34th INTERNATIONAL SYMPOSIUM ON COMBUSTION
Warsaw University of Technology
MONDAY, 30 July 2012

WELCOME and
HOTTEL LECTURE–8:30 am
Small scales, many species and the manifold challenges of turbulent combustion *Stephen B. Pope*
Chair: R. Barlow
Main Hall

BREAK

Room	315	231	306	Small Hall	219	208	134
	Premixed Flame Simulations *Chairs:* *B. Cuenot* *M. Tanahashi*	**Droplet Evaporation and Combustion** *Chairs:* *D. Katoshevski* *J. Shinjo*	**DDT** *Chairs:* *A.K. Hayashi* *A. Kuhl*	**Kinetics of Cyclic Ethers** *Chairs:* *P. Dagaut* *W. Pitz*	**Laminar Flames: Alcohols** *Chairs:* *F. Egolfopoulos* *U. Riedel*	**Plasma-Aided Combustion** *Chairs:* *Y. Ju* *K. Takita*	**Propellant/Hydrate** *Chairs:* *T. Ueda* *F. Williams*
10:40	1A01: Simulation of nitrogen emissions in a premixed hydrogen flame stabilized on a low swirl burner *J.B. Bell,* *M.S. Day,* *M.J. Lijewski*	1B01: Droplet evaporation in a turbulent atmosphere at elevated pressure: Experimental data *Madjid Birouk,* *Sean C. Fabbro*	1C01: Numerical study of gaseous detonation transition in multi-bent tube with initial flame size effect *Min-cheol Gwak,* *Ki-hong Kim,* *Jack J. Yoh*	1D01: A high temperature and atmospheric pressure experimental and detailed chemical kinetic modelling study of 2-methyl furan oxidation *K.P. Somers,* *J.M. Simmie,* *F. Gillespie,* *U. Burke,* *J. Connolly,* *W.K. Metcalfe,* *F. Battin-Leclerc,* *P. Dirrenberger,* *O. Herbinet,* *P.-A. Glaude,* *H.J. Curran*	1E01: Pressure effects on laminar burning velocities and Markstein lengths for isooctane-ethanol-air mixtures *Emilien Varea,* *Vincent Modica,* *Bruno Renou,* *Abdelkrim M. Boukhalfa*	1F01: Combustion enhancement in a supersonic flow by simultaneous operation of DBD and plasma jet *Yoshinori Matsubara,* *Kenichi Takita,* *Goro Masuya*	1G01: Experimental investigation of flame spreading over pure methane hydrate in a laminar boundary layer *Yoshihiro Maruyama,* *Masaru Joe Fuse,* *Takeshi Yokomori,* *Ryo Ohmura,* *Shigeru Watanabe,* *Toru Iwasaki,* *Wataru Iwabuchi,* *Toshihisa Ueda*

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11:05	1A02: Modified laminar flamelet presumed probability density function for LES of premixed turbulent combustion *M. Mahdi Salehi, W. Kendal Bushe, Nasim Shahbazian, Clinton P.T. Groth*	1B02: Spherically symmetric droplet combustion of three and four component miscible mixtures as surrogates for Jet-A *Yu Cheng Liu, Anthony J. Savas, Thomas Avedisian*	1C02: Flame dynamics and consideration of deflagration-to-detonation transition in central gravitational field *V'yacheslav Akkerman, Chung K. Law*	1D02: The reaction of 2,5-dimethylfuran with hydrogen atoms-An experimental and theoretical study *Philipp Friese, John M. Simmie, Matthias Olzmann*	1E02: Study on pressure dependences of ethanol oxidation by separated weak flames in a micro flow reactor with a controlled temperature profile *Hisashi Nakamura, Akira Yamamoto, Mikito Hori, Takuya Tezuka, Susumu Hasegawa, Kaoru Maruta*	1F02: Direct ignition and S-curve transition by *in-situ* nano-second pulsed discharge in methane/oxygen/ helium counterflow flame *Wenting Sun, Sang Hee Won, Timothy Ombrello Campbell Carter, Yiguang Ju*	1G02: Experimental data and model predictions of aluminium agglomeration in composite propellants including plateau-burning formulations *K.V. Anand, Aviral Roy, Irfan Mulla, Kishor Balbudhe, K. Jayaraman, S.R. Chakravarthy*
11:30	1A03: Large eddy simulation and experimental studies of turbulent premixed combustion near extinction *P. Wang, F. Zieker, R. Schießl, N. Platova, J. Fröhlich, U. Maas*	1B03: Effect of a homogeneous combustion catalyst on combustion characteristics of single droplets of diesel and biodiesel *Mingming Zhu, Yu Ma, Dongke Zhang*	1C03: Oscillatory flame propagation: Coupling with the acoustic field *Fernado F. Fachini, Luc Bauwens*	1D03: Theoretical study of the reaction 2,5-dimethylfuran + H → products *Baptiste Sirjean, René Fournet*	1E03: NO_x formation and flame velocity profiles of *iso-* and *n-* isomers of butane and butanol *Gregory A. Chung, Benjamin Akih-Kumgeh, Jeffrey Bergthorson*	1F03: On the influence of singlet oxygen molecules on the NO_x formation in methane-air laminar flame *A.M. Starik, P.S. Kuleshov, A.S. Sharipov, V. Strelnikova, N.S. Titova*	1G03: The diffusion flame structure of an ammonium perchlorate based composite propellant at elevated pressures *T.D. Hedman, K.Y. Cho, L.J. Groven, R.P. Lucht, S.F. Son*
11:55	1A04: Impact of dynamic wrinkling model on the prediction accuracy using the F-TACLES combustion model in swirling premixed turbulent flames *T. Schmitt, A. Sadiki, B. Fiorina, D. Veynante*	1B04: Droplet vaporization characteristics of multicomponent mixtures of methanol and gasoline surrogate in opposed stagnation flows *Huayang Zhu, Yuyin Zhang, Xu Min, Robert J. Kee*	1C04: Dynamics of shock induced ignition in Fickett's model: Influence of *X* *J. Tang, M.I. Radulescu*	1D04: The thermal decomposition of 2.5-dimethylfuran *Marko Djokic, Hans-Heinrich Carstensen, Kevin M. Van Geem, Guy B. Marin*	1E04: An experimental and kinetic modeling study of *n*-butanol combustion at low pressure *Jianghuai Cai, Lidong Zhang, Feng Zhang, Zhandong Wang, Yuyang Li, Fei Qi*	1F04: Dynamic response of a turbulent lean-premixed flame to nanosecond repetitively pulsed discharges *D.A. Lacoste, D.A. Xu, J.P. Moeck, C.O. Laux*	1G04: Using molecular dynamics simulations with a ReaxFF reactive force field to develop a kinetic mechanism for ammonia borane oxidation *M.R. Weismiller, M.F. Russo, A.C.T. van Duin, R.A. Yetter*

