

Day 0 - 11 Sept. 2016

18:00 - 21:00

Welcome reception

Day 1 - 12 Sept. 2016

Welcome addresses:

9:00	- Rector of Politecnico	Professor Giovanni Azzone
9:10	- Deputy VC (Research), Brunel	Professor Goeff Rodgers
9:25	- Chair	Professor Tassos Karayiannis
9:30	Plenary lecture	Professor Sandra M. Troian - 171 - MicroAngelo: 3D Lithography Based on Thermocapillary Sculpting of Nanofilms
10:15	Keynote lecture	Dr Pietro Asinari -14 - Multiscale Simulation of Nanofluids for Solar Thermal Energy

Session Chair: F. Inzoli

10:45 **Coffee break**

	BIO1 - Lab-on a-chip 1	SP1 - Experimental	MP1 - Liquid-liquid, droplets
11:10	Session Chair: S. Balabani	Session Chair: D. Emerson	Session Chair: R. Osellame
11:10	172 - Microfluidic-Enabled Screening of Kidney Organogenesis	89 - The Effect of Asymmetry on Micromixing in Curvilinear Microchannels	167 - Scale-out of liquid-liquid flows in small channels
11:30	126 - Micro-scale engineered scar-like tissues as in vitro model to investigate fibroblast proliferation and phenotype	59 - Flow configurations in a Y Splitting-Junction Microchannel	43 - Viscosity influence on flow pattern map of immiscible liquid-liquid flow in a T-shaped microchannel
11:50	232 - High-throughput pre-concentration for bacteria using acoustofluidic chip	33 - Wall Shear Stress Measurement in Micro-channel	196 - Measurements of micro-mushroom patterns in a magnetic micromixer
12:10	73 - A Microscale Biomimetic Platform for Generation and Electro-Mechanical Stimulation of 3D Cardiac Constructs	195 - Experimental Investigation of Supersonic Two-Dimensional Free Microjets	206 - Asphaltene aggregation and deposition in transparent T-shaped micro-channel

12:30	64 - Lab-on-a-Chip microfluidic platforms to monitor the shear-induced thrombotic risk in blood contacting devices	211 - Velocity measurements in an Omega-micromixer using Stereo-MicroPIV	98 - Plug formation in a microchannel in two-phase flows with non-Newtonian liquids
12:50	Lunch break		
	Keynote lecture	Professor Srinivas Garimella - 174 - Convective condensation at small scales: Experimental and analytical advances	
13:50			
14:20	Sponsor Presentation 1 <i>Session Chair: T. Karayiannis</i>		
14:40	BIO2 - Lab-on-a-chip 2 <i>Session Chair: A. Redaelli</i>	SP2 - Modelling 1 <i>Session Chair: S. Lorenzani</i>	MP2 - Bubbles, droplet & solids 1 <i>Session Chair: Y. Yan</i>
14:40	36 - Characterisation of microfluidic systems using optical methods at dynamic flow rates	87 - Mixing through Vortex Shedding in a Microfluidic Channel: A numerical simulation study	219 - Investigation of elasticity in micromixing of low viscosity emulsions
15:00	83 - 3D FEM dissipation model of suspended micro channel resonators	143 - Pressure Drop Analysis in a Rectangular Microchannel with Staggered Arrangements of Cylindrical Micro Pin Fins	200 - Microfluidic Characterisation of Ultralow Interfacial Tension Droplets by Thermal Capillary Wave Analysis
15:20	74 - High-Throughput Microfluidic Platform for Guiding Mesenchymal Stromal Cell Perfused Micromasses	65 - Modelling analysis of mass transport in polymer electrolyte fuel cells porous media with the aid of computational fluid	40 - Trains of Particles in Finite-Reynolds-number Micro Square Flow
15:40	128 - On-Chip Magnetic Platform for Single-Particle Manipulation with Integrated Electrical Feedback	76 - Numerical and experimental investigation of the levitation and flow created by ultrasonic fields in narrow gaps	231 - A Novel Chip Design with Side-channel Pre-alignment for Particle Sorting
16:00		183 - Accelerating a multiscale fluidic model with Gaussian processes	210 - Experimental Analysis of Droplet Formation in a Micro Cross-Junction
16:20	Coffee break		
16:40	BIO3 - Lab-on-a-chip 3 <i>Session Chair: S. Trojan</i>	SP3 - Applications <i>Session Chair: G.L. Morini</i>	MP3 - Bubbles, droplet & solids 2 <i>Session Chair: F.G. Ergin</i>
16:40	155 - Fluid dynamic modeling of a size-based sorter Lab-on-chip for the inertial trapping of circulating tumor cells	202 - Heat transfer optimization in compact air heat exchanger	27 - Light actuated micro droplet ejection for 3D printing

