

7th Australian Conference on Laser Diagnostics in Fluid Mechanics and Combustion 9-11th December 2015

Welcome to the 7th Australian Conference on Laser diagnostics in Fluid Mechanics and Combustion.

Venue

The conference venue is Level 10, The Woodward Centre, The University of Melbourne, 185 Pelham St, Carlton 3052. All papers will be held in the same conference centre room.

Registration

Registration is open on Level 10 from 12:30 to 2pm on Wednesday 9th.

Meal Breaks

Morning tea, lunch and afternoon tea will be served on Level 10, see the program for times.

Dinner

Dinner will be held on Thursday 10th in the main dining room of the Woodward Centre, level 10. Pre-dinner drinks will start at 6:30pm.

Presentations

Presentations run for 20 minutes, which includes 5 minutes for questions and change over. Please make sure your talk is uploaded before your session.

Electronic Copy of Proceedings

An electronic copy of the conference proceedings can be downloaded from the conference web page.

Prizes

Two prizes will be awarded: (1) Best student presentation and (2) Best paper student first author paper.

If you have any questions or require any assistance, please approach any of the attendees from Monash University, or the conference chairs:

Damon Honnery

Daniel Edgington-Mitchell.

7th Australian Conference on Laser Diagnostics in Fluid Mechanics and Combustion
9-11th December 2015- Program

	Wednesday 9th Registration	12:30pm
	Opening and Welcome	2:00pm
K1	Opening Keynote- Chair Dr Daniel Edgington-Mitchell T.J. McIntyre, R.M. Kelly and T. Vanyai <i>Imaging and Diagnostic Techniques for High-speed Hypersonic Flow</i>	2:20pm
	Afternoon tea	3:20pm
	Session A- Chair Professor Bassam Dally	
A1	T.C.W. Lau and G.J. Nathan <i>The influence of Stokes number on particle clustering within a two-phase turbulent jet</i>	3:40pm
A2	M.C. Trump, K. L. de Graaf, B. W. Pearce and P. A. Brandner <i>An Experimental Investigation of the Optical Measurement of Microbubbles in a Confined Radial Jet</i>	4:00pm
C3	M.K. Le, R. Zhang, L. Rao and S. Kook <i>Applications of OH-PLIF and soot-PLII in a small-bore optical diesel engine</i>	4:20pm
A4	A. Chinnici, Y. Xue, T.C.W. Lau, M. Arjomandi, G.J. Nathan <i>Experimental Characterisation of the Vortex Structure within a Solar Expanding-Vortex Particle Receiver-Reactor</i>	4:40pm
A5	N. Mason-Smith, D. Duke, M. Fedrizzi, J. Soria, D. Edgington-Mitchell & D. Honnery <i>Back-Illumination Imaging of Pressurised Metered-Dose Inhaler Sprays</i>	5:00pm
	Thursday 10th	
	Session B- Chair Professor Gus Nathan	
K2	Z. T. Alwahabi, S. W. Zhiwei and M. Wall <i>Laser Induced Breakdown Spectroscopy: Detection of High and Low Concentrations</i>	9:00am
B1	D.H. Gu, Z.W. Sun, G.J. Nathan, P.R. Medwell, Z.T. Alwahabi and B.B. Dally <i>Improvement of Precision and Accuracy of Temperature Imaging in Sooting Flames Using Two-line Atomic Fluorescence (TLAF)</i>	10:00am
B2	A.R.W. Macfarlane, M. Dunn, M. Juddoo and A.R. Masri <i>High-Speed PLIF Measurements of OH and CH₂O in Turbulent Auto Igniting Flames of DME</i>	10:20am
	Morning Tea	10:40am
	Session C- Chair Professor Assaad Masri	
C1	Z. Sun, G. Nathan, Z. Alwahabi and B. Dally <i>Numerical assessments of measuring soot aggregates sizes using elastic scattering at two laser wavelengths and one collection angle</i>	11:00am
C2	S. Algoraini, S. Zhiwei, Z. T. Alwahabi <i>Laser-Induced Incandescence of Laminar Premixed C₂H₄-Air flames at Well-Controlled Pressure</i>	11:20am
A3	P. Muston, D. Nguyen, D. Honnery and D. Edgington-Mitchell <i>Droplet Breakup in Turbulent Counterflow</i>	11:40am