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12:20	1A05: Saturation mechanism of the heat release response of a premixed swirl flame using LES *H.J. Krediet, C.H. Beck, W. Krebs, J.B.W. Kok*	1B05: Effects of fuel droplet size distribution on soot formation in spray flames formed in a laminar counterflow *Jun Hayashi, Junichi Fukui, Fumiteru Akamatsu*	1C05: Accelerative expansion and DDT of stoichiometric ethylene/oxygen flame rings in micro-gaps *Ming-Hsun Wu, Wei-Chun Kuo*	1D05: Flame chemistry of tetrahydropyran as a model heteroatomic biofuel *Nicole J. Labbe, Vikram Seshadri, Tina Kasper, Nils Hansen, Patrick Oßwald, Katharina Kohse-Höinghaus, Phillip R. Westmoreland*	1E05: Experimental and kinetic modeling study of 1-hexanol combustion in an opposed-flow diffusion flame *C. Yeung, M.J. Thomson*	1F05: OH radical and temperature measurements during ignition of H_2-air mixtures excited by a repetitively pulsed nanosecond discharge *Z. Yin, W.R. Lempert, I.V. Adamovich*	1G05: The structure and extinction of non-premixed methane/ nitrous oxide and ethane/nitrous oxide flame *Tei Newmann-Lehman, Roberto Grana, Kalyanasundaram Seshadri, Forman Williams*
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Room	**315**	**231**	**306**	**Small Hall**	**219**	**208**	**134**
	Topical Review *Chair:* *A. Dreizler*	**Droplet Combustion in Micro-Gravity** *Chairs:* *M. Mikami* *TBA*	**Detonation: Diffraction- Narrow and Curved Tubes** *Chairs:* *S. Dorofeev* *E.Oran*	**Kinetics of Cyclic Hydrocarbons** *Chairs:* *K. Brezinsky* *J. Simmie*	**Laminar Flames: Ethers, Esters, Dienes** *Chairs:* *V. Dias* *J. Miller*	**Mild/Flameless Combustion** *Chairs:* *B. Dally* *M. de Joannon*	**Flame Synthesis** *Chairs:* *A. Makino* *TBA*
14:15	1A06/07: High speed imaging in fundamental and applied combustion research *Volker Sick*	1B06: Droplet ignition behavior in the vicinity of the leading edge of a flame spreading along a fuel droplet array in fuel-vapor/air mixture *Hiroshi Nomura, Hiromu Takahashi, Yusuke Suganuma, Masao Kikuchi*	1C06: Comprehensive visualization of detonation-diffraction structures and sizes in unstable and stable mixtures *Yuto Nagura, Jiro Kasahara, Akiko Matsuo*	1D06: Modeling of two- and three-ring cyclic aromatics formation in the pyrolysis of toluene *Akira Matsugi, Akira Miyoshi*	1E06: Experimental investigation of partially premixed, highly-diluted dimethyl ether flames at low temperatures *Kuiwen Zhang, Kai Moshammer, Patrick Oßwald, Katharina Kohse-Höinghaus*	1F06: DNS of EGR-type turbulent flame in MILD condition *Y. Minamoto, T.D. Dunstan, N. Swaminathan, R.S. Cant*	1G06: Spontaneous ignition temperature for the compacted mixture of Ni-Al system: Experiment, theory, and comparisons *Atsushi Makino, D. Ichikawa, A. Matsumoto, T. Kanda, T. Watanabe*

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14:40	**Jet Flames** *Chair:* *A. Dreizler* *J. Frank*	1B07: Sub-millimeter sized methyl butanoate droplet combustion: Microgravity experiments and detailed numerical modeling *T.I. Farouk,* *Y.C. Liu,* *A.J. Savas,* *C.T. Avedisian,* *F.L. Dryer*	1C07: Numerical study of three-dimensional detonation wave dynamics in a circular tube *Deok-Rae Cho,* *Jae-Ryul Shin,* *Su-Hee Won,* *Jeong-Yeol Choi*	1D07: Hydrogen-assisted isomerizations of fulvene to benzene and of larger cyclic aromatic hydrocarbons *Ahren W. Jasper,* *Nils Hansen*	1E07: Mass spectrometric investigation of the low-temperature dimethyl ether oxidation in an atmospheric pressure laminar flow reactor *F. Herrman,* *P. Oßwald,* *K. Kohse-Höinghaus*	1F07: Studies on liquid fuel based flameless combustor with two stage concept *V. Mahendra Reddy,* *Darshan Sawant,* *Darshan Trivedi,* *Sudarshan Kumar*	1G07: Flame synthesis of 1-D complex metal oxide nanomaterials *Lili Cai,* *Pratap Mahesh Rao,* *Yunzhe Feng,* *Xiaolin Zheng*
15:05	1A08: A comparison of turbulent dimethyl ether and methane non-premixed flame structure *Han Shen,* *Kathryn N. Gabet,* *Randy A. Patton,* *Frederick Fuest,* *Jeffrey A. Sutton*	1B08: Effects of droplet interaction on spontaneous ignition of an *n*-decane droplet pair *Osamu Moriue,* *Yohei Nishiyama,* *Yosuke Yamaguchi,* *Hideki Hashimoto,* *Eiichi Murase*	1C08: Front shock behavior of stable curved detonation waves in rectangular-cross-section curved channels *Hisahiro Nakayama,* *Jiro Kasahara,* *Akiko Matsuo,* *Ikkoh Funaki*	1D08: Experimental and semi-detailed kinetic modeling study of decalin oxidation and pyrolysis over a wide range of conditions *P. Dagaut,* *A. Ristori,* *A. Frassoldati,* *T. Faravelli,* *G. Dayma,* *E. Ranzi*	1E08: A comparative study of chemical kinetic characteristics of methyl esters in diffusion flame extinction *Pascal Diévart,* *Sang Hee Won,* *Jing Gong,* *Stephen Dooley,* *Yiguang Ju*	1F08: Regime transition from premixed to flameless oxidation in turbulent JP-10 flames *K.H.H. Goh,* *P. Geipel,* *F. Hampp,* *R.P. Lindstedt*	1G08: Role of substrate, temperature, and hydrogen on the flame synthesis of graphene films *Nasir K. Memon,* *Stephen D. Tse,* *Manish Chhowalla,* *Bernard H. Kear*
15:30	1A09: Simultaneous LII and PIV measurements in the soot formation region of turbulent non-premixed flames *V. Narayanaswamy,* *N.T. Clemens*	1B09: Effects of droplet diameter on instantaneous burning rate of isolated fuel droplets in argon-rich or carbon dioxide-riched ambiences under microgravity *Shinji Nakaya,* *Kotaro Fujishima,* *Mitsuhiro Tsue,* *Michikata Kono,* *Daisuke Segawa*	1C09: Two-dimensional numerical simulation on galloping detonation in a narrow channel *Nobuyuki Tsuboi,* *Youhi Morii,* *A. Koichi Hayashi*	1D09: Low temperature oxidation of benzene and toluene in mixture with *n*-decane *Olivier Herbinet,* *Benoit Husson,* *Maude Ferrari,* *Pierre-Alexandre Glaude,* *Frédérique Battin-Leclerc*	1E09: Propagation and extinction of cyclopentadiene flames *Chunsheng Ji,* *Runhua Zhao,* *Bo Li,* *Fokion N. Egolfopoulos*	1F09: Transient inception of MILD combustion in Hot Diluted Diffusion Ignition (HDDI) regime: A numerical study *G. Sorrentino,* *D. Scarpa,* *A. Cavaliere*	1G09: $Y_2Si_2O_7$:Eu/SiO_2 core shell phosphor particles prepared by flame spray pyrolysis *Hiroshi Hasegawa,* *Toshihisa Ueda,* *Takeshi Yokomori*

