

CONFERENCE PROGRAM

Wednesday 28 th February 2018						
8:30	Registration					
9:00 – 9:30	Welcome Words					
	Amphitheatre Cavallès		Amphitheatre 4		Amphitheatre 5	
9:30 – 10:30	Plenary	[156] Y. Bellouard : Femtosecond laser assisted three-dimensional micro- and nano-structuring of glass: from a complex laser-matter interaction to its applications in microengineering and micro-fluidics in particular				
10:30 – 11:00	Coffee break					
11:00 – 12:05	Session μFLU 1A	Mixing, Extraction & Reaction in Microscale Flows 1	Session μFLU 1B	Microfluidics in biological and organic systems 1	Session NEGF 1	Rarefied flows and heat transfer 1
	11:00 (15min)	[58] A. Basauri, J. Gomez-Pastora, M. Fallanza, E. Bringas and I. Ortiz Mass transfer performance under different flow-pattern systems in micro-extractors	11:00 (15min)	[23] M. Mukhopadhyay, U. Ghosh, S. Dasgupta and D. Sarkar Parametric Studies of Drying Induced Deformation in Erythrocytes	11:00 (15min)	[42] M. Sadr, M. Gorji and M. Torrilhon A Fokker-Planck Kinetic Model for Dense Gases
	11:15 (15min)	[102] O. Liot, A. Singh, P. Bacchin, P. Duru, P. Joseph and J. Morris Clogging of model pores with a Brownian suspension	11:15 (15min)	[29] D. Ferraro, M. Serra, I. Hajji, L. Geremie, R. Renault, J.-L. Viovy and S. Descroix CONTINUOUS-FLOW DROPLET MICROFLUIDIC PLATFORM FOR SINGLE-CELL RT-qPCR ANALYSIS	11:15 (15min)	[44] Y. Ben-Ami and A. Manela Acoustic Radiation from a Pulsating Cylinder in a Rarefied Gas
	11:30 (15min)	[107] D. Funfschilling, B. Peter, N. Dumas and C. Serra, Formation of double emulsion in surface treated PDMS microchips	11:30 (5min)	[26] M. Saeedipour and S. Pirker Effect of surface topology on contact line motion in open micro-channels – A numerical study	11:30 (15min)	[52] D. Emerson and X.-J. Gu Rarefied Shear Flow past an Axisymmetric Ring Cavity
	11:45 (5min)	[33] D. Podbevsek, G. Ledoux, D. Colombet and F. Ayela Direct Evidence of Hydroxyl Radicals Formation Downstream Two - Phase Cavitating Microflows	11:35 (5min)	[98] A. Siddique, I. Pause, S. Narayan and R. Stark Stability of Protein Coatings Inside Microfluidic Devices Under Flow Conditions	11:45 (15min)	[73] S. Busuioc and V. Ambrus Lattice Boltzmann study of rarefied flows in Cartesian, cylindrical and spherical geometries
	11:50 (5min)	[88] Y. Kawashima, T. Watanabe and T. Ono Nucleation Behavior of Lysozyme in Monodisperse Droplet-based Crystallization	11:40 (5min)	[121] S. Connolly, K. McGourty and D. Newport Viability of Breast Cancer Cells under Lymphatic Flow Conditions	12:00 (5min)	[74] V. Sofonea and V. Ambrus Lattice Boltzmann Approach to Evaporation - Condensation between Parallel Planes
	11:55 (5min)	[103] F. Corne, A. Lélias, A. Magnaldo, C. Sorel, N. Raimondi and L. Prat Microfluidic and kinetic transfer: application to an innovative liquid-liquid extraction process			12:05 (5min)	[137] V. Yeachana, C. Barrot, L. Baldas, M. Rojas-Cárdenas and S. Colin Study of acetone vapor phosphorescence at varying temperatures for molecular tagging thermometry
	12:00 (5min)	[65] L. Zhang, H. Yang, B. Jones, F. Buja and P. Fiorini Simple Accurate and Passive Mixing in Capillary-driven Microfluidic Systems				
12:05 – 14:00	Lunch					
14:00 – 15:15	Session μFLU 2	Microscale Systems Simulation, Measurement and Manufacturing 1	Session workshop 2	Training workshop	Session NEGF 2	Micro and nano scale flows and heat transfer 1
