2015

AUSTRALIAN COMBUSTION SYMPOSIUM

The University of Melbourne, Parkville, Victoria

7-9 December 2015



The Combustion Institute - Australian and New Zealand Section

Local Organizers: University of Melbourne, Defence Science & Technology Group

EVENTS AND LOCATIONS

SUNDAY 6 DECEMBER

Registration	15:00 - 18:00	Gryphon Gallery, 1888 Building
Welcome Reception	15:00 – 18:00	Gryphon Gallery, 1888 Building
Executive Committee Meeting	17:00 – 17:30	Thermodynamics Lab
Biennial General Meeting	17:30 – 18:00	Gryphon Gallery, 1888 Building
	MONDAY 7 DECEMBER	
Registration	7:00 – 15:00	The 10th floor, Law Building
Opening Ceremony & Bilger Memorial	7:45 – 8:30	Woodward Conference Centre, the 10 th floor, Law Building
Tour to DST Group	14:30 – 17:00	Registration only
	TUESDAY 8 DECEMBER	
Registration	7:00 – 15:00	The 10th floor, Law Building
Tour to UoM Thermodynamics Lab	15:00 – 17:00	Mechanical Engineering Building
Banquet Reception	18:30 – 19:30	Courtyard, Ormond College
Banquet	19:30	Dining Hall, Ormond College
	WEDNESDAY 9 DECEMBER	

Awards & Closing Ceremony

12:00 - 13:00

Woodward Conference Centre, the 10th floor, Law Building

Princes Path Of 0 0 Y ≡ Search Google Maps Review Second Ave FIST AVE **Ormond College** 83 CollegeCres 3 (Banquet) Morrison Gatehouse St/ 😝 🖁 First College College College St Hilda's College Park Dr Queen's College ۲ 83 ιAι 17 St Carthage's Church egraves St. Degraves St. 34 th 5 Fitzgibbon 1 University Oval -Trinity College 34 The Bulpadock h Newman College 🚖 Melbourne University Athletics Club Morrah St/Royal Pde 🔛 Palmerston Pl Morrah St Royal Parade t Tin Alley Tin Alley Fitzgibbon St University of Elgin pl Melbourne Tin Alley 34 System Garden Bd Union University of Melbourne/Swanston St The Clyde Hotel 34 T . 5 あ Bank Swanston (Cardigan St The Graduate Schoo of Humanities and... Ê -Grainger Museum lan Potter Museum of Art 🏛 Masson Rd University of pourne/Royal Parade Genetics Ln 8 elbourne H Hospital Pa Ca) 11 Faraday St Monash Rd **Baillieu Library** 0 5 Fi oital 4 South Lawn ters Wilson õ University of Melbourne/Swanston St Medical Rd Pod ardigan 55 H Dental Health Services Victo Faculty of Medicine, Dentistry and Health... Kernot Rd ١ St/Royal Parade 🔛 ٥ 1888 Building Grattan St õ Grattan St (Welcome Reception) Barry St Berkeley : Grattan S 55 Grattan St/Swanston St Id euin Bouverie St ١ KFC WI あ University Square ston 5 æ Church St Barry St SWS **Thermodynamics Lab** Leicester St Haymarket Roundabout Rydges on Swanston (UoM Tour) Elizabeth 5 Swanston ' Pelham St 11. Argyle 55 Bouverie St Berkeley S 55 Cardigan 5 Pelham St Lincoln Square/ Swanston St 5 * -elcester / S Pelham St Argyle Saua Seeds Specialty Coffee ÷ Ball Canada Ln õ 05 digan Google -Map data ©2015 Goode Lite Mode

University of Melbourne Campus Map

Law Building – Woodward Conference Centre, 10th floor (Main Site)

The Combustion Institute – Australian and New Zealand Section gratefully acknowledges the following organizations whose generous support contributed to the success of the 2015 Australian Combustion Symposium.

