OS11: Microfluidics and Microphysiological Modeling

October 29, 2021
ROOM3

OS11-1
8:00-8:12
Dynamics of Pulsatile Viscous and Viscoelastic Fluid Slugs: Experiments.
Pamela Vazquez-Vergara (Universitat de Barcelona, Spain), Luis F. Olguin (Universidad Nacional Autónoma de México, Mexico), Eugenia Corvera Poiré (Universidad Nacional Autónoma de México, Mexico / Universitat de Barcelona, Spain)

OS11-2
8:12-8:24
Dynamics of Pulsatile Viscous and Viscoelastic Fluid Slugs: Theory
Ulises Torres-Herrera, Luis F. Olguin, Eugenia Corvera Poiré (National Autonomous University of Mexico, Mexico)

OS11-3
8:24-8:36
Fluid Dynamics Within An Oscillating Nanotube: Insights Into Nonlinear Dynamics
Ulises Torres-Herrera, Luis Enrique Miranda, Kevin Axel Fernández, Eugenia Corvera Poiré (National Autonomous University of Mexico, Mexico)

OS11-4
8:36-8:48
Model of the Circulatory System of the Human Liver
Aimee M. Torres Rojas, Sylvie Lorente (Villanova University, USA), Mathieu Hautefeuille (Universidad Nacional Autónoma de México, México), Aczel Sanchez Cedillo (Centro Médico 20 de Noviembre, México)

OS11-5
8:48-9:00
Emission of Droplets in a Zero-mean-flow Microfluidic Device: a Lattice-Boltzmann Study
Julien Lombard (Universidad Nacional Autónoma de México, Mexico), Ignacio Pagonabarraga (Universitat de Barcelona, Spain / École Polytechnique Fédérale de Lausanne (EPFL), Switzerland), Eugenia Corvera Poiré (Universidad Nacional Autónoma de México, Mexico / Universitat de Barcelona, Spain)

OS11-6
15:20-15:32
The Wall-to-Wall Collisions in the Microchannel Gas Flow
Jing-Wu Dong, Chih-Yung Huang (National Tsing Hua University, Taiwan)

OS11-7
15:32-15:44
Hydrodynamic Interaction of Deformable Micro Swimmers
Kiyoto Kubo, Toshihiro Omori, Takuji Ishikawa (Tohoku University, Japan)

OS11-8
15:44-15:56
Viscosity Estimation of a Two-dimensional Suspension Flow in a Narrow Channel by a Two-way Coupling Scheme
Naoki Okamura, Tomohiro Fukui, Misa Kawaguchi, Koji Morinishi (Kyoto Institute of Technology, Japan)

OS11-9
15:56-16:08
Enhanced Collective Migration of Endothelial Cells by Low Shear Stress in the Early Stage
Ryuji Sugahara, Kenichi Funamoto (Tohoku University, Japan)

OS11-10 16:08-16:20 **Evaluation of PAK1 Localization in Vascular Endothelial Cells by Hypoxic Stresses Using Microfluidic Devices**
Kazuki Sone, Satomi Hirose (Tohoku University, Japan), Daisuke Yoshino (Tokyo University of Agriculture and Technology, Japan), Kenichi Funamoto (Tohoku University, Japan)

OS11-11 16:20-16:32 **Numerical Simulation on the Effects of the Power-law Fluid on Lift Coefficient of a 2-Dimentional Cylinder**
Naoki Masuyama, Tomohiro Fukui, Misa Kawaguchi, Koji Morinishi (Kyoto Institute of Technology, Japan)

OS11-12 16:32-16:44 **Computational Biomechanical Model of the Sponge's Choanocyte Chamber**
Takumi Ogawa, Toshihiro Omori, Takuji Ishikawa (Tohoku University, Japan)

OS11-13 17:10-17:50 **Blood Flow in Macro and Microfluidic Systems: From Fabrication to Applications** *(Invited)*
Rui A. Lima, Violeta Carvalho, Andrews Souza, Maria S. Souza (University of Minho, Portugal), Glauco Nobrega (Instituto Politécnico de Bragança (IPB), Portugal), Inês M. Gonçalves, Reinaldo R. Souza, Senhorinha F.C.F. Teixeira (University of Minho, Portugal), João Eduardo Ribeiro (Instituto Politécnico de Bragança, Portugal)

OS11-14 17:50-18:02 **Contact Line Dynamics of Pulsatile Microfluidic Interfaces Modulated by Wetting**
Joaquín Flores Gerónimo (King's College London, UK), Aurora Hernández-Machado (Universitat de Barcelona, Spain), Eugenia Corvera Poiré (National Autonomous University of Mexico, Mexico)

OS11-15 18:02-18:14 **Dynamics of AC Electroosmotic Flow Subject to Pulsatile Pressure Gradient in Microchannels**
Seymen Ilke Kaykanat (Bogazici University, Turkey), Eugenia Corvera Poiré (National Autonomous University of Mexico, Mexico), Kerem Uguz (Bogazici University, Turkey)

OS11-16 18:14-18:26 **Oxygen Gradient under Severe Hypoxia Changes *Dictyostelium* Migration Directionality**
Satomi Hirose (Tohoku University, Japan), Jean-Paul Rieu, Christophe Anjard, Olivier Cochet-Escartin (Claude Bernard University Lyon 1, France), Kenichi Funamoto (Tohoku University, Japan)

OS11-17 18:26-18:38 **Evaluation of Migration Speed of Cancer Cells by Different Types of Matrices Using Microfluidic Devices**
Satoshi Aratake, Kenichi Funamoto (Tohoku University, Japan)

OS11-18 19:00-19:12 **On the Tangential Knudsen Force Induced by a Heated Substrate with Surface Microstructure**
Clint John Cortes Otic, Taku Ohara (Tohoku University, Japan), Shigeru Yonemura (National Institute of Technology (KOSEN), Ube College, Japan)

OS11-19
19:12-19:24

Comparison of Permeability of 3D Microvascular Network Model under Controlled Oxygen Concentration

Masataka Nikaido (Tohoku University, Japan), Tatsuya Osaki (The University of Tokyo, Japan), Kenichi Funamoto (Tohoku University, Japan)

OS11-20
19:24-19:36

Reconstruction of 3D Human Brain Microvasculature on a Chip Using Brain Endothelial Cells, Astrocytes and Pericytes

Momoko Sato, Mai Inagaki, Yuka Sakamaki (Tokushima University, Japan), Kenichi Funamoto (Tohoku University, Japan), Masanori Tachikawa (Tokushima University, Japan)