

Sunday, 4 December 2022

1500 - 1700 Special event for Women in Fluid Mechanics
Venue: The Duck Inn, 74 Rose St, Chippendale NSW 2008

1700 - 1900 On-site registration and welcome reception
Venue: MacLaurin Hall (A14D), The University of Sydney, Sydney, NSW 2006

Monday, 5 December 2022

0730 Onsite registration opens
Conference Venue: **Abercrombie Building (H70) or ABS**
Corner Abercrombie Street and Codrington Street
The University of Sydney NSW 2006

0800 - 0830 23AFMC Welcome Address, Prof Ben Thornber
ABS Auditorium (B2010)

0830 - 0930 Keynote I Batchelor Lecture: Prof Herbert Huppert - A review of the life and accomplishments of George Batchelor; granular collapses; and defending against tsunamis
Chair: Prof Tony Lucy

0930 - 1000 Morning tea break

1000 - 1200	01A Turbulence I Chair: Dr Melissa Kozul ABS Auditorium (B2010)	01B Heat and Mass Transfer I Chair: A/Prof Mike Meylan ABS Case Study Lecture Theatre 1170	01C Biomedical Fluid Dynamics I Chair: Dr Susann Beier ABS Lecture Theatre 1130	01D Bluff Body Flows I Chair: Dr Sarah Morris ABS Lecture Theatre 1110	01E Droplets & Sprays I Chair: A/Prof Matthew Cleary ABS Case Study Lecture Theatre 1070	01F Particle-laden flows I Chair: Dr Agisilaos Kourmatzis ABS Case Study Lecture Theatre 1060	01G Instabilities and Transition I Chair: A/Prof Daniel Edgington-Mitchell ABS Case Study Lecture Theatre 1050
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1200 - 1330 Lunch break

Poster Session

ABS Seminar Rooms 1080, 1100, 1040

1330 - 1430 Keynote II: Prof Joanna Austin - Non-equilibrium in Shock-Dominated Hypersonic Flows
Chair: Dr Bianca Capra
ABS Auditorium (B2010)

1430 - 1530	02A Flow in Built Environments Chair: Dr Esmaeel Eftekharian ABS Auditorium (B2010)	02B Gas Dynamics Chair: Dr Rowan Gollan ABS Case Study Lecture Theatre 1170	02C Biomedical Fluid Dynamics II Chair: Prof David Fletcher ABS Lecture Theatre 1130	02D Turbulent Mixing Chair: Dr Michael Groom ABS Lecture Theatre 1110	02E Droplets & Sprays II Chair: Dr Sabita Sarkar ABS Case Study Lecture Theatre 1070	02F Particle-laden flows II Chair: Prof Nicky Eshtiaghi ABS Case Study Lecture Theatre 1060	02G Aerodynamics I Chair: Dr Danielle Moreau ABS Case Study Lecture Theatre 1050
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1530 - 1640 Afternoon tea

1540 - 1640: Panel Session # 1 - ABS Auditorium (B2010)

Boundary Layers Under APG

1640 - 1900 Lab Tours - USYD + UNSW (Limited capacity)
Buses depart from ABS building (conference venue)

1800 - 2200 Dinner for HDR students
Royal Hotel, 370 Abercrombie St, Darlington, NSW 2008

Tuesday, 6 December 2022

0830 - 0930 Keynote III: Prof Nicky Eshtiaghi - Sludge Rheology and its impact on pipeline transportation of sludge
Chair: A/Prof Ahmad Jabbarzadeh
ABS Auditorium (B2010)

0930 - 1000 Morning tea break

1000 - 1200	03A Turbulence II Chair: Dr Svetlana Tkachenko ABS Auditorium (B2010)	03B Experimental Techniques & Facilities I Chair: Dr Charitha de Silva ABS Case Study Lecture Theatre 1170	03C Biomedical Fluid Dynamics III Chair: Dr Natalia Kabaliuk ABS Lecture Theatre 1130	03D Bluff Body Flows II Chair: Dr Methma Rajamuni ABS Lecture Theatre 1110	03E Viscous and Non-Newtonian Fluids Chair: A/Prof Ahmad Jabbarzadeh ABS Case Study Lecture Theatre 1070	03F Boundary Layers I Chair: Dr Azadeh Jafari ABS Case Study Lecture Theatre 1060	03G Multiphase Flows I Chair: Dr Agisilaos Kourmatzis ABS Case Study Lecture Theatre 1050
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1200 - 1330 Lunch

Student Networking Lunch

1230 - 1330, ABS Seminar Room 1080

1330 - 1430	Keynote IV Turner Lecture: <u>A/Prof Nicole Jones</u> - Mixed, not stirred: The Momentum, heat and sediment fluxes driven by nonlinear internal waves Chair: Prof Trevor McDougall ABS Auditorium (B2010)						
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1430 - 1530	04A Environmental Fluid Dynamics I Chair: Prof Mattieu Sellier ABS Auditorium (B2010)	04B Bubble-laden Flows I Chair: A/Prof Nick Lawson ABS Case Study Lecture Theatre 1170	04C Bio-fluid Dynamics I Chair: Dr Natalia Kabaliuk ABS Lecture Theatre 1130	04D Stratified Flows I Chair: Dr Cat Vreugdenhil ABS Lecture Theatre 1110	04E Droplets & Sprays III Chair: Dr Agisilaos Kourmatzis ABS Case Study Lecture Theatre 1070	04F Pipe, Duct & Confined Flows I Chair: A/Prof Sharon Stephen ABS Case Study Lecture Theatre 1060	04G CFD Methods I Chair: Dr Michael Groom ABS Case Study Lecture Theatre 1050
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1530 - 1640	Afternoon tea	1540 - 1640: Panel Session # 2 - ABS Auditorium (B2010) Hydrogen and Green Fuels					
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1640 - 1800	05A Environmental Fluid Dynamics II Chair: A/Prof Nick Lawson ABS Auditorium (B2010)	05B Bubble-laden Flows II Chair: Prof David Fletcher ABS Case Study Lecture Theatre 1170	05C Bio-fluid Dynamics II Chair: Dr Natalia Kabaliuk ABS Lecture Theatre 1130	05D Stratified Flows II Chair: A/Prof Nicole Jones ABS Lecture Theatre 1110	05E Suspension Rheology Chair: A/Prof Miguel Moyers-Gonzalez ABS Case Study Lecture Theatre 1070	05F Pipe, Duct & Confined Flows II Chair: Prof Maziar Arjomandi ABS Case Study Lecture Theatre 1060	05G CFD Methods II Chair: A/Prof Fang-Bao Tian ABS Case Study Lecture Theatre 1050
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1800 - 1900	Transit to conference dinner venue						
1900 - 2300	CONFERENCE DINNER Venue: Sofitel Sydney Wentworth, 61- 101 Phillip St, Sydney NSW 2000						

