

PROGRAM

Wednesday 13 November

9:00 *Registration and welcome coffee*

9:30 **Opening of the conference**
M. Marsiglia and C. Marlière (Microfluidics 2019 scientific correspondents,
IFP Energies nouvelles, France)

9:30 - 12:30 TUTORIALS

9:30 **Miniaturized on-line analysis**
N. Caillol (Axel'One, France)

10:30 **Novel microfluidic devices for fluid and material characterization**
A. Lindner (ESPCI Paris, France)

11:30 **Microfabrication for extreme conditions**
S. Marre (ICMCB, France)

12:30 *Lunch*

14:00 **Welcome address**
X. Longaygue (IFPEN Scientific Division, France)

14:05 - 17:00 SESSION 1: FLUID SEPARATION AND ON-CHIP ANALYSIS

14:05 **Keynote address**
R. Lammertink (Univ. of Twente, Netherlands)

14:50 **An unconventional microfluidic strategy for the separation of chiral amino-acids**
A. Perro¹, S. Assavapanumat^{1,2}, N. Sojic¹, P. Garrigue¹, B. Goudeau¹,
T. Yutthalekha², C. Wattanakit², A. Kuhn¹ (1 Univ. of Bordeaux, CNRS, ISM,
Bordeaux INP, France; 2 Vidyasirimedhi Institute of Science and Technology,
Thailand)

15:15 *Coffee break*

15:45 **Towards microfluidic measurements of colloidal dispersions equations of states**
C. Keita, J.-B. Salmon (CNRS, Solvay-LoF, Univ. of Bordeaux, France)

16:10 **Two-phase microfluidic flow in hydrodynamic filtration for continuous particle sorting**
K. Yoon^{1,2}, H. W. Jung², M.-S. Chun¹ (1 Korea Institute of Science and Technology ,2 Korea Univ., Republic of Korea)

16:35 **Dynamics and mass transfer of bubbles in microchannels**
J. Rivero-Rodrigues, B. Scheid (Univ. libre de Bruxelles, Belgium)

17:00 - 19:30 POSTER SESSION

Pitch, poster presentation and networking refreshment break

19:30 *End of the poster session*

Thursday 14 November

9:00 - 12:00 SESSION 2: FLUIDS AND FLOW CHARACTERIZATION

9:00 **Influence of the inlet flow profile on the channel flow stability after a sudden expansion**
R. Debuyschère, B. Rimez, L. Siconolfi, F. Gallaire, B. Scheid (Univ. libre de Bruxelles, Belgium)

9:25 **Surfactant effects on droplet formation in microfluidic systems**
M. Kalli, E. Roumpea, S. H. (B.) Hue, P. Angeli (UCL, UK)

9:50 **Characterisation of viscoelastic properties using particle migration in confined Poiseuille flows**
A. Naillon, X. Salas-Barzola, W. Chèvremont, C. De Loubens, H. Bodiguel (Univ. Grenoble Alpes, CNRS, Grenoble INP, LRP, France)

10:15 *Coffee break*

10:45 **Experimental microfluidics to improve mechanistic understanding of multiphase and reactive flow in porous media**
S. Roman¹, C. Soullaine² (1 Univ. of Orléans, CNRS, BRGM, 2 BRGM, France)

11:10 **A microfluidic investigation of oil mobilization during improved oil recovery**
M. Saadat¹, M. Dudek¹, T. Ho², P. A. Tsai², G. Øye¹ (1 Norwegian Univ. of Science and Technology, Norway; 2 Univ. of Alberta, Canada)

11:35 **Low salinity water flooding in a PDMS micro-model**
N. K. Karadimitriou¹, H. Mahani², H. Steeb¹, V. Joekar-Niasar³ (1 Stuttgart Univ., Germany; 2 Shell Global Solutions International B.V., Netherlands; 3 Univ. of Manchester, UK)

12:00 *Lunch*

13:30 - 17:50 SESSION 3: SYNTHESIS AND PERFORMANCE MONITORING

13:30 **Keynote address: Microchannel reactors for energy related applications – Fuel synthesis, fuel processing and power-to-gas**
G. Kolb (Eindhoven Univ. of Technology, Netherlands)

14:15 **Process intensification for the synthesis of fluorescent organic nanocrystals by microfluidics supercritical antisolvent**
T. Jaouhari¹, G. Aubert¹, O. Nguyen¹, T. Tassaing², S. Fery-Forgues³, A. Erriguible^{1,4}, C. Aymonier¹, S. Marre¹ (1 CNRS, Univ. of Bordeaux, Bordeaux INP, ICMCB, 2 CNRS, Univ. of Bordeaux, Bordeaux INP, ISM, 3 SPCMIB, Univ. Paul Sabatier, 4 CNRS, Univ. of Bordeaux, Bordeaux INP, I2M, France)