15:55	**BREAK**						
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	Flame Stabilization *Chair:* *B. Cetegen* *A. Masri*	**Spray DNS** *Chair:* *J. Bellan* *P. Pepiot*	**Detonation for Propulsion** *Chair:* *M. Koshi* *TBA*	**Kinetics of Alkylbenzenes** *Chairs:* *M. Colket* *N. Chaumeix*	**Flames in Velocity Gradient** *Chairs:* *K.N. Lakshmisha* *K. Seshadri*	**New Concept and Fuel Technology** *Chairs:* *S. Minaev* *C.-J. Sung*	**Metal Combustion** *Chairs:* *S. Son* *R. Yetter*
16:25	1A10: Flame stabilization and auto-ignition of pulsed methane jets in a hot coflow: Influence of temperature *Christoph M. Arndt, Robert Schießl, James D. Gounder, Wolfgang Meier, Manfred Aigner*	1B10: Droplet/turbulence interaction and early flame kernel development in an autoigniting realistic dense spray *Junji Shinjo, Akira Umemura*	1C10: Injection and mixing in a scramjet combustor: DES and RANS studies *Yancheng You*	1D10: Theoretical investigation into the low-temperature oxidation of ethylbenzene *Mohammednoor Altarawneh, Bogdan Z. Dlugogorski, Eric M. Kennedy, John C. Mackie*	1E10: C/H atom ratio in recirculation-zone-supported premixed and non-premixed flames *Viswanath R. Katta, William M. Roquemore*	1F10: Experimental and numerical study of rich inverse diffusion flame structure *B. Stelzner, F. Hunger, S. Voss, J. Keller, C. Hasse, D. Trimis*	1G10: Flame propagation of nano/micron-sized aluminum particles and ice (ALICE) mixtures *Dilip S. Sundaram, Vigor Yang, Terrence L. Connell Jr., Grant A. Risha, Richard A. Yetter*
16:50	1A11: Structure and stabilization of hydrogen jet flames in cross-flows *A.M. Steinberg, R. Sadanandan, C. Dem, P. Kutne, W. Meier*	1B11: Extinction precursors in turbulent sprays *Andrew P. Wandel*	1C11: A computational study of the HyShot II combustor performance *M. Chapuis, E Fedina, C. Fureby, K. Hannemann, S. Karl, J. Martinez Schramm*	1D11: New experimental evidence and modeling study of the ethylbenzene oxidation *Benoit Husson, Maude Ferrari, Olivier Herbinet, Ahmed S. Syed, Pierre-Alexandre Glaude, Frederique Battin-Leclerc*	1E11: Numerical simulation of edge flames initiation and propagation with an adaptive wavelet collocation method *Emanuele Martelli, Mauro Valorani, Samuel Paolucci, Zachary Zikosky*	1F11: Experimental and analytical investigation of lean premixed methane/air combustion in a mesoscale counter-flow reactor *Erica L. Belmont, Ingmar Schoegl, Janet L. Ellzey*	1G11: Stabilized flames in hybrid aluminum-methane-air mixtures *Michael Soo, Philippe Julien, Samuel Goroshin, Jeffrey Bergthorson, David Frost*

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17:15	1A12: Analysis of blowoff dynamics from flames with stratified fueling *Kristin M. Kopp-Vaughan, Trevor R. Jensen, Baki M. Cetegen, Michael W. Renfro*	1B12: Lagrangian conditional statistics of turbulent spray combustion in diesel-like conditions *Jaeyeob Seo, Kang Y. Huh*	1C12: LES-based Eulerian PDF approach for the simulation of scramjet combustors *Heeseok Koo, Pratik Donde, Venkat Raman*	1D12: An experimental and modeling study of the shock tube ignition of a mixture of *n*-heptane and *n*-propylbenzene as a surrogate for a large alkyl benzene *D. Darcy, M. Mehl, J.M. Simmie, J. Würmel, W.K. Metcalfe, C.K. Westbrook, W.J. Pitz, H.J. Curran*	1E12: Methane/oxygen combustion in a rapidly mixed type tubular flame burner *Baolu Shi, Daisuke Shimokuri, Satoru Ishizuka*	1F12: A novel ion transport membrane reactor for fundamental investigations of oxygen permeation and oxy-combustion under reactive flow conditions *Patrick Kirchen, Daniel J. Apo, Anton Hunt, Ahmed F. Ghoniem*	1G12: Combustion of micron-sized particles of titanium and zirconium *Carlo Badiola, Edward L. Dreizin*
17:45	**MEMBERS MEETING** **ROOM 134** **This meeting includes:** **Report from President Westbrook** **and** **Voting on the new Board of Directors** **Please plan to attend**						

TUESDAY, 31 July 2012

PLENARY LECTURE–8:30 am
Detonative propulsion *Piotr Wolanski*
Chair: C.K. Westbrook
Main Hall

BREAK

Room	315	231	306	Small Hall	219	208	134
	DNS of Premixed Flames *Chairs:* *J.H. Chen* *E. Hawkes*	**Spray Combustion** *Chairs:* *E. Gutheil* *M. Xu*	**H_2 Detonation** *Chairs:* *L. Bauwens* *A. Starik*	**Kinetics of Alkanes and Surrogates** *Chairs:* *S. Klippenstein* *R. Sivaramakrshnan*	**Flame Synthesis: TiO_2** *Chairs:* *N.I. Kim* *S. Tse*	**New Technology: Fuel Cell** *Chairs:* *D. Dunn-Rankin* *S.S. Shy*	**Catalytic Combustion/ Reaction** *Chairs:* *O. Deutschmann* *Y. Suzuki*
9:40	2A01: A dynamic SGS combustion model based on fractal characteristics of turbulent premixed flames *Itaru Yoshikawa, Youngsam Shim, Mamoru Tanahashi, Yuzuru Nada Toshio Miyauchi*	2B01: LES-CMC of a dilute acetone spray flame *S. Ukai, A. Kronenburg, O.T. Stein*	2C01: Critical conditions of hydrogen-air detonation in partially confined geometry *W. Rudy, M. Kuznetsov, R. Porowski, A. Teodorczyk, K. Sempert, J. Grune*	2D01: Autoignition of gasoline and its surrogates in a rapid compression machine *Goutham Kikkadapu, Kamal Kumar, Chih-Jen Sung, Marco Mehl, William J. Pitz*	2E01: Combustion chemistry of $Ti(OC_3H_7)_4$ in premixed flat burner-stabilized H_2/O_2/Ar flame at 1 atm *A.G. Shmako, O.P. Korobeinichev, D.A. Knyazkov, A.A. Paletsky, R.A. Maksutov, I.E. Gerasimov, T.A. Bolshova, V.G. Kiselev, N.P. Gritsan*	2F01: Oxy-combustion of solid fuels in a carbon fuel cell *Brentan R. Alexander, Reginald E. Mitchell, Turgut M. Gür*	2G01: Structure sensitivity of propene oxidation over Co-Mn spinels *Zhen-Yu Tian, Naoufal Bahlawane, Vincent Vannier, Katharina Kohse-Höinghaus*
10:05	2A02: Conditional velocity statistics for high and low Damköhler number turbulent premixed combustion in the context of Reynolds Averaged Navier Stokes simulations *Nilanjan Chakraborty, A.N. Lipatnikov*	2B02: LES/probability density function approach for the simulation of an ethanol spray flame *Colin Heye, Venkat Raman, Assaad R. Masri*	2C02: Numerical simulations of hydrogen detonations with detailed chemical kinetic *Brian D. Taylor, David A. Kessler, Vadim N. Gamezo, Elaine S. Oran*	2D02: An experimental and modeling study of the autoignition of 3-methylheptane *W. Wang, Z. Li, M.A. Oehlschlaeger, D. Healy, H.J. Curran, S.M. Sarathy, M. Mehl, W.J. Pitz, C.K. Westbrook*	2E02: Dye sensitized solar cells prepared by flames stabilized on a rotating surface *Saro Nikraz, Hai Wang*	2F02: A self-sustaining thermal transpiration gas pump and SOFC power generation system *Pingyang Zeng, Kang Wang, Jeongmin Ahn, Paul D. Ronney*	2G02: Hetero-/homogeneous combustion of ethane/air mixtures over platinum at pressures up to 14 bar *Xin Zheng, John Mantzaras, Rolf Bombach*

