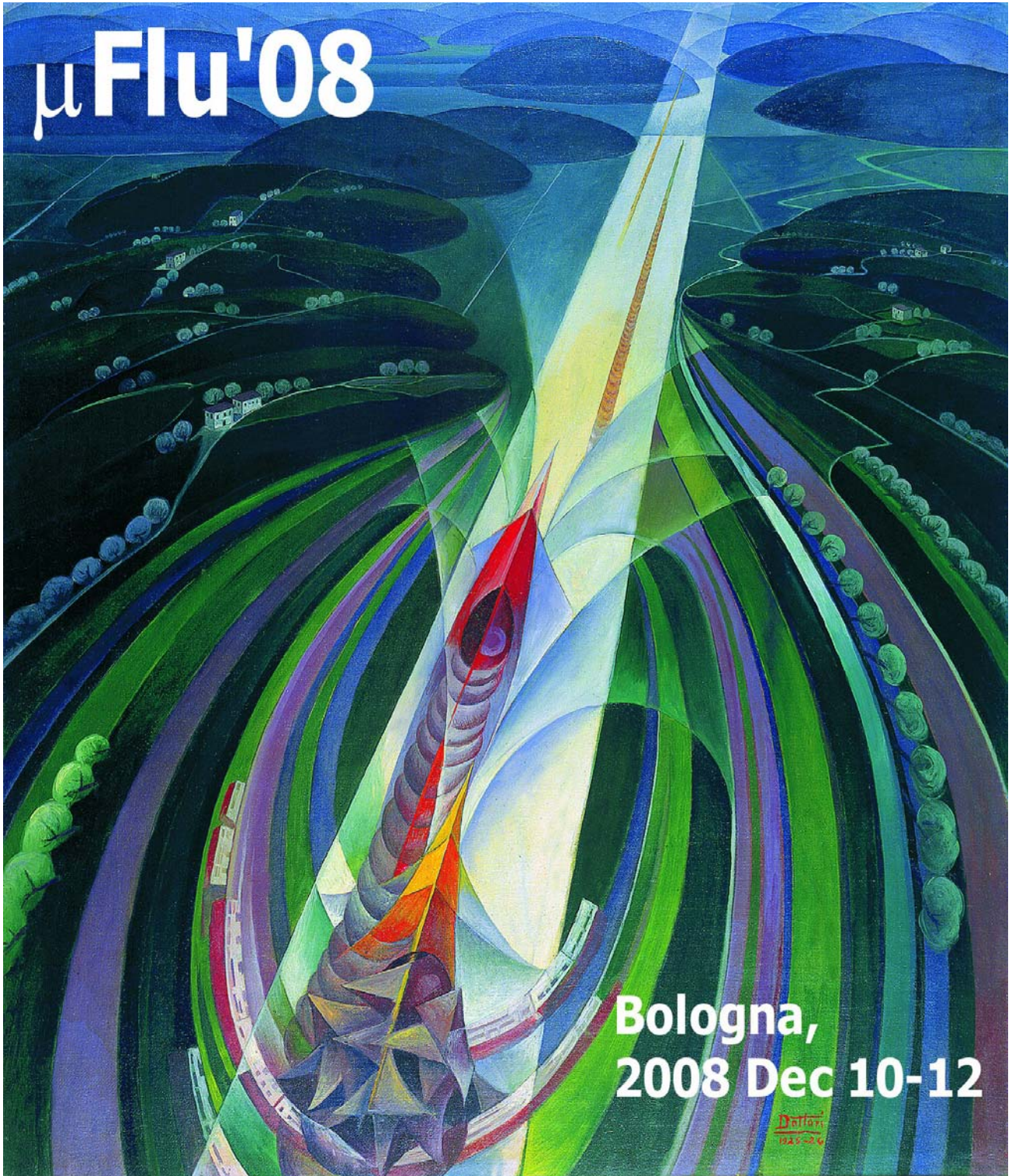


μFlu'08



Bologna,
2008 Dec 10-12

Programme



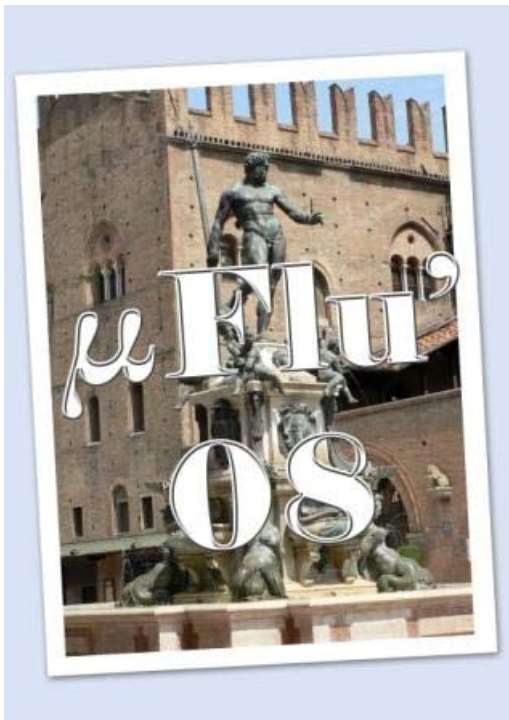
SOCIÉTÉ HYDROTECHNIQUE
DE FRANCE



ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA
DIPARTIMENTO DI INGEGNERIA ENERGETICA,
NUCLEARE E DEL CONTROLLO AMBIENTALE



Université
de Toulouse



1st European Conference on Microfluidics

Microfluidics 2008 (μ Flu'08)

<http://microfluidique.insa-toulouse.fr/mf08.htm>

December 10-12, 2008
Bologna, Italy



exhibitors



The cover picture:

Gerardo Dottori

Trittico della velocità-La corsa, 1925-1927

oil paint

Museo Civico di Palazzo della Penna, Raccolta Dottori, Perugia

Courtesy Archivi Gerardo Dottori, Perugia

Welcome from the Chairs

It gives us great pleasure in welcoming the participants to the First European Conference on Microfluidics (mFlu'08) in Bologna, Italy. This Conference is the International version of the Microfluidics French Conference held in Toulouse for three editions from 2002 to 2006 and organized by Prof. Colin at INSA. In our mind, this International evolution of the Conference has to be considered as an unavoidable step to transform the Conference in a major gathering place for learning and generating new ideas through interactions among researchers engaged in diverse fields focused on microscale phenomena in Europe and in the world. For this reason, the main objectives of this conference are to strengthen the links inside the European scientific community in this young discipline and to promote exchanges between European Universities and Industrial companies engaged in this field, as well as to spread European Microfluidics research in countries outside from Europe and to increase connections between European researchers and researchers from other countries.

We are excited about the high level of interest from across the world on this Conference. Microfluidics finds now applications in every industrial sector, as well as in numerous media covered fields like biology, medicine, chemical and process engineering, transports, environmental sciences, microelectronics... This Conference will present original fundamental and applied works which cover a broad array of topics at microscale, including Gas Microflows, Liquid Microflows, Two-Phase Flows in Microsystems, Microflows in Bioengineering and Biofluidics, Microfabrication Techniques for Microfluidic Systems, Lab on a Chip and Miniaturized Chemistry, Electrokinetic Microflows, Microdroplets management, Fluidic Microactuators and Micromixing and Microflow Visualisation and Measurements.

The Conference is a joint effort from two institutions: Alma Mater Studiorum Università di Bologna and INSA Toulouse. The Conference is being hosted in the new building of the School of Engineering of the University of Bologna, the oldest European University with more than nine centuries of history. The School of Engineering of the Alma Mater Studiorum-Università di Bologna offers students a wide range of academic degree courses, featuring innovative elements; with its 15 undergraduate degree courses, 10 postgraduate degree courses and one European postgraduate degree course, it covers the Industrial, Information Technology, Environmental, Civil and Architectural-Building areas. The field of Microfluidics represents a exciting borderline scientific topic for this School.

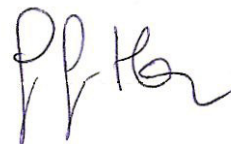
We would like to thank the authors for selecting this Conference as the venue to disseminate their findings. We are deeply indebted to the track chairs, session chairs, scientific committee members for their work with the abstract evaluation and selection process. Without their dedicated efforts, we would not have been able to organize and present this Conference. Besides, we thank all the external reviewers for their efforts spent to guarantee a high scientific level of the papers that are being presented in this Conference.

Finally, we highlight that this Conference could not be organized without the dedicated help of SHF (Société Hydrotechnique de France), the organizing committee members and the staff of the DIENCA chaired by Prof. Salvigni. We would like to thank each and everyone at Bologna and Toulouse who have helped us in making the Conference a glowing partnership of Alma Mater Studiorum-Università di Bologna and INSA Toulouse.

We hope that you will have a very enjoyable and professionally useful Conference, profitable scientific discussions and that you will meet a lot of new people and friends!



Stéphane Colin,
Université de Toulouse,
FRANCE



Gian Luca Morini
DIENCA Università di Bologna
ITALY

Programme Overview

The registration and all the sessions take place in the School of Engineering (Lazzaretto site) at Via del Lazzaretto 15, 40136 Bologna, Italy.