Wednesday, 7 December 2022							
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0830 - 0930	06A Plumes Chair: Dr Azadeh Jafari ABS Auditorium (B2010)	06B Heat and Mass Transfer II Chair: Prof Wenxian Lin ABS Case Study Lecture Theatre 1170	06C Flow Control I Chair: Dr Natalia Kabaliuk ABS Lecture Theatre 1130	06D Stratified Flows III Chair: Prof Richard Manasseh ABS Lecture Theatre 1110	06E Break Room I Chair: ABS Case Study Lecture Theatre 1070	06F Particle-laden flows III Chair: Prof Tracie Barber ABS Case Study Lecture Theatre 1060	06G Wind and Renewables I Chair: Prof Jason Monty ABS Case Study Lecture Theatre 1050
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0930 - 1000	Morning tea break						
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1000 - 1200	07A Aerodynamics II Chair: Dr Methma Rajamuni ABS Auditorium (B2010)	07B Heat and Mass Transfer III Chair: Prof John Cater ABS Case Study Lecture Theatre 1170	07C Hypersonics I Chair: Dr Bianca Capra ABS Lecture Theatre 1130	07D Boundary Layers II Chair: Prof Tracie Barber ABS Lecture Theatre 1110	07E Experimental Techniques & Facilities II Chair: Dr Chaoyang Jiang ABS Case Study Lecture Theatre 1070	07F Combustion & Reacting Flows I Chair: Dr Maryam Ghodrat ABS Case Study Lecture Theatre 1060	07G Wind and Renewables II Chair: Dr Daniel Linton ABS Case Study Lecture Theatre 1050
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1200 - 1330	Lunch	1220 - 1320 Women in Engineering Lunchtime Panel Discussion ABS Seminar Room 1080					
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1330 - 1430	Keynote V (Sponsor: Pawsey Supercomputing Research Centre): <u>A/Prof Daniel Chung</u> - Riblets drag reduction and rough-wall heat transfer according to minimal channels Chair: Dr Chris Harris ABS Auditorium (B2010)						
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1430 - 1530	08A Turbulence III Chair: Prof Lyazid Djenidi ABS Auditorium (B2010)	08B Boundary Layers III Chair: A/Prof Sharon Stephen ABS Case Study Lecture Theatre 1170	08C Hypersonics II Chair: Dr Melissa Kozul ABS Lecture Theatre 1130	08D Turbomachines & Industrial Flows I Chair: Prof Ahmad Jabbarzadeh ABS Lecture Theatre 1110	08E Flow Control II Chair: A/Prof Fang-Bao Tian ABS Case Study Lecture Theatre 1070	08F Particle-laden flows IV Chair: Dr Mohammad Hoque ABS Case Study Lecture Theatre 1060	08G AI/ML for Fluids I Chair: Prof Ben Thornber ABS Case Study Lecture Theatre 1050
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1530 - 1640	Afternoon tea	1540 - 1640: Panel Session # 3 - ABS Auditorium (B2010) ML & AI Applications in Fluid Mechanics					
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1640 - 1800	09A Compressible Flows Chair: Dr Rowan Gollan ABS Auditorium (B2010)	09B Aeroacoustics I Chair: Prof Con Doolan ABS Case Study Lecture Theatre 1170	09C Hydrodynamics I Chair: Dr Maryam Abdolahpour ABS Lecture Theatre 1130	09D Turbomachines & Industrial Flows II Chair: Dr Darrin Stephens ABS Lecture Theatre 1110	09E Experimental Techniques & Facilities III Chair: Prof Nicholas Hutchins ABS Case Study Lecture Theatre 1070	09F Combustion & Reacting Flows II Chair: Prof Evatt Hawkes ABS Case Study Lecture Theatre 1060	09G AI/ML for Fluids II Chair: Dr Maryam Ghodrat ABS Case Study Lecture Theatre 1050
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1800 - 2000

BBQ
Venue: Cadigal Green, The University of Sydney

Thursday, 8 December 2022

0830 - 0930

Keynote VI: [A/Prof Sam Mallinson](#) - Fluid Dynamics and Heat Transfer in Thermal Inkjet Printers
Chair: Prof Tracie Barber
ABS Auditorium (B2010)

0930 - 1040

Morning tea break

0940 - 1040: Panel Session # 4, ABS Auditorium (B2010)
[Challenges in Translational Research](#)

1040 - 1200	10A Lattice Boltzmann Methods Chair: Prof Emilie Sauret ABS Auditorium (B2010)	10B Aeroacoustics II Chair: Dr Danielle Moreau ABS Case Study Lecture Theatre 1170	10C Hydrodynamics II Chair: Prof Hubert Chanson ABS Lecture Theatre 1130	10D Fluid Structure Interaction I Chair: Dr Maryam Abdolahpour ABS Lecture Theatre 1110	10E Break Room II Chair: ABS Case Study Lecture Theatre 1070	10F Wakes Chair: Prof Chengwang Lei ABS Case Study Lecture Theatre 1060	10G AI/ML for Fluids III Chair: Dr Maryam Ghodrat ABS Case Study Lecture Theatre 1050
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1200 - 1330

Lunch

1330 - 1530	11A Experimental Techniques & Facilities IV Chair: Dr Kapil Chauhan ABS Auditorium (B2010)	11B Jet Flows I Chair: Prof Andrew Ooi ABS Case Study Lecture Theatre 1170	11C Hypersonics III Chair: Dr Tamara Sopek ABS Lecture Theatre 1130	11D Fluid Structure Interaction II Chair: Dr Maryam Abdolahpour ABS Lecture Theatre 1110	11E Micro/nanofluidics Chair: Prof Yonggang Zhu ABS Case Study Lecture Theatre 1070	11F Oceanography Chair: Dr Cat Vreugdenhil ABS Case Study Lecture Theatre 1060	11G Multiphase Flows II Chair: Prof Mattieu Sellier ABS Case Study Lecture Theatre 1050
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1530 - 1600

Afternoon tea

1600 - 1700

AFMS Annual General Meeting
ABS Auditorium (B2010)

1700 - 1800

CLOSING CEREMONY
ABS Auditorium (B2010)