17:00	124 - Micro-chip for Single Cell Isolation with Laser-induced Forward Transfer	197 - Fabrication of nanoporous membranes through silicon templates : two different approaches	100 - Role of viscoelasticity in droplet formation inside a microfluidic T-junction
17:20	118 - Space-Time Chromatography of Mesoscopic Suspended Objects in Periodically Patterned Microfluidic	11 - Magnetic Artificial Cilia Fabricated in an Out-of-Cleanroom Roll-Pulling Process Generate Significant Microfluidic Pumping	49 - Drop Motion Induced by Vertical Vibrations
17:40	149 - Cyclic uniaxial strain on 3D microconstructs: a novel heart-on-a-chip platform for the generation of functional	237 - Magnetic nanofluids help improve the efficiency of solar thermal collector	57 - Acoustothermal heating for droplet manipulation
18:00			119 - Two-phase flow in T – junction microchannels

Day 2 - 13 Sept. 2016

8:30	Keynote lecture		Dr Jürgen Brandner - 6 - Miniaturization and Process Intensification - smaller means better?
	Session Chair: C. Koenig		
9:00	BIO4 - Lab-on-a-chip 4	SP4 - Modelling 2	MP4 - Heat transfer
	Session Chair: C. Guiducci	Session Chair: P. Hao	Session Chair: T. Muszynski
9:00	166 - Flow and mass transfer optimization in a biotherapeutic purification device	58 - Influence of the boundary conditions on the damping forces exerted by gas	131 - Experimental study of the effect of an electrical field on a liquid vapor interface in a
9:20	55 - A microfluidic device for studying drug transport through endothelial Blood Brain Barrier cells monolayers	109 -Non-equilibrium effects on steady flow past a stationary circular micro-cylinder	66 - Simulations of microscale water flows in a squared lid cavity under freezing conditions using energy conserving
9:50	178 - An integrated microfluidic digital PCR system for alginate droplet formation, efficient direct PCR	145 - Analysis and design of a new micropump doable with a simple micro-fabrication process	54 - Comparison of working fluid combinations in a microchannel membrane absorber

10:10	146 - Design and process optimization in microfluidic devices for DNA amplification	41 - Non-equilibrium dynamics of dense gas under tight confinement	204 - Improvement of thermosyphon performance by wall wettability modification
10:30	194 - Measurement of Molecular Diffusion in the Vicinity of Liquid-Solid Interface by Total Internal Reflection		163 - Nano-PCMs for enhanced Thermal Energy Storage applications
10:50	Coffee break		
	Keynote lecture		Prof Gian Luca Morini - 170 - The challenge to measure single-phase convective heat transfer coefficients in microchannels
11:10	Session Chair: A. Redaelli		
11:40	BIO5 - Lab-on-a-chip 5 Session Chair: J. Cooper-White	SP5 - Modelling 3 & Heat Transfer 1 Session Chair: R. Ardito	MP5 - Condensation 1 Session Chair: R. Andrzejczyk
12:00	146 -Design and process optimization in microfluidic devices for DNA amplification 194 - Measurement of Molecular Diffusion in the Vicinity of Liquid-Solid Interface by Total Internal Reflection	92 - Transient Dynamics of Elastic Hele-Shaw Cell Due to External Forces with Application to Impact Mitigation 39 - Numerical modelling of electro-osmotic flow in porous micro-channels	140 - Steady State and Transient Numerical Simulations of Condensation in Small Diameter Channels 213 - High Pressure Condensing Refrigerant Flows through Microchannels Part 1: Pressure Drop Models
12:20	23 - Hydrodynamic structures to improve cell capturing in microchannels	21 - Heat transfer enhancement in counter-flow-heat-exchanger for use in microfabricated Joule-Thomson cryocooler	214 - High Pressure Condensing Refrigerant Flows through Microchannels Part 2: Heat Transfer Models
12:40	209 - Simulation of Bio-Particle Separation Using Inertial Microfluidics in a Spiral Microchannel for Biomedical Applications	201 - Structural optimization of microjet array cooling system	104 - Performance of Shell-and-Tube Condenser with Minichannels for the Micro Domestic ORC
13:00	Lunch break		
14:00	Keynote lecture		Professor Roger D. Kamm - 7 - Microfluidic Models of Metastatic Cancer
14:30	Sponsor Presentation 2		Beatrice Carasi - COMSOL
	Session Chair: G. Dubini		
14:50	BIO6 - Lab-on-a-chip 6 & Biomedical 1	SP6 - Heat transfer 2	MP6 - Boiling 1