Gold Sponsor









Silver Sponsor









ACS 2015 TECHNICAL PROGRAM

	Woodward Conference Centre	Room GM16	Room GM17	Room 104	Room 106
	Opening Ceremony & Bilger Memorial				
7 December	Bilger Lecture (Poinsot)				
Morning	Plenary Lecture (D'Anna)				
	IC Engine and Gas Turbine Combustion	MILD Combustion	Combustion Kinetics	Turbulent Combustion CFD	Spray Combustion
Afternoon	IC Engine and Gas Turbine Combustion	Solids Combustion	Combustion Kinetics	Turbulent Combustion CFD	Spray Combustion
	Plenary Lecture (Xu)				
8 December	Plenary Lecture (Hawkes)				
Morning	IC Engine and Gas Turbine Combustion	Solids Combustion	Combustion Kinetics	Turbulent Combustion CFD	Soot
Afternoon	IC Engine and Gas Turbine Combustion	Chemical Looping & VAM Combustion	Turbulent & Laminar Flame Experiments	Turbulent Combustion CFD	Soot
9 December	Plenary Lecture (Cleary)				
Morning	Turbulent & Laminar Flame Experiments	Furnace Combustion			
Noon	Awards & Closing Ceremony				

	Monday 7 December				
7:45	Opening Ceremony and Bilger Memorial Prof. Assaad Masri (Chair, Australian and New Zealand Section, the Combustion Institute) Prof. Michael Brear (Chair, Conference Chair) Woodward Conference Centre				
8:30	Bilger Lecture (P1) Unsteady Combustion in Gas Turbines: Ignition, Instabilities and Control Dr. Thierry Poinsot, CERFACS, France Chair: Prof. Assaad Masri, University of Sydney Woodward Conference Centre				
9:30	Plenary Lecture (P2) Combustion-Generated Fine and Ultrafine Particles Prof. Andrea D'Anna, University of Naples Federico II, Italy Chair: Prof. Graham Nathan, University of Adelaide Woodward Conference Centre				
10:30	Break	1	1	1	1
	Woodward Conf. Centre	Room GM16	Room GM17	Room 104	Room 106
	IC Engine and Gas Turbine Combustion Chair: Dr. J. Lacey	MILD Combustion Chair: Dr. R. Gordon	Combustion Kinetics Chair: Dr. Y. Yang	Turbulent Combustion CFD Chair: Dr. M. Talei	Spray Combustion Chair: Dr. S. Chan
11:00	<u>1A01</u> : Impact of Triacetin as an oxygenated fuel additive to waste cooking biodiesel: transient engine performance and exhaust emissions A. Zare, T. Bodisco, M.N. Nabi, H. M. Farhad, M.M. Rahman, D. Stuart, Z. Ristovski, R. J Brown Queensland University of Technology	<u>1B01</u> : Classification of Non- Premixed MILD and Autoignitive Flames M. J. Evans, P. R. Medwell, H. Wu, A. Stagni, M. Ihme University of Adelaide	<u>1C01</u> : H2-Air Chemical Kinetic Evaluation for Pulse Detonation Engine Simulations V.B.B. Rodrigues, E. C. Maciel, C. S. T. Marques University of São Paulo, Brazil	<u>1D01</u> : LES-MMC modeling of a partially-premixed turbulent dimethyl ether/air jet flame G. Neuber, Y. Gao, A. Kronenburg, O.T. Stein , M. J. Cleary University of Stuttgart, Germany	<u>1E01</u> : Identification of Burning and Extinguishing Behaviour in Spray Flames with Spark Ignition J. E. Baayens, Andrew P. Wandel University of Southern Queensland