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1000 - 1020	A.001: Consequences of dual scaling on the velocity structure functions [19] LYAZID DJENIDI, Robert Antonia, Shunlin Tang	B.007: Particle image velocimetry investigations on the flow structures of buoyancy vortices [20] *ZIYANG WANG, Neil A. Hawkes, Michael MacDonald, John Cater, Richard G. J. Flay	C.013: Numerical investigation of hematocrit levels on patient-specific aortic simulations informed by four-dimensional phase-contrast magnetic resonance imaging [140] *XIAOJING GUO, Qingdi Wang, Emma Hornsey, Lucy McKenna, Daniel Stäb, Ning Jin, Eric Poon, Ruth Lim, Andrew Ooi	D.019: Effects of circumferential riblets of triangular shape on flow structures around a circular cylinder [4] *FENGDA XING, Chengwang Lei	E.025: Experimental and numerical simulation of centrifugal atomization process for fine metal powder production [91] PRASHANTH ETHIRAJULU, Vishnu Teja Mantripragada, Sabita Sarkar	F.031: Experimental study of densely-seeded gravity-driven particle-laden flow [53] *XIAOPENG BI, Timothy Lau, Zhiwei Sun, Graham Nathan	G.037: Topology optimization of superhydrophobic surfaces to delay spatially developing laminar-turbulent transition [95] *HARRISON NOBIS, Philipp Schlatter, Eddie Wadbro, Martin Berggren, Dan Henningson
1020 - 1040	A.002: Subcritical transitions to turbulence; the role of the adjoint [34] CHRISTOPHER CAMOBRECO, Alban Potherat, Gregory Sheard	B.008: The ocean boundary layer beneath a melting ice shelf: insights from large-eddy simulations with a near-wall model [228] CATHERINE VREUGDENHIL, John Taylor, Peter Davis, Keith Nicholls, Paul Holland, Adrian Jenkins	C.014: The effect of diameter variation when accessing patient-specific coronary tortuosity [241] *CHI SHEN, Mingzi Zhang, Susann Beier	D.020: Flows past cylinders confined within ducts [88] *WILSON LU, Quang Duy Nguyen, Leon Chan, Chengwang Lei, Andrew Ooi	E.026: Droplet dynamics in flame spray pyrolysis [157] *CALLUM KENNEDY, Matthew Dunn, Assaad Masri	F.032: Simulation of upper airway drug particle deposition using three different turbulence models: comparison and benchmarking to experiments [63] *ZHAOQI MA, Shaokoon Cheng, Liam Milton-McGurk, Hak-Kim Chan, Dino Farina, Agisilaos Kourmatzis	G.038: Direct numerical simulation and study of a compressible reacting Kelvin-Helmholtz instability [144] *SAMUEL ROBERTSON, Sebastian Galindo-Lopez, Matthew Cleary, Ben Thornber
1040 - 1100	A.003: Corner flow separation in adverse pressure gradients: problem in the context of underwater vehicles [35] CHRIS GARGAN-SHINGLES, David Pook	B.009: A numerical investigation to study the local heat transfer characteristic of pulsed jet on a protruded concave surface [294] *JAYKUMAR JOSHI, Akhalesh Sharma, Pawan Sharma, Santosh Sahu	C.015: Comparison of two common outflow strategies for resolving coronary haemodynamics at resting and hyperaemic conditions [264] MINGZI ZHANG, Chi Shen, Susann Beier	D.021: Effect of inlet pulsation frequency on unsteady wake of a finite height surface mounted circular cylinder [146] *ABHISHEK KUMAR, Prashant Kumar, Shaligram Tiwari	E.027: Near-field multiphase interactions of uninhabited aerial systems and aerosol dispersion [343] *SHAKA CHU, Matthew Dunn, Vinny Gupta, Dries Verstraete, Omar Ilaya, Hurmat Ain, Ben Thornber	F.033: Electrical resistance tomography for quantitative concentration measurement of coarse particle suspensions [108] ENZU ZHENG, Andrew Chrissy	G.039: Effect of depth ratio on frozen wave instability [161] *KUSHAL PRASAD CHOUDHARY, Shyama Prasad Das, Shaligram Tiwari
1100 - 1120	A.004: The interaction of isotropic turbulent flow with an airfoil leading edge [49] *AHMED OSAMA MAHGOUB, Chaoyang Jiang, Danielle Moreau, Con Doolan, Charitha de Silva	B.010: Fluid flow and thermal characteristics of synthetic jet issuing from 6-lobed star orifices for power-dense electronics cooling [301] *JAYKUMAR JOSHI, Pawan Sharma, Dnyanesh Mirikar, Santosh Sahu, Harekrishna Yadav	C.016: An assessment of the effect of coronary arterial geometric variations on the hemodynamics [277] NAVID FREIDOODNIMEHR, Maziar Arjomandi	D.022: Effect of position and size of upstream sphere on wake of a stationary sphere [160] *ABHISHEK KUMAR, Shaligram Tiwari, Shyama Prasad Das	E.028: Periodic formation of droplets by nucleation in condensing vapour: observations and modelling of frequency of occurrence and suppression of nucleation [408] PATRICK SCHEUNEMANN, Paul Stephenson, Mark Jermy	F.034: Understanding clogging in cold spray nozzles using a novel approach for modelling particle growth along nozzle walls utilising computational fluid dynamics [111] *MARK MOGEKE, Justin Leontini, Andrew Ang, Samuel Pinches	G.040: Stability of a temperature-dependent viscosity boundary-layer flow [187] SHARON STEPHEN, Paul Griffiths

1120 - 1140	A.005: Destruction of turbulent flux of momentum and heat around a hairpin vortex in a channel flow [85] *YOSHIIKO INAGAKI, Mamoru Takahashi, Koichi Tsujimoto, Toshitake Ando, Toshihiko Shakouchi	B.011: Large eddy simulation study of turbulent natural convection flow of dry and humid air inside a differentially heated cavity with passive conducting walls [334] HADI AHMADI MOGHADDAM, Svetlana Tkachenko, Guan Heng Yeoh, John Reizes,	C.017: The mitral vortex ring dictates haemodynamic efficiency in the left ventricle by facilitating redirection of flow [378] *JOHN KEARNS, Mark Thompson, Murray Rudman, Benedict Costello	D.023: Flow around I-shape step cylinders [196] *CAI TIAN, Jianxun Zhu, Erik Holmedal Lars	E.029: Shot-to-shot deviation of a second generation commonrail injection system operating with cooking-oil-residue biodiesel [169] DAT X NGUYEN, Andrea Cavicchi, Kien T. Nguyen, Vu H Nguyen, Phuong X. Pham, Lucio Postrioti	F.035: Fully-resolved CFD-DEM simulation of newtonian suspension flows [142] *MOHAMMAD FAZLI, Murray Rudman, Shibo Kuang	G.041: Vorticity generation and conservation in free surface flows [239] STEPHEN TERRINGTON, Kerry Hourigan, Mark Thompson
1140 - 1200	A.006: Invariance properties of the entropy production equations, and uniqueness of the inertial frames of reference of shear-flow systems [94] ROBERT K. NIVEN	B.012: Withdrawn [61]	C.018: Decrease in turbulent blood flow in an arteriovenous fistula after stent implantation [398] SANJIV GUNASEKERA, Charitha de Silva, Olivia Ng, Shannon Thomas, Ramon Varcoe, Tracie Barber	D.024: Predicting aerodynamic forces on roughened cylinders at post-critical Reynolds numbers [212] SHIBO WANG, David Burton, Mark Thompson	E.030: Withdrawn [136]	F.036: Influence of Stokes number on the velocity of a particle-laden jet issuing into a confined tube [220] ELLIOTT LEWIS, Zhiwei Sun, Graham Nathan, Matthew Gill, Matthew Boot-Handford, Mark Sceats	G.042: Richtmyer-Meshkov instability under axial strain [419] *BRADLEY PASCOE, Michael Groom, Ben Thornber

1200 - 1330	Lunch break	Poster Session ABS Seminar Rooms 1080, 1100, 1040
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1430 - 1450	A.043: A comparison of force balance and pressure integration techniques for predicting wind-induced and dynamic responses of tall buildings [127] *MOHAMMAD MAHDI SALEHINEJAD, Yin Fai Li, Quincy Ma, Richard G. J.	B.046: Mixing of thermally stratified gas in horizontal tube using shock waves [128] *MACIEJ GRYBKO, Ray Malpress, David Buttsworth, Fabian Zander, Byrenn Birch	C.049: Effect of severity on pulsatile blood flow through double stenosed carotid artery [86] *SWAPNIL RAJMANE, Shaligram Tiwari	D.052: Zero-skin-friction heat transfer: moving beyond Reynolds analogy [134] *KEVIN ZHONG, Nicholas Hutchins, Daniel Chung	E.055: Effects of water droplet size on the spray-induced redistribution of longitudinal ventilation air in road tunnels [205] *TAO DENG, Stuart Norris, Rajnish Sharma	F.058: Vortex and short-circuiting flow in gas cyclone [236] RUIZHI JIN, Sijie Dong, Zihui Zhang, Kejun Dong, Bo Wang	G.061: Numerical study on a generic helicopter configuration using an immersed boundary method [38] *JACK HEESUNG PARK, Daniel Linton, Ben Thornber
1450 - 1510	A.044: Withdrawn [428]	B.047: Temporal freestream measurements in the T5 free piston shock tunnel [181] *WESLEY YU, Ying Luo, Joanna Austin, Hans Hornung	C.050: How fluid mechanics influenced HFV ventilator protocols: a selective review [268] *THOMAS SCOTT, Justin Leontini, David Tingay	D.053: Evidence suggesting turbulent superstructures are concatenations of geometrically self-similar coherent motions [246] RAHUL DESHPANDE, Charitha de Silva, Ivan Marusic	E.056: Evaporation modelling of refrigerant-solvent droplets [216] HARRY SCOTT, Swetha Vutlapalli, Damon Honnery, Daniel Duke	F.059: The lift force due to cavitation and compressibility for a sphere rolling down an inclined plane [237] STEPHEN TERRINGTON, Mark Thompson, Kerry Hourigan	G.062: Development and validation of digital twin to design wing attitude controller [100] *MORGAN VAN HOFFEN, Ingo Jahn
1510 - 1530	A.045: Withdrawn [431]	B.048: Modelling and statistical analysis of plastic steam gasification [197] *MOJTABA AJORLOO, Maryam Ghodrat, Jason Scott, Vladimir Strezov	C.051: Decoupling the effects of rotational speed and flowrate on the fluid dynamics of dry powder inhalers [65] *ATHIYA AZEEM, Gajendra Singh, Hak-Kim Chan, Runyu Yang, Agisilaos Kourmatzis	D.054: Withdrawn [390]	E.057: Withdrawn [244] Jeekeun Lee	F.060: Incorporation of local porosity for polydisperse granular media using Voronoi-based mapping in CFD-DEM [260] HANQIAO CHE, Catherine O'Sullivan, Adnan Sufian, Edward Smith	G.063: Withdrawn [172]