	14:00 (15min)	[38] S. Rieks and E. Kenig CFD-Simulation of Phase-Change-Driven Interrelated Momentum, Heat and Species Transfer in Capillaries		Vision Research Modern high-speed imaging, techniques and solutions for microscopy and microfluidics R&D.	14:00 (15min)	[45] J. Joseph, M. Delanaye, R. Nacereddine and J. Brandner Advanced CFD methodology to investigate high-temperature complex wire-net micro heat exchanger performance
	14:15 (15min)	[50] N. Cardin, L. Davoust, S. Lips, S. Siedel and J. Bonjour Theoretical and Experimental Investigations of the Effect of an Electric Field on the Shape of a Meniscus in a Square Groove			14:15 (15min)	[49] Z. Jiang, W. Zhao and W. Chen An Investigation of Boundary Conditions for Nonlinear Constitutive Equations on Micro-Couette Flow
14:30 (15min)	[61] A. Sochinskii, D. Colombet, F. Ayela, M. Medrano-Munoz, N. Luchier and J.-M. Duval Hydrodynamic Experimental And Numerical Study Of Micro-Fabricated Regenerators				14:30 (15min)	[51] T. Baier, S. Hardt, V. Shahabi and E. Roohi Knudsen pump with specular and diffuse walls

	14:45 (15min)	[90] M. Sharma, A. Frijns, J. Kooman and D. Smeulders A Micro-optofluidic Sensor System based on PET Sensing for Real Time Sodium Concentration Measurement		Vision Research Modern high-speed imaging, techniques and solutions for microscopy and microfluidics R&D.	14:45 (15min)	[60] A. Borgogna, M.A. Murmura, M. Giona, M.C. Annesini and S. Cerbelli Lagrangian approach to the steady-state performance of inflow-outflow micromixers operating at large Peclet values
	15:00 (5min)	[57] M. Knoll, C. Offenzeller, B. Jakoby and W. Hilber A Spray Processed Harsh Environment Humidity Sensor for Detecting Relative Humidity in Microfluidic Gas Channels			15:00 (5min)	[67] A. Frezzotti, P. Barbante and L. Gibelli Numerical study of the evaporation of a liquid film in contact with a non-ideal vapor
	15:05 (5min)	[78] M. Smolka, C. Prietl, B. Lamprecht, V. Satzinger, D. Nees, S. Ruttloff, P. Hütter, M. Tscherner, C. Palfinger, C. Schaudé, P. Schäffner, A. Haase, J. Hesse, G. Kriechhammer, G. Kokkinis, D. Scheidl and B. Wilfing Microfluidic Chips For High Throughput Roll-To-Roll Production			15:05 (5min)	[142] K. Maeda, C. Hong, Y. Asako and G.L. Morini Scaling effects in transition region between laminar and turbulent of gas flows through micro-tubes
	15:10 (5min)	[32] A. Tröls, T. Fischinger, B. Mayrhofer, K. Hingerl and B. Jakoby An UV Stereolithography Polymer Based EWOD Stack and its Application as a Gravity Supported Microfluidic Pixel Cell				
15:15 – 16:00 Coffee break + Discussion around posters						
	Session μFLU 3A	Microscale Systems Simulation, Measurement and Manufacturing 2	Session μFLU 3B	Liquid & Multiphase Micro- and Nanoflows 1	Session NEGF 3	Aerothermodynamics of high speed flows
16:00 – 17:00	16:00 (15min)	[30] D. Ferraro, M. Serra, J.-L. Viovy and S. Descroix Microfabrication of a microfluidic valve with negligible Backflow for droplets manipulation	16:00 (15min)	[48] L. Arsenjuk, J. Franzke and D. Agar Sensing Multiphase Microflows by Detection of Triboelectric Charge - Measuring Principle and Application in Automation	16:00 (15min)	[24] F. Sharipov and F. Dias Structure of shock waves propagating through gaseous mixtures