MON	Woodward Conf. Centre	Room GM16	Room GM17	Room 104	Room 106
11:20	<u>1A02</u> : Modeling of the ion current developed in a direct injection diesel engine R. Rao , D. Honnery Monash University	<u>1B02</u> : The impact of carrier gas on ethanol flame behaviour in a Jet in Hot Coflow (JHC) burner J. Ye, P.R. Medwell, M.J. Evans, B.B. Dally University of Adelaide	<u>1C02</u> : Non-Oxidative Thermal Decomposition of Endosulfan W.N.K. Dharmarathne, J.C. Mackie, E.M. Kennedy, M. Stockenhuber University of Newcastle	1D02: Acceleration of combustion simulations using GPUs K.A. Damm, R.J. Gollan, A. Veeraragavan University of Queensland	<u>1E02</u> : A New Approach in Characterizing Secondary- Breakup Regimes for Newtonian Liquids P.X. Pham, A. Kourmatzis, A. Masri University of Sydney
11:40	 <u>1A03</u>: Experimental investigation of the effects of oxygenated fuels on exhaust emissions in a heavy duty diesel engine F. M. Hossain, M.N. Nabi, M.M. Rahman, A. Zare, T.J. Rainey, D. Stuart, Z. Ristovski, R. J. Brown Queensland University of Technology 	<u>1B03</u> : The adequacy of laminar flame calculations for identifying MILD combustion P.R. Medwell, M.J. Evans, Q.N. Chan, V.R. Katta University of Adelaide	1 <u>C03</u> : Non-Oxidative Thermal Decomposition of Endosulfan II. Mechanism of Decomposition J.C. Mackie, W.N.K. Dharmarathne, E.M. Kennedy, M. Stockenhuber University of Newcastle	1D03: Developments in Multiple Mapping Conditioning for turbulent premixed combustion B. Sundaram, A.Y. Klimenko, M. J. Cleary University of Queensland	1E03: The effect of radiation heat transfer under ECN Spray A conditions M. A. Chishty, M. Bolla, E. R. Hawkes, Y. Pei, and S. Kook University of New South Wales
12:00	 1A04: Evaporation and mixing of ethanol-water mixture in a heavy duty common rail marine diesel engine intake air E. Kim, V. Garaniya, R. Islam, R. Abbassi University of Tasmania 	1B04: Effect of Turbulence on the MILD Combustion Characteristics of Victorian Brown Coal M. Saha, B.B. Dally, P.R. Medwell, A. Chinnici University of Adelaide	 1C04: Kinetics analysis and reaction characteristics of aluminium alloys in water vapor T. Zhang, J. Liu, Z. Huang, W. Yang, J. Zhou Zhejiang University, China 	1D04: Computational Model of Conically Stabilized Turbulent Premixed Flames A.T. Brimmo, M.I. Hassan Masdar Institute of Science and Technology, UAE	1E04: Effect of Impinging Angle on Non-Evaporative Diesel Wall-Jet M.H. Jayed, J. Soria, D.R. Honnery Monash University
12:20	2:20 Lunch (Woodward Conference Center)				