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1640 - 1900	Lab Tours - USYD + UNSW (Limited capacity) Buses depart from ABS building (conference venue)
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1800 - 2200	Dinner for HDR students Royal Hotel, 370 Abercrombie St, Darlington, NSW 2008
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Chair: A/Prof Ahmad Jabbarzadeh
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1000 - 1020	A.064: Orthogonal, turbulent Couette-Poiseuille flow [218] DALE PULLIN, Wan Cheng, Ravi Samtaney, Xisheng Luo	B.070: Quantifying the accuracy of a stereoscopic background-oriented Schlieren technique for the topology measurement of thin liquid films [60] *JESSICA XU, Callum Atkinson	C.076: Effect of high flow local extraction on the removal of the aerosol plume in an ICU room [133] *TIANGAO ZHAO, Chenlin Sun, Logan Marriott, Matthew Harper, Tongming Zhou	D.082: Experimental visualisation of pressure distribution around a hemispherical protuberance at low Reynolds numbers [27] *NISHANTH MENAKATH, Gareth Vio	E.088: Velocimetric fluid densities defined using probability density functions, and new families of conservation laws [116] ROBERT K. NIVEN	F.094: Turbulent boundary layer over isotropic 3-D sine-wave surface roughness [62] *MISARAH ABDELAZIZ, Lyazid Djenidi, Mergen Ghayesh, Rey Chin	G.100: Investigation of a 75mm axial flow hydrocyclone for industrial use: an alternative to the reverse flow hydrocyclone [15] *SHUVAM MOHANTY, Jong-Leng Liow
1020 - 1040	A.065: Enhancement of gene expression programming for Reynolds-averaged Navier-Stokes equations turbulence modeling with unsupervised clustering [99] LORENZO CAMPOLI, Richard Sandberg, Yuan Fang, XiaoWei Xu	B.071: Wind tunnel investigation of wall-bounded flow behind non-uniform porous screens [153] *YUHUI (PAUL) ZHANG, Matthew Mason	C.077: Mean streaming gas transport is maintained at very high frequencies during medical high-frequency ventilation [145] *DESHABIMANA WANIGASEKARA, Chinthaka Jacob, Richard Manasseh, Justin Leontini	D.083: Vortex ring collisions upon hemispheres on a flat wall [68] *BOWEN XU, K. Peri, T. H. New, Haotian Li	E.089: Extracting rheological parameters from free surface data for viscoplastic flows [185] MATHIEU SELLIER, James Hewett, Miguel Moyers-Gonzalez, Dale Cusack, Ben Kennedy	F.095: Towards the characterisation of multi-scale roughness for turbulent boundary-layer measurements [137] *ADITYA RAMANI, Lachlan Schilt, Bagus Nugroho, Angela Busse, Jason Monty, Nicholas Hutchins, Thomas Jelly	G.101: Image analysis characterisation of bubble size distribution in bubbly flow from a submerged pipe [43] MARTIN LEAHY, Shannon Keough, Andrew MacGillivray
1040 - 1100	A.066: Nonlinear energy transfer in channel flow at $Re = 180$ [110] *JITONG DING, Simon Illingworth, Daniel Chung	B.072: Clarifying the influence of magnification in 2D2C-PIV and practical trade-offs on scale-estimation in an oscillating grid turbulence flow [283] *BHAARATH RAMESH, Joseph Klewicki, Jimmy Philip	C.078: Droplet particle accumulation in multi-pulsed expiratory events [198] SARAH MORRIS, William McAtee, Jesse Capecealatro, Vrishank Raghav	D.084: Wake structure behind porous obstructions in steady current [103] *FEI HE, Scott Draper, Paul Branson, Hongwei An, Marco Ghisalberti, Liang Cheng, Chengjiao Ren	E.090: Nonisothermal thin-film flow of a viscoplastic material over topography [217] MIGUEL MOYERS-GONZALEZ, James Hewett, Dale Cusack, Ben Kennedy, Mathieu Sellier	F.096: An improved method for estimation of skin friction in turbulent boundary layers [351] *VAN THUAN HOANG, Azadeh Jafari, Benjamin Cazzolato, Maziar Arjomandi	G.102: Free surface effects on various surface-piercing cylinder configurations [106] *AHMED SHAMA, Ahmed Swidan, John Young
1100 - 1120	A.067: Spatial resolution effects in turbulent boundary layers over three-dimensional rough surfaces [180] *YU XIA, Nicholas Hutchins, Ivan Marusic, Daniel Chung, Wagih Abu Rowin	B.073: An experimental facility to study the turbulent boundary layer adjacent to a melting vertical ice face [303] *PAMODA HERATH, Saurabh Pathak, Bishakhdatta Gayen, Joseph Klewicki, Jimmy Philip	C.079: Numerical simulation of buoyancy-driven flow in a human stomach [245] *XINYING LIU, Simon Harrison, Shouryadiptra Ghosh, Matthew Sinnott, David Fletcher, Paul Cleary	D.085: Three-dimensional investigation of the wake behind an unconfined flat plate at turbulent Reynolds numbers [107] *DANIAH SALEH H ALJUBAILI, Leon Chan, Andrew Ooi	E.091: Beneath the surface: recovery of ice thickness from observations. [219] *ELIZABETH MCGEORGE, Miguel Moyers-Gonzalez, Mathieu Sellier, Phillip Wilson	F.097: Reynolds number effect on a rough wall turbulent boundary layer subjected to a large eddy break-up device [362] SHUBHAM KUMBHAR, Lyazid Djenidi, Farzin Ghanadi, Md Kamruzzaman	G.103: Electrohydrodynamic control of viscous fingering during displacement of perfect dielectric fluids [123] *JIACHEN ZHAO, Zhongzheng Wang, Emilie Sauret
1120 - 1140	A.068: Realisable riblets subject to fully turbulent flow [224] MELISSA KOZUL, Wagih Abu Rowin, Nicholas Hutchins, Richard Sandberg	B.074: Development of a background-oriented Schlieren system for a transonic wind tunnel [395] NATHAN HUMPHREY, Haimin Huang, Matteo Giacobello, Peter Manovski	C.080: Fluid-particle dynamics of nasal drug delivery in a realistic human airway lung model [388] SUVASH SAHA, Isabella Francis, Xinlei Huang, Md. Rahman	D.086: Numerical simulation of oscillatory flow past an elliptic cylinder at low KC and RE conditions [170] XINRU WANG, Jianxun Zhu, Lars Erik Holmedal, Hong Wang, Dag Myrhaug	E.092: Numerical modelling of linear and oblique collisions of liquid-coated particles validated with experimental results [342] *OSCAR PUNCH, Megan Danczyk, Daniel Holland	F.098: Estimation of friction velocity for turbulent boundary layers of micro-perforated plates [363] *GIANNI SEVERINO, Van Hoang, Anton Silvestri, Benjamin Cazzolato, Maziar Arjomandi	G.104: Optimization of liquid-solid mixing by swirl using computational fluid dynamics simulations [165] *ZHU YANG, Thomas Holemans, Bert Lagrain, Bert Sels Sels, Maarten Vanierschot
1140 - 1200	A.069: Spatial resolution effects in turbulent boundary layers over three-dimensional rough surfaces [180] *YU XIA, Nicholas Hutchins, Ivan Marusic, Daniel Chung, Wagih Abu Rowin	B.075: A comparative study of shadowgram and background oriented Schlieren measurements [399] KRISHNA TALLURU, Harald Kleine	C.081: Microplastics transport in human upper airways: a CFD-DEM approach [427] MOHAMMAD S. ISLAM, Puchanee Larpruenrudee, Hamidreza Mortazavy Beni, Zhenya Fan, YuanTong Gu	D.087: Structure of the streaming flow generated by a sphere oscillating in a viscous fluid [380] *PEIJING LI, Jesse Collis, Alexander R. Nunn, Douglas R. Brumley, Lennart Schneiders, John Sader	E.093: Shear thickening fluids from silicon oil and hollow glass micro-spheres [423] JONG-LENG LIOW, Khabilavarnan P. Nadaraja	F.099: Simulation of a turbulent boundary layer over three-dimensional roughness [403] ISAAC CHAN, Rey Chin	G.105: Cyclic injection of immiscible fluids in porous media: a numerical investigation using a pore-resolved interface tracking algorithm [191] ZHONGZHENG WANG, Jean-Michel Pereira, Yixiang Gan, Emilie Sauret

