. Armstrong

Wetting phenomena are important for natural and technological processes. We apply the Gauss-Bonnet theorem to reveal a link between contact angle and fluid topology based on a newly defined term, deficit curvature. We show that deficit curvature captures effects of contact angle hysteresis and describes wetting in multiphase systems where geometrically complex contact lines and surface heterogeneity are present. This work establishes fundamentals necessary to probe the role of wetting in subsurface systems by taking principles of topology and integral geometry into account.

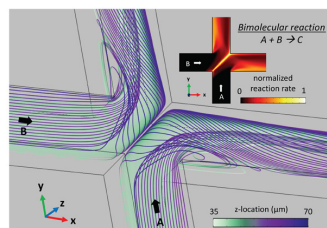


Geophysical Research Letters 47(5), 1-9, 2020

Corresponding author: Steffen Berg

Three-dimensional Vortex-induced Reaction Hotspots at Flow Intersections

Sang H. Lee, Peter K. King



We show the emergence of reaction hot spots induced by three-dimensional (3D) vortices with a simple bimolecular reaction. We conduct microfluidics experiments to visualize the spatial map of the reaction rate with a chemiluminescence reaction and cross-validate the results with direct numerical

simulations. 3D vortices form at spiral-saddle-type stagnation points, and the 3D vortex flow topology is essential for initiating reaction hot spots. The effect of vortices on mixing and reaction becomes more vigorous for rough-walled channels.

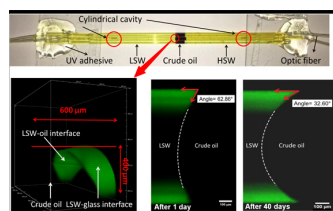
Physical Review Letters 124, 144501

Corresponding author: Peter K. King

Group website

Impact of water salinity differential on a crude oil droplet constrained in a capillary: pore-scale mechanisms

Lifei Yan, Hamed Aslannejad, S. Majid Hassanizadeh, Amir Raouf



We investigated the effect of salinity on trapped oil re-mobilization through osmosis and emulsification. We monitored capillary tubes with low-salinity, crude oil and high-salinity water for 40 days. We measured the oil drop movement and the contact angles of the high-salinity and low-salinity water in combination with the oil. Based on our observations, we propose a hypothesis about water-in-oil emulsification and water diffusion through the oil phase.

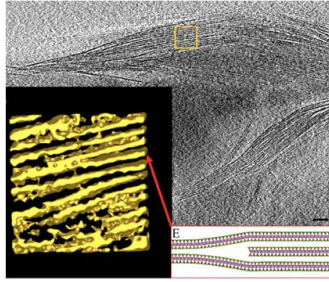
Fuel 274, 117798

Corresponding author: Lifei Yan

Layer size polydispersity in hydrated montmorillonite creates multiscale porosity networks

Michael L. Whittaker, Luis R. Comolli, Benjamin Gilberta, Jillian F. Banfielda

The aluminosilicate layers of the swelling clay mineral montmorillonite, and the saturated pores they delineate, control the mechanical properties and the transport of solutes in many natural and engineered environments. We used cryogenic transmission electron microscopy to show that stacking defects within minimally altered, fully hydrated montmorillonite particles define multiscale porosity networks.






InterPore Members, do you want to promote your publication to the community? If so, please submit your highlight to newsletter@InterPore.org. Note that we will not review the entries nor does InterPore endorse the published work. Furthermore, we publish on a “submitted first, published first” basis. The highlighted publication should be no older than 6 months (available online).

The highlight has a length of maximum 500 characters and contains an illustration. Please note that we offer this opportunity exclusively to InterPore members. If you would like to become a member, please have a look [here](#).



Research Positions

-  PhD position, A micro-mechanical approach to cemented granular materials, Université Grenoble Alpes, France
-  PhD position, On-Demand History Matching in Reactive Transport, MINES ParisTech, Fontainebleau, France
-  Deputy Group Leader, Computational Earth Science Group, Los Alamos National Laboratory, USA



InterPore Calendar

Date

Event

Date	Event
14-16 May 2020 (*)	The Hellenic National InterPore Chapter meeting (Athens, Greece)
30 August - 4 September 2020	The 12th annual InterPore meeting (Qingdao, China)
1-2 October 2020	The German Chapter meeting (Stuttgart, Germany)
26-28 October 2020	The French Chapter meeting (Strasbourg, France) (Flyer)
2 November 2020	The Benelux Chapter meeting (Enschede, The Netherlands)
23-25 November 2020	The Australian Chapter meeting (Perth, Australia)
31 May - 3 June 2021	The 13th annual InterPore meeting (Edinburgh, UK)
15-21 May 2022	The 14th annual InterPore meeting (Albuquerque, New Mexico, USA)

(*) We will send notification in case of any last-minute changes.



Imprint

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Articles and news items on the study and characterization of porous media,
especially when relevant to other types of porous media,
are welcomed for publication in this newsletter, issued twice a month.

Find us on:  |  | 

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