MON	Woodward Conf. Centre	Room GM16	Room GM17	Room 104	Room 106
	IC Engine and Gas Turbine Combustion	Solids Combustion	Combustion Kinetics	Turbulent Combustion CFD	Spray Combustion
	Chair: Dr. R. Zhang	Chair: Dr. K. Shah	Chair: Dr. M. Altarawneh	Chair: Dr. M. Cleary	Chair: Prof. A. Masri
13:10	 <u>1A05</u>: Formulation of new oxygenated fuels and their influence on engine performance and exhaust emissions M. N. Nabi, A. Zare, F.M. Hossain, M.M. Rahman, D. Stuart, Z. Ristovski, R. J Brown Queensland University of Technology 	 <u>1B05</u>: Effect of Boron Carbide on the Ignition and Combustion Characteristics of Amorphous Boron D. Liang, L. Qiu, J. Liu, B. Chen, J. Zhou Zhejiang University, China 	1 <u>C05</u> : Magnitude of the deuterium kinetic isotope effect during the combustion of methane over a Pd/Al2O3 catalyst B.A. Wright, E.M. Kennedy, and M. Stockenhuber University of Newcastle	1D05: The Flow Characteristics and Flame Statistics of an Experimental Turbulent CH4/air Premixed Flame using DNS H. Wang, E.R. Hawkes, J.H. Chen University of New South Wales	<u>1E05</u> : A theoretical examination of spray supercriticality in compression ignition engines F. Poursadegh, J.S. Lacey, M.J. Brear and R.L. Gordon University of Melbourne
13:30	1A06: Fuel Economy and CO2 Benefits of Dual-Fuel Combustion in Spark-Ignition Engines using Less Processed Petroleum-Derived Fuels K. Morganti, M. Al-Abdullah and A. Zubail Saudi Aramco Oil Company	 <u>1B06</u>: Investigation of smouldering combustion of biomass fuel H. Wang, P. R. Medwell, C. H. Birzer, P. J. van Eyk, Z. F. Tian, M. Possell University of Adelaide 	1C06: The role of HNO and NOH in NO formation during ammonia oxidation on Pt(111) J.D. González, B.S Haynes and A. Montoya University of Sydney	1D06: Equivalence Ratio Effects on Turbulent Premixed Flames in Lean Methane/Air Mixtures Z. Wang, E. Motheau, J. Abraham Purdue University, USA	1E06: Macroscopic Spray Characteristics of an Evaporating Diesel Spray I.M. Rizwanul Fattah, W. Ren, C. Woo, Q.N. Chan, S. Kook, E.R. Hawkes University of New South Wales
13:50	1A07: The Effect of Nitric Oxide on Autoignition Onset of Toluene Reference Fuels (TRFs) in a CFR Engine Z. Chen, H. Yuan, Y. Yang, M.J. Brear University of Melbourne	1B07: Degradation and Combustion Behaviours of Some Thermoplastics with Potential Use as Hybrid Rocket Fuels P. Joseph, V. Novozhilov, R. Zhang Victoria University	1C07: Mechanism Development and Chemical Kinetics Analysis of HxNyOz Species in Gliding Arc Discharge M. Zangouei, B. S. Haynes University of Sydney	1D07: Analysis of the flame brush of an acoustically perturbed swirling premixed flame T.F. Guiberti, S. Bejaoui, D. Durox, T. Schuller CNRS, France	1E07: Flow Measurements of Compressed Natural Gas Jets Issued from Direct Injectors for Spark Ignition Engines P. Lappas, T. J. Rogers, P. Petersen RMIT University

MON	Woodward Conf. Centre	Room GM16	Room GM17	Room 104	Room 106
14:10	 <u>1A08</u>: Removal of secondary aerosols produced during plasma diesel particulate treatment M. Babaie, P. Talebizadeh, K.H. Sia, A.J. Yi, Z. Ristovski, H. Rahimzadeh, R. Brown Queensland University of Technology 	 <u>1B08</u>: Use of Beneficiated Victorian Brown Coal for Blended Combustion in PCI Blast Furnaces A. De Girolamo, A. Grufas, I. Lyamin, I. Nishio, Y. Ninomiya and L. Zhang Monash University 	1C08: A Plug Flow Reactor for Investigating Autoignition Chemistry in Combustion Engines N. Leplat, Z. Lu, Y. Yang, and M.J. Brear University of Melbourne	1D08: Local extinction and reignition in a turbulent lifted flame S. Karami, M. Talei, E.R. Hawkes University of New South Wales	<u>1E08</u> : Common Rail Diesel Sprays from Twin-hole Nozzle D. Nguyen, D. Duke, A. Kastengren, C. Powell, D. Honnery Monash University
14:30	Tour to Defence Science and Technology (DST) Group (by advance registration only)				

	Tuesday 8 December				
8:30	Plenary Lecture (P3) Flash Boiling Spray Behavior and Combustion in a Direct Injection Gasoline Engine Prof. Min Xu, Shanghai Jiaotong University, China Chair: Prof. Michael Brear, University of Melbourne Woodward Conference Centre				
9:30	Plenary Lecture (P4) Petascale Direct Numerical Simulations of Laboratory Flames Prof. Evatt Hawkes, University of New South Wales Chair: Prof. Brian Haynes, University of Sydney Woodward Conference Centre				
10:30	Break				
	Woodward Conf. Centre	Room GM16	Room GM17	Room 104	Room 106
	IC Engine and Gas Turbine Combustion Chair: Prof. R. Brown	Solids Combustion Chair: Prof. V. Novozhilov	Combustion Kinetics Chair: Prof. E. Kennedy	Turbulent Combustion CFD Chair: Dr. N. Smith	Soot Chair: Prof. G. Nathan
11:00	2A01: An Investigation of the Performance of a Gasoline Spark Ignition Engine Fuelled with Hot Ethanol Direct Injection Y. Huang, G. Hong University of Technology Sydney	2B01: Pyrolysis Characteristics of Ionic Liquid and Solvent Treated Coals J. Cummings, P. Tremain, D. Hamilton, S. Kundu, B. Moghtaderi, R. Atkin,and K. Shah University of Newcastle	2C01: Impact of Thermochemical Properties in Combustion Experiments A. Ahmed, M. Khurshid, S. Mohamed, W.L. Roberts, S.M. Sarathy King Abdullah University of Science and Technology, Saudi Arabia	2D01: Lewis number effects on edge-flame propagation in lifted turbulent flames S. Karami, M. Talei, E.R. Hawkes, H. Yu University of New South Wales	2E01: Soot measurements in a N2-diluted ethylene/air counterflow diffusion flame at elevated pressures H.M.F. Amin and W.L. Roberts King Abdullah University of Science and Technology, Saudi Arabia