1200 - 1330 Lunch

Student Networking Lunch
1230 - 1330, ABS Auditorium (B2010)

1330 - 1430 Keynote IV Turner Lecture: [A/Prof Nicole Jones](#) - Mixed, not stirred: The Momentum, heat and sediment fluxes driven by nonlinear internal waves
Chair: Prof Trevor McDougall
ABS Auditorium (B2010)

1430 - 1530	04A Environmental Fluid Dynamics I Chair: Prof Mattieu Sellier ABS Auditorium (B2010)	04B Bubble-laden Flows I Chair: A/Prof Nick Lawson ABS Case Study Lecture Theatre 1170	04C Bio-fluid Dynamics I Chair: Dr Natalia Kabaliuk ABS Lecture Theatre 1130	04D Stratified Flows I Chair: Dr Cat Vreugdenhil ABS Lecture Theatre 1110	04E Droplets & Sprays III Chair: Dr Agisilaos Kourmatzis ABS Case Study Lecture Theatre 1070	04F Pipe, Duct & Confined Flows I Chair: A/Prof Sharon Stephen ABS Case Study Lecture Theatre 1060	04G CFD Methods I Chair: Dr Michael Groom ABS Case Study Lecture Theatre 1050
1430 - 1450	A.106: Flexural gravity wave scattering by a step with compression [206] MICHAEL MEYLAN	B.109: Sound-pulse amplitudes generated by detaching bubbles [189] FILIPPO NELLI, Shuang Zhu, Richard Manasseh, Grant Deane, Andrew Ooi	C.112: Flow field around swimming mosquito larvae [269] *KARTHICK DHILEEP, Perran A. Ross, Fang-Bao Tian, John Young, Ary A. Hoffmann, Joseph Lai, Sridhar Ravi	D.115: How much upwelling occurs in the abyssal bottom boundary layer? [444] TREVOR MCDUGALL, Ryan Holmes	E.118: Drop deformation dynamics and fragment characteristics in the bag-breakup regime [281] *KAITAO TANG, Thomas Adcock, Wouter Mostert	F.121: The effect of slip on the flow over a gap in a channel [67] CHRISTIAN THOMAS, Sophie Calabretto, Silvia Ceccacci, James Denier	G.123: Numerical simulation of Rayleigh-Plateau instability using explicit volume diffusion coupled with the Σ-Y model [26] *JIAYUE YU, Matthew Cleary, Agisilaos Kourmatzis, Bosen Wang
1450 - 1510	A.107: A DEC scheme for predicting transport of air pollution [278] PANKAJ JAGAD, Ravi Samtaney	B.110: Simulating acoustic behaviour of a bubble screen with a coupled-oscillator model [199] SHUANG ZHU, Andrew Ooi, Alex Skvortsov, Richard Manasseh	C.113: Withdrawn [340]	D.116: The structure of density-stratified flow of finite depth over finite obstacles [358] PETER BAINES, Leon Chan, Jimmy Philip	E.119: Multiphase interactions of sprays in a small-scale UAS rotor-induced wake field [350] VINNY GUPTA, Matthew Dunn, Shaka Chu, Omar Ilaya, Hurmat Ain, Ben Thornber	F.122: Low Reynolds number oscillatory flow over a backward-facing step [209] SAM MALLINSON	G.124: A multibody unsteady, frequency-based VLM [42] *DYLAN DOONER, Gareth Vio, Nicholas Giannelis
1510 - 1530	A.108: A model for investigating wave-induced drift and tidal effects on particle transport over submerged reefs [287] *DE'VEREUX HARVEY, Richard Manasseh, Guy Metcalfe, Kostas Belibassakis, Angeliki Karperaki	B.111: Observations of free-surface disturbances from a bubble plume [306] *DANICA TOTHOVA, Shuang Zhu, Richard Manasseh, Martin Kocan, Alex Skvortsov, Andrew Ooi	C.114: An experimental investigation of the droplet dynamics and flow-field of respiratory exhalations [308] PRATEEK BAHL, Shovon Bhattacharjee, Raina MacIntyre, Con Doolan, Charitha de Silva	D.117: Temporal evolution of mixing regimes in diurnally heated stratified open channel flows [411] *CINDY NGUYEN-DANG, Nicholas Williamson, Steven Armfield, Michael Kirkpatrick, Stuart Norris	E.120: Withdrawn [266]		G.125: Prediction of main rotor loads through a prescribed pull up manoeuvre using an actuator surface method [93] DAVID BOYD, Daniel Linton, Ben Thornber

1530 - 1640 Afternoon tea

1540 - 1640: Panel Session # 2 - ABS Auditorium (B2010)
[Hydrogen and Green Fuels](#)

