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# ANZNMF 2018

## Auckland

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The University of Auckland  
Room 301-G053, The Science Centre, 23 Symonds St



**SCIENCE**  
DEPARTMENT OF PHYSICS



### Programme

#### Wednesday June 27 - Student Workshop

0800		<b>Registration</b>
0900		<b>Welcome</b>
0915	Serena Watkins	Tracking diffusion using fluorescence microscopy
0945	Steve Lee	Optical microscopy techniques to image cells and molecules in microfluidics
1030		<b>Morning Tea</b>
1100	Shaun Hendy	Simulations for micro- and nanofluidics
1145	Geoff Willmott	Micro- and nanofluidic transport mechanisms
1230	<b>Lunch</b>	<b>Lunch</b>
1330	Volker Nock	Fabrication tricks we learned around the hyphae chips
1400	Amanda Ellis	PDMS surface modification
1430	Rosanne Guijt & Egan Doeven	3D printing
1500		<b>Afternoon Tea</b>
1530	Muhammad Shiddiky	Nanoparticles based diagnostics
1600	Majid Warkiani	Microfluidic particle/cell sorting
1630	Michael Breadmore	Applications of microfluidics
1700		<b>Finish</b>

## Thursday June 28

0800		<b>Registration</b>
0845		<b>Welcome and Housekeeping</b>
0900	<b>Sandra Troian</b>	<b>Plenary: MicroAngelo technique: 3D sculpting of nanofilms by modulation of thermocapillary forces</b>
	<b>FABRICATION</b>	<i>Chair: Volker Nock</i>
0945	Elisenda Fornells	Integrated 3D printed heaters for microfluidic applications
1000	Matheus Vargas	Laser parameters and solvent treatment improvements for CO2 laser ablated poly(methyl methacrylate) microchannels
1015	Farhan Cecil	A step towards fully automated 3D printed instruments
1030		<b>Morning Tea</b>
	<b>APPLICATIONS</b>	<i>Chair: Muhammad Shiddiky</i>
1100	Justin Cooper-White	Super resolution and organoid compatible, microfabricated interaction devices for studying sub-cellular single molecule transport and multicellular interactomes
1115	Shau-Chun Wang	Using fiber optic particle plasmon resonance biosensors to determine nervous necrosis virus in fish pond water
1130	Ripon Bhattacharjee	A bisulfite-free approach for global DNA methylation detection based on highly porous iron oxide NanoZyme
1145	Nicholas Glass	Microfluidic devices for high throughput investigation of in vitro and in vivo angiogenesis
1200	Maira Syed	Two-stage microfluidic scheme for high-throughput retention of mammalian cells
1215	Xuefei He	Label free volumetric mapping of thrombus formation and embolism in a microfluidic system
1230		<b>Lunch</b>
	<b>MICROFLUIDICS</b>	<i>Chair: Craig Priest</i>
1330	Leslie Yeo	Acoustic enhancement of intracellular delivery for ex vivo therapeutics
1345	Chin Hong Ooi	Liquid marble-based digital microfluidics – a new platform for miniature labs
1400	Shiyang Tang	Lab-on-a-chip platforms enabled by novel magnetorheological elastomer microactuators
1415	Lianmei Jiang	A versatile microfluidic device for production of ultra-small nanoparticle-encoded microbeads
1430	Moein Kashani	Fluid dynamics simulation for new insight into microfluidic systems
1445		<b>Afternoon Tea and Poster Session</b>
	<b>FORCES AND ARRAYS</b>	<i>Chair: Emilia Nowak</i>
1545	Ray Dagastine	Connecting surface force measurements between micro-drops in microfluidic devices and atomic force microscopy
1600	Ankita Gangotra	Nanoaspiration: development & applications
1615	Yiling Sun	A microfluidic platform for the study of protrusive forces in fungi and oomycetes
1630	David Inglis	Anisotropic fluid conduction in periodic obstacle arrays
1645	Claudia Binder	Micropillar arrays as efficient screening platforms: new insight into third phase formation in solvent extraction
1700		<b>Finish</b>
1900		<b>CONFERENCE DINNER at Harbourside, The Ferry Building, 99 Quay Street</b>