	16:15 (15min)	[75] T. Zaouter, D. Lasseux, M. Prat, F. Ledrappier, K. Vulliez, A. Beziat and P. Joseph Gas Flow in a Network of Nanochannels of Varying Depth Made by Grayscale Laser Litography	16:15 (15min)	[69] L. Braun, T. Hessberger, C. Serra and R. Zentel Actuating LCE-Particles of Complex Shape by Microfluidic Processing	16:15 (15min)	[94] T. Schwartzentruber and M. Grover Nonequilibrium Dissociation In Air From First Principles
	16:30 (15min)	[91] E. Roumpea, N. Kovalchuk, M. Chinaud, M. Simmons and P. Angeli Two-colour Micro-PIV Measurements during Droplet Formation in a Flow-focusing Microchannel	16:30 (15min)	[80] Y. Tomo, A. Askounis, Y. Takata and K. Takahashi Bubble Generations and Growths in a Nano Liquid Cell and a Carbon Nanotube	16:30 (15min)	[135] F. Bariselli, A. Frezzotti and T. Magin Development of a coupled DSMC-SPH solver for the study of melting in rarefied gas flows
	16:45 (15min)	[148] G. Yossifon and S. Park Active electrokinetic control of the concentration-polarization layer in a microchannel-membrane system	16:45 (15min)	[122] D. Papageorgiou, S. Game, E. Keaveny and M. Hodes On the Hydrodynamics of Flow through Superhydrophobic Microchannels	16:45 (15min)	[138] B. Dias, J. Scoggins and T. Magin Detailed shock layer physics of a meteor entry
18:15 Conference reception at the City Hall						

Thursday 1 st March 2018						
8:30	Registration					
	Amphitheatre Cavallès		Amphitheatre 4		Amphitheatre 5	
9:00 – 9:40	Session μFLU 4 - Keynote Lecture 1A	[161] A. Siria Nanofluidics, fluid transport at the molecular scale			Session NEGF 4 - Keynote Lecture 1B	[159] A. Garcia Fluctuations in Non-equilibrium Fluids
9:40 – 10:40	Session μFLU 5A	Micro- and Nanoscale Heat Transfer	Session μFLU 5B	Microfluidics in biological and organic systems 2	Session NEGF 5	Rarefied flows and heat transfer 2
	9:40 (15min)	[89] N. Richardson, J. Punch, E. Dalton, M. Carroll and K. Nolan Thermal and Hydraulic Characterisation of Microfluidic Heat Exchangers for Photonics Integrated Circuits	9:40 (15min)	[25] Z. Poursharifi, H. Asadi and K. Sadeghy Simulating Peristaltic Micro-Mixers in Devices Containing rigid particles suspended in Viscoplastic Bio-Fluids	9:40 (15min)	[63] N. Sarna and M. Torrilhon Model Adaptivity for the Boltzmann Equation Involving Bounded Position Domains
	9:55 (15min)	[114] T. Kirk, D. Crowdy and M. Hodes Effects of thermocapillary stress and meniscus curvature on slip length in microchannels with ridged walls	9:55 (15min)	[62] J. Sepulveda, A. Montillet, D. Della Valle, C. Loisel and A. Riaublanc Production of biosourced foams by microchannels at high throughput	9:55 (15min)	[79] G. Di Staso, S. Srivastava, E. Arlemark, H. Clercx and F. Toschi Hybrid Lattice Boltzmann-Direct Simulation Monte Carlo Approach for Non-Equilibrium Flows in Complex Geometries
	10:10 (5min)	[56] C. Offenzeller, M. Knoll, B. Jakoby and W. Hilber High Temperature Stable Screen-Printed temperature Sensor for In Situ Measurement of Temperature in Microfluidic Channels	10:10 (15min)	[86] Y. Nakajima, T. Ukai, T. Mizuki and T. Hanajiri Electrophoretic Coulter method for identification of normal cells or dead cells	10:10 (15min)	[117] A. Tsimpoukis and D. Valougeorgis Rarefied gas flow in a comb-type assembly driven by the vertical harmonic motion of a moving element
	10:15 (5min)	[131] M. Carroll, K. Nolan, N. Richardson, E. Dalton and J. Punch Optical Characterisation of Low Viscosity Viscoelastic Fluids within Microchannels for Photonics Cooling Applications	10:25 (5min)	[28] Z. Ma, Y. Zhou, D. Collins and Y. Ai Fluorescence Activated Cell Sorting via a Focused Traveling Surface Acoustic Beam	10:25 (5min)	[83] S. Meskos and S. Stefanov 2D - DSMC Simulation of Gas Mixing in Micro Channels