Session Locations : TA01, TA02, TA03, TA04, AL (see the roomplan at the end of this section)

Tuesday, December 9, 2008

16:00	Welcome and Registration (AL)
19:30	

Wednesday, December 10, 2008

8:00	Registration		
9:00	Opening Ceremony (TA01)		
10:00	Invited Lecture I1: Charles Baroud (TA01)		
10:30	Coffee Break (AL)		
11:15	Oral Session O1-1 (TA01) Two-Phase Flows in Microsystems	Oral Session O1-2 (TA02) Microfabrication Techniques	Oral Session O1-3 (TA03) Lab on a Chip Miniaturized Chemistry
12:45	Lunch (AL)		
14:15	Oral Session O2-1 (TA01) Gas Microflows	Oral Session O2-2 (TA02) Liquid microflows	Oral Session O2-3 (TA03) Microdroplets Management
15:30	Poster Session P2-1 (TA01) Gas Microflows	Poster Session P2-2 (TA02) Liquid microflows	Poster Session P2-3 (TA03) Microdroplets Management
16:00	Coffee Break (AL) Discussion Around Posters		
16:45	Oral Session O3-1 (TA01) Bioengineering and Biofluidics	Oral Session O3-2 (TA02) Electrokinetic Microflows	Oral Session O3-3 (TA03) Microactuators and Micromixing

Thursday, December 11, 2008

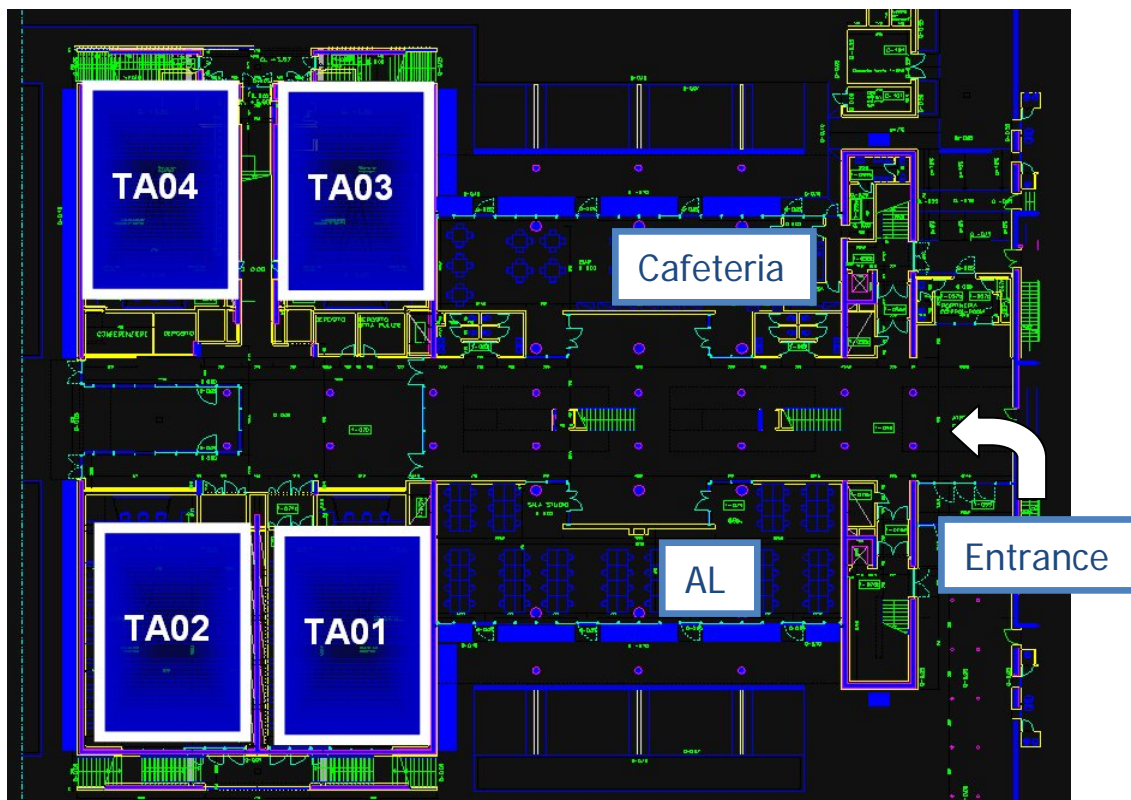
8:15	Invited Lecture: Felix Sharipov (TA01)		
9:00	Oral Session O4-1 (TA01) Two-Phase Flows in Microsystems	Oral Session O4-2 (TA02) Liquid Microflows	Oral Session O4-3 (TA03) Electrokinetic Microflows
10:15	Poster Session P4-1 (TA01) Two-Phase Flows in Microsystems	Poster Session P4-2 (TA02) Liquid microflows	Poster Session P4-3 (TA03) Electrokinetic Microflows
10:45	Coffee Break (AL) Discussion Around Posters		
11:30	Oral Session O5-1 (TA01) Microflow Visualisation and Measurements	Oral Session O5-2 (TA02) Microdroplets Managements	Oral Session O5-3 (TA03) Bioengineering and Biofluidics
12:45	Lunch (AL)		
14:15	Oral Session O6-1 (TA01) Microactuators and Micromixing	Oral Session O6-2 (TA02) Lab on a Chip Miniaturized Chemistry	Oral Session O6-3 (TA03) Two-Phase Flows in Microsystems
15:30	Poster Session P6-1 (TA01) Microactuators and Micromixing	Poster Session P6-2 (TA02) Lab on a Chip Miniaturized Chemistry	Poster Session P6-3 (TA03) Two-Phase Flows in Microsystems
16:00	Coffee Break (AL) Discussion Around Posters		
16:45	Oral Session O7-1 (TA01) Gas Microflows	Oral Session O7-2 (TA02) Liquid Microflows	Oral Session O7-3 (TA03) Bioengineering and Biofluidics
20:00	μflu08 Social Dinner Palazzo Isolani - Via Santo Stefano, 16 40125 Bologna,		

Friday, December 12, 2008

8:15	Invited Lecture: Ralph Lindken (TA01)		
9:00	Oral Session O8-1 (TA01) Microflow Visualisation and Measurements	Oral Session O8-3 (TA03) Bioengineering and Biofluidics	
10:15	Poster Session P8-1 (TA01) Microflow Visualisation and Measurements	Poster Session P8-3 (TA03) Bioengineering and Biofluidics	
10:45	Coffee Break (AL) Discussion Around Posters		
11:30	Oral Session O9-1 (TA01) Microflow Visualisation and Measurements	Oral Session O9-3 (TA03) Liquid Microflows	
12:45	Lunch (AL)		
14:15	Oral Session O10-1 (TA01) Gas Microflows	Oral Session O10-2 (TA02) Two-Phase Flows in Microsystems	Oral Session O10-3 (TA03) Microfabrication Techniques
15:45	Closing Ceremony (TA01)		

Session Locations and Roomplan:

Room	December 9	December 10	December 11	December 12
TA01		Opening Ceremony Invited Lecture I1 Oral sessions O1-1 O2-1 O3-1 Pres. Poster P2-1	Invited Lecture I2 Oral sessions O4-1 O5-1 O6-1 O7-1 Pres. Poster P4-1 P6-1	Invited Lecture I3 Oral sessions O8-1 O9-1 O10-1 Pres. Poster P8-1
TA02		Oral sessions O1-2 O2-2 O3-2 Pres. Poster P2-2	Oral sessions O4-2 O5-2 O6-2 O7-2 Pres. Poster P4-2 P6-2	Oral sessions O10-2
TA03		Oral sessions O1-3 O2-3 O3-3 Pres. Poster P2-3	Oral sessions O4-3 O5-3 O6-3 O7-3 Pres. Poster P4-3 P6-3	Oral sessions O8-3 O9-3 O10-3 Pres. Poster P8-3
AL	Registration	Coffee break Lunch Poster sessions P2-1 P2-2 P2-3	Coffee break Lunch Poster sessions P4-1 P4-2 P4-3 P6-1 P6-2 P6-3	Coffee break Lunch Poster sessions P8-1 P8-3



Information for the presenters

Oral presentations

The time allocated for a presentation is:

- **Keynote speakers:** 25 minutes + 5 minutes discussion.
- **Oral presentations:** 14 + 4 minutes discussion.
- **Poster presentation:** 5 minutes without discussion, the discussion taking place after the session around the posters.

The presentations (PowerPoint 2007 or older versions, Adobe pdf) should be put on a USB-stick and copied on the computer in the presentation room about half an hour before the session starts. The presentations will take place in the lecture-rooms TA01, TA02, TA03 (see the Roomplan above).

Poster presentations

The Poster room is the room AL. The maximum poster size is ISO-A0 (84 cm (width) x 118 cm (height)). The posters can be put on the poster boards on the scheduled day from 8 h (morning poster sessions) or from the lunch (afternoon poster sessions).

Please remove them at the end of the poster session. Materials for the poster arrangement will be present in the Poster room (AL). All poster presentations will be in the Poster room (AL).

μ Flu'08 Programme

Tuesday 9 December - Afternoon

- o 16h00 – 19h30 Welcome and Registration
-

Wednesday 10 December - Morning

- o 08h00 Registration
- o 09h00 Opening Ceremony
- o 10h00 **Session I1 - Invited Lecture:** Charles N. BAROUD, LadHyX and Department of Mechanics, Ecole Polytechnique, Palaiseau, France.
Session Chair: Gian Piero CELATA
 - 10h00 [μ FLU08-164] *Control of Droplet Microfluidics through Laser-Induced Thermocapillarity.* Charles N. BAROUD.
- o 10h30 Coffee Break
- o 11h15 **Session O1-1 (*Two-Phase Flows in Microsystems*)**
Session Chair: Gian Piero CELATA
 - 11h15 [μ FLU08-130] *Droplet Dynamics in a Microfluidic Bifurcation.* Andreas CARLSON, Minh DO-QUANG & Gustav AMBERG.
 - 11h33 [μ FLU08-207] *Simulation of Formation and Dynamics of Micro-Droplets.* Shelly GULATI, Xize NIU, Joshua B. EDEL & Andrew J. DE MELLO.
 - 11h51 [μ FLU08-179] *Microdroplet Formation in Y Junction: Effect of Geometrical Parameters on the Microdroplet Fabrication.* Peiyuan HE, Eric LECLERC, Dominique BARTHES-BIESEL, Laurent GRISCOM & Florence EDWARDS-LEVY.
 - 12h09 [μ FLU08-217] *2D Foam Coarsening in a Microfluidic System.* Julien MARCHALOT, Jérôme LAMBERT, Isabelle CANTAT, Patrick TABELING & Marie-Caroline JULLIEN.
 - 12h27 [μ FLU08-220] *Two-Phase Drops in Microfluidic Device.* Nicolas PANNACCI, Henrik BRUUS, Hervé WILLAIME & Patrick TABELING.
- o 11h15 **Session O1-2 (*Microfabrication Techniques for Microfluidic Systems*)**
Session Chair: Norbert KOCKMANN
 - 11h15 [μ FLU08-55] *Development of Flexible Polymer Lab on Chip Integrating Microelectromagnets for Microbeads Manipulation.* Rémy FULCRAND, David JUGIEU, Christophe ESCRIBA, David BOURIER, Philippe ARTILLAN, Ali BOUKABACHE, Jean-Yves FOURNIOLS & Anne-Marie GUE.