1640 - 1800	05A Environmental Fluid Dynamics II Chair: A/Prof Nick Lawson ABS Auditorium (B2010)	05B Bubble-laden Flows II Chair: Prof David Fletcher ABS Case Study Lecture Theatre 1170	05C Bio-fluid Dynamics II Chair: Dr Natalia Kabaliuk ABS Lecture Theatre 1130	05D Stratified Flows II Chair: A/Prof Nicole Jones ABS Lecture Theatre 1110	05E Suspension Rheology Chair: A/Prof Miguel Moyers-Gonzalez ABS Case Study Lecture Theatre 1070	05F Pipe, Duct & Confined Flows II Chair: Prof Maziar Arjomandi ABS Case Study Lecture Theatre 1060	05G CFD Methods II Chair: A/Prof Fang-Bao Tian ABS Case Study Lecture Theatre 1050
1640 - 1700	A.126: A lubrication model for simulating lava flows with application to Marcath volcano [369] EDWARD HINTON, Jack Saville, Herbert Huppert	B.130: An experimental investigation and numerical modelling of the dynamics of a bubble plume in the presence of surfactant [179] *ABDULLAZIZ GLABE ZAKARI, Mohammad Mainul Hoque, Peter Ireland, Geoffrey Evans, Subhasish Mitra	C.134: Numerical simulation of the total cavopulmonary connection flow under varying relative perfusion in lungs [17] *MARIIA TIMOFEEVA, Chitrarth Lav, Andrew Ooi, Michael Cheung	D.138: Numerical simulation of the cylindrical release gravity current in a stratified ambient [221] *WAI KIT LAM, Leon Chan, Andrew Ooi, Duncan Sutherland, Richard Manasseh, Khalid Moinuddin	E.142: A molecular dynamics simulation study on the rheological behaviour of water-based amino acid ionic liquid lubricants [83] *YANG FENG, Ahmad Jabbarzadeh	F.146: Dispersion study of Helium in semi-enclosed environment [190] *HENGRUI LIU, Brock Virtue, Fatemeh Salehi, Rouzbeh Abbassi, Timothy Lau, Anthony Chun Yin Yuen, Guan Heng Yeoh, Djurre Siccama, Fiona Mitchell-Corbett	G.150: A practical numerical approach to predict the skin friction drag on a rough surface [97] *SETYO NUGROHO, Eric Fusil, Bagus Nugroho, Rey Chin
1700 - 1720	A.127: Relaxation of wind-perturbed pine seeds to stable autorotation [409] *JOSEPH LYNCH, Natalia Kabaliuk, Thomas Paul, Mark Jermy	B.131: Monodisperse microbubble production in a pressurised environment with a microfluidic T-junction. [255] *AARON AILWOOD, Luka Barbaca, James Venning, Patrick Russell, Bryce Pearce, Paul Brandner	C.135: Computational dynamics of blood flow in a venous blood vessel implanted with neurovascular venous stents and stent mounted neural interfaces [33] *JAMES (WEIJIE) QI, Andrew Ooi, David Grayden, Sam John	D.139: Self-similar solutions of a gravity current moving into a stratified ambient [229] ANDREW OOI, Leon Chan, Khalid Moinuddin, Duncan Sutherland, Richard Manasseh, Albert Dai, Alex Skvortsov	E.143: Shear-induced migration and segregation of polydisperse suspensions under partially-reversed Poiseuille flow [276] CHRISTOPHER LEONARDI, Nathan Di Vaira, Lukas Laniewski-Wollk	F.147: A combined experimental and numerical investigation of reciprocating finite-length pipe flow [154] *DANICA TOTHOVA, Richard Manasseh, S. A. Sannasiraj	G.151: Discrete exterior calculus discretization of axisymmetric two-phase incompressible Navier-Stokes equations with a conservative phase field method [258] *MINMIAO WANG, Pankaj Jagad, Ravi Samtaney

1720 - 1740	A.128: Simulating non-isothermal channelized lava flows via reduced models [422] *DAVID MUCHIRI, Mathieu Sellier, Miguel Moyers-Gonzalez, James Hewett	B.132: Microbubble generation via combined Saffman-Taylor and Plateau-Rayleigh instabilities [273] *SIENNA COOK, Luka Barbaca, Patrick Russell, James Venning, Bryce Pearce, Paul Brandner	C.136: Towards modelling the influence of myocardium stiffening on ventricular hemodynamics and its associated impact on HFpEF [207] *JIJO DERICK ABRAHAM, Travis Mitchell, Bahni Ray, Christopher Leonardi	D.140: The stratified inclined duct: what we learned about stratified turbulence in a maintained shear flow from experiment and computation [267] PAUL LINDEN, Amir Atoufi, Stuart Dalziel, Xianyang Jiang, Gaopan Kong, Adrien Lefauve, John Taylor, Lu Zhu	E.144: Start-up flow of viscoplastic material and a method to identify the yield stress [371] EDWARD HINTON, Jesse Collis, John Sader	F.148: Nonlinear dynamics of reciprocating pipe flow in relation to oscillating water column wave energy converters [253] RICHARD MANASSEH, Lidong Cui, Justin Leontini, Danica Tothova	G.152: Development of a coupled meso-microscale CFD model for non-neutral urban winds [286] *BEN MALIN, Matthew Mason
1740 - 1800	A.129: Withdrawn [432]	B.133: Rising behaviour of particle-laden bubble in co-current liquid flows [333] MOHAMMAD MAINUL HOQUE, Zhengbiao Peng, S. M. Murali Mohan, Geoffrey Evans, Elham Doroodchi	C.137: The influence of inlet boundary conditions on subject-specific aorta simulations [324] *QJINGDI WANG, Xiaojing Guo, Daniel Ståb, Ning Jin, Eric Poon, Ruth Lim, Andrew Ooi	D.141: Direct numerical simulations of heat and mass transfer in the north Atlantic ocean [291] *BAHMAN GHASEMI, Bishakh datta Gayen, Catherine Vreugdenhil	E.145: Modelling of pressure driven suspension flows in microchannels [435] *RUSSELL HOLT, Gary Rosengarten, Daniel Lester, Sherman CP Cheung	F.149: Velocity measurements within a triply periodic minimal surface (TPMS) porous medium [282] *DAEJUNG KIM, Jonathan Tran, Jimmy Philip	G.153: Discrete exterior calculus based flow simulations on a sphere for detection of solar inertial modes [325] RAMA AYOUB, Pankaj Jagad, Jordan Philidet, Laurent Gizon, Ravi