TUE	Woodward Conf. Centre	Room GM16	Room GM17	Room 104	Room 106
11:20	2A02: Emissions and Performance of a Gas Turbine Engine with Two and Three-Component Blends of Petroleum and Bio-fuels F.L. Carter, R. N. Parthasarathy, and S. R. Gollahalli University of Oklahoma, USA	2B02: Numerical Modeling of Oxygen Enhanced Combustion and Transient Heating Characteristics in a Reheating Furnace R. Prieler, P. Belohradsky, B. Mayr, M. Demuth, C. Hochenauer Graz University of Technology, Austria	2 <u>C02</u> : Validation of oxidation mechanisms for pentane isomers S. Cheng, H. Yuan, Y. Yang, M.J. Brear University of Melbourne	2D02: Large Eddy Simulation of Evaporating Acetone in a Turbulent Multiphase Flow M. N. Khan and M. J. Cleary University of Sydney	
11:40	2A03: Ethanol-Fuelled Gasoline Compression Ignition (GCI) Combustion in a Common-Rail Diesel Engine C. Woo, S. Kook, E.R. Hawkes University of New South Wales	2B03: A Bench-Scale TGA- FTIR Investigation of Tar Removal in a Modified Biochar Production Process P. Tremain, F. Yin, F. Wilson, B. Moghtaderi, K. Shah University of Newcastle	2C03: Systematic study for H abstraction from alkanes by amine radical (NH2) K. Siddique, M. Altarawneh, and B.Z. Dlugogorski Murdoch University	2D03: DNS of hydrogen auto- ignition under HCCI-like conditions with wall heat transfer; parametric study J. Behzadi, M. Bolla, M. Talei, E.R. Hawkes, S. Kook University of New South Wales	2E03: High pressure considerations for Yield Sooting Index S.A. Steinmetz, W.L. Roberts King Abdullah University of Science and Technology, Saudi Arabia
12:00		 <u>2B04</u>: XANES Iron K-Edge Speciation of Heat Transfer Tube Corrosion upon Victorian Brown Coal Oxy- Fuel Combustion. I. Jabaz, J. Chen, K. Suzuki, Y. Ninomiya, L.Zhang Monash University 	2C04: Reactions of SH radical with C1-C4 Hydrocarbons Z. Zeng, M. Altarawneh, B.Z. Dlugogorski Murdoch University	2D04: Towards the LES-MMC Calculation of Turbulent Piloted Flames with Inhomogeneous Inlets S. Galindo, M.J. Cleary and A.R. Masri University of Sydney	2E04: Variations of In-Flame Soot Particles in the Presence of a Neighbouring Flame in a Diesel Engine R. Zhang, Y. Zhang and S. Kook University of New South Wales
12:20	Lunch (Woodward Conferer	nce Centre)			

