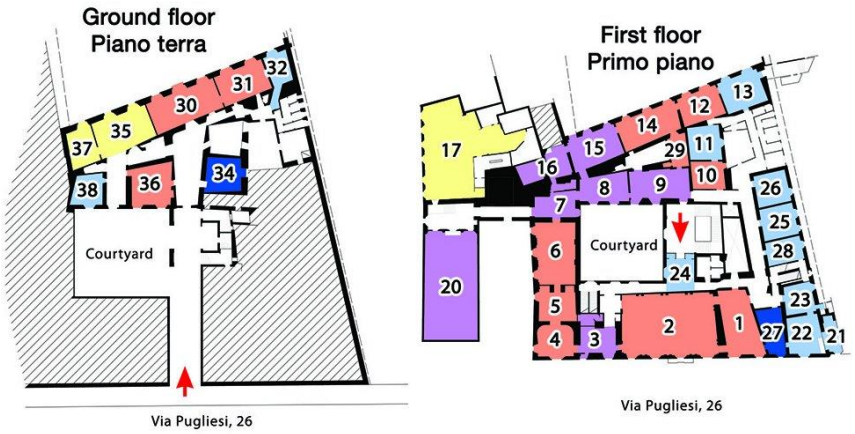
Acoustofluidics 2014

MONASH University

Conference Program

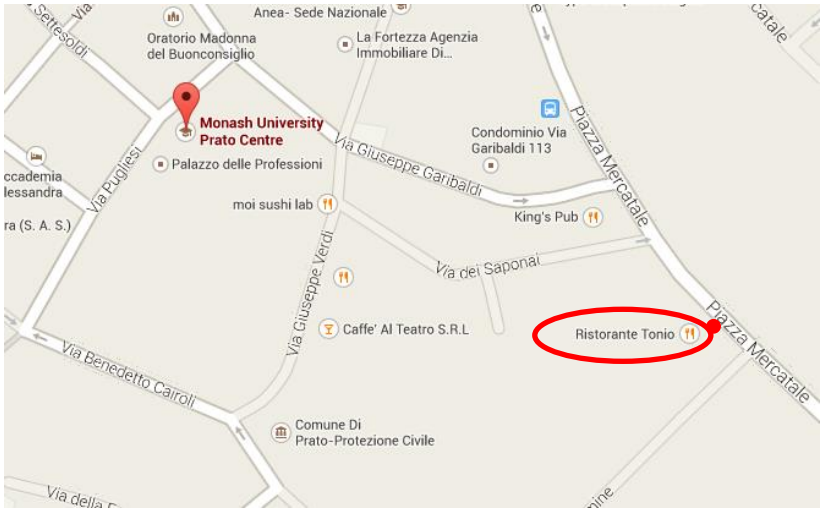
Venue: Monash University Prato Centre, Palazzo Vaj, Via Pugliesi 26, Prato

Presentations will be held in the Sala Veneziana (Room 6), poster sessions will be in Rooms 4 and 5.



Time	Thursday 11th September
10.30	USWnet Management Meeting (open to all who are interested) – Room 15
13.00	**Conference Opening**
13.05 - 13.45	Keynote Lecture – Jonathan Cooper **Fluidic microcircuits using Phononic Lattices and Surface Acoustic Waves** University of Glasgow
	Session 1: Biological Applications
13.50 - 14.10	**3D Cell Culture Using a Temperature Controlled Ultrasound Actuated Multi-Well Chip Device** Mathias Ohlin, Athanasia E. Christakou, Björn Önfelt, Martin Wiklund Royal Institute of Technology (KTH)
14.10 - 14.30	**Removal of proteins from blood using acoustophoresis** Andreas Lenshof, Maria Tenje, Maria N. Lundgren, Ann-Margret Svärd-Nilsson, Jens Kjeldsen-Kragh, Lena Åberg and Thomas Laurell Lund University
14.30 - 14.50	**Engineering composite tissue sheets with acoustic levitation** Angela Tait, Peter Glynne-Jones, Emily Swindle, Adam Fisher, Martin Grossel, Martyn Hill, and Donna Davies University of Southampton
14.50 - 15.10	**On-Chip Ultrasonic Sample Preparation For DNA-Based Diagnostics** Ida Iranmanesh, Harisha Ramachandriah, Mathias Ohlin, Aman Russom, and Martin Wiklund Royal Institute of Technology (KTH)