	BREAK **Women in Combustion Coffee Break** **Please meet in Main Hall**						
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	DNS of Premixed Flames *Chairs:* *J.H. Chen* *E. Hawkes*	**Spray Combustion** *Chairs:* *E. Gutheil* *M. Xu*	**H_2 Detonation** *Chairs:* *L. Bauwens* *S. Starikovskaia*	**Kinetics of Alkanes and Fuel Surrogates** *Chairs:* *G. Marin* *R. Sivaramakrisnan*	**Micro/Meso-Scale Flames** *Chairs:* *N.I. Kim* *S. Tse*	**New Technology Concepts** *Chairs:* *D. Dunn-Rankin* *S.S. Shy*	**Catalytic Combustion/ Reaction** *Chairs:* *O. Deutschmann* *Y. Suzuki*
11:05	2A03: Turbulent Reynolds number dependence of Flame Surface Density transport in the context of Reynolds Averaged Navier Stokes simulations *Nilanjan Chakraborty,* *R.S. Cant*	2B03: Understanding high-pressure gas-liquid interface phenomena in Diesel engines *Rainer N. Dahms,* *Lyle M. Pickett,* *Joseph C. Oefelein,* *Julien L. Manin*	2C03: Fluid dynamics of rotating detonation engines with hydrogen and hydrocarbon fuels *Douglas Schwer,* *K. Kailasanath*	2D03: Experimental and modeling study on the pyrolysis and oxidation of *iso*-octane *Tomasz Malewicki,* *Andrea Comandini,* *Kenneth Brezinsky*	2E03: Fundamental burning velocities of micro-scale propagating spherical flames with H_2, CH_4 and C_3H_8 mixtures *Masaya Nakahara,* *Fumiaki Abe,* *Kenichi Tokunaga,* *Atsushi Ishihara*	2F03: Experimental study of minimum ignition energy of lean H_2-N_2O mixtures *S.A. Coronel,* *R. Mével,* *S.P.M. Bane,* *J.E. Shepherd*	2G03: An experimental and numerical investigation of the hetero-/homogeneous combustion of fuel-rich hydrogen/air mixtures over platinum *Marco Schultze,* *John Mantzaras,* *Rolf Bombach,* *Konstantinos Boulouchos*
11:30	2A04: Radical fingering in turbulent premixed flame classified into thin reaction zones *Youngsam Shim,* *Naoya Fukushima,* *Masayasu Shimura,* *Yuzuru Nada,* *Mamoru Tanahashi,* *Toshi Miyauchi*	2B04: A new solution for a polydisperse spray diffusion flame and its extinction in a shear layer *J.B. Greenberg,* *D. Katoshevski*	2C04: Combustion characteristics in a supersonic combustor with hydrogen injection upstream of cavity flameholder *Hongbo Wang,* *Zhenguo Wang,* *Mingbo Sun,* *Ning Qin*	2D04: Experimental and modeling study on the pyrolysis and oxidation of *n*-decane and *n*-dodecane *Tomasz Malewicki,* *Kenneth Brezinsky*	2E04: Combustion of gaseous and liquid fuels in meso-scale tubes with wire mesh *Masato Mikami,* *Yoshiyuki Maeda,* *Keiichiro Matsui,* *Takehiko Seo,* *Lilis Yuliati*	2F04: Combustion wave propagation in mixtures of JSC-1A lunar regolith simulant with magnesium *Francisco Álvarez,* *Christopher White,* *Ashvin Kumar Narayana Swamy,* *Evgeny Shafirovich*	2G04: Three-dimensional direct Numerical Simulation of turbulent catalytic combustion of hydrogen over platinum *F. Lucci,* *C.E. Frouzakis,* *J. Mantzaras*

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11:55	2A05: Scalar dissipation rate modelling for Large Eddy Simulation of turbulent premixed flames *T.D. Dunstan* *Y. Minamoto,* *N. Chakraborty,* *N. Swaminathan*	2B05: A tabulated chemistry method for spray combustion *B. Franzelli,* *B. Fiorina,* *N. Darabiha*	2C05: A flow visualization study on self-ignition of high pressure hydrogen gas released into a tube *In-Seuck Jeung,* *Yeong Ryeon Kim,* *Hyoung Jin Lee,* *Sei-Hwan Kim*	2D05: Multi-species time-history measurements during *n*-hexadecane oxidation behind reflected shock waves *D.R. Haylett,* *D.F. Davidson,* *R.D. Cook,* *Z. Hong,* *W. Ren,* *S.H. Pyun,* *R.K. Hanson*	2E05: Modeled quenching limits of spherical hydrogen diffusion flames *V.R. Lecoustre,* *P.B. Sunderland,* *B.H. Chao,* *R.L. Axelbaum*	2F05: Flame synthesis of WO_3 nanotubes and nanowires for efficient photoelectrochemical water-splitting *Pratap M. Rao,* *In Sun Cho,* *Xiaolin Zheng*	2G05: Combustion characteristics in a small-scale reactor with catalyst segmentation and cavities *Yueh-Heng Li,* *Guan-Bang Chen,* *Fang-Hsien Wu,* *Tsarng-Sheng Cheng,* *Yei-Chin Chao*
12:20	2A06: Streamline segment analysis of turbulent premixed flames *Lipo Wang,* *Nilanjan Chakraborty,* *Jian Zhang*	2B06: Stability of spray combustion for water/alcohols mixtures in oxygen-enriched air *Fei Yi,* *Richard L. Axelbaum*	2C06: Effects of a wall on the self-ignition patterns and flame propagation of high-pressure hydrogen release through a tube *Seihwan Kim,* *Hyoung Jin Lee,* *Ji Hyun Park,* *In-Seuck Jeung*	2D06: A rapid compression machine study of the low temperature combustion of cyclohexane at elevated pressures *S. Vranckx,* *C. Lee,* *R.X. Fernandes*	2E06: Effects of inert gases on the vortex bursting in small diameter tubes *Daisuke Shimokuri,* *Yuuji Karatsu,* *Satoru Ishizuka*	2F06: Sol-flame synthesis of hybrid metal oxide nanowires *Yunzhe Feng,* *In Sun Cho,* *Lili Cai,* *Pratap Mahesh Rao,* *Xiaolin Zheng*	2G06: Catalytic ignition of light hydrocarbons over Rh/Al_2O_3 studied in a stagnation point flow reactor *Julian N. Bär* *Canan Karakaya,* *Olaf Deutschmann*
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Room	315	231	306	Small Hall	219	208	134
	Premixed Flame Experiments *Chairs:* *F. Dinkelacker* *I. Gökalp*	**Diesel Modeling and Simulation** *Chairs:* *K. Huh* *F. Mauss*	**Wild and Sooting Fires** *Chairs:* *J.M.Most* *T. Tsuruda*	**Topical Review** *Chair:* *T. Turanyi*	**Cellular Flames** *Chair:* *S. Kadowaki* *M. Matalon*	**Oxy-Coal Biofuel** *Chair:* *K. Kohse-Höinghaus* *J. Wendt*	**Biomass** *Chairs:* *M. Pourkashanian* *L. Tognotti*
14:15	2A07: Measurements and correlations of turbulent burning velocities over wide ranges of fuels and elevated pressures *D. Bradley,* *M. Lawes,* *Kexin Liu,* *M.S. Mansour*	2B07: Transported probability density function modelling of the vapour phase of an *n*-heptane jet at Diesel engine conditions *Yuanjiang Pei,* *Evatt R. Hawkes,* *Sanghoon Kook*	2C07: Assessment of Forefire/MESONH for wildland fire/atmosphere coupled simulation of the FireFlux experiment *Jean-Baptiste Filippi,* *Xavier Pialat,* *Craig B. Clements*	2D07/2D08: The role of sensitivity and uncertainty analysis in combustion modelling *Alison S. Tomlin*	2E07: An experimental investigation on self-acceleration of cellular spherical flames *Fujia Wu,* *Grunde Jomaas,* *Chung K. Law*	2F07: Role of exhaust gas recycle on submicrometer particle formation during oxy-coal combustion *Xiaofei Wang,* *S. Michael Daukoru,* *Sarah Torkamani,* *Wei-Ning Wang,* *Pratim Biswas*	2G07: Continuous *in-situ* measurements of alkali species in the gasification of biomass *C. Erbel,* *M. Mayerhofer,* *P. Monkhouse,* *M. Gaderer,* *H. Spliethoff*
14:40	2A08: Turbulent premixed flame front dynamics and implications for limits of flamelet hypothesis *Ömer L. Gülder,* *Frank T.C. Yueri*	2B08: Effects of EGR on the structure and emissions of diesel combustion *M. Jangi,* *T. Lucchini,* *G. D'Errico,* *X.S. Bai*	2C08: Extension of the eddy dissipation concept and smoke point soot model to the LES frame for fire simulations *Z.B. Chen,* *B.P. Xu,* *J.X. Wen,* *S. Dembele*	**Uncertaintity Analysis in Reaction Kinetics** *Chairs:* *T. Turanyi* *J. Zädor*	2E08: Cellular and sporadic flame regimes of low-Lewis-number stretched premixed flames *Roman Fursenko,* *Sergey Minaev,* *Hisashi Nakamura,* *Takuya Tezuka,* *Susumu Hasegawa,* *Koichi Takase,* *Xing Li,* *Masato Katsuta,* *Masao Kikuchi,* *Kaoru Maruta*	2F08: A comparison of soot, fine particle and sodium emissions for air- and oxy-coal flames, with recycled flue gases of various compositions. *William J. Morris,* *Dunxi Yu,* *Jost O.L. Wendt*	2G08: Slow pyrolysis of wood particles: Characterisation of volatiles by Laser-Induced fluorescence *Nico Zobel,* *Andrés Anca-Couce*