C4	M.J. Evans, P.R. Medwell and J. Ye <i>Laser-Induced Fluorescence of Hydroxyl in Ethylene Jet Flames in Hot and Diluted Coflows</i>	12:00pm
C5	K.C.Y. Kueh, T. Lau, G.J. Nathan, Z.T. Alwahabi <i>Temperature Measurements by Laser-induced Phosphorescence: Effect of Laser Flux Variation</i>	12:20pm
C6	J. Ye, P.R. Medwell, M.J. Evans, B.B. Dally <i>Quantitative Rayleigh temperature imaging in turbulent flames of prevaporised n-heptane</i>	12:40pm
Lunch		1:00pm
<u>Session D- Chair A/Professor Tracie Barber</u>		
D1	C. Hesseling, T. Homeyer, J. Peinke, and G. Gulker <i>Particle depth position detection in digital holographic PIV accounting for the truncation error</i>	2:00pm
D2	K. Grayson, I. Marusic and N. Hutchins <i>Analysis of PIV error due to laser light sheet misalignment</i>	2:20pm
D3	C. Atkinson, A-J. Buchner, M. Eisfelder, V. Kitsios and J. Soria <i>A real-time PIV system for the establishment and study of self-similar APG turbulent boundary layers</i>	2:40pm
D4	J. Ding, J. Wang, Y. Liu, and S. Shi <i>Dense Ray Tracing Based Reconstruction Algorithm for Light Field Volumetric Particle Image Velocimetry</i>	3:00pm
D5	M. Fedrizzi and J. Soria <i>A Low Cost PIV Timing Control System Using a Single-Board Computer</i>	3:20pm
Afternoon Tea		3:40pm
<u>Session E- Chair A/Professor Ramesh Narayanaswamy</u>		
E1	A. Lotfi, Z. Lawler, O.Jan, M. Hassan and T. Barber <i>Experimental Investigation of Hemodynamic Alteration in Arterial Bifurcation</i>	4:00pm
E2	J. Aplin, P. H. Geoghegan, C.J.T. Spence, Natalia Kabaliuk, and M.C. Jermy <i>Stereoscopic PIV measurements of the Natural Breath Cycle in a Neonate Nasal Cavity</i>	4:20pm
E3	T. Barber and A. Leung <i>Arterio-venous fistula hemodynamics</i>	4:40pm
E4	X. Lou, T. Zhou and L. Cheng <i>PIV Analysis on the Flow Field of a Yawed Square Cylinder in Oscillatory Flow</i>	5:00pm
E5	C.X. Thong, C.H. Birzer and B.B. Dally <i>Mixing field characteristics of asymmetrical multi-lateral jets injected into a round pipe flow</i>	5:20pm
E6	V. Chaugule, R. Narayanaswamy, A.D. Lucey, V. Narayanan and J. Jewkes <i>Turbulent Impinging Jet on an Oscillating Surface</i>	5:40pm
Conference Dinner		6:30pm
Friday 11th		
<u>Session F- Chair Professor Damon Honnery</u>		
K3	D.D. Duke <i>A Review of Synchrotron Radiation Diagnostics for Fluid Mechanics</i>	9:00am

F1	R. Manoharan, S. O'Byrne and T. K. Boyson <i>Time-resolved temperature measurements in a repetitively pulsed nanosecond discharge using tuneable diode laser absorption spectroscopy</i>	10:00am
F2	B.J. Wheatley, H. Fulge and T.J. McIntyre <i>Atomic Oxygen Concentration in a Microwave Plasma</i>	10:20am
Morning Tea		10:40am
<u>Session G- Chair A/Professor Zeyad Alwahabi</u>		
G1	T.N. Crouch, N. Barry, J.A. Venning, D. Burton, M.C. Thompson, and J. Sheridan <i>The application of laser diagnostics to cycling aerodynamics</i>	11:00am
G2	J. Weightman, O. Amili, D. Honnery, D. Edgington-Mitchell, and J. Soria <i>Effects of Nozzle Lip Thickness on the Global Modes of an Impinging Supersonic Jet</i>	11:20am
G3	D.J. Tan, J. Soria, D. Honnery and D. Edgington-Mitchell <i>An Investigation of the Turbulent Integral Length Scales in an Underexpanded Axisymmetric Jet</i>	11:40am
G4	S.S. Bhat, J. Zhao, J. Sheridan, M. C. Thompson and K. Hourigan <i>Investigation of the flow structure over a rotating insect wing using PIV measurements</i>	12:00pm
G6	C.M. de Silva, D.T. Squire, N. Hutchins and I. Marusic <i>Towards capturing large scale coherent structures in boundary layers using particle image velocimetry.</i>	12:20pm
G5	Kevin, B. Nugroho, J.P. Monty and N. Hutchins, G. Pathikonda, J.M. Barros and K.T. Christensen <i>Dissecting a modified turbulent boundary layer using particle image velocimetry</i>	12:40pm
Lunch and farewell		1:00pm