## Friday June 29

0900	<b>Jadranka Travas-Sejdic</b>	<b>Plenary: Functionalisation of conjugated polymers for biosensing, biointerfaces and bioelectronics</b> <i>Chair: Lianmei Jiang</i>
	<b>MICROFLUIDICS (2)</b>	
0945	Anna Waterhouse	Microfluidics for the evaluation of immobilised liquid surface coatings
1000	Rebecca Soffe	Leaf-on-a-chip: artificial or art?
1015	Pavisara Nanthasurasak	"Snail mail separations" – a portable, battery-powered and solvent-less platform for electrophoresis
1030		<b>Morning Tea</b>
	<b>DROPS AND BEADS</b>	<i>Chair: Shaun Hendy</i>
1100	Emilia Nowak	Fluid flows during drops coalescence triggered by the presence of surfactant
1115	Alexander Smith	The rolling and slipping of droplets on superhydrophobic surfaces
1130	Hossein Rashidian	Oblique impact of a droplet on a textured surface
1145	Matheu Broom	Symmetry splitting of impacting droplets via surface patterning
1200	Frederick Wells	Ferrofluid drop impacts in a non-uniform magnetic field
1215	Mathieu Sellier	Models for the bead mobility technique: a droplet-based viscometer
1230		<b>Lunch</b>
	<b>APPLICATIONS (2)</b>	<i>Chair: Rebecca Soffe</i>
1330	Ada Wong	Drug screening of cancer cell lines and human primary tumors using droplet microfluidics
1345	Mostak Ahmed	Analysis of multiple cancer biomarkers using nanomixing-enhanced interfacial biosensing on a multiplexed device
1400	Muhammad Shiddiky	Nanoparticles based novel nanomachineries for cancer diagnostics
1415	Louise Orcheston-Findlay	A microfluidic gradient generator to simulate the oxygen microenvironment in cancer cell culture
1430	Daisy Yang	Optofluidic platform for high-throughput screening of leach chemistry
1445	Shilun Feng	Real-time and quantitative detection of H <sub>2</sub> O <sub>2</sub> concentration by microfluidic data-logger
1500		<b>Afternoon Tea</b>
	<b>PARTICLES IN FLOWS</b>	<i>Chair: Mathieu Sellier</i>
1530	Ming Li	Inertial separation of hydrogel microdroplets by size
1545	Qianbin Zhao	Inertial microparticle manipulation by sheath flow-enhanced secondary flow in slanted groove microchannel
1600	Joe Berry	Particle distributions in shear flows: consequences for blood clotting
1615	Shaun Hendy	The aggregation of Janus particles in flows
1630	Qaisar Latif	Emergent properties of Janus spheres: experiments
1645		<b>Closing</b>
1030		<b>Saturday June 30: Those going on the WAIHEKE CRUISE, meet at Fullers Downtown Auckland Ferry Terminal</b>

## Posters

P1	Samudrika Wijayapala	Imparting mosquito repellent property to fabric through silver nano particles biosynthesised from citronella oil
P2	Zaidon Al-aqbi	Microfluidic devices fabricated in poly (methyl methacrylate) (PMMA) for the separation of aminoglycoside antibiotics
P3	Bhuwan Ghimire	A microfluidic device for capture and detection of circulating tumor cells
P4	Nicola Lacalendola	Fabrication and characterisation of nanopipettes
P5	Benjamin Lageder	Microfluidic third phase screening in rare earth solvent extraction systems
P6	Marta Orłowska	Liquid manipulation in a functionalised 'pillar cuvette'.
P7	Santhosh Kumar Pandian	Drop impact of non-Newtonian fluids on patterned polymer surfaces
P8	Mohammadamin Raoufi	Effects of viscoelasticity on particle sorting through a straight microchannel with trapezoidal cross section
P9	Sina Safaei	Molecular dynamics simulations of Janus particles
P10	Aliaa Shallaan	Microfluidics slurry handling platform for ion sensing
P11	Jing-Hong Pai	South Australian Node of the Australian National Fabrication Facility supports lab-on-a-chip and micro/nanofluidics science
P12	Firas K. Mohamad Alosfur	Synthesis and study the effect of Al layer on of ZnO nanostructures

## Info

**Full Abstracts** will be available for download from the conference website.

**Speakers**, please load up your talk from USB and/or check your laptop connection in the break prior to your talk.

**Local information:** some good campus maps that may be accessed from the website (under 'Local Information').

**Harassment-free environment:** this meeting has adopted the London Code of Conduct (see website) and all participants are required to abide by this Code. If you have any questions about the Code of Conduct, please contact Geoff Willmott.

**Local Organising Committee:** Geoff Willmott (Chair), Claude Agueraray, Shaun Hendy, Volker Nock, Emilia Nowak, Mathieu Sellier.

**Thanks** to Angela Murphy and Event Services for conference management.