TUE	Woodward Conf. Centre	Room GM16	Room GM17	Room 104	Room 106
	IC Engine and Gas Turbine Combustion	Chemical Looping and VAM Combustion	Turbulent and Laminar Flame Experiments	Turbulent Combustion CFD	Soot
	Chair: Prof. D. Honnery	Chair: Dr. A. Veeraragavan	Chair: Dr. P. Medwell	Chair: Prof. A. Klimenko	Chair: Dr. Matt Dunn
13:10	2A05: Effect of Injection Timing on Gasoline/Diesel and Gasoline/ Biodiesel Fuelled Dual-Fuel Engine: A Comparative Study Y. H. Teoh , H. H. Masjuki, M. A. Kalam, H. G. How University of Malaya, Malaysia	 <u>2B05</u>: Chemical Looping Air Separation for Oxy-fuel Power Plants Using a Spray Dried CuO/MgAl2O4 Oxygen Carrier H. Song, K. Shah, E. Doroodchi, A. Evans, B. Moghtaderi University of Newcastle 	2C05: Suitability of micro-PIV for characterizing poly- disperse dilute sprays in combustion applications A. Kourmatzis and A.R. Masri Macquarie University	2D05: Simulations of an n- dodecane flame with LES/sparse-Lagrangian MMC method F. Salehi, M. J. Cleary, A.R. Masri University of Sydney	2E05: The influence of high flux broadband radiation on soot concentration and temperature in a sooty flame X. Dong, Z. Sun, D. Gu, G.J. Nathan, P.J. Ashman, Z.T. Alwahabi, B.B. Dally University of Adelaide
13:30	2A06: Combustion and emission investigation of Calophyllum inophyllum biodiesel blends in an unmodified diesel engine A. M. Ruhul, M. A. Kalam, H. H. Masjuki, S. Imtenan University of Malaya, Malaysia	2B06: Effect of Methane and coal dust Concentrations on Explosion Pressure Rise M.J. Ajrash, J. Zanganeh, D. Eschebach and B. Moghtaderi University of Newcastle	2C06: Effect of multi-lateral fuel jet injection on the flow field of Methane-Air turbulent flame C.X. Thong, B.B. Dally, P.A.M. Kalt, C.H. Birzer University of Adelaide	2D06: The effect of equivalence ratio on sound generation by turbulent premixed flames A. Haghiri, M. Talei, M. J. Brear, E. R. Hawkes University of Melbourne	2E06: A technique for the measurement and classification of soot precursors and soot particles in turbulent flames D. Bartos, M. Dunn, M. Sirignano, A. D'Anna, A.R. Masri University of Sydney
13:50	2A07: Effects of EDI on Combustion and Emissions of Small Spark Ignition Engine at Lean Mixture Conditions N.F.O. Al-Muhsen, G. Hong University of Technology Sydney	2B07: Carbonation Reaction Kinetics at Low Partial Pressures of CO2 for a Novel Greenhouse Calcium Looping Combustion Process M. Ramezani, K. Shah, E. Doroodchi, P. Tremain and B. Moghtaderi University of Newcastle	2C07: Scalar Dissipation Rates in Turbulent Flames of Methane with Inhomogeneous Inlets H. Cutcherb, R.S. Barlowa, G. Magnottia , A.R. Masri University of Sydney	2D07: Flame interaction identification in turbulent premixed flames D. Brouzet, A. Haghiri, T. Kulkarni, M. Talei, M. J. Brear, E.R. Hawkes University of Melbourne	2E07: The effect of Exit Strain Rate on Soot Volume Fraction in Turbulent Non- Premixed Jet Flames S. M. Mahmoud, Z. W. Sun, B. B. Dally, Z. T. Alwahabi, P. R. Medwell and G. J. Nathan University of Adelaide