Room	315	231	306	Small Hall	219	208	134
15:05	2A09: Non-Adiabatic interaction of turbulent premixed flames with counterflowing combustion products *Bruno Coriton, Jonathan H. Frank, Alessandro Gomez*	2B09: Predicting diesel combustion characteristics with Large-Eddy Simulations including tabulated chemical kinetics *C. Bekdemir, L.M.T. Somers, L.P.H. de Goey, J. Tillou, C. Angelberger*	2C09: The size and mass distribution of firebrands collected from ignited building components exposed to wind *Sayaka Suzuki, Samuel L. Manzello, Yoshihiko Hayashi*	2D09: Uncertainty propagation in the derivation of phenomenological rate coefficients from theory: A case study of propyl radical oxidation *C. Franklin Goldsmith, Alison S. Tomlin, Stephen J. Klippenstein*	2E09: Numerical simulation of propagating circular and cylindrical lean premixed hydrogen/air flames *C. Atlantzis, C.E. Frouzakis, A.G. Tomboulides, K. Boulouchos*	2F09: Effect of CO_2 gasification reaction on char structural characteristics during oxy-fuel combustion *Xiaowei Liu, Minghou Xu, Junping Si, Chao Wang, Bo Zhao, Hong Yao*	2G09: Effect of high CO_2 concentration on char formation through mineral reaction during biomass pyrolysis *Hirotatsu Watanabe, Kiyomi Shimomura, Ken Okazaki*
15:30	2A10: Turbulent premixed flame characteristics of a $CO/H_2/O_2$ mixture highly diluted with CO_2 in a high pressure environment *Hideaki Kobayashi, Yuki Otawara, Jinhua Wang, Futoshi Matsuno, Yasuhiro Ogami, Taku Kudo, Satoshi Kadowaki*	2B10: Lift-off and stabilization of *n*-heptane combustion in a Diesel engine with a multiple-nozzle injection *R. Solsjö, M. Jangi, C. Chartier, X.-S. Bai, Ö. Andersson*	2C10: Regional-scale simulations of wildland fire spread informed by real-time flame front observations *M.C. Rochoux, B. Delmotte, B. Cuenot, S. Ricci, A. Trouvé*	2D10: Systematic analysis and reduction of combustion mechanisms for ignition of multi-component kerosene surrogate *Quan-De Wang, Ya-Mei Fang, Fan Wang, Xiang-Yuan Li*	2E10: A structural study of premixed hydrogen-air cellular tubular flames *Carl A. Hall, Robert W. Pitz*	2F10: Combustion characteristics, flame images, and quantitative soot measurements fueling neat butanol and neat soybean biodiesel *Haifeng Liu, Yu Liu, Ming Huo, Mingfa Yao, Chia-fon F. Lee*	2G10: Pyrolysis study of poplar biomass by tunable synchrotron vacuum ultraviolet photoionization mass spectrometry *Junjie Weng, Liangyuan Jia, Yu Wang, Shaobo Sun, Xiaofeng Tang, Zhongyue Zhou, Katharina Kohse-Höinghaus, Fei Qi*
15:55	**BREAK**						