- 11h33 [*μ*FLU08-150] *Flip-Chip Bonding of Sensor Dies on PMMA for Low-Cost Microfluidic Applications*. Mark FRETZ, Janko AUERSWALD, Thomas G. HARVEY, Jie ZHU, Noa SCHMID & Christian BOSSHARD.
 - 11h51 [*μ*FLU08-56] *Manufacturing of Microstructures from Metal and Polymers*. Juergen J. BRANDNER.
 - 12h09 [*μ*FLU08-227] *Plasma-Based Fabrication of PDMS Microfluidic Devices of Controlled Surface Roughness*. Marie-Elena VLACHOPOULOU, Angeli TSEREPI, Georgios BOULOUSIS & Evangelos GOGOLIDES.
 - 12h27 [*μ*FLU08-104] *Rapid Prototyping of Thiolene Microfluidic Chips*. Giampaolo MISTURA, David FRIZZO, Alberto FRANZOI, A. PACETTI, Giorgio CARRARO, Giuseppe PIRRUCIO, Pirruccio ZOCCANTE & Matteo PIERNO.
- **11h15 Session O1-3 (Lab on a Chip and Miniaturized Chemistry)**
Session Chair: Nick GODDARD
- 11h15 [*μ*FLU08-250] *Towards Biological Experimentation in Microfluidic Microdroplets*. Florian HOLLFELDER.
 - 11h33 [*μ*FLU08-162] *Fluid Propulsion in Microchannels using magnetically Actuated Artificial Cilia - A Parametric Study*. Syed KHADERI, Michiel BALTUSSEN, Patrick ANDERSON, Daniel IOAN, Jaap DEN TOONDER & Patrick ONCK.
 - 11h51 [*μ*FLU08-173] *A Rapid, Continuous Flow Microreactor for Performing Multi-Step (Bio) Reactions on the Surface of Single Magnetic Particles*. Sally A. PEYMAN, Alexander ILES & Nicole PAMME.
 - 12h09 [*μ*FLU08-116] *Microfluidic Cartridge with Integrated Pumps and Liquid Position Feedback Design for Running Protein Assays*. Joerg NESTLER, Tom ENDERLEIN, Karla HILLER, Thomas OTTO, Thomas GESSNER, Janko AUERSWALD, Helmut F. KNAPP, Christian GRIFFITHS & Samuel BIGOT.
 - 12h27 [*μ*FLU08-120] *Dispersion of Nanoparticles in Micro-Channel Geometries for Pharmaceutical Screening Applications*. Claudia LESCHE, Stefanie DEMMING, Ingo KAMPEN, Arno KWADE & Stephanus BUTTGEBACH.
- **12h45 Lunch**

Wednesday 10 December - Afternoon

- **14h15 Session O2-1 (Gas Microflows)**
Session Chair: Dimitris VALOUGEORGIS
- 14h15 [*μ*FLU08-154] *A Navier-Stokes Model Incorporating the Effects of Near-Wall Molecular Collisions with Applications to Micro Gas Flows*. Erik J. ARLEMARK, Kokou DADZIE & Jason M. REESE.
 - 14h33 [*μ*FLU08-140] *Numerical Analysis of Viscous Dissipation Effect in Trapezoidal Microchannels*. Talie SHEIKHALIPOUR & Abbas ABBASSI.
 - 14h51 [*μ*FLU08-172] *Shock Wave Generation at Microscale*. Jean-Denis PARISSE, Jérôme GIORDANO, Pierre PERRIER, Yves BURTSCHHELL & Irina A. GRAUR.
 - 15h09 [*μ*FLU08-186] *A Computational Study of Oscillatory Couette Flows in the Transition Regime with Higher Order Moment Method*. Xiao-Jun GU & David R. EMERSON.

o **15h30 Session P2-1 (*Gas Microflows*) Poster Presentation**

Session Chair: Dimitris VALOUGEORGIS

- 15h30 [μ FLU08-163] *Numerical Modelling of Non-Isothermal Gas Flow through an Elliptical Microtube.* Irina A. GRAUR & Felix SHARIPOV.
- 15h35 [μ FLU08-199] *Study of Slip Boundary Conditions and Effects of the Accommodation Coefficient in Microchannel with DSMC Method.* Djilali AMEUR, Cédric CROIZET, Fadila MAROTEAUX & Renée GATIGNOL.
- 15h40 [μ FLU08-33] *Finite Volume Calculations of Gaseous Slip Flow past a Confined Square in a Two-Dimensional Microchannel.* Kiril SHTEREV & Stefan STEFANOV.
- 15h45 [μ FLU08-190] *A Constant Wall Temperature Microchannel Gas Flow.* Snezana MILICEV & Nevena STEVANOVIC.

o **14h15 Session O2-2 (*Liquid Microflows*)**

Session Chair: Juergen BRANDNER

- 14h15 [μ FLU08-27] *Review of Heat Transfer in Microchannels.* Paolo ROSA, Tassos G. KARAYIANNIS & Michael W. COLLINS.
- 14h33 [μ FLU08-111] *Heat Transfer between Walls and Fluids: MD Simulations with Vibrating Walls.* Pieter VAN DEN AKKER, Arjan J. H. FRIJNS, Anton A. VAN STEENHOVEN & Peter A. J. HILBERS.
- 14h51 [μ FLU08-102] *Experimental Analysis of the Micro-Convective Heat Transfer in the Transition Region.* Gian Luca MORINI, Marco LORENZINI, Sandro SALVIGNI & Gian Piero CELATA.
- 15h09 [μ FLU08-84] *Conjugate Forced Convection and Heat Conduction in Micro Heat Exchangers: A Hybrid Approach.* Carlo NONINO, Stefano SAVINO & Stefano DEL GIUDICE.

o **15h30 Session P2-2 (*Liquid Microflows*) Poster Presentation**

Session Chair: Juergen BRANDNER

- 15h30 [μ FLU08-196] *A Chemotaxis-Like Method to Manipulate Colloids in Micro-Channels.* Benjamin ABECASSIS, Cécile COTTIN-BIZONNE, Christophe YBERT, Armand AJDARI & Lydéric BOCQUET.
- 15h35 [μ FLU08-253] *Model Development for Effective Thermal Conductivity and Dynamic Viscosity of Alumina-Water Nanofluids.* Avdhesh K. SHARMA & Ajai K. SINGH.
- 15h40 [μ FLU08-144] *A Pressure Drop Study of Capillary Microreactors.* Oliver TAHENY, Mark DAVIES & Tara DALTON.
- 15h45 [μ FLU08-17] *Continuum Models for Liquid Transport through Narrow Pores: a Molecular Dynamics Study.* Mauro CHINAPPI, Francesco PICANO & Carlo Massimo CASCIOLA.

o **14h15 Session O2-3 (*Microdroplets Management*)**

Session Chair: Charles BAROUD

- 14h15 [μ FLU08-35] *Lattice Boltzmann Simulation of Droplet Behaviour in Microfluidic Devices.* Haihu LIU & Yonghao ZHANG.
- 14h33 [μ FLU08-78] *Solid-Liquid Operations in Microchannels.* Alain MARCATI, Laurent PRAT, Christophe SERRA & Michel BOUQUEY.
- 14h51 [μ FLU08-115] *Relation between Reversible Electrowetting and Impacting/Bouncing Drop Test on Superhydrophobic Surfaces.* Florian LAPIERRE, Vincent THOMY, Philippe BRUNET, Yannick COFFINIER & Rabah BOUKKERROUB.