14:50	Session Chair: M. Rasponi 193 - Development of “Evanescent Wave for a Chip” for Distribution	Session Chair: J. Brandner 42 - Evaluation of heat losses in counter flow micro heat exchangers	Session Chair: A. Gheitaghy 77 - Investigation on the bubble cushion during contactless boiling in micro-
15:10	223 - Active Micro-Mixer for Biomedical Applications	86 - High Performance Tubular Heat Exchanger with Microjet Heat Transfer	82 - Transition from Subcooled to Saturated Flow Boiling on the Basis of Energy
15:30	168 - The effect of RBC stiffness on microhemodynamics	203 - Heat transfer enhancement in microjet heat exchanger	186 - Pool Boiling Enhancement on Nanostructured Copper Oxide Surfaces
15:50	32 - Characteristics of Red Blood Cell Perfusion in Microfluidic Models of	30 - Enhancement of Heat Transfer Characteristics of Microchannel Heat Sink	129 - 1-D Modelling of Pressure Fluctuation and Flow Reversal during Flow Boiling in a
16:10	169 - Local aggregation characteristics of microscale blood flows		233 - Simulation of R134a Flow Boiling in Microchannels
16:30	Coffee break		
16:50	BIO7 - Biomedical 2 Session Chair: E. Kaliviotis	MP7 - Modelling 1 & Condensation 2 Session Chair: D. Del Col	MP8 - Boiling 2 Session Chair: S. Gedupudi
16:50	72 - In-Vitro μ -PIV in contracting lymphatic vessels	13 - Mass Transfer Characterization of Chemical Absorption of CO ₂ in	179 - Dynamics of Droplets Evaporating on Structured Surfaces
17:10	137 - CFD model of mouse liver microcirculation based on a 3D	37 - Nanostructured Coatings for Water/Surface Slip: A Molecular Dynamics	224 - Transient Flow Boiling Local Heat Transfer in a Multi-Microchannel Evaporator
17:30	48 - μ -Particle Image Velocimetry and Computational Fluid Dynamic Study of	68 - Growth and Dewetting of Condensation Microdroplets on	199 - TEM Study on Phase Change in a Nano Liquid Cell
17:50	31 - Flow mixing and dispersion phenomena in lung-inspired microfluidic structures	173 - R1234yf condensation inside a horizontal 3.4 mm ID microfin tube	190 - Experimental Investigation of Thermal Performance of Aluminum-Grooved Micro Heat Pipes
		212 - Accurate and Inexpensive Thermal Time-of-Flight Sensor for Measuring	235 - Graphene Powder Processing For Water Solar Distillation using Nanofluids
20:00	Conference dinner		