			10:30 (5min)	[109] A. Shahid, S. Chong, J. Mahony, J. Deen and P.R. Selvaganapathy Electrical tweezer for DNA analysis by loop-mediated isothermal amplification (LAMP)	10:30 (5min)	[125] S. Busuioc and V. Ambrus Lattice Boltzmann study of shock wave propagation with Cartesian, cylindrical and spherical symmetry using the vielbein formalism
				10:35 (5min)	[112] M.-V. Johansson Measurement of Permeability of Low Permeable Membranes	
10:40 – 11:30	Coffee break + Discussion around posters					
11:30 – 12:20	Session μFLU 6A	Microscale Systems Simulation, Measurement and Manufacturing 3	Session μFLU 6B	Liquid & Multiphase Micro- and Nanoflows 2	Session NEGF 6	Processes, devices and systems in non-equilibrium conditions
	11:30 (15min)	[110] A. Mohammadzadeh, A. Fox-Robichaud and P.R. Selvaganapathy A fast and inexpensive method for fabrication and integration of electrodes in microfluidic devices	11:30 (15min)	[126] Y. Wang, Y. Gao, P. Magaud, L. Baldas, C. Lafforgue and S. Colin Inertial Migration of Neutrally Buoyant Particles in Square Channels at High Reynolds Numbers	11:30 (15min)	[46] Z. Wang, D. Orejon, K. Sefiane and Y. Takata Vapor absorption phenomenon onto liquid desiccant droplet driven by vapor pressure difference
	11:45 (15min)	[118] M.N. Sabry, S. El-Emam, M. Mansour and M. Shouman Development of an efficient uniflow comb micromixer for biodiesel production at low Reynolds number	11:45 (15min)	[143] M. Andredaki, A. Georgoulas, N. Miche, E. Teodori, A. Moita, A. Moreira and M. Marengo Numerical Investigation of Oscillating Vapour Slugs within Heated Micro-channels in Saturated Flow Boiling Conditions	11:45 (15min)	[153] M. Wolf, A. Polikarpov, A. Frijns, I. Graur, S. Nedea and R. Enright Comparison of numerical results of Molecular Dynamics simulations and S- model kinetic equations for evaporation and condensation of Argon
	12:00 (5min)	[116] N. Dumas, E. Rosati, M. Madec, V. Pasteur and D. Funfschilling Simulating diffusion transport between droplets in a microfluidics chip	12:00 (15min)	[144] T. Tohme, Y. Gao, P. Magaud, L. Baldas, C. Lafforgue and S. Colin Inertial Migration of Spherical Particles in Bidisperse Suspensions Flowing in Microchannels	12:00 (15min)	[36] S. Toto, P. Nicolay, G.L. Morini and J. Brandner Design of a SAW Pirani sensor with extended range and sensitivity
12:05 (5min)	[123] I. Lara-Ibeas, C. Andrikopoulou, S. Colin, L. Baldas and S. Le Calvé Fabrication of a Silica-Coated Micro Gas Chromatography Column for VOC Separation	12:15 (5min)	[133] C. Lafforgue, W. Entwistle, P. Schmitz, P. Magaud and L. Baldas Microfocusing of particles in microchannels: effect of channel curvature	12:15 (5min)	[141] I. Voronich On Free Molecular Levitation and Motion of Microparticle in Closed Vessel	
12:20 – 14:00	Lunch					

14:00 – 14:40	Session μFLU 7 - Keynote Lecture 2A	[155] E. Kumacheva Microfluidics and carbon dioxide			Session NEGF 7 - Keynote Lecture 2B	[160] R. Ellefson Gas Dynamics Involved in Process Gas Sampling
14:40 – 15:40	Session μFLU 8A	Mixing, Extraction & Reaction in Microscale Flows 2	Session μFLU 8B	Microscale Systems Simulation, Measurement and Manufacturing 4	Session NEGF 8	Micro and nano scale flows and heat transfer 2