- 15h09 [*μFLU08-257*] *Dynamic X-Ray Optics with Microfluidics: Stabilization of Gas Bubbles by Surface Ordering and Freezing.* Yasutaka IWASHITA, Christian BAHR, Craig PRIEST, Stephan HERMINGHAUS & Ralf SEEMANN.
- **15h30 Session P2-3 (*Microdroplets Management*) Poster Presentation**
Session Chair: Charles BAROUD
 - 15h30 [*μFLU08-107*] *Study of the Anisotropy of Water Droplets on Patterned Surfaces.* Ciro SEMPREBON, Giampaolo MISTURA & Enzo ORLANDINI.
 - 15h35 [*μFLU08-117*] *Improving Coplanar Electrodes for Moving Water Droplets.* Athanasios GIANNITSIS, Brian P. CAHILL, Uwe PLIQUETT, Gunter GASTROCK, Raul LAND, Thomas NACKE, Mart MIN & Dieter BECKMANN.
 - 15h40 [*μFLU08-149*] *Study of Droplet Impact and Spreading on Solid Substrates of Different Wetting Behaviour.* Julie FRASSY-DARONA, Christian LECOT, Cyril DELATTRE & Arthur SOUCEMARIANADIN.
 - 15h45 [*μFLU08-261*] *Microdroplets Based Detection Using Laser Induced Fluorescence for Evolving New Enzyme in a Microfluidic Device.* Nan WU, Yonghao ZHU, Patrick W. LEECH, Pamela HOOBIN, Sue BROWN & Chris EASTON.
 - 15h50 [*μFLU08-142*] *Development of a Plasma Process for Flow Control in a PDMS Microfluidic Device.* Nathalie VO TAN THO, Nicolas PANNACCI, Hervé WILLAIME, Valessa BARBIER, Patrick TABELING, Farzaneh AREFI-KHONSARI, Diego MANTOVANI & Michaël TATOULIAN.
 - **16h00 Coffee Break and discussion around posters**
 - **16h45 Session O3-1 (*Microflows in Bioengineering and Biofluidics*)**
Session Chair: Michael COLLINS
 - 16h45 [*μFLU08-37*] *Microfluidic Screening Reactor for Estimation of Biological Reaction Kinetics.* Astrid EDLICH, Stefanie DEMMING, Miriam VOGL, Stephanus BUTTGENBACH, Ezequiel FRANCO-LARA & Rainer KRULL.
 - 17h03 [*μFLU08-113*] *A Toolbox for Lamination-Based Fast Prototyping of Flexible Monolithic COC Chips.* Sandrine MISERERE, Jérémie WEBER, Bertrand DE LAMBERT, Jean-Louis VIOVY & Laurent MALAQUIN.
 - 17h21 [*μFLU08-222*] *Microfluidic System for Characterization of Biochemical and Mechanical Response of Endothelial Cells to Shear Flow.* Massimiliano ROSSI, Ralph LINDKEN, Beerend P. HIERCK & Jerry WESTERWEEL.
 - 17h39 [*μFLU08-93*] *Microflow Induced by Ciliates as Interesting Phenomenon in Fluid Dynamics.* Bogumila Ewelina ZIMA-KULISIEWICZ & Antonio DELGADO.
 - **16h45 Session O3-2 (*Electrokinetic Microflows*)**
Session Chair: Sedat TARDU
 - 16h45 [*μFLU08-143*] *Electrophoretic Motion of a Charged Particles through a Converging-Diverging Microchannel.* Ye AI, Sang W. JOO, Yingtao JIANG, Marcos CHENEY & Shizhi QIAN.
 - 17h03 [*μFLU08-62*] *Taylor-Aris Dispersion by Pressure-Driven and Electroosmotic Flow in Microchannels.* Vincent NIEBORG, Ralph LINDKEN, Herman KRAMER, Geert-Jan WITKAMP & Jerry WESTERWEEL.
 - 17h21 [*μFLU08-90*] *Nonlinear Electrophoresis in a Strong Electric Field.* Evgeny DEMEKHIN, Alex KOROVYAKOVSKIY & Vladimir SHELISTOV.
 - 17h39 [*μFLU08-49*] *Simultaneous Particle Separation using AC-Driven Electro-Osmotic Micropumps.* Wolfgang HILBER, Bernhard WEISS, Ahmad SAEED, Roman HOLLY & Bernhard JAKOBY.

o **16h45 Session O3-3 (*Fluidic Microactuators and Micromixing*)**

Session Chair: Janko AUERSWALD

- 16h45 [μ FLU08-213] *Principle Design and Actuation of a Dual Chamber Electromagnetic Micropump*. Farid AMIROUCHE & Yu ZHOU.
- 17h03 [μ FLU08-267] *Quantitative Three-Dimensional Concentration and Temperature Mapping in Microfluidic Channels using Fluorescence Lifetime Imaging*. Tom ROBINSON, Prashant VALLURI, Hugh B. MANNING, Dylan M. OWEN, Christopher DUNSBY, Geoff S. BALDWIN, Mark A. A. NEIL, Andrew J. DE MELLO, Paul M. W. FRENCH, John F. ECCLESTON, Yolanda SCHAERLI, Florian HOLLFELDER & Robert WOOTTON.
- 17h21 [μ FLU08-79] *Characterizing Relaxation Timescales and Overall Steady-State Efficiency of Continuous Inflow-Outflow Micromixers*. Stefano CERBELLI, Massimiliano GIONA, Fabio GAROFALO & Alessandra ADROVER.
- 17h39 [μ FLU08-177] *A New Passive Planar Microfluidic Mixer: Design and Evaluation*. YanFeng FAN & Ibrahim HASSAN.

o **18h00 End of sessions**

Thursday 11 December - Morning

o **08h15 Invited Lecture I2:** Felix SHARIPOV, Departamento de Fisica, Universidade Federal do Parana, Curitiba, Brazil.

Session Chair: David EMERSON

- 08h15 [μ FLU08-14] *Modelling and Calculations of Gas Flows in Microfluidics: DSMC vs Kinetic Equation*. Felix SHARIPOV.

o **09h00 Session O4-1 (*Two-Phase Flows in Microsystems*)**

Session Chair: Tassos KARAYIANNIS

- 09h00 [μ FLU08-32] *Investigation of Multicomponent Mass Transfer in Liquid-Liquid Extraction Systems at Microscale*. Paris CHASANIS & Eugeny Y. KENIG.
- 09h18 [μ FLU08-40] *A New Correlation for Local Boiling Heat Transfer Coefficients of FC-72 in Microchannels Heat Sinks*. Ayman MEGAHED & Ibrahim HASSAN.
- 09h36 [μ FLU08-81] *Two-Phase Flow at Micro Scale under Supercritical Conditions*. Jean-Jacques LETOURNEAU & Laurent PRAT.
- 09h54 [μ FLU08-87] *Numerical Simulations of Rigid Fiber Suspensions*. Katarina GUSTAVSSON & Anna-Karin TORNBERG.

o **10h15 Session P4-1 (*Two-Phase Flows in Microsystems*) Poster Presentation**

Session Chair: Tassos KARAYIANNIS

- 10h15 [μ FLU08-204] *Optimized Resistor Pattern for Thermocapillary Actuation*. Bertrand SELVA, Julien MARCHALOT, Kevin BUSSON & Marie-Caroline JULLIEN.
- 10h20 [μ FLU08-109] *DNA Detection by Hyperbranched Rolling Circle Amplification (HRCA) in Microfluidic Droplets*. Guillaume COLAS, Stefano BEGOLO, Max CHABERT & Jean-Louis VIOVY.

- 10h25 [*μ*FLU08-128] *Capillary Force Dominated Impact of a Solid Sphere onto a Free Liquid Surface*. Minh DO-QUANG, Andreas CARLSON & Gustav AMBERG.
 - 10h30 [*μ*FLU08-195] *Two-Phase Flow in Microfluidic Devices: Effects of Wettability and Viscosity. Applications to Enhanced Oil Recovery*. Christophe COTTIN, Annie COLIN, Hugues BODIGUEL & Mikel MORVAN.
 - 10h35 [*μ*FLU08-224] *A Probabilistic Criterion Related to Bubble Size for Automatic Flow Pattern Identification in R134a Two-Phase Flow*. Stefano DALL'OLIO, Marco MARENGO & G. E. COSSALI.
 - 10h40 [*μ*FLU08-232] *The Effect of Variable Gravity and Shear Stress on the Flattened Rivulet Dynamics in a Minichannel*. Oleg A. KABOV, Maria V. BARTASHEVICH, Andrey GLUSHCHUK & Vyacheslav CHEVERDA.
- **09h00 Session O4-2 (Liquid Microflows)**
Session Chair: Michel FAVRE-MARINET
- 09h00 [*μ*FLU08-54] *Investigation of Critical Reynolds Number for Single-Phase Flow in Capillaries*. Jurij TONKONOGIJ & Antanas PEDISIUS.
 - 09h18 [*μ*FLU08-88] *Influence of Roughness and Fluid Properties on Fluid Flow Characteristics in Silicon Microchannels*. Katharina BODE, Jochen HAMMERSCHMIDT, Stefanie DEMMING, Otto GREGORY, Stephanus BUTTGEBACH & Stefan SCHOLL.
 - 09h36 [*μ*FLU08-112] *Applicability of the Micropolar Fluid Theory in Solving Microfluidics Problems*. Anna KUCABA-PIETAL.
 - 09h54 [*μ*FLU08-24] *Visco-Elastic Flows at Macro-, Micro- and Nano-Scales*. Luca BIFERALE, Guido MANZI & Mauro SBAGAGLIA
- **10h15 Session P4-2 (Liquid Microflows) Poster Presentation**
Session Chair: Michel FAVRE-MARINET
- 10h15 [*μ*FLU08-132] *Scalar Advection Close to the Wall in a Chaotic Flow*. Filippo DE LILLO, Guido BOFFETTA & Andrea MAZZINO.
 - 10h20 [*μ*FLU08-65] *Novel Method for Analysing Phase Diagrams using Pervaporation*. Annick MOUMEN, Jacques LENG, Mathieu JAONICOT & Patrick TABELING.
 - 10h25 [*μ*FLU08-38] *Modelling of Plane Flow with a Pressure Gradient in a Nanochannel*. Valery RUDYAK, Alexander BELKIN, Veniamin EGOROV & Denis IVANOV.
- **09h00 Session O4-3 (Electrokinetic Microflows)**
Session Chair: Sedat TARDU
- 09h00 [*μ*FLU08-13] *Electro-Osmotic Thin Film Flow with a Moving Interface*. Mohammed RIZWAN SADIQ, Shizhi QIAN & Sang W. JOO.
 - 09h18 [*μ*FLU08-126] *Dielectric Properties of Water inside Single-Walled Carbon Nanotube*. Yuan LIN, Junichiro SHIOMI, Shigeo MARUYAMA & Gustav AMBERG.
 - 09h36 [*μ*FLU08-201] *Insulated Liquid Electrodes in a Microfluidic Chip for the Electroporation of Living Cells*. Julien VILLEMEJANE, Guillaume MOTTET, Olivier FRANCAIS, Jean-Pierre LEFEVRE, Lluís M. MIR & Bruno LEPIOUFLE.
 - 09h54 [*μ*FLU08-249] *Development of Novel Electrohydrodynamic Micropump with 3-D Electrode Geometry*. Anthony J. ROBINSON, Garret O'DONNELL, Jaap VERHEGGEN & Chan Y. CHING.