14:40 **A tubular nucleation process device for continuous crystallization with polymorph selection of small organic molecules**
B. Rimez (Univ. libre de Bruxelles, Belgium)

15:05 *Coffee break*

15:30 **Gas-liquid flow characterisation and mass transfer study in a microreactor for oligomerization catalyst testing**
M. Kamaledine¹, C. Bonnin¹, T. Michel¹, L. Brunet-Errard¹, J. Aubin², L. Prat² (1 IFP Energies nouvelles, 2 Univ. of Toulouse, CNRS, France)

15:55 **Effect of flocculants on on-chip coalescence of crude oil droplets in produced water**
M. Dudek¹, A. Wehrle², G. Øye¹ (1 Norwegian Univ. of Science and Technology, Norway; 2 ESICAEN, France)

16:20 **Development of a commercially-viable system for the automatic generation of high-throughput monodisperse microdroplets**
R. Vasiliauskas¹, A. Vigne¹, G. V. Casquillas¹ (1 Elvys innovation center, France)

16:45 *Coffee break*

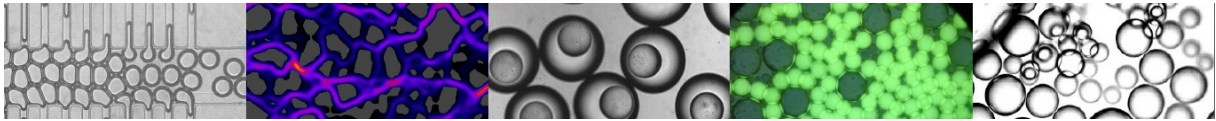
- 17:00 **Microfluidics applied to the detection of insoluble hydrocarbons for the oxidation monitoring of fuels and biofuels**
E. Bordes, C. Dalmazzone, L. Starck, D. Frot, M. Alves-Fortunato
(IFP Energies nouvelles, France)
- 17:25 **Development of plasma-activated reactions in a liquid-gas micro-reactor**
P.-A. Royoux, S. Ognier, M. Zhang, C. Thomas, M. Tatoulian (Chimie ParisTech, PSL University, CNRS, Institut de Recherche de Chimie de Paris, France)
- 17:50 *End of the presentations*
- 18:00 *Departure to the cocktail party*
- 18:30 *Cocktail party at the Domaine de Vert-Mont*
- 21:00 *Bus transfer from the Domaine de Vert-Mont to the hotels in Rueil then to Place Charles de Gaulle-Étoile in Paris*

Friday 15 November

9:00 - 12:05 SESSION 4: NEW TECHNOLOGIES FOR THE ENVIRONMENT AND ALTERNATIVE ENERGIES

- 9:00 **Keynote address**
D. Sinton (Univ. of Toronto, Canada)
- 9:45 **Emergence of microflow based photocatalytic reactors for selective oxidation of benzyl alcohol to benzaldehyde**
J. C. Colmenares, V. Nair, S. Rashmi Pradhan (Polish Academy of Sciences, Poland)
- 10:10 *Coffee break*
- 10:30 **Optimizing energy production in an osmotic engine: adjustment of hydrogel-particles size by microfluidic glass capillary device**
A. Jangizehi, L. Arens, C. Fengler, M. Wilhelm (Karlsruhe Institute of Technology, Germany)
- 10:55 **High-pressure microfluidic approaches to study CO₂ bioconversion within deep saline aquifers**
A. Cario, M. Perroux, C. Fauveau, O. Nguyen, C. Lecoutre, Y. Garrabos, S. Marre (CNRS, Univ. Bordeaux, ICMCB, France)
- 11:20 **Keynote address**
D. Weitz (Harvard Univ., USA)
- 12:05 *Lunch*

- 13:30 **START-UPPERS SHARINGS**
L. Bocquet (ENS, France), L. Boitard (MilliDrop, France), F. Hamber (Fluigent, France)
- 14:30 **BRING HOME LEARNINGS**
By A. Lindner (ESPCI Paris, France) and P. Maestro (Solvay, France)
- 14:50 *Closing address by the Organization Committee*
- 15:00 *End of the conference*



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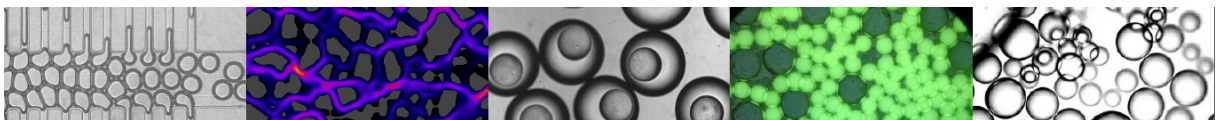
CETONI