	14:40 (15min)	[41] S. Mekkaoui, D. Le Roy, V. Dupuis and A.-L. Deman Anisotropic magnetic composite with customized microstructuration for microfluidic devices	14:40 (15min)	[96] D. Mikaelian, E. Grac and B. Jones Modeling of capillary-driven microfluidic networks using electrical circuit analogy	14:40 (15min)	[101] J. Xie, L. Gibelli, M. Borg, O. Henrich, D. Lockerby and J. Reese A Direct Numerical Evaluation of Molecular Mean Free Paths
	14:55 (15min)	[66] S. Ding, M. Attia, J. Wallyn, C. Serra, N. Anton and T. Vandamme Monodisperse Inorganic-Polymer Hybrid Nanoparticles of Controlled Size Via Microfluidic Routes	14:55 (15min)	[111] M. Rossi, A. Marin and C. Kaehler 3D Particle tracking in thermal Marangoni flows on sessile evaporating droplets	14:55 (15min)	[132] K. Heijmans and S. Gastra-Nedeia Thermal characteristics of reactive interfaces
	15:10 (15min)	[99] A. Yagodnitsyna, A. Kovalev and A. Bilsky Investigation of ionic liquid-water flow in T-shaped rectangular microchannels	15:10 (15min)	[113] L. Mu, T. Ogawa, D. Kondo, H. Yoshikawa, F. Zoueshtyagh, T. Kaneko and I. Ueno Acceleration of Macroscopic Contact Line Induced by an Interaction with a Tiny Particle on a Smooth Substrate	15:10 (5min)	[106] N. Djordjević, G.L. Morini and J. Brandner Design of a Temperature Micro-Sensor with a Gaseous Fluid Flow
	15:25 (5min)	[85] W. Haselmayr, M. Hamidovic, A. Grimmer and R. Wille Fast and Flexible Drug Screening Using a Pure Hydrodynamic Droplet Control	15:25 (5min)	[70] Z. Sheady Computational Fluid Dynamic Analysis of Turbulent Flow through Defected Micro-Injection Moulded Rectangular Channels	15:15 (5min)	[124] S. Khan, D. Newport and S. Le Calvé Detection of Air-borne VOCs using Heterodyne Interferometry
	15:30 (5min)	[100] A. Knauer, N. Visaveliya, X. Li and J.M. Köhler Micro Flow Synthesis of Multiscale Composite Microparticles for Catalytic Applications	15:30 (5min)	[77] R. Rakesh, S.K. Kannam, R. Hartkamp and S.P. Sathian Thermal gradient induced transport of nanoscale water droplets	15:20 (5min)	[127] G. Rezende, D. Newport and S. Le Calvé Micro Photo Ionization Detector for Volatile Organic Compounds
				15:35 (5min)	[115] V. Bhadrans, A. Goharzadeh, Y.-J. Lin, Y.-F. Yap, J.C. Chai, N. Mathew, F. Vargas and S.L. Biswal Experimental Study of Asphaltene Deposition in a Transparent Microchannel with a Square Obstacle	
15:40 – 16:20	Coffee break + Discussion around posters					
16:20 – 17:20	Session μFLU 9A	Liquid & Multiphase Micro- and Nanoflows 3	Session μFLU 9B	Microscale Systems Simulation, Measurement and Manufacturing 5	Session NEGF 9	Vacuum gas dynamics and gas-surface interaction
	16:20 (15min)	[82] D. Caprini, G. Sinibaldi, L. Marino and C.M. Casciola Novel Experimental Investigation of The Fluid Dynamics Field in T-Junction Bubble Break-Up	16:20 (15min)	[128] F. Cairone, A. Amenta and M. Bucolo Platform For Real-Time Open Loop Control of Slug Flows	16:20 (15min)	[47] M. Liao, Q.-D. To and C. Leonard Construction of Nonparametric Collision Model for Graphitic Walls
	16:35 (15min)	[130] B. Rostami and G.L. Morini Experimental investigation of dripping and jetting regimes in a micro cross-junction with newtonian and non-newtonian dispersed phases in silicon oil	16:35 (15min)	[134] M. Mayer, M. Hodes, T. Kirk and D. Crowdy Effect of Boundary Deflection on Spreading Resistance in the Context of Thermal Contact Resistance	16:35 (15min)	[81] H. Yamaguchi, Y. Ozaki, Y. Matsuda and T. Niimi Measurement of Heat Transfer from Platinum Surface through Water Vapor