o **10h15 Session P4-3 (*Electrokinetic Microflows*) Poster Presentation**

Session Chair: Sedat TARDU

- 10h15 [μ FLU08-43] *Experimental and Mathematical Studies of Electroosmotic Flow in a Poly (Dimethylsiloxane) Microfluidic Hybrid Device*. Amanda V. ELLIS, Febly THO, John BURNELL and Andrea BUBENDORFER.
- 10h20 [μ FLU08-66] *Occurrence of Vortices in Electro-Osmotic Micro-Channel Flows*. Yuval ECKSTEIN, Avraham SEIFERT, Gilad YOSSIFON & Touvia MILOH.
- 10h25 [μ FLU08-85] *Jet Instability in High-Frequency Alternating Electric Fields*. Sergey POLYANSKIKH, Evgeny DEMEKHIN & Elena SHAPAR.
- 10h30 [μ FLU08-106] *Instabilities and Electroconvection in Electric Membranes*. Vladimir LAPCHENKO, Ekaterina KOPELEVICH, Evgeny DEMEKHIN & Eugene KALADIN.
- 10h35 [μ FLU08-242] *Numerical Modelling of AC Electroosmotic Flows based on the Poisson-Boltzmann Equation Coupled to the Navier-Stokes Equations*. Pascale PHAM, Sedat TARDU & Anne PLANAT-CHRETIEN.
- 10h40 [μ FLU08-271] *Modelling and Optimization of Multi-Enzyme Electrokinetic Driven Multiplexed Microchip for Simultaneous Detection of Sugars*. Yegermal Tesfaw ATALAY, Pieter VERBOREN, Steven VERMEIR, Nicolas VERGAUWE, Bart NICOLAI & Jeroen LAMMERTYN.

o **10h45 Coffee Break and discussion around posters**

o **11h30 Session O5-1 (*Microflow Visualisation and Measurements*)**

Session Chair: Lucien BALDAS

- 11h30 [μ FLU08-182] *Velocity Distribution in the Transverse Section of a Microchannel: Estimation through an Inverse Infrared Temperature Measurement Problem*. Isabelle PERRY, Yves JANNOT, Denis MAILLET & Benoit FIERES.
- 11h48 [μ FLU08-80] *Observation of the Clogging of PDMS Micro-Separators by Micrometric Particles*. Patrice BACCHIN, Aurélie MARTY, Jie LIN, Paul DURU, David BOURRIER, Monique DILHAN & Martine MEIRELES.
- 12h06 [μ FLU08-44] *Mixing Flow in the Slanted Ridge Mixer – Experimental Characterization and Numerical Simulations*. Twan VAN SCHIJNDEL, Nicolette KAHYA, Aleksey KHARIN, Jaap DEN TOONDER & Mrityunjay SINGH.
- 12h24 [μ FLU08-272] *New Optical Counting Technique with 3D-Hydrodynamic Focusing for Leukaemia Cells*. Stefano CHIAVAROLI, David NEWPORT & Bernie WOULFE.

o **11h30 Session O5-2 (*Microdroplets Management*)**

Session Chair: Marco MARENGO

- 11h30 [μ FLU08-105] *Plasma-Deposited Fluorocarbon Films as Hydrophobic Layers for Electrowetting on Dielectric Based Droplet Transport*. Pinelopi BAYIATI, Angeliki TSEREPI, Dimitris GOUSTOURIDIS, Konstantinos MISIAKOS & Evangelos GOGOLIDES.
- 11h48 [μ FLU08-244] *The Production of Micro-Droplets by the Impact of a Drop on a Hydrophobic Micro-Grid*. Philippe BRUNET, Farzam ZOUESHTIAGH, Alain MERLEN, Florian LAPIERRE & Vincent THOMY.
- 12h06 [μ FLU08-269] *Electro-Hydrostatic Stability and Electrowetting Performance of Captive Microdroplets – A Parametric Sensitivity Analysis*. Antonis I. DRYGIANNAKIS, Athanasios G. PAPATHANASIOU & Andreas G. BOUDOUVIS.
- 12h24 [μ FLU08-114] *'Pipe Based Bioreactors' – A New High-Throughput Bioreaction Platform Based on Microfluidics*. Gunter GASTROCK, Karen LEMKE, Andreas GRODRIAN, Jörg SCHEMBERG, Stefan WIEDEMEIER, Robert ROMER, Jens T. SCHUMACHER & Josef METZE.

o **11h30 Session O5-3 (*Microflows in Bioengineering and Biofluidics*)**

Session Chair: David NEWPORT

- 11h30 [*μFLU08-46*] *Lateral Migration of Vesicles in Microchannels*. Badr KAOUI, Gwennou COUPIER, Chaouqi MISBAH & Thomas PODGORSKI.
- 11h48 [*μFLU08-108*] *Microfluidic Magnetic Cell Sorting System for Cancer Diagnosis*. Laure SAIAS, Antoine-Emmanuel SALIBA, Jean-Louis VIOVY, Jean-Yves PIERGA, Philippe VIELH & Françoise FARACE.
- 12h06 [*μFLU08-248*] *Microfluidic Approaches to Circulating Cell Mechanics*. Sylvain GABRIELE, Anne-Marie BENOLIEL, Pierre BONGRAND & Olivier THEODOLY.
- 12h24 [*μFLU08-64*] *Micro-Scale Flow on Naturally Occurring and Engineered Functional Surfaces*. Philip H. GASKELL, Yeaw C. LEE, Harvey M. THOMPSON, David R. EMERSON & Xiao J. GU.

o **12h45 Lunch**

Thursday 11 December - Afternoon

o **14h15 Session O6-1 (*Fluidic Microactuators and Micromixing*)**

Session Chair: Ibrahim HASSAN

- 14h15 [*μFLU08-76*] *Spectral Localization and Mixing Regimes in Nonchaotic Stokes Microflows*. S. CERBELLI & M. GIONA.
- 14h33 [*μFLU08-139*] *Simulation of Microfluidic Mixing Using Artificial Cilia*. Michiel G. H. M. BALTUSSEN, Jaap M. J. DEN TOONDER, Femke M. BOS & Patrick D. ANDERSON.
- 14h51 [*μFLU08-170*] *Fabrication and Evaluation of Electrochemical Actuator with an integrated Sensor Unit for Microfluidic Device*. Gerald BLANCO-GOMEZ, Andrew GLIDLE, Jon M. COOPER, Leonard M. FLENDRIG & Tim J. FOSTER.
- 15h09 [*μFLU08-254*] *Transverse Diffusive Mixing in Pressure Driven Microchannels: a Lattice Boltzmann Study of the Scaling Laws*. Segun AYODELE, Fathollah VARNIK, Dierk RAABE.

o **15h30 Session P6-1 (*Fluidic Microactuators and Micromixing*) Poster**

Presentation

Session Chair: Ibrahim HASSAN

- 15h30 [*μFLU08-160*] *Active Micromixing through Self-Generating Vortical Structures*. Sedat TARDU.
- 15h35 [*μFLU08-241*] *Experimental Characterization of Sub-Millimetric Fluidic Actuators: Application to Boundary Layer Separation Control*. Ahmad BATIKH, Lucien BALDAS, Robert CAEN, Wafa GHOZLANI & Azeddine KOURTA.
- 15h40 [*μFLU08-185*] *Synthesis of Block Copolymer Vesicles in a Micromixer*. Waltraut MUELLER, Michael MASKOS, Daniel METZKE & Patrick LOEB.
- 15h45 [*μFLU08-226*] *Numerical Simulation of Single Artificial Cilium Magnetic Driven Motion in a Semi-Infinite Domain*. Dragos ISVORANU, Daniel IOAN & Petrisor PARVU.
- 15h50 [*μFLU08-246*] *Thermal Diffusion Effects in T-Shaped Micromixers*. Haritz BARRUTIA, Alain MARTIN, Abdelfattah ZEBIB & Mounir BOU-ALI.

- 15h55 [*μ*FLU08-70] *Design and Simulation of an Interdigital-Chaotic Advection Micromixer for Lab-on-a-chip Applications*. Khashayar KHOSHMANESH, Abbas Z. KOUZANI, Saeid NAHAVANDI, Sara BARATCHI & Jagat KANWAR.
- **14h15 Session O6-2 (Lab on a Chip and Miniaturized Chemistry)**
Session Chair: Patrick TABELING
 - 14h15 [*μ*FLU08-230] *Enhancement of Transport in Biosensing using Flow Segmentation*. Matteo FUMAGALLI, Volkert VAN STEIJN, Chris R. KLEIJN, Louis C. P. M. DE SMET, Ernst J. R. SUDHOLTER & Michiel T. KREUTZER.
 - 14h33 [*μ*FLU08-121] *Characterisation of Optimised Polymer Microreactor Designs for Linear Dilution Generation using an Integrated Optical Detection System*. Hayat ABDULLA YUSUF, Sara BALDOCK, Robert BARBER, Stephan MOHR, Peter FIELDEN, Nick GODDARD & Bernard TREVES BROWN.
 - 14h51 [*μ*FLU08-221] *Thermal Analysis for Velocity, Kinetics and Enthalpy Reaction Measurements in Microfluidic Device*. Christophe PRADERE, Cindy HANY, Jean TOUTAIN & Jean-Christophe BATSALE.
 - 15h09 [*μ*FLU08-89] *Step-Emulsification Microfluidics for Production of Monodispersed High Surface Area Silica Microparticles*. Venkatachalam CHOKKALINGAM, Boris WEIDENHOF, Wilhelm F. MAIER, Stefan HERMINGHAUS & Ralf SEEMANN.
 - **15h30 Session P6-2 (Lab on a Chip and Miniaturized Chemistry) Poster Presentation**
Session Chair: Patrick TABELING
 - 15h30 [*μ*FLU08-103] *Synthesis of Rubrene Organic Nanocrystals in a 3D Hydrodynamic Focusing Device*. Valérie GENOT, Callie CROUSHORE, Jean-Pierre LEFEVRE, Robert Bernard PANSU, Jacques Alexis DELAIRE, Serge DESPORTES & Philipp RUDOLPH VON ROHR.
 - 15h35 [*μ*FLU08-127] *Enzyme Based Microsensor for Simultaneous Detection of Glucose and Ethanol Applied in a Microbioreactor System*. Stefanie DEMMING, Ralph WILKE, Astrid JANSEN, Felix PRECHT & Stephanus BUTTGEBACH.
 - 15h40 [*μ*FLU08-135] *EWOD Displacement on Patterned Superhydrophobic Silicon Nanowires Surface: Lab-on-Chip for Direct Mass Spectrometry Analysis*. Florian LAPIERRE, Bernard VERBEKE, Nicolas VERPLANCK, Vincent THOMY, Gaelle PIRET, Yannick COFFINIER & Rabah BOUKKERROUB.
 - 15h45 [*μ*FLU08-200] *Electrophoretic PDMS/Glass Chips with Integrated Active Cooling for Quantification of Amino Acids*. Omar YASSINE, Louis RENAUD, Pascal KLEIMANN, Anne-Laure DEMAN, Jean-François CHATEAUX, Pierre MORIN, Naim OUAINI & Rosaria FERRIGNO.
 - 15h50 [*μ*FLU08-268] *Integrated AC Electrokinetic Micropumps for Lab-on-a-Chip Applications*. Stefano CATTANEO, Fabio DEL SIGNORE, Murray GILLIES, Hywel MORGAN, Nicholas G. GREEN & Ralph LINDKEN.
 - **14h15 Session O6-3 (Two-Phase Flows in Microsystems)**
Session Chair: Oleg KABOV
 - 14h15 [*μ*FLU08-100] *Non-Newtonian Fluids in Flow Focusing Devices: Encapsulation with Alginates*. Sophie LE VOT, Jean BERTHIER, Pascal TIQUET, Nadine DAVID, Régis BLANC, Pierre-Yves BENHAMOU & Florence RIVERA.
 - 14h33 [*μ*FLU08-124] *Manipulation of Bubbles with Acoustic Waves in a Microfluidic Device*. David RABAUD & Philippe MARMOTTANT.
 - 14h51 [*μ*FLU08-118] *An Interface Capturing Method for Two-Phase Flow with Moving Contact Lines*. Sara ZAHEDI, Gunilla KREISS & Katarina GUSTAVSSON.