Room	315	231	306	Small Hall	219	208	134
	Premixed Flame Experiments *Chairs:* *J. Driscoll* *Ö. Gülder*	**IC Engine Simulation and Model Development** *Chairs:* *O. Colin* *D. Haworth*	**Cell Pattern and Particles Influence** *Chairs:* *J. Kasahara* *R. Klemens*	**Uncertainty Analysis in Reaction Kinetics** *Chairs:* *T. Turanyi* *J. Zädor*	**Combustion in Porous Media** *Chairs:* *J. Ellzey* *TBA*	**Catalysis/Wall Chemical Effect** *Chairs:* *Y.C. Chao* *J. Mantzaras*	**Biomass/PVC** *Chairs:* *B. Haynes* *K. Okazaki*
16:25	2A11: Pressure and fuel effects on turbulent consumption speeds of H_2/CO blends *Prabhakar Venkateswaran, Andrew Marshall, Jerry Seitzman, Tim Lieuwen*	2B11: Analysis of misfire processes in realistic direct injection spark ignition engine using multi-cycle Large Eddy Simulation *D. Goryntsev, A. Sadiki, J. Janicka*	2C11: Cellular pattern formation in detonation propagation *K. Ishii, K. Morita, Y. Okitsu, S. Sayama, H. Kataoka*	2D11: On transient behavior of non-premixed counter-flow diffusion flames within the REDIM based model reduction concept *V. Bykov, A. Neagos, U. Maas*	2E11: Modeling of heterogeneous combustion in porous media under free convection *Nickolay A. Lutsenko*	2F11: Effect of wall surface reaction on a methane-air premixed flame in narrow channels with different wall materials *Yu Saiki, Yuji Suzuki*	2G11: Release of K, Cl, and S during combustion and co-combustion with wood of high-chlorine biomass in bench and pilot scale fuel beds *Joakim M. Johansen, Martti Aho, Kari Paakkinen, Raili Taipale, Helge Egsgaard, Jon G. Jakobsen, Flemming J. Frandsen, Peter Glarborg*
16:50	2A12: Flame front characteristics of turbulent premixed flames diluted with CO_2 and H_2O at high pressure and high temperature *Jinhua Wang, Futoshi Matsuno, Masaki Okuyama, Yasuhiro Ogami, Hideaki Kobayashi*	2B12: A flamelet model for premixed combustion under variable pressure conditions *Varun Mittal, Heinz Pitsch*	2C12: Ignition of fuel/air mixtures by radiatively heated particles *F. Beyrau, M.A. Hadjipanayis, R.P. Lindstedt*	2D12: Computationally-efficient implementation of chemistry using combined dimension reduction and tabulation in simulations of turbulent combustion *Varun Hiremath, Steven R. Lantz, Haifeng Wang, Stephen B. Pope*	2E12: Investigation on the thermal flame thickness for lean premixed combustion of low calorific H_2/CO mixtures within porous inert media *S. Voss, M. Mendes, J.M.C. Pereira, S. Ray, J.C.F. Pereira, D. Trimis*	2F12: OH-PLIF investigation of wall effects on flame quenching in a slit burner *Haolin Yang, Yaoxun Feng, Xiaohan Wang, Liqiao Jiang, Daiqing Zhao, Naoki Hayashi, Hiroshi Yamashita*	2G12: Tar formation variations during fluidised bed pyrolytic biomass conversion *J. Bruchmüeller, K.H. Luo, B.G.M. van Wachem*

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17:15	2A13: Effects of preferential transport and strain in bluff body stabilized lean and rich premixed CH_4/air flames *Matthew J. Dunn, Robert S. Barlow*	2B13: Working fluid composition effects on methane oxycombustion in an SI-engine: EGR vs. CO_2 *A.C. Van Blarigan, R. Seiser, J.Y. Chen, R. Cattolica, R.W. Dibble*	2C13: Study on the characteristics of unsteady self-sustained detonation waves in flake aluminum dust/air mixtures *Qingming Liu, Chunhua Bai, Mo Chen*	2D13: Reaction-Diffusion Manifolds for unconfined, lean premixed, piloted, turbulent methane/air systems *Gerd Steinhilber, Ulrich Maas*	2E13: Analytical study of stretched ultra-lean premixed flames within porous inert media *Max A.E. Kokubun, Fernando M. Pereira, Fernando F. Fachini*	2F13: Effects of hydrogen addition on the catalytic oxidation of carbon monoxide over platinum at power generation relevant temperatures *Xin Zheng, Marco Schultze, Rolf Bombach, John Mantzaras*	2G13: Nascent tar formation during polyvinylchloride (PVC) pyrolysis *Ben Gui, Yu Qiao, Dan Wan, Shuai Liu, Zainan Han, Hong Yao, Minghou Xu*
17:40	**COMBUSTION INSTITUTE SECTION CHAIR MEETING IN ROOM 231** **CHOPIN CONCERT AT HOLY TRINITY CHURCH:** **BUSSES WILL DEPART FROM UNIVERSITY SQUARE AT *18:30***						

WEDNESDAY, 1 August 2012

PLENARY LECTURE–8:30 am

The computation of laminar flames *Mitchell D. Smooke*

Chair: K. Maruta

Main Hall

BREAK

Room	315	231	306	Small Hall	219	208	134
	LES of Non-Premixed Flames *Chairs:* *A. Kempf* *H. Pitsch*	**SI Engine Experiments** *Chairs:* *M. Drake* *E. Tomita*	**Detonation Initation and Stability** *Chairs:* *I.-S. Jeung* *TBA*	**Kinetics of Methyl Esters** *Chairs:* *H. Curran* *O. Herbinet*	**Flame-vortex Interaction** *Chairs:* *O. Fujita* *H. Im*	**Chemical Looping** *Chair:* *E. Dreizin* *P. Ronney*	**Coal Combustion: Particle** *Chair:* *R. Mitchell* *C. Shaddix*
9:40	3A01: Turbulence-radiation interactions in Large-Eddy Simulations of luminous and non-luminous non-premixed flames *A. Gupta,* *D.C. Haworth,* *M.F. Modest*	3B01: Experimental characteristics of turbulent premixed flame in a boosted Spark-Ignition engine *C. Mounaim-Rousselle,* *L. Landry,* *F. Halter,* *F. Foucher*	3C01: A particle level-set based Eulerian method for multi-material detonation simulation of high explosive and metal confinements *Ki-hong Kim,* *Jack J. Yoh*	3D01: Ignition delay times of methyl oleate and methyl linoleate behind reflected shock waves *Matthew F. Campbell,* *David F. Davidson,* *Ronald K. Hanson,* *Charles K. Westbrook*	3E01: MG-local-PCA method for reduced order combustion modeling *Axel Coussement,* *Olivier Gicquel,* *Alessandro Parente*	3F01: Assessment of the thermochemistry of oxygen chemisorption and surface oxide desorption during looping combustion of coal char *Osvalda Senneca,* *Piero Salatino,* *Luciano Cortese*	3G01: Flamelet modeling of coal particle ignition *M. Vascellari,* *H. Xu,* *C. Hasse*
10:05	3A02: LES/PDF based modeling of soot-turbulence interactions in turbulent flames *Pratik Donde,* *Venkat Raman,* *Michael E. Mueller,* *Heinz Pitsch*	3B02: Analysis of pre-ignition in highly charged SI engines: Emphasis on the auto-ignition mode *J. Rudloff,* *J.-M. Zaccardi,* *S. Richard,* *J.M. Anderlohr*	3C02: Initiation and sustaining mechanisms of stabilized oblique detonation waves around projectiles *Shinichi Maeda,* *Satoshi Sumiya,* *Jiro Kasahara,* *Akiko Matsuo*	3D02: A lumped approach to the kinetic modeling of pyrolysis and combustion of biodiesel fuels *Chiara Saggese,* *Alessio Frassoldati,* *Alberto Cuoci,* *Tiziano Faravelli,* *Eliseo Ranzi*	3E02: Further investigation on the enhancement of flame speed in vortex ring combustion *Satoru Ishizuka,* *Toshiyuki Yamashita,* *Daisuke Shimokuri*	3F02: Interaction between Fe-based oxygen carriers and *n*-heptane during chemical looping combustion *Jinhua Bao,* *Wen Liu,* *Jason P. Cleeton* *S.A. Scott,* *J.S. Dennis,* *Zhenshan Li,* *Ningsheng Cai*	3G02: Characterizing char particle fragmentation during pulverized coal combustion *Matthew B. Tilghman,* *Reginald E. Mitchell*