1800 - 1900

Transit to conference dinner venue

1900 - 2300

CONFERENCE DINNER

Venue: Sofitel Sydney Wentworth, 61- 101 Phillip St, Sydney NSW 2000

Wednesday, 7 December 2022

0830 - 0930	06A Plumes Chair: Dr Azadeh Jafari ABS Auditorium (B2010)	06B Heat and Mass Transfer II Chair: Prof Wenxian Lin ABS Case Study Lecture Theatre 1170	06C Flow Control I Chair: Dr Natalia Kabaliuk ABS Lecture Theatre 1130	06D Stratified Flows III Chair: Prof Richard Manasseh ABS Lecture Theatre 1110	06E Break Room I Chair: ABS Case Study Lecture Theatre 1070	06F Particle-laden flows III Chair: Prof Tracie Barber ABS Case Study Lecture Theatre 1060	06G Wind and Renewables I Chair: Prof Jason Monty ABS Case Study Lecture Theatre 1050
0830 - 0850	A.154: Passive PV module cooling through mixing induced in the boundary layer using vortex generators [309] PRATEEK BAHL, Zibo Zhou, Svetlana Tkachenko, Victoria Timchenko, Charitha de Silva	B.157: Heat transfer enhancement using a self-oscillating baffle attached to a vertical heated flat surface [1] SOUDEH MAZHARMANESH, Fang-Bao Tian, Chengwang Lei	C.160: A numerical study of active blowing control on a three-dimensional low-aspect-ratio heaving plate [112] *BRUCE JIN, Li Wang, Sridhar Ravi, John Young, Joseph Lai, Fang-Bao Tian	D.163: Quantifying the effects of intermittency in stratified open channel flow [55] *VASSILI ISSAEV, Nicholas Williamson, Steven Armfield		F.168: Characterising the airflow instability that induces tiger stripes in inkjet printing [304] *ANDRE FELLIPE VILANOVA DE ARAUJO AQUINO, Sam Mallinson, Geordie D. Mcbain, Glenn D. Horrocks, Charitha de Silva, Tracie	F.171: Comprehensive wind farm validation of an actuator surface method LES with a road map to real time [45] DANIEL LINTON, Ben Thorner
0850 - 0910	A.155: Characteristics of planar buoyant plumes in a turbulent channel with cross flow [120] *YICHENG CAO, Jimmy Philip, Andrew Ooi	B.158: Characterisation of 3D printed TPMS heat exchangers [393] BENJAMIN REYNOLDS, Luckmore Kadzungura, Ken Morison, Conan Fee, Daniel Holland	C.161: Direct numerical simulation of the zero-pressure gradient boundary layer flow over a dimpled plate [173] JIANXUN ZHU, Cai Tian, Lars Erik Holmedal	D.164: Methods for identifying gravity current frontal position in a stratified ambient [119] DUNCAN SUTHERLAND, Andrew Ooi, Leon Chan, Wai Kit Lam		F.169: Withdrawn [320]	F.172: The effect of surface level drop on experimental water wheel measurements [70] *MATTHEW TOOLE, Cristian Birzer, Richard Kelso
0910 - 0930	A.156: Measurements of scalar in buoyant plumes in a turbulent boundary layer [405] *MIAOYAN PANG, Kapil Chauhan	B.159: Hydrogen energy storage system: how does the semi-cylindrical helical coil heat exchanger affect metal hydride beds' thermal conductivity? [421] *PUCHANEE LARPRUENRUDEE, Nick S. Bennett, M.J. Hossain, Robert Fitch, Mohammad S. Islam	C.162: Experimental investigation of the heat transfer efficiency of oversized riblets in turbulent boundary layers [213] *SICONG WANG, Wagih Abu Rowin, Rahul Deshpande, Richard Sandberg, Nicholas Hutchins	D.165: Scaling of a turbulent natural convection boundary layer immersed in a stably stratified medium [102] *KRISHNA REDDY MARYADA, Steven Armfield, Priyanka Dhopade, Stuart Norris		F.170: Experimental study of the particle bouncing in particle-laden flows: the influence of particle loading [345] *SHIPU HAN, Zhiwei Sun, Zhaofeng Tian, Timothy Lau, Alfonso Chinnici, Graham Nathan	F.173: Wind tunnel investigation of horizontal-axis wind turbine wake under an imposed adverse pressure gradient [73] *PAUL BAYRON, Richard Kelso, Rey Chin
0930 - 1000	Morning tea break						
1000 - 1200	07A Aerodynamics II Chair: Dr Methma Rajamuni ABS Auditorium (B2010)	07B Heat and Mass Transfer III Chair: Prof John Cater ABS Case Study Lecture Theatre 1170	07C Hypersonics I Chair: Dr Bianca Capra ABS Lecture Theatre 1130	07D Boundary Layers II Chair: Prof Tracie Barber ABS Lecture Theatre 1110	07E Experimental Techniques & Facilities II Chair: Dr Chaoyang Jiang ABS Case Study Lecture Theatre 1070	07F Combustion & Reacting Flows I Chair: Dr Maryam Ghodrati ABS Case Study Lecture Theatre 1060	07G Wind and Renewables II Chair: Dr Daniel Linton ABS Case Study Lecture Theatre 1050
1000 - 1020	A.174: Sit-ski aerodynamics [117] TESSA IMPEY, Natalia Kabaliuk, Lev Chernysev, Mark Jermy, Cameron Ross	B.180: A parametric study on swirling methane-air mesoscale flames for micro-thermophotovoltaic systems [443] *MICHAEL RAY WENCESLAO, Priyanka Dhopade, Rajnish Sharma	C.186: Experimental design for measuring electron transpiration cooling in hypersonic flows [32] *OLIVER PAXTON, Hadas Porat, Ingo Jahn	D.192: Turbulent statistics of a vertical natural convection boundary layer [14] JUNHAO KE, Nicholas Williamson, Steven Armfield, Atsuki Komiya, Stuart Norris	E.198: Evaluating a fast response aerodynamic probe for wake measurements [25] *CONNOR MARSHALL, Jesse McCarthy, Malcolm Jones	F.204: Effect of buoyancy on CFD prediction accuracy of hydrogen/methane diffusion jet flames. [121] *MANAHARA MANATUNGA, Farid C. Christo, Jeremy Sheehy, Jorg Schluter, Sergiy Shelyag	G.210: Analysis of the relationship between wind veer and wake deflection of yawed wind turbine wakes in stable atmospheric boundary layer flow [82] *ELLA KERR, Michael Kirkpatrick
1020 - 1040	A.175: Effects of pitch perturbations on a rotating wing [223] SHANTANU S. BHAT, Soudeh Mazharmanesh, Albert Medina, Sridhar Ravi	B.181: Heat transfer analysis and flow visualization of a pulsatile flow in a horizontal pipe using computational fluid dynamics [125] *JOSE GABRIEL MERCADO, Rajnish Sharma, Alison Subiantoro	C.187: Boundary layer correction method for supersonic and hypersonic wind tunnel nozzles with thick, low density boundary layers [72] *LACHLAN NOLLER, Fabian Zander,	D.193: Instabilities in flow over a rounded backward facing step due to time varying adverse pressure gradient [171] RAMALINGAM N, Shyama Prasad Das	E.199: Development of a low-cost four-hole pressure probe for the measurement of three-dimensional fluid flows [52] *JOSHUA HASELGROVE, Richard Kelso, Matthew Emes	F.205: Direct numerical simulation of reacting multimode narrowband Kelvin-Helmholtz shear layer [214] *MOUSTAFA ALI, Matthew Cleary, Ben Thorner	G.211: Large eddy simulation of artificially generated atmospheric vortices for power generation [178] *THERESA BISCHOF, Michael MacDonald, John Cater, Richard G. J. Flay
1040 - 1100	A.176: Characterization of the flow field generated by a NACA 0012 flat wing tip [227] *TINGYI ZHANG, Yuchen Ding, Con Doolan, Jeoffrey Fischer, Charitha de Silva, Thomas Geyer, Danielle Moreau	B.182: Heat dissipation of active origami geometries [188] FARHAN AHMED, Mehdi Khatamifar, Wenxian Lin	C.188: Experimental investigation of aft body radiating flows on a scaled Titan atmospheric entry model [122] *SNEHA SRINIVASAN, Richard Morgan, Hadas Porat	D.194: Experimental single and two-point statistics of unsteady wall pressures under a supersonic boundary layer [193] ANGUS WILLS, Danielle Moreau, Con Doolan	E.200: Effect of pressure tap density on prediction of wind-induced loads and dynamic response of tall buildings [126] *MOHAMMAD MAHDI SALEHINEJAD, Yin Fai Li, Quincy Ma, Richard G. J. Flay	F.206: Numerical simulation of hydrogen normal and knocking combustion [248] *MUHAMMAD UMAIR MANZOOR, MohammadReza Yosri, Farzad Poursadegh, Mohsen Talei, Yi Yang, Michael Brear	G.212: The effect of wind turbine layout on the performance of offshore wind farms [201] JAY PRAKASH GOIT, Asim Önder