- 15h09 [*μ*FLU08-138] *Generating Double Emulsions W/O/W in a PDMS System by Controlling Locally the Wetting Properties of the Channel.* Hervé WILLAIME, Nicolas PANNACCI, Pol GRASLAND-MONGRAIN, Emilie-Marie SOARES, Michael BENZAQUEN & Patrick TABELING.
- **15h30 Session P6-3 (*Two-Phase Flows in Microsystems*) Poster Presentation**
Session Chair: Oleg KABOV
 - 15h30 [*μ*FLU08-36] *Dynamics of Vesicles in Microchannel Flows.* Enrico SEGRE, Vasilii KANTSLER & Victor STEINBERG.
 - 15h35 [*μ*FLU08-53] *Bubble Formation in Flow-Focusing Microfluidic Devices.* Taotao T. FU, Denis FUNFSCHILLING, Youguang G. MA & Huai-Zhi LI.
 - 15h40 [*μ*FLU08-57] *A Simple Way to Measure the Hydrodynamic Resistance of Droplets in Microchannels.* Vincent LABROT, Michael SCHINDLER, Pierre GUILLOT, Annie COLIN & Mathieu JOANICOT.
 - 15h45 [*μ*FLU08-59] *A Hybrid Level-Set-Cahn-Hilliard Model for Two-Phase Flow.* Martin KRONBICHLER & Gunilla KREISS.
 - 15h50 [*μ*FLU08-218] *Advanced Design of a Pulsating Heat Pipe: Numerical Simulations and Proposal for an Experimental Apparatus.* Mauro MAMELI, Marco MARENCO, Leonid VASILIEV & Stefano ZINNA.
 - 15h50 [*μ*FLU08-25] *Extraction in Microfluidic Droplets.* Pascaline MARY, Vincent STUDER & Patrick TABELING.
- **16h00 Coffee Break and discussion around posters**
- **16h45 Session O7-1 (*Gas Microflows*)**
Session Chair: Yonghao ZHANG
 - 16h45 [*μ*FLU08-198] *Microchannel Flow with Lattice Gas Cellular Automata and Lattice Boltzmann Method.* Jae Wan SHIM & Renée GATIGNOL.
 - 17h03 [*μ*FLU08-189] *A Variational Solution of the Linearized Boltzmann Equation for Gas Flows in Microchannels.* Carlo CERCIGNANI & Silvia LORENZANI.
 - 17h21 [*μ*FLU08-215] *A Moment Method for Low Speed Gas Microflows.* Aldo FREZZOTTI, Livio GIBELLI & Benedetta FRANZELLI.
 - 17h39 [*μ*FLU08-19] *Estimation of the Poiseuille Number and of the Exact Hydraulic Diameter in Rarefied Gas Flows through Channels of Various Cross Sections.* Stelios VAROUTIS, John LIHNAROPOULOS, Dimitris VALOUGEORGIS, Dimitris MATHIOULAKIS & A. TSEREPI.
- **16h45 Session O7-2 (*Liquid Microflows*)**
Session Chair: Denis MAILLET
 - 16h45 [*μ*FLU08-270] *High Gradient Magnetic Separation of Micro-Pollutant from Wastewaters.* Giacomo MARIANI, Massimo FABRI, Francesco NEGRINI & Pier Luigi RIBANI.
 - 17h03 [*μ*FLU08-122] *Non-Axisymmetric Instabilities in Charged Microjets in Liquid-Liquid Electrospays.* Guillaume RIBOUX, Alvaro G. MARIN, Ignacio G. LOSCERTALES & Antonio BARRERO.
 - 17h21 [*μ*FLU08-180] *Direct Modelling of the Microscale Flow through a PEM Fuel Cell GDL and Channel.* Anastasios KOPANIDIS, Demetri BOURIS, Andreas THEODORAKAKOS & Manolis GAVAISES.
 - 17h39 [*μ*FLU08-258] *Lattice Boltzmann Simulations in Microfluidics: Probing the Boundary Condition.* Jens HARTING, Christian KUNERT & Jari HYVALUOMA.

o **16h45 Session O7-3 (*Microflows in Bioengineering and Biofluidics*)**

Session Chair: Dimos POULIKAKOS

- 16h45 [*μFLU08-73*] *An Enzyme-Based Microfluidic Biofuel Cell to Generate Micropower from Glucose and Oxygen.* Abdelkader ZEBDA, Louis RENAUD, Sophie TINGRY, Marc CRETIN, Christophe INNOCENT, Frédéric PICHOT & Rosaria FERRIGNO.
- 17h03 [*μFLU08-233*] *Shear Induced Changes in Fluidity and Mobile Fraction of HeLa Cell Membrane: Dependence on Local Traction Forces.* Tamal DAS, Suman CHAKRABORTY & Tapas MAITI.
- 17h21 [*μFLU08-60*] *Enrichment of Bacteria with Conjugated Polymer Electrodes.* Joakim ISAKSSON, Stefano CATTANEO & Murray GILLIES.
- 17h39 [*μFLU08-178*] *Conformational Fluctuations of Single-Tethered DNA Duplexes in and without Applied Shear Flow.* Katrin GUNTHER, Kristin LAUBE, Indrani SEN & Michael MERTIG.

o **18h00 End of sessions**

o **20h00 Banquet**

Friday 12 December - Morning

o **08h15 Invited Lecture I3:** Ralph LINDKEN, Delft University of Technology, the Netherlands.

Session Chair: Lucien BALDAS

- 08h15 [*μFLU08-216*] *Recent Advances in Optical Diagnostics for the Investigation of Microfluidic Flows.* Ralph LINDKEN.

o **09h00 Session O8-1 (*Microflow Visualisation and Measurements*)**

Session Chair: Lucien BALDAS

- 09h00 [*μFLU08-94*] *Micro-PIV Investigations of Water Slip and Particle Thermophoresis.* Laura BRIGO, Matteo PIERNO, Giorgio CARRARO, Andrea PACETTI & Giampaolo MISTURA.
- 09h18 [*μFLU08-86*] *Acoustic Focusing of Particles in a Micro-Channel. Application to Micro-PIV.* Olivier DRON, Jean-Luc AIDER, Claire RATIER & Mauricio HOYOS.
- 09h36 [*μFLU08-166*] *Ex-Vivo μPIV Measurements of the Flow Induced by Cilia in Mouse Trachea.* Jeanette HUSSONG, Petra FAULHAMMER, Katharina NOREIKAT, Wolfgang KUMMER, Kendra V. SHARP, Ralph LINDKEN & Jerry WESTERWEEL.
- 09h54 [*μFLU08-206*] *Measurement of Phase Internal Flow during Droplet Generation at T-Shaped Nozzles.* Daniél MALSCH, Nils GLEICHMANN, Mark KIELPINSKI, Günter MAYER, Thomas HENKEL, Volkert VAN STEIJN, Chris R. KLEIJN & Michiel T. KREUTZER.

o **10h15 Session P8-1 (*Microflow Visualisation and Measurements*) Poster Presentation**

Session Chair: Lucien BALDAS

- 10h15 [*μFLU08-34*] *Micro-PIV Study of the Flow of Wormlike Micelles.* Philippe NGHE, Guillaume DEGRE, Patrick TABELING & Armand AJDARI.

