InterPore represents the intersection of all applications of porous media research. It brings together academic and industry researchers and connects practitioners across a wide variety of disciplines. The InterPore scientific program ranges from fundamental pore-scale behavior, to advanced imaging techniques, to large-scale computational modeling, and much more.

The InterPore Annual Meeting provides a unique opportunity to learn about current research on topics such as filtrations, membranes, and bio/pharmaceutical porous media, while at the same time gaining access to hundreds of other talks from the world’s experts in diverse areas, but which can be surprisingly relevant.

We invite you to register for InterPore2022, which gives in-person or remote access to the full scientific program. See the selected minisymposia and presentations listed on this flyer, or browse the entire program on the conference website.

Plenary & Invited Lectures

Abraham Stroock
Cornell University
The Pulse of Plants

Sujit Datta
Princeton University
Life in a Tight Spot: How Bacteria Swim, Disperse, and Grow in Porous Media

Evangelos Tsotsas
Otto von Guericke-Universität
Discrete Models, Continuum Models and Scale Transitions for the Drying of Porous Media

On-Site, Online & On-Demand

Networking Events

Physical & Virtual Exhibitions

Workshops & Lab Tours

Minisymposia Topics

- Biochemical processes and biofilms in porous media
- Fluid Interactions with Thin Porous Media
- Biophysics of living porous media: theory, experiment, modeling and characterization
- Manufactured Porous Materials for Industrial Applications
- Porous Media for a Green World: Water & Agriculture
- Interfacial phenomena in multiphase systems
- Electrochemical processes in porous media
- Advances in imaging porous media: techniques, software and case studies
- Swelling and shrinking porous media
- Fluids in Nanoporous Media

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Presentations Include

Particle Transport and Trapping
- Preferential Flow of Emulsion through Homogeneous Porous Media
- 2D Particle Tracking Velocimetry in Multiphase Flow in Porous Media
- Flow dynamics of multiple fluids and solid particles in porous media
- Effect of nanoparticles on the water-soluble polymers flow in porous media
- Analysis of Stokes-Brinkman modeling for solute/particle transport in a domain with microporous regions
- Experimental study of drying in the presence of fluorescent particles in model porous media
- Evaluation of zero-valent iron nanoparticles (nZVI) injection tests in porous media using synchrotron X-ray computed microtomography
- Transport and retention of nanoparticles in natural porous media-Effect of pore structure and geometry.

Separations and Filtration
- Application of Screen Channel Liquid Acquisition Devices for Phase Separation in Microgravity
- Surface-washing of contaminated porous substrates
- Laboratory scale demonstration of cationic organics removal by graphene oxide nanosheets injection in porous media
- The effect of porosity and pore structure on the accumulation of particles into cullulious fibrous filters

Membranes
- Numerical modeling of the influence of Gas Diffusion Layer properties on liquid water transport and transient responses in a Proton Exchange Membrane Fuel Cell (PEMFC)
- Sherwood number correlation for reverse osmosis membrane systems in turbulent regime
- Initial Yield Surface of Cellular Sheet TPMS Lattices
- Direct Solar Membrane Distillation Device with Micro-3D Printed Spacer and Titanium Mesh

Materials
- Production and characterization of porous sludge-derived biochar as a sustainable solution for the water industry
- Fabrication, Characterization, and Testing of Architected 3D Graphene Foams
- Optimisation and characterisation of a dual porosity medical grade porous medium for personalised inkjet printed dosages applications
- Additive Manufacturing of open porous structures: correlation of laboratory testing to simulations for application related properties

Thin Porous Media
- Decontamination-induced contaminant redistribution in porous media
- Development of a method to investigate the distribution of components in the cross-section of coated media before and after printing
- Inkjet printing of surfactant solutions onto thin moving porous media
- Chromatographic Effects in Inkjet Printing
- Capillary imbibition and swelling of thin paper sheets
- Experimental Studies on Permeabilities of Thin Fibrous Materials

Biochemical & Phamaceutical
- Modelling pharmaceutical tablet swelling using discrete element modelling and a single particle swelling model
- Microfluidic study of biomass-growth induced changes on hydraulic properties. Investigation of growth characteristics under varying nutrient gas environments.
- A novel platform for monitoring and imaging bacterial biofilm growth in complex structures
- Development of bio-cellulose based biofilms from recycled food wastes with potential applications in medical, food and environmental sectors
- Visualizing biofilms within porous media using contrast-enhancing staining agents
- Time evolution of biofilm’ permeability field in porous media and control on fluid flow velocities
- Mechanisms driving intermittency in preferential flow paths in porous media biofilms
- Engineering biofilm hydraulic resistance on the microscale
- Imaging and chemical analysis of ureteral stent encrustation and incrustation
- A porous media flow model for simulating flow of non-Newtoninan bone cement inside a deformable vertebra in the context of vertebroplasty
- Reduced-order model to investigate cell-scale hemodynamics through disordered porous networks of the human placenta
- Two-step diffusion in cellular hygroscopic (vascular plant-like) materials

Selected Fundamentals
- Pore-scale modelling of polymeric solutions in porous media
- Influence of solute transport and capillarity on bubble evolution in porous networks
- Salt crystallization at a hydrophobic-hydrophilic interface in quasi 2D layered porous material.

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