15.10 - 15.30	Coffee and Posters
	Session 2: Modelling and Numerical Analysis
15.30 – 15.50	**Thermoviscous theory of ultrasound scattering on microparticles and droplets** Jonas T. Karlsen, Mads J. H. Jensen, and Henrik Bruus Technical University of Denmark
15.50 - 16.10	**Effects of surface profile on a boundary-driven acoustic streaming field** Junjun Lei, Martyn Hill, and Peter Glynne-Jones University of Southampton
16.10 - 16.30	**Numerical analysis of particles undergoing acoustophoresis in a PDMS channel driven by surface acoustic waves** Nitesh Nama, R. Barnkob, C. J. Kähler, F. Costanzo, and T. J. Huang The Pennsylvania State University
16.30 - 16.50	**Hydrodynamic interactions in microfluidic acoustophoresis at high particle concentrations** Mikkel W. H. Ley and Henrik Bruus Technical University of Denmark
16.50 - 17.00	Coffee Break
	Session 3: Acoustic Microbubbles
17.00 – 17.25	Invited Lecture – Michel Versluis **StemBells: a novel stem cell delivery platform using microbubbles and acoustic radiation force** University of Twente
17.25- 17.45	**Manipulation of microbubbles in a microfluidic chip using planar array** Agesinaldo Silva, Bruce Drinkwater, Chris Fury, Philip H. Jones, and Gianluca Memoli University of Bristol, National Physical Laboratory, University college London
17.45 - 18.05	**Acoustic bubble sorting for ultrasound contrast agent enrichment** Tim Segers, Michel Versluis, University of Twente
18.05 – 18.25	**Live demonstration:** **Some acoustic properties of cooked spaghetti** Jeremy J Hawkes, Sara Baldock, Kenji Yasuda University of Manchester, Tokyo Medical and Dental University
19.00	Conference Banquet, Ristorante Tonio



Time	Friday 12th September
	Session 4: Droplets
9.00 - 9.20	**On-Chip Biochemistry: Droplet Generation and Merging** Adrian Neild, Monash University
9.20 – 9.40	**Ultrasonic Atomization of sessile drop in an Acoustic levitator** Marina Reissenweber, Gerhard Lindner Coburg University
9.40 – 10.00	**Droplet handling with acoustophoresis in bulk acoustic wave devices** Peter Reichert, Ivo Leibacher, and Jürg Dual ETH Zurich
10.00 – 10.30	Coffee and Posters
10.30 – 11.10	Keynote Lecture – James Friend **Beyond SAW in Acoustic Microfluidics** RMIT University
	Session 5: SAW Technologies
11.10 - 11.30	**Towards high efficient SAW-based microfluidic actuators** Raimund Brünig, Andreas Winkler, Florian Kiebert, and Hagen Schmidt IFW Dresden
11.30 - 11.50	**Interaction-free phononic crystal droplet sensing for portable surface acoustic-wave driven microfluidic devices** M. Agostini, M. Travagliati, G. De Simoni, R. J. Shilton, V. Piazza, M. Cecchini Scuola Normale Superiore and Istituto, Istituto Italiano di Tecnologia
11.50 - 12.10	**SAW-based fluid atomization using mass-producible chip devices** Andreas Winkler, Stefan Harazim, and David J. Collins IFW Dresden, Monash University
12.10 - 12.55	Lunch
	Session 6: SAW Devices
12.55 – 13.20	Invited Lecture – Richie Shilton **Ultra high frequency surface acoustic wave driven microfluidics** Istituto Italiano di Tecnologia
13.20 – 13.40	**Acoustic and dielectrophoretic particle sorting using virtual deterministic lateral displacement (vDLD)** David J Collins, Tuncay Alan and Adrian Neild Monash University
13.40 - 14.00	**Combined acoustic torques and forces on spherical particles obtained by the leakage of two standing orthogonal surface acoustic waves** Ianis Bernard, Philippe Marmottant, David Rabaud, Cédric Poulain, and Pierre Thibault Univ. Grenoble Alpes
14.20 - 14.40	**Cell and droplet sorting with surface acoustic waves** Thomas Franke University of Glasgow
14.40 - 15.10	Coffee Break

	Session 7: Particle Manipulation
15.10 - 15.30	**Cell trapping on acoustofluidic edge structures** Ivo Leibacher and Jürg Dual ETH Zurich
15.30 - 15.50	**Engineering single-vortex acoustic streaming for sub-micrometer particle handling** P. B. Muller, M. Antfolk, P. Augustsson, T. Laurell, and H. Bruus Technical University of Denmark, Lund University
15.50 - 16.10	**Efficiency Assessment of Acoustic Solid-Particle Separation in Gases** Ramin J. Imani, Etienne Robert Royal Institute of Technology (KTH), Polytechnique Montréal
16.10 – 16.30	**A novel combination of an optical trap with an acoustofluidic device to provide direct acoustic force measurements** Andreas Lamprecht, Stefan Lakämper, Iwan Schaap, and Jurg Dual ETH Zurich, Georg-August Universität
16.30 – 16.50	**Acoustic trapping for sepsis diagnosis using MALDI-MS** B. Hammarström, B. Nilson, T. Laurell, J. Nilsson and S. Ekström Lund University, Dongguk University
16.50 – 17.10	**SAW induced particle deflection in a microchannel using PDMS posts** Richard Rambach and Thomas Franke University of Glasgow, Augsburg University
17.10 – 17.15	Announcing “Acoustofluidics 2015” and closing remarks