- 10h20 [*μ*FLU08-48] *Electrochemical Detection in Microfluidic Channels: Comparison of Analytical Performances between Single Electrode Configuration and Electrode Arrays*. Christian AMATORE, Nicolas DA MOTA, Catherine SELLA & Laurent THOUIN.
 - 10h25 [*μ*FLU08-82] *μPIV Flow Field Measurements in a Flow Focusing Geometry*. Denis FUNFSCHILLING, Taotao FU, Huai-Zhi LI & Thomas MASON.
 - 10h30 [*μ*FLU08-95] *Micro Hot-Tubes: Measurements and Flow Control*. Vladimir ANISKIN, Anatoliy MASLOV, Aleksander SHIPLYUK, Vladimir SELEZNEV & Victor PRINZ.
 - 10h35 [*μ*FLU08-194] *Probing Slippage and Flow Dynamics of Thin Dewetting Polymer Films*. Oliver BAUMCHEN, Karin JACOBS & Renate FETZER.
- **09h00 Session O8-3 (*Microflows in Bioengineering and Biofluidics*)**
Session Chair: David NEWPORT
- 09h00 [*μ*FLU08-137] *Numerical Simulations of DNA-Chip Hybridization with or without Mixing by Chaotic Advection*. Aurélien BEUF, Philippe CARRIERE & Florence RAYNAL.
 - 09h18 [*μ*FLU08-171] *Relaxation Dynamics of Confined DNA: a Mesoscale Simulation*. Elisabetta DE ANGELIS & Mauro CHINAPPI.
 - 09h36 [*μ*FLU08-252] *Dynamics of Vesicles and Blood Cells in Shear Flow*. Annie VIALLAT, Cyrille VEZY, Manouk ABKARIAN & Gladys MASSIERA.
 - 09h54 [*μ*FLU08-187] *Blood Flow Separation in Microfluidic Channels*. Maiwenn KERSAUDY-KERHOAS, Resham DHARIWAL, Marc P. Y. DESMULLIEZ & Lionel JOUVET.
- **10h15 Session P8-3 (*Microflows in Bioengineering and Biofluidics*) Poster Presentation**
Session Chair: David NEWPORT
- 10h15 [*μ*FLU08-51] *Phase Modulation Based Micro-Interferometry for Investigating Micro-Scale Phenomenon in Micro-Devices and Biological Structures*. Shiju JOSEPH, David NEWPORT & Maurice WHELAN.
 - 10h20 [*μ*FLU08-83] *Passive Microfluidic Devices for Plasma Extraction from Whole Human Blood*. Elodie SOLLIER, Hervé ROSTAING, Yves FOUILLET, Jean-Luc ACHARD & Patrick POUTEAU.
 - 10h25 [*μ*FLU08-146] *Tensile Strength of Nanocapsules Functionalized with Poly (Ethylene Glycol) and Wall Interactions during Flow through Nanochannels*. Raluca POPA, Marcel VRANCEANU, Stefan NIKOLAUS, Hermann NIRSCHL & Gero LENEWEIT.
 - 10h30 [*μ*FLU08-156] *Microfluidic Actuation in Living Organisms: a Biomimetic Catalogue*. Nikolay BOGATYREV & Julian F. V. VINCENT.
 - 10h35 [*μ*FLU08-266] *Experimental Study on Laminar Flow through Microchannel Bends for Blood Cell Separation Applications*. S. MUKHOPADHYAY, M. TWEEDIE, S. S. ROY & J. A. MCLAUGHLIN.
- **10h45 Coffee Break and discussion around posters**
- **11h30 Session O9-1 (*Microflow Visualisation and Measurements*)**
Session Chair: Ralph LINDKEN
- 11h30 [*μ*FLU08-197] *3D In Situ Visualization of Particle Flowing in Mini-Channels by using Digital Holographic Microscopy*. Claire RATIER, Mauricio HOYOS, Pascal KUROWSKI, Thierry DARNIGE, Eric CLEMENT, Frank DUBOIS, Catherine YOURASSOWSKY, Natacha CALLENS & Christophe MINETTI.

- 11h48 [*μ*FLU08-175] *Three-Dimensional Micro-channel Flow with Complex Shape by Micro-Digital-Holographic-PTV and Numerical Simulation*. Shin-Ichi SATAKE, Gaku SORIMACHI, Takafumi ANRAKU, Tomoaki KUNUGI, Kazuho SATO & Tomoyoshi ITO.
 - 12h06 [*μ*FLU08-16] *Nano-Velocimetry for Flows near Nano-Structured Surfaces*. Gea O. F. PARIKESIT, Ralph LINDKEN & Jerry WESTERWEEL.
 - 12h24 [*μ*FLU08-231] *Multiphase Flow in a Forest of Micropillars*. Volkert VAN STEIJN, Michiel MAKKEE, Chris R. KLEIJN, Michiel T. KREUTZER & Axel GUENTHER.
- **11h30 Session O9-3 (*Liquid Microflows*)**
Session Chair: Carlo NONINO
- 11h30 [*μ*FLU08-131] *Generation of a Spray on Demand using a Vibrating Micro-Channel*. Moussa TEMBELY, Arthur SOUCEMARIANADIN & Christian LECOT.
 - 11h48 [*μ*FLU08-20] *Impact of a Molecular Packing upon a Surface Stokes Flow*. Laurent DAVOUST, Yu Lin HUANG, Shuo Hung CHANG & Laurent DRAZEK.
 - 12h06 [*μ*FLU08-202] *Magnetic Particles as Multifunctional Transport Carriers and Fluid Drivers in Micro Systems*. Roy J. S. DERKS, Arjan J. H. FRIJNS, Menno W. J. PRINS & Andreas DIETZEL.
 - 12h24 [*μ*FLU08-75] *Nano-Viscosimetry of Thin Polymer Films from a Linear Stability Model*. Tanguy LEVEDER, Stefan LANDIS & Laurent DAVOUST.
- **12h45 Lunch**

Friday 12 December - Afternoon

- **14h15 Session O10-1 (*Gas Microflows*)**
Session Chair: Aldo FREZZOTTI
- 14h15 [*μ*FLU08-151] *Air Flow in Aluminum Foam: Heat Transfer and Pressure Drops Measurements*. Alberto CAVALLINI, Simone MANCIN, Luisa ROSSETTO & Claudio ZILIO.
 - 14h33 [*μ*FLU08-167] *New Experimental Setup for Accurate Measurement of Gas Microflows*. Jeerasak PITAKARNNOP, Stelios VAROUTIS, Dimitris VALOUGEORGIS, Sandrine GEOFFROY, Nicolas LAURIEN & Stéphane COLIN.
 - 14h51 [*μ*FLU08-161] *Mass Flow Rates in Microchannels: from Slip to Near Free Molecular Regimes*. Irina A. GRAUR, Pierre PERRIER, J. Gilbert MEOLANS, Wafa GHOSLANI & Timothée EWART.
 - 15h09 [*μ*FLU08-155] *Heat Transfer and Pressure Drop Correlations of Carbon Dioxide around Critical Point in Microchannel Heat Exchangers*. Yasuyoshi KATO, Tri Lam NGO, Nikitin KONSTANTIN & Utamura MOTOAKI.
 - 15h27 [*μ*FLU08-96] *Pressure Drop in Transitional and Turbulent Regime for Isothermal Gas Flows through Microtubes*. Gian Luca MORINI, Marco LORENZINI, Pauline BERTHELLEMY & Marco SPIGA.

o **14h15 Session O10-2 (*Two-Phase Flows in Microsystems*)**

Session Chair: Minh DO-QUANG

- 14h15 [μ FLU08-148] *Contact Line Dynamics in Immersion Lithography - Dynamic Contact Angle Analysis*. Michel RIEPEN, Fabrizio EVANGELISTA & Sjoerd DONDEERS.
- 14h33 [μ FLU08-153] *Effect of Inlet Conditions on Gas-Liquid Flow Regimes in Microchannels*. Nan SHAO, Asterios GAVRIILIDIS & Panagiota ANGELI.
- 14h51 [μ FLU08-183] *Coarse Grid Modelling of Capillary Driven Two-Phase Flow in Direct Methanol Fuel Cells*. Nils PAUST, Peter KOLTAY, Roland ZENGERLE & Christoph ZIEGLER.
- 15h09 [μ FLU08-243] *Optical Microsensors to Study Two-Phase Flow Characteristics*. Olaf KOEPPEN, Felix ZIEGLER, Hein AURACHER & Martin BUCHHOLZ.
- 15h27 [μ FLU08-99] *Microfluidic Emulsion Stabilization*. Jean-Christophe BARET, Abdeslam EL HARRAK, Felix KLEINSCHMIDT & Andrew GRIFFITHS.

o **14h15 Session O10-3 (*Microfabrication Techniques for Microfluidic Systems*)**