10:30	**BREAK**						
Room	**315**	**231**	**306**	**Small Hall**	**219**	**208**	**134**
	LES of Non-Premixed Flames *Chairs:* *A. Kempf* *H. Pitsch*	**SI Engine Experiments** *Chairs:* *M. Drake* *E. Tomita*	**Detonation Initation and Stability** *Chairs:* *I.-S. Jeung* *TBA*	**Kinetics of Methyl Esters** *Chairs:* *H. Curran* *O. Herbinet*	**Ignition/Flame Initiation** *Chairs:* *O. Fujita* *H. Im*	**Confined Meso-Scale Flames** *Chair:* *E. Dreizin* *P. Ronney*	**Coal Combustion: Soot** *Chair:* *R. Mitchell* *C. Shaddix*
11:05	3A03: A comparative study of Sandia Flame Series (D-F) using sparse-Lagrangian MMC modelling *Y. Ge,* *M.J. Cleary,* *A.Y. Klimenko*	3B03: Mixture-formation process of ethanol-blended gasoline in a spark-ignition engine *Nobuyuki Kawahara,* *Eiji Tomita,* *Takuya Kadowaki*	3C03: Homogeneous explosion and shock initiation induction times for three-step chain-branching kinetics *Josue Melguizo-Gavilanes,* *Luc Bauwens*	3D03: Detailed chemical kinetic modeling of the effects of C=C double bonds on the ignition of biodiesel fuels *C.K. Westbrook,* *W.J. Pitz,* *S.M. Sarathy,* *M. Mehl*	3E03: Critical condition for the ignition of reactant mixture by radical deposition *Huangwei Zhang,* *Peng Guo,* *Zheng Chen*	3F03: Direct prediction of laminar burning velocity using an adapted annular stepwise diverging tube *Zhao Liu,* *Min Jung Lee,* *Nam Il Kim*	3G03: Soot low-temperature combustion on Cu-Zr/ZSM-5 catalysts in O_2/He and NO/O_2/He atmospheres *Feng Bin,* *Chonglin Song,* *Gang Lv,* *Jinou Song,* *Kunpeng Wang,* *Xiaodong Li*
11:30	3A04: Deterministic Multiple Mapping Closure (MMC) applied to a turbulent flame in Large Eddy Simulation (LES) *C.B. Devaud,* *I. Stankovic,* *B. Merci*	3B04: Investigation of the 3-D flow field in an IC engine using tomographic PIV *E. Baum,* *B. Peterson,* *C. Surmann,* *D. Michaelis,* *B. Böhm,* *A. Dreizler*	3C04: Transverse wave generation mechanism in rotating detonation *Yuho Uemura,* *A. Koichi Hayashi,* *Makoto Asahara,* *Nobuyuki Tsuboi,* *Eisuke Yamada*	3D04: Ignition behavior of pure and blended methyl octanoate, *n*-nonane, and methylcyclohexane *B. Rotavera,* *E.L. Petersen*	3E04: Measurements of the critical initiation radius and unsteady propagation of *n*-decane/air premixed flames *Hwan Ho Kim,* *Sang Hee Won,* *Jeffrey Santner,* *Zheng Chen,* *Yiguang Ju*	3F04: Flame acceleration in long narrow open channels *Vadim Kurdyumov,* *Moshe Matalon*	3G04: Large eddy simulation of a pulverised coal jet flame *B.M. Franchetti,* *F. Cavallo Marincola,* *S. Navarro-Martinez,* *A.M. Kempf*

Room	315	231	306	Small Hall	219	208	134
11:55	3A05: Large eddy simulation of a lifted ethylene flame using a dynamic nonequilibrium model for subfilter scalar variance and dissipation rate *Colleen M. Kaul, Venkat Raman, Edward Knudsen, Edward S. Richardson, Jacqueline H. Chen*	3B05: High-speed PIV and LIF imaging of temperature stratification in an internal combustion engine *Brian Peterson, Elias Baum, Benjamin Böhm, Volker Sick, Andreas Dreizler*	3C05: Formation of transverse waves in oblique detonations *Jimmy Verreault, Andrew J. Higgins, Robert A. Stowe*	3D05: Photoionization mass spectrometry and modeling study of premixed flames of three unsaturated $C_5H_8O_2$ esters *B. Yang, C.K. Westbrook, T.A. Cool, N. Hansen, K. Kohse-Höinghaus*	3E05: A numerical study of the autoignition of dimethyl ether with temperature inhomogeneities *Haoyang Zhang, Evatt R. Hawkes, Jacqueline H. Chen, Sanghoon Kook*	3F05: Flame dynamics in a heated meso-scale radial channel *Aiwu Fan, Jianlong Wan, Kaoru Maruta, Hisashi Nakamura, Hong Yao, Wei Liu*	3G05: Soot formation characteristics in a lab-scale turbulent pulverized coal flame with simultaneous planar measurements of laser induced incandescence of soot and Mie Scattering of pulverized coal *Jun Hayashi, Nozomu Hashimoto, Noriaki Nakatsuka, Hirohumi Tsuji, Hiroaki Watanabe, Hisao Makino, Fumiteru Akamatsu*
12:20	3A06: Large-eddy simulation/ probability density function modeling of a non-premixed CO/H_2 temporally evolving jet flame *Yue Yang, Haifeng Wang, Stephen B. Pope, Jacqueline H. Chen*	3B06: High-speed imaging of spray-guided DISI engine combustion with near-TDC injection of E85 for ultra-low NO and soot *Magnus Sjöberg, David L. Reuss*	3C06: Detonation re-initiation mechanism following the Mach reflection of a quenched detonation *R. Bhattacharjee, S.S.M. Lau-Chapdelaine, G. Maines, L. Maley, M.I. Radulescu*	3D06: Shock tube/laser absorption studies of the decomposition of methyl formate *W. Ren, K.-Y. Lam, S.H. Pyun, A. Farooq, D.F. Davidson, R.K. Hanson*	3E06: Analysis of *n*-heptane auto-ignition characteristics using computational singular perturbation *Saurabh Gupta, Hong G. Im, Mauro Valorani*	3F06: Oscillating and rotating flame patterns in radial microchannels *Sergey Minaev, Roman Fursenko, Evgeniy Sereshchenko, Aiwu Fan, Sudarshan Kumar*	3G06: PM10 formation during the combustion of N_2-char and CO_2-char of Chinese coals *Chang Wen, Minghou Xu, Dunxi Yu, Changdong Sheng, Hongwei Wu, Ping'an Zhang, Yu Qiao, Hong Yao*

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12:45	3A07: A novel transient turbulent jet flame for studying turbulent combustion *Haifeng Wang, Mrinal Juddoo, Sten H. Starner, Assaad R. Masri, Stephen B. Pope*	3B07: Jet-guided combustion characteristics and local fuel concentration measurements in a hydrogen direct-injection spark-ignition engine *Mithun Kanti Roy, Nobuyuki Kawahara, Eiji Tomita, Takashi Fujitani*	3C07: Near limit behavior of the detonation velocity *John H.S. Lee, Anne Jesuthasan, Hoi Dick Ng*	3D07: HIGH temperature rate constants for H/D + methyl formate and methyl acetate *S. Peukert, R. Sivaramakrishnan, M.-C. Su, J.V. Michael*	3E07:Hydrodynamic aspects of end-gas autoignition *Leonid Kagan, Gregory Sivashinsky*	3F07: Response of non-premixed flames to bulk flow perturbations *Nicholas Magina, Vishal Acharya, Timothy Lieuwen*	3G07: The influence of gasification reactions on char consumption under oxy-combustion conditions: Effects of particle trajectory and conversion *Simcha Singer, Lei Chen, Ahmed F. Ghoniem*
14:15	**EXCURSION TO WIECHA INN** **BUSSES WILL DEPART FROM UNIVERSITY SQUARE AT *14:15***						

THURSDAY, 2 August 2012

PLENARY LECTURE—8:30 am

Combustion chemistry probed by synchrotron VUV photoionization mass spectrometry *Fei Qi*