LIST OF POSTERS

- Radial distribution function of Lennard-Jones fluids in shear flows from intermediate asymptotics
L. Banetta¹, A. Zaccone² (1 Univ. of Cambridge, UK; 2 Univ. of Milan, Italy)
- Design and characterization of a continuous on-chip micro-distillation tool
F. El Masri¹, C. Bonnin¹, L. Brunet-Errard¹, S. Marre², C. Aymonier²
(1 IFP Energies nouvelles, 2 CNRS, Univ. of Bordeaux, Bordeaux INP, ICMCB, France)
- Development of an optical measurement method for “sampled” micro-volumes and nano-flow rates
F. Ogheard (CETIAT, France), *presented by* A.W. Boudaoud (CETIAT, France)
- High-pressure multiphase microfluidics for greener manufacturing of active pharmaceutical ingredients
D. Arora¹, R. Sedev^{1,2}, C. Priest², J. Beh¹, N. Foster¹ (1 Western Australian School of Mines, Curtin Univ., 2 Future Industries Institute, Univ. of South Australia, Australia)
- Microfluidics with fluid walls for cell migration assays
C. Deroy (Univ. of Oxford, UK)
- In situ photo-patterning of hydrogel membrane in PDMS microfluidic channels
H. T. Nguyen, C. Keita, J.-B. Salmon (CNRS, Solvay-LoF, Univ. of Bordeaux, France)
- Numerical simulation of spreading liquid film subject to interaction with two spherical particles on horizontal smooth substrate
H. Nakamura¹, V. Delafosse², G. Dietze³, H. N. Yoshikawa⁴, F. Zoueshtiagh², L. Mu⁵, T. Tsukahara¹, I. Ueno¹ (1 Tokyo Univ. of Science, Japan; 2 Univ. of Lille, 3 Univ. Paris-Sud, 4 Univ. Côte d’Azur, France; 5 Dalian Univ. of Technology, China)
- Successive acceleration of macroscopic contact line of droplet induced by interaction with multiple pillars
Y. Takase¹, H. Nakamura¹, M. Motosuke¹, H. N. Yoshikawa², F. Zoueshtiagh³, L. Mu⁴, I. Ueno¹ (1 Tokyo Univ. of Science, Japan; 2 Univ. Côte d’Azur, 3 Univ. of Lille, France; 4 Dalian Univ. of Technology, China)
- Generation of nanoparticle superlattices by using an off-the-shelf microfluidic device
S. Mariot, G. Tresset, B. Pansu (Lab. de Physique des solides, CNRS, Univ. Paris-Saclay, France)
- Methodology to study microgel behavior for IOR projects
D. Masiero¹, M. Marsiglia², I. Vega¹, C. Marlière², J. Boujlel Younsi², M. I. Hernández¹
(1 YPF Tecnología, Argentina; 2 IFP Energies nouvelles, France)

- Measuring oil recovery using optical microscopy with packed beds in microfluidic channels
D. Le-Anh, A. Rao, M. H. G. Duits, H. Gardeniers, F. Mugele (Univ. of Twente, MESA+ Institute for Nanotechnology, Netherlands)
- Use of micromodels for understanding the mechanisms of capillary trapping in porous medium
J. Boujlel, S. Youssef, I. Ayadi, N. Pannacci, Y. Peysson (IFP Energies nouvelles, France)
- Novel thermoplastic fluoroelastomer for rapid fabrication of chemically compatible microdevices
A. H. McMillan^{1,2}, M. B. J. Roeffaers², S. C. Leshner-Perez¹ (1 Elvsys Microfluidic Innovation Center, France; 2 KU Leuven, Belgium)
- Characterization of extensional properties of polymer solutions with a dedicated microfluidic device: applications to drag reducers and water treatment
I. Hénaut, A. Battani, C. Bouvry, H. Chakibi (IFP Energies nouvelles, France)
- Breast tumor-on-chip
S. Bano (Elvsys Microfluidic Innovation Center, France)
- Online oil-in-water emulsion characterization for enhanced oil recovery applications
E. Ayoub^{1,2}, P. Cologon¹, M. Marsiglia¹, C. Dalmazzone¹, J.-B. Salmon² (1 IFP Energies nouvelles, 2 CNRS, Solvay-LoF, Univ. of Bordeaux, France)
- Methodologies for thermodynamic properties characterization in microfluidic systems
T. Gavoille^{1,2}, N. Pannacci¹, G. Bergeot¹, C. Marlière¹, S. Marre² (1 IFP Energies nouvelles, 2 ICMCB, CNRS, France)



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