TUE	Woodward Conf. Centre	Room GM16	Room GM17	Room 104	Room 106
14:10	2A08: Comparative study on Gasoline-Ethanol Dual Fuel Injection Strategies in a Small Spark Ignition Engine N.F.O. Al-Muhsen, G. Hong University of Technology Sydney	2B08: Derivation of Kinetic Parameters for the Stone Dust Looping Combustion Process for Ventilation Air Methane Abatement S.Patel, O.Kubiak, P.Tremain, B. Moghtaderi, J. Sandford, K. Shah University of Newcastle	2 <u>C08</u> : Performing High Spatial and Temporal Resolution Measurements on Forced Premixed Laminar Flames S.M. Wiseman, M.J. Brear, R.L. Gordon, I. Marusic University of Melbourne	2D08: A study of pressure enhancement influence on the radiative reabsorption in CO2-diluted methane laminar premixed flames S. Karimkashi, M. Bolla, H. Wang, E.R. Hawkes, H.G. Im, P.G. Arias University of New South Wales	2E08: Development of an in- flame thermophoretic soot sampling device C. Wang, Q.N. Chan, S. Kook, E.R. Hawkes, P.R. Medwell, J. Lee University of New South Wales
14:30		2B09: VAM oxidation over palladium loaded on high silica BEA and MFI zeolites H. HosseiniAmoli, L. Harvey, E.M. Kennedy, M. Stockenhuber University of Newcastle	2C09: An Experimental and Numerical Study into Laminar Flame Speeds of H2/CO/Air Mixtures with CO2 and N2 Dilution R. Shang, Y. Zhang, M. Zhu, Z. Zhang, D. Zhang University of Western Australia	2D09: Preliminary Experimental and Computational Study of Time varying Laminar Non- Premixed Ethylene/Nitrogen Flames K.K. Foo, A. Jocher, C.X. Thong, B.B. Dally, G.J. Nathan, P.R. Medwell, Z.T. Alwahabi, H. Pitsch University of Adelaide	2E09: External Irradiation Effect on the Evolution of In- flame Soot Species C. Wang, Q.N. Chan, S. Kook, E.R. Hawkes, P.R. Medwell, J.Lee University of New South Wales
15:00	Tour to University of Melbe	ourne Thermodynamics Lab	oratory (register at reception	desk on the 10 th floor)	

	Wednesday 9 December				
9:00	Plenary Lecture (P5)				
	Conserved Scalar and Conditional Moment Models for Multiphase, Mult	ticomponent and Multiscale Combustion			
	Dr. Matthew Cleary, University of Sydney				
	Chair: Prof. Alex Klimenko, University of Queensland				
	Woodward Conference Centre				
10:00	Break				
	Woodward Conference Centre	Room GM16			
	Turbulent and Laminar Flame Experiments	Furnace Combustion			
	Chair: Prof. B.B. Dally	Chair: Dr. B. Feng			
10:30	<u>3A01</u> : On the Structure of Turbulent Flames of DME/N2 with Inhomogeneous inlets	<u>3B01</u> : Assessment of natural draft combustion properties of a top-lit up-draft research furnace			
	T.F. Guiberti, M. Juddoo, M. Dunn, W.L. Roberts, A.R. Masri	T. Kirch, P.R. Medwell, C.H. Birzer			
	University of Sydney	University of Adelaide			
10:50	<u>3A02</u> : Stabilization of Turbulent Auto-Igniting DME Jets Issuing in Hot Vitiated Coflows	<u>3B02</u> : Numerical simulation of premixed methane/air flame dynamics in narrow channels			
	A.R.W. Macfarlane, M. Dunn, M. Juddoo, A.R. Masri	X. Kang, R. J. Gollan, P. A. Jacobs and A. Veeraragavan			
	University of Sydney	University of Queensland			
11:10	<u>3A03</u> : An Experimental Study of the Effect of Soap on Ignition and Combustion Characteristics of Single Droplets of Glycerol	<u>3B03</u> : Surface Temperature Distribution along the Brick-Clay or Porcelain Tube Due to the Flame Spreading			
	H.Y. Setyawan, M. Zhu, Z. Zhang and D. Zhang	C Luo, J. Zanganeh, E. Doroodchi and B. Moghtaderi			
	University of Western Australia	University of Newcastle			
11:30	<u>3A04</u> : Soot Reduction in Cookstoves due to Turbulent Mixing	<u>3B04</u> : Turbojet Exhaust Plume Heat Transfer			
	K.M. Lask, P.R. Medwell, C.H. Birzer, A.J. Gadgil	Y.D. Kuo, N.S.A. Smith, D.R. Honnery			
	University of California Berkeley, USA	Monash University			
12:00	Awards & Closing Ceremony – The Terry Wall Best Student Paper	Award; Best Student Paper Prizes			
	Lunch (Woodward Conference Centre)				