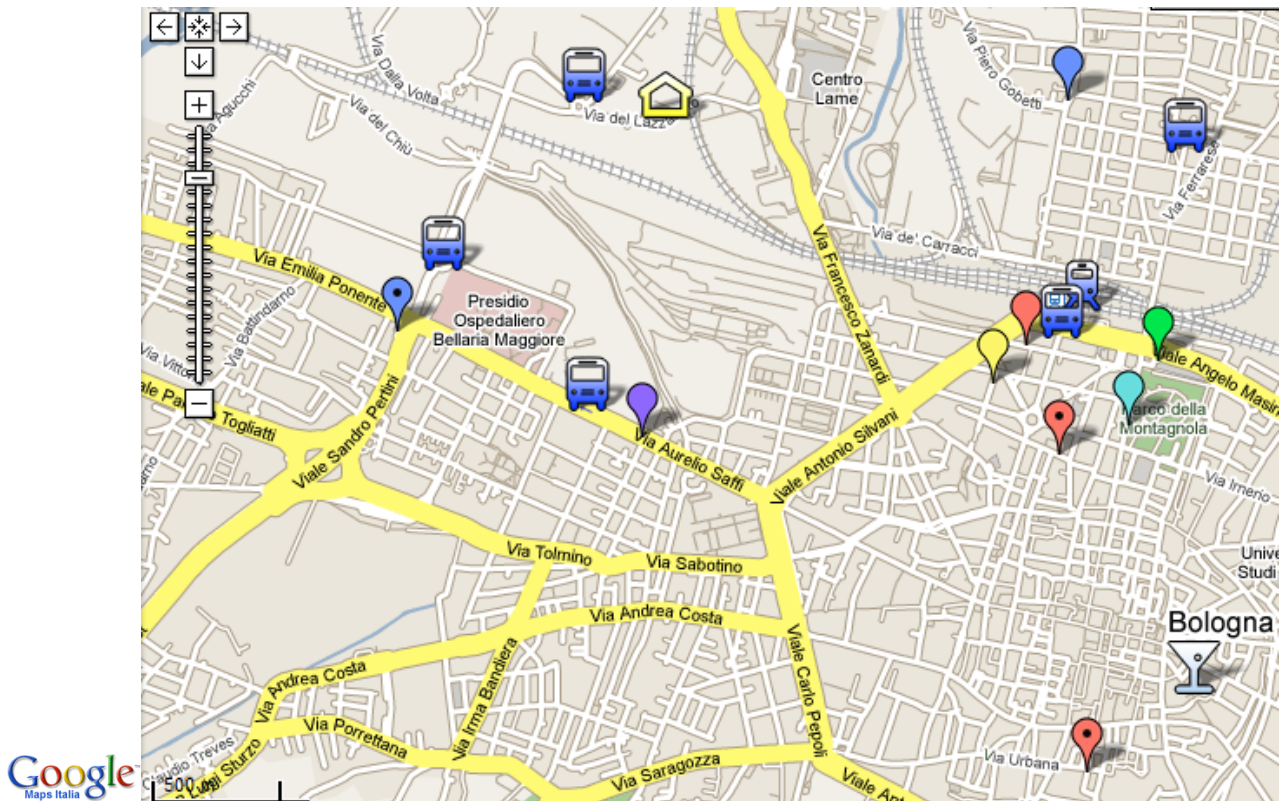
Session Chair: Norbert KOCKMANN

- 14h15 [μ FLU08-91] *Nanofluidic Systems: Development of Fabrication Technologies and Characterization of Capillary Filling Rates*. Alaa El Dine ALLOUCH, Yannick VIERO, Mathieu GODEFFROY, Jean-Charles MILLET, Pascal DUBREUIL, Aurélien BANCAUD, Pierre JOSEPH, Anne-Marie GUE, Patrick ABGRALL & Nam-Trung NGUYEN.
- 14h33 [μ FLU08-228] *Fabrication, Surface Modification and Characterization of Polymeric Microfluidic Devices Using Plasma Etching and Plasma Processing Technology*. Katerina TSOUGENI, Dimitris PAPAGEORGIOU, Konstantinos KONTAKIS, Nikolaos VOUREDAS, Angeliki TSEREPI & Evangelos GOGOLIDES.
- 14h51 [μ FLU08-237] *A Complete Process to Make a Lab on a Chip with Complex Fluidics and Thick Electrodes for Biological Applications*. Guillaume MOTTET, Julien VILLEMEJANE, Jean-Pierre LEFEVRE & Bruno LE PIOUFLE.
- 15h09 [μ FLU08-50] *Potentialities of Glass Wafers for Thermal Sensors and Actuators Development*. Bertrand MARTY, Thierry CAMPS, Josiane TASSELLI, Antoine MARTY, Laurent BOUSCAYROL & Jean-Christophe MARROT.
- 15h27 [μ FLU08-205] *SOLID Process for Microfluidics Systems*. Jérôme CHARMET, Henri HAQUETTE, Edith LAUX, Herbert KEPPNER, Ganna GORODYSKA, Marcus TEXTOT, Guido SPINOLA DURANTE, Erwin PORTUONDO-CAMPA, Helmut KNAPP, Roland BITTERLI & Wilfried NOELL.

o **15h45 Closing Party**

o **16h30 End of Conference**

Conference and Accommodation Locations



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Site of the 1st European mFlu08 Conference



Jolly Hotel Bologna De La Gare
Piazza 20 Settembre 40126 Bologna
www.nh-hotels.com



I Portici Hotel
Via Indipendenza, 69 40121 Bologna
www.iportichotel.it



Zanhotel Europa
Via Boldrini Cesare, 11 40121 Bologna
www.zanhotel.it



Grand Hotel Elite
Via Aurelio Saffi, 36 40131 Bologna
www.hotelelite.it



Hotel Touring Bologna
Via de' Mattuiani, 1 40124 Bologna
www.hoteltouring.it



Hotel Astor
Via A. Fioravanti, 42/2 40129 Bologna
www.hotel-astor.it



Astoria Hotel
Via Fratelli Rosselli, 14 40121 Bologna
www.astoria.bo.it



Best Western Hotel Maggiore
Via Emilia Ponente, 62/3 40133 Bologna
www.hotel-maggiore.it



Bus n° 35 Stop name: "Rotonda Battaglione Pistoia"



Train station

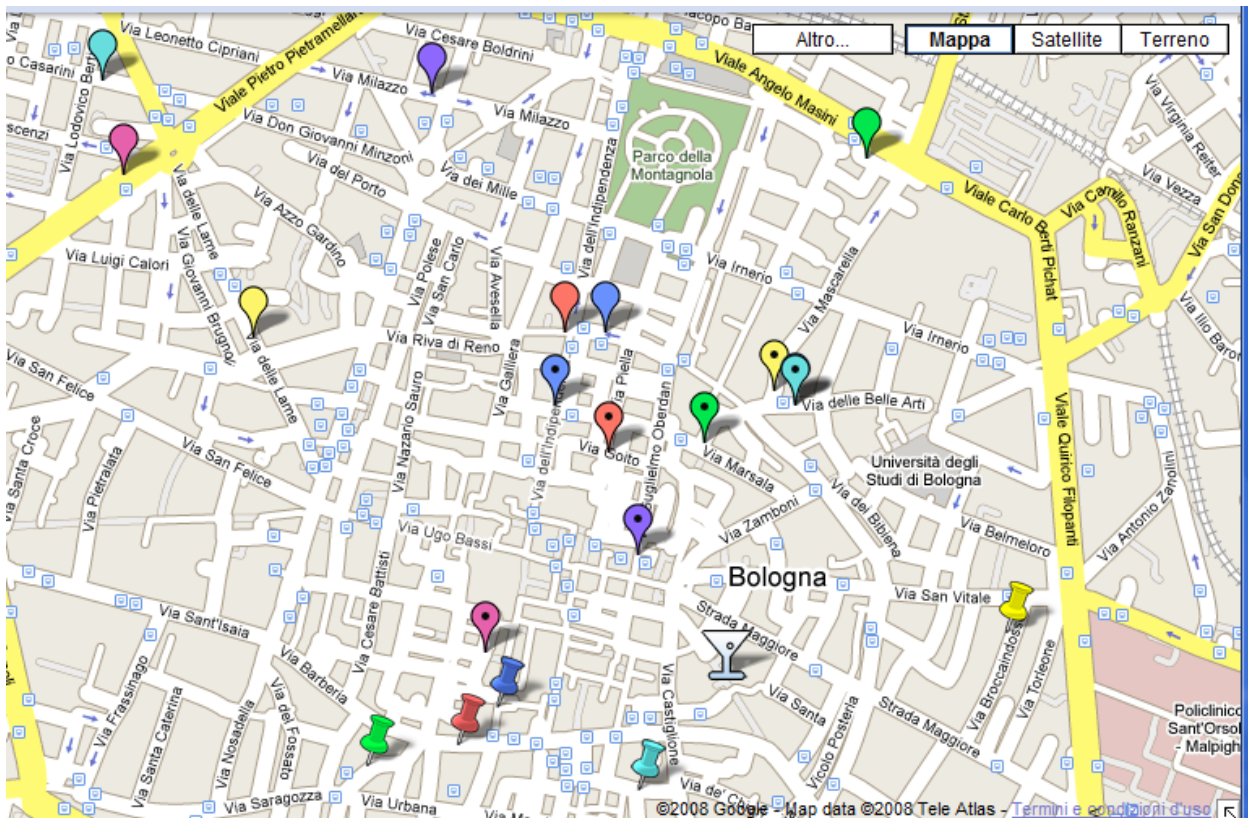


μflu08 Social Dinner
Via Santo Stefano, 16 40125 Bologna,



Nuovo Hotel Del Porto
Via Del Porto nr, 6 40122 Bologna
051 247 926
www.nuovohoteldelporto.com

Where to go to find something to eat during μFlu'08 in Bologna?



	RISTORANTE ZIA CATARI - Via Montegrappa 7 Bologna; <i>TF</i>		Osteria Cantina Bentivoglio - Via Mascarella, 4/B Bologna; <i>TF; IA</i>
	Cesari's Srl - Via de' Carbonesi, 8 Bologna; <i>TF; IC; FA</i>		Ristorante Osteria de' Poeti - Via de' Poeti, 1/b Bologna; <i>TF; FA</i>
	Osteria Dell'Orsa Sas Di Orienti Marco E C. - Via Mentana, 1/F Bologna; <i>TF; IA</i>		Ristorante Caminetto d'oro - Via Falegnami. Bologna; <i>TF, FA</i>
	Osteria La Matta - Mura Punta Galliera 11/A Bologna; <i>TF; IA</i>		Pizzeria La Mela - Via dei Fusari, Bologna; <i>P, IA</i>
	Da Bertino Snc Di Roda Alberto & C. - Via delle Lame, 55 Bologna; <i>TF</i>		Pizzeria Il Tari - Via Collegio di Spagna, Bologna; <i>P; IA</i>
	Ristorante Donatello - Via Righi Augusto, 8 Bologna; <i>TF</i>		Trattoria Annamaria - Via Delle Belle Arti 17 Bologna; <i>TF; IA</i>
	Ristorante Diana Srl - Via dell'Indipendenza, 24 Bologna; <i>TF; FA</i>		Pizzeria Ristorante Da Pino - Via Carbonara, Bologna; <i>P; IA</i>
	Palazzo Isolani - Conference Dinner - Via Santo Stefano, 16 Bologna		Il Veliero Ristorante Pizzeria Via Milazzo, 11 Bologna; <i>P; IA</i>
	Trattoria Scacco Matto - Via Broccaindosso, 63/B Bologna; <i>TF, IA</i>		La Praia - Via Camillo Casarini, 10 Bologna; <i>TF</i>
	Ristorante La Pignatta - Viale Silvani Antonio, 18 Bologna; <i>TF; FA</i>		Trattoria La Corte Galluzzi Corte De' Galluzzi, 7 Bologna; <i>TF; FA</i>
	Trattoria Pizzeria Belle Arti - Via Delle Belle Arti, 14 Bologna; <i>P, IA</i>		Ristorante Teresina - Via Guglielmo Oberdan, 4 Bologna; <i>TF</i>

TF
FA
P

Italian Traditional food
"Formal" ambience
Pizza

IC
IA

International food
"Informal" ambience