1100 - 1120	A.177: Lift and drag forces on two rough circular cylinders in tandem configuration at a post-critical Reynolds number. [230] *ANIL PASAM, Daniel Tudball Smith, Mark Thompson, David Burton	B.183: Correction method for measuring fluid temperature using a thermal imaging camera [332] *KAISAR AL SHAMI, Andrew Neely, Talluru M. Krishna, Bianca Capra	C.189: An incident shock boundary condition for Eilmer4 [124] *FLYNN HACK, Ingo Jahn, David Buttsworth, Fabian Zander	D.195: Direct numerical simulation of momentum and scalar turbulent internal boundary layers [302] MICHAEL MACDONALD	E.201: Installation, commissioning and operation of the atmospheric boundary layer research facility (ABLRF) [261] MATTHEW EMES, Matthew Marano, Azadeh Jafari, Maziar Arjomandi	F.207: Wall heat transfer modelling of hydrogen knocking combustion [251] *XINBEI DOU, Muhammad Umair Manzoor, MohammadReza Yosri, Farzad Poursadegh, Mohsen Talei, Yi Yang, Michael Brear	G.213: Microscale wind resource assessment of Natadola in Viti Levu, Fiji [210] KUNAL DAYAL, Rishal Singh, Rajnish Sharma
1120 - 1140	A.178: An experimental investigation of the interaction between an airfoil in the wake of a cylinder [234] *ROWENA DIXON, Chaoyang Jiang, Charitha de Silva, Danielle Moreau, Con Doolan	B.184: Pulsed heat transfer coefficient for expansion mass transport regime in PPMOCVD [426] SALMA R. RADWAN, Natalia Kabaliuk, Johann Land, Sid Becker, Susan Krumdieck	C.190: Transitional boundary layer measurements in the University of Southern Queensland hypersonic wind tunnel [182] *ALISTER WEBB, Byrenn Birch, Fabian Zander, David Buttsworth	D.196: Investigation of the contribution from large scale coherent structures and the Reynolds shear stress quadrant events via the Renard-Deck decomposition to the wall skin friction coefficient in a zero-pressure-gradient turbulent boundary layer [357] *BIHAI SUN, Christophe Cuvier, Christian Willert, Yasar Ostovan, Jean-Marc Foucaut, Callum Atkinson, Julio Soria	E.202: Australian National Arc-Jet Facility: a proposal for an industrial scale, long duration hypersonic, high-temperature materials and plasma research facility for Australia [311] CHRISTOPHER JAMES, Michael Heitzmann, Pradeep Shukla, Oliver Paxton	F.208: Numerical simulations of a methane-oxygen rotating detonation engine with two inlet configurations [288] SEBASTIAN GALINDO-LOPEZ, Matthew Cleary, Ben Thornber, Adrian Pudsey	G.214: Turbulent flow over wavy surfaces: Flow separations and wave parameters [211] WILL JUNGHOON LEE, Tunggul Bhirawa, Kevin Kevin, Bharathram Ganapathisubramani, Jason Monty, Takfarinas Medjnoun, Luis Blay Esteban
1140 - 1200	A.179: Three-dimensional numerical study of flow past pitching seagull wing under wind gust [90] *JAY RANA, Shaligram Tiwari	B.185: Withdrawn [57]	C.191: Heated barrel mode for a hypersonic Ludwig tube with free-piston compression: preliminary performance [183] BYRENN BIRCH, Ray Malpress, Khalid Saleh, David Buttsworth	D.197: Withdrawn [385]	E.203: The design and characterisation of the UNSW anechoic wind tunnel [348] DANIELLE MOREAU, Charitha de Silva, Roman Kisler, Jiawei Tan, Jiang Chaoyang, Manuj Awasthi, Con Doolan	F.209: Analysis of the filtered flame-front displacement term for an intensely turbulent premixed flame experiencing flame-wall interaction [341] *SHRESHTHA KUMAR GUPTA, Pavel Panek, Mohsen Talei, Robert Lindsay Gordon, Vaibhav Kumar Arghode	G.215: Implied energy harvesting performance of transverse flow-induced vibration of a D-section cylinder [293] JISHENG ZHAO, Mark Thompson, Kerry Hourigan

1200 - 1330	Lunch	1220 - 1320	Women in Engineering Lunchtime Panel Discussion ABS Lecture Theatre 1110
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1330 - 1430	Keynote V (Sponsor: Pawsey Supercomputing Research Centre): <u>A/Prof Daniel Chung</u> - Riblets drag reduction and rough-wall heat transfer according to minimal channels Chair: Dr Chris Harris ABS Auditorium (B2010)
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1430 - 1530	08A Turbulence III Chair: Prof Lyazid Djenidi ABS Auditorium (B2010)	08B Boundary Layers III Chair: A/Prof Sharon Stephen ABS Case Study Lecture Theatre 1170	08C Hypersonics II Chair: Dr Melissa Kozul ABS Lecture Theatre 1130	08D Turbomachines & Industrial Flows I Chair: Prof Ahmad Jabbarzadeh ABS Lecture Theatre 1110	08E Flow Control II Chair: A/Prof Fang-Bao Tian ABS Case Study Lecture Theatre 1070	08F Particle-laden flows IV Chair: Dr Mohammad Hoque ABS Case Study Lecture Theatre 1060	08G AI/ML for Fluids I Chair: Prof Ben Thornber ABS Case Study Lecture Theatre 1050
1430 - 1450	A.216: Influence of Miura-origami shapes on skin friction drag in turbulent flows [235] *TONY ZAHTILA, Leon Chan, Mark Benjamin, Andrew Ooi, Gianluca Iaccarino	B.219: Global stability analysis of rotating axisymmetric boundary layer [22] RAMESHKUMAR BHORANIYA, Vinod Narayanan	C.222: Co-designing hypersonic vehicle geometry and trajectory [18] *KIERAN MACKLE, Ingo Jahn	D.225: Application of hybrid RANS-LES models to the prediction of flow, residence time and solids distribution in an industrial crystalliser [16] GARY BROWN, David Fletcher, Jeremy Leggoe, David Whyte	E.228: Reducing turbulent skin-friction drag by application of a perforated surface [262] AZADEH JAFARI, Beverley McKeon, Benjamin Cazzolato, Maziar Arjomandi	F.231: Effect of sub-atmospheric conditions on jet-induced cratering on a granular surface [194] LOKESH SILWAL, Daniel Stubbs, Brian Thurow, Masatoshi Hirabayashi, Vrishank Raghav, David Scarborough	G.233: Applying CFD-driven machine learning simultaneously to multiple flow configurations to develop more universal turbulence models [23] *YUAN FANG, Yaomin Zhao, Richard Sandberg, Andrew Ooi
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Chair: Prof Tracie Barber
ABS Auditorium (B2010)

0930 - 1040 Morning tea break

0940 - 1040: Panel Session # 4, ABS Auditorium (B2010)
Challenges in Translational Research

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1330 - 1530	11A Experimental Techniques & Facilities IV Chair: Dr Kapil Chauhan ABS Auditorium (B2010)	11B Jet Flows I Chair: Prof Andrew Ooi ABS Case Study Lecture Theatre 1170	11C Hypersonics III Chair: Dr Tamara Sopek ABS Lecture Theatre 1130	11D Fluid Structure Interaction II Chair: Dr Maryam Abdolahpour ABS Lecture Theatre 1110	11E Micro/nanofluidics Chair: Prof Yonggang Zhu ABS Case Study Lecture Theatre 1070	11F Oceanography Chair: Dr Cat Vreugdenhil ABS Case Study Lecture Theatre 1060	11G Multiphase Flows II Chair: Prof Mattieu Sellier ABS Case Study Lecture Theatre 1050
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