	16:50 (15min)	[31] N. Heinß, S. Alebrand, K. Myagmar, C. Sommer, J. Wittek and M. Baßler The effect of deformability on particle velocity in laminar flows	16:50 (15min)	[140] F. Peaudecerf, J. Landel, R. Goldstein and P. Luzzatto-Fegiz Impact of surfactant on the drag reduction potential of superhydrophobic surfaces	16:50 (15min)	[105] N. Vasileiadis, S. Naris, D. Valougeorgis, A. Hashad, S. Ehlers and W. Sabuga Modeling of Gas Flow and Determination of Effective Area in Three FPG8601 Piston-Cylinder Assemblies
	17:05 (15min)	[59] D. Podbevsek, F. Ayela, D. Colombet, M. Martini, H. Lai, O. Tillement and G. Ledoux Luminescence based temperature measurements in micro cavitating flow	17:05 (15min)	[147] D. Mariuta, L. Baldas, J. Brandner, K. Haas-Santo, S. Le Calvé, S. Colin, P. Magaud and C. Barrot-Lattes Recent Developments In Miniaturized Optical Systems For Continuous Fluorescence Detection In Liquid Flows	17:05 (15min)	[151] R. Brancher, P. Perrier and I. Graur Pressure Driven Flow in a Rectangular Microchannel
20:00	Conference social dinner					

Friday 2 ^d March 2018						
8:30	Registration					
	Amphitheatre Cavallès		Amphitheatre 4		Amphitheatre 5	
9:00 – 9:40	Session μFLU 10 - Keynote Lecture 3A	[158] P. Dittrich Microfluidic devices for the creation of nanowire sensors			Session NEGF 10 - Keynote Lecture 3B	[157] P. Colinet Evaporation and wetting of liquid drops
9:40 – 10:30	Coffee break + Discussion around posters					
10:30 – 11:30	Session μFLU 11A	Microscale Systems Simulation, Measurement and Manufacturing 6	Session μFLU 11B	Liquid & Multiphase Micro- and Nanoflows 4	Session NEGF 11	Rarefied flows and heat transfer 3
	10:30 (15min)	[149] D. Fratantonio, S. Stefanov, M. Rojas-Cárdenas, C. Barrot and S. Colin Photoluminescence Models in Direct Simulation Monte Carlo for Molecular Tagging Techniques	10:30 (15min)	[34] X. Qiu, V. Bouchiat, D. Colombet and F. Ayela Liquid Phase Exfoliation of Graphene in a Hydrocavitating Microchannel	10:30 (15min)	[119] S. Ganesh and M. Gorji A Variance Reduction Method for DSMC Using Correlated Processes
	10:45 (15min)	[152] D. Rehman, A.H.A. Lutey and G.L. Morini Effect of Aspect Ratio of Rectangular Microchannels on Laminar to Turbulent Transition for Compressible Flows	10:45 (15min)	[35] Q. Zhang, T.T. Fu, C.Y. Zhu, Y.G. Ma and H. Li Formation dynamics of ferrofluid droplets in a T-junction	10:45 (15min)	[120] G. López Quesada, G. Tatsios, M. Rojas-Cárdenas, L. Baldas, C. Barrot, S. Colin and D. Valougeorgis Pumping effect due to temperature gradients imposed in a multistage assembly consisting of long tapered orthogonal channels
			11:00 (15min)	[39] D. Orejon, Y. Maeda, F. Lv, P. Zhang and Y. Takata Enhanced jumping of micrometre droplets on superhydrophobic surfaces without microstructures	11:00 (15min)	[136] M.T. Ho, L. Zhu, L. Wu, P. Wang, Z. Guo, J. Ma and Y. Zhang Pore-scale simulations of rarefied gas flows in porous media
			11:15 (15min)	[40] S. Marre, A. Cario, C. Lecoutre, O. Nguyen, D. Bernard and Y. Garrabos Investigating underground CO2 storage in porous media using geological labs on chip	11:15 (15min)	[139] G. Tatsios, D. Valougeorgis and S. Stefanov Implicit Boundary Conditions for Pressure Driven Flows Coupled with the End Correction Methodology
11:40 – 12:00	Closing ceremony					
12:00	Lunch					