Day 3 - 14 Sept. 2016

8:30	Keynote lecture Session Chair: E. Bianchi	Professor Carlotta Guiducci - 262 - Advancements in electrical-based techniques on chip for single-cell level analytics	
9:00	BIO8 -Complex flows & suspensions in microsystems (Special Session) Session Chair: R. D. Kamm	Nanofluids 1	MP9 - Modelling 2
9:00	95 - The Role of von Willebrand Factor and Platelet Margination in their	93 - Diamagnetic nanofluid behaviour in the strong magnetic field	188 - Numerical simulation of electroosmotic/pressure driven nanofluid
9:20	217 - Analyzing a single deformable cell in an inclined centrifuge microscope: a	96 - Numerical study of natural convection for Al ₂ O ₃ and CuO nanofluids inside	61 - CFD simulation of precipitation in solvent-displacement processes
9:40	216 - Deformability and size based capsule sorting	97 - Does particle size matter in nanofluids' thermal properties?	221 - Determining Transport Properties by Molecular Dynamics
10:00	185 - High-accuracy particle sizing in sheath less microfluidic impedance	218 - A Novel De-noising Scheme For Effective Extraction of Ensemble Solution	56 - Pressure Drop Modelling in Gas Channels of Polymer Electrolyte Fuel Cells
10:20	208 - Study of the phase separation effect in capillary-size micro-channels	222 - Atomically controlled electrochemical reaction for cost-effective and high-	236 - Hybrid Numerical Simulation of Digital Rock from Pore Scale to Darcy scale
10:40			189 - Investigating the electroosmotic/pressure driven nanofluid
11:00	Coffee break		
11:20	BIO9 - Lab-on-a-chip 7 Session Chair: P. Occhetta	Nanofluids 2	MP10 - Visualisation/experimental
11:20	60 - Microfluidic device for high throughput SPIM on chip	90 - Effect of Inlet Temperature on Convective Heat Transfer of gamma-Al ₂ O ₃ /Water Nanofluid in Microtube	102 - Influence of the shape of an orifice entrance on the flow pattern and droplet deformation during high-pressure
11:40	178 - An integrated microfluidic digital PCR system for alginate droplet formation, efficient direct PCR	181 - Cooling Process of Nanofluid in a Cavity Submitted to Non-isothermal Heating	80 - Energetic Efficiency of Mixing in a Micro-Fluidized Bed

12:00	35 - Highly Deformable Hydrogel Nanofilaments in Poiseuille Flow	16 - Characteristics of Fluid Flow and Heat Transfer of Nanofluid Flow in Microchannels with Micromixers	25 - Nanomanipulating and sensing single particles interactions with combined atomic force microscopy optical tweezers (AFM/OT)
12:20	176 - Thread-based microfluidics: spontaneous capillary flow in homogeneous and heterogeneous	26 - Nanofluid flow and heat transfer in boundary layers at small nanoparticle volume fraction	110 - Gold nanoparticle synthesis in gas-liquid-liquid flow in a microchannel
12:40			69 - Dynamic motion of Droplets on Slippery Lubricant-Impregnated Surfaces with Micro Textures
13:00	Lunch break		
	Keynote lecture		
	Professor Vladimir V. Kuznetsov - 162 - Fundamental Issues Related to Flow Boiling and Two-Phase Flow Patterns in Microchannels - Experimental Challenges and Opportunities		
14:00			
	Session Chair: R. Mereu		
14:30	BIO10 - Applications	SP7 - Heat transfer 3	MF11 - Boiling 3
	Session Chair: Y. Deng	Session Chair: D. Mikielewicz	Session Chair: S. Garimella
14:30	175 - Spontaneous capillary flow limit in diverging open U-grooves and suspended	147 - Measurement of thermal transpiration flow through a microtube	139 - 1-D Modelling of the Influence of Nucleation Frequency on Pressure
14:50	120 - Dynamic Modelling of Microfluidic Networks using Wave Digital Filters	205 - Heat transfer intensification in vertical shell -and coil heat exchangers;	125 - Evaporation and Boiling in Narrow Gap
15:10	116 - Integrated temperature control system for microfluidic culture of	148 -Parametrization study of the thermally driven rarefied flow between saw-tooth	99 - Experimental Investigation of Fluid Flow and Heat Transfer of Flow Boiling in
15:30	113 - Electroosmotic flow through an α -hemolysin nanopore	152 - Fluid Flow and Heat Transfer of a Non-Newtonian Fluid in a Micro -Annulus in the	12 - Performance of a Micro Scale Integrated Thermal Management System
15:50	105 - Interaction effects of micro/nanoparticles on targeted	114 - Electrochemical Modelling and Simulation of Lithium-ion Battery Cooling	187 - Effect of Nanostructure in Microporous Surfaces on Pool Boiling Augmentation
16:10	Conference closure & farewell		
16:20	Farewell Coffee break		