Chair: F. Battin-Leclerc

Main Hall

BREAK

Room	315	231	306	Small Hall	219	208	134
	DNS of Fundamental Processes *Chairs:* *N. Chakraborty* *E.S. Richardson*	**Diesel Engines and Emissions** *Chairs:* *C. Mounaim-Rousselle* *A. Pekalski*	**Fire Mitigation** *Chairs:* *A. Hayhurst* *O. Korobeinichev*	**Kinetics of Alcohols** *Chairs:* *P.A. Glaude* *M. Sarathy*	**Laminar Counterflow Flames** *Chairs:* *S. Ishizuka* *TBA*	**Soot or Dioxin Precursors** *Chairs:* *M. Alzueta* *M.Kraft*	**Oxidation/Pylorysis** *Chairs:* *TBA* *TBA*
9:40	4A01: Probability of auto-ignition in turbulent hydrogen-air mixtures using DNS *Gordon Fru, Dominique Thévenin*	4B01: Analysis of diesel engine combustion using imaging and blind source separation *Katarzyna Bizon, Simone Lombardi, Gaetano Continillo, Ezio Mancaruso, Bianca Maria Vaglieco*	4C01: Extinguishment of propane/air co-flowing diffusion flames by fine water droplets *Itaru Sakurai, Jinji Suzuki Yoshinobu Kotani Hiroyoshi Naito Akira Yoshida*	4D01: Kinetics for the reactions of phenyl with methanol and ethanol: Comparison of theory and experiment *J. Park, Z.F.Xu, K. Xu, M.C. Lin*	4E01: Numerical study on ultra-lean rotating counterflow twin premixed flame of hydrogen-air *Akane Uemichi, Makihito Nishioka*	4F01: Formation of Polychlorinated dibenzo-*p*-dioxins and Polychlorinated Dibenzofurans (PCDD/F) by precursor pathways in oxidation of pesticide *alpha*-cypermethrin *Sindra L. Summoogum, Dominika Wojtalewicz, Mohammednoor Altarawneh, John C. Mackie, Eric M. Kennedy, Bogdan Z. Dlugogorski*	4G01: Predicting the CO_2/CO production ratio during char oxidation: Capturing the oxygen dependence with semi-global intrinsic kinetics models *M. Geier, C.R. Shaddix F. Holzleithner*

Room	315	231	306	Small Hall	219	208	134
10:05	4A02: Direct numerical simulation of autoigniting mixing layers in MILD combustion *J.A. van Oijen*	4B02: Systematic study of ignition delay for jet fuels and diesel fuel in a heavy-duty diesel engine *David A. Rothamer, Lucas Murphy*	4C02: A comprehensive model for simulating the interaction of water with solid surfaces in fire suppression environments *Karl Meredith, Jaap de Vries, Yi Wang, Yibing Xin*	4D02: Unimolecular dissociation of hydroxypropyl and propoxy radicals *Judit Zádor, James A. Miller*	4E02: Effect of pressure on structure and extinction of near-limit hydrogen counterflow diffusion flames *U. Neimann, K. Seshadri, F.A. Williams*	4F02: Fe_2O_3 nanoparticle mediated molecular growth and soot inception from the oxidative pyrolysis of 1-methylnaphthalene *Michael Paul Herring, Phillip Potter, Hongyi Wu, Slawomir Lomnicki, Barry Dellinger*	4G02: Effect of pyrolysis conditions on the char gasification with mixtures of CO_2 and H_2O *Chao Chen, Jing Wang, Wei Liu, Sen Zhang, Jingshu Yin, Hong Yao*
10:25	**BREAK**						
Room	**315**	**231**	**306**	**Small Hall**	**219**	**208**	**134**
	DNS of Fundamental Processes *Chairs:* *N. Chakraborty* *E.S. Richardson*	**Diesel Engines and Emissions** *Chairs:* *C. Mounaim-Rousselle* *A. Pekalski*	**Fire Mitigation** *Chairs:* *W. Grosshandler* *O. Korobeinichev*	**Kinetics of Alcohols** *Chairs:* *P. A. Glaude* *M. Sarathy*	**Instability/ Thermo-Acoustic** *Chairs:* *S. Ishizuka* *TBA*	**Soot or Dioxin Precursors** *Chairs:* *M. Alzueta* *M. Kraft*	**Oxidation/Pylorysis** *Chairs:* *TBA* *TBA*
11:05	4A03: Turbulent scalar mixing in a non-premixed flame diluted with inert evaporating droplets *J. Xia, K.H. Luo, H. Zhao, A. Megaritis*	4B03: Detailed analysis of kinetic reactions in soot oxidation by simulated diesel exhaust emissions *Kyeong O. Lee, Heeje Seong, Seung M. Choi*	4C03: Reduction of flammability of ultrahigh-molecular-weight polyethylene with triphenyl phosphate additives *O.P. Korobeinichev, A.A. Paletsky, L.V. Kuibida, M.B. Gonchikzhapov, I.K. Shundrina*	4D03: Rate constants of hydrogen abstraction by methyl radical from *n*-butanol and a comparison of CanTherm, MultiWell and Variflex compared *D. Katsikadakos, C.-W. Zhou, J.M. Simmie, H.J. Curran, P.A. Hunt, Y. Hardalupas A.M.K.P. Taylor*	4E03: Experimental evaluation of DC electric field effect on the thermoacoustic behaviour of flat premixed flames *E.N. Volkov, V.N. Kornilov, L.P.H. de Goey*	4F03: Hydrocarbon species concentrations in nitrogen diluted ethylene-air laminar jet diffusion flames at elevated pressures *Ranjith Kumar Abhinavam Kailasanathan, Emily K. Book, Tiegang Fang, William L. Roberts*	4G03: Predictive one step kinetic model of coal pyrolysis for CFD applications *T. Maffei, A. Frassoldati, A. Cuoci, E. Ranzi, T. Faravelli*

Room	315	231	306	Small Hall	219	208	134
11:30	4A04: Determination of three-dimensional quantities related to scalar dissipation rate and its transport from two-dimensional measurements: Direct Numerical Simulation based validation *N. Chakraborty,* *H. Kolla,* *R. Sankaran,* *E.R. Hawkes,* *J.H. Chen,* *N. Swaminathan*	4B04: Numerical simulation of continuously regenerating diesel particulate filter *Kazuhiro Yamamoto,* *Kazuki Yamauchi*	4C04: Cup-burner flame structure and extinguishment by $CF_3Br$and C_2HF_5 in microgravity *Fumiaki Takahashi,* *Viswanath R. Katta,* *Gregory T. Linteris,* *Oliver C. Meier*	4D04: Low-temperature combustion chemistry of biofuels: Pathways in the low-temperature (550–700 K) oxidation chemistry of isobutanol and *tert*-butanol *Oliver Welz,* *John D. Savee,* *Arkke J. Eskola,* *Leonid Sheps,* *David L. Osborn,* *Craig A. Taatjes*	4E04: Finding thermoacoustic limit cycles for a ducted Burke-Schumann flame *Simon J. Illingworth,* *Iain C. Waugh,* *Matthew P. Juniper*	4F04: The high pressure study of *n*-propylbenzene pyrolysis *S. Gudiyella,* *K. Brezinsky*	4G04: Dynamic behaviour of coal macerals during pyrolysis-associations between physical, thermal and chemical changes *Rohan Stanger,* *Wei Xie,* *Terry Wall,* *John Lucas,* *Merrick Mahoney*
11:55	4A05: Optimal chemical markers of the heat release rate deduced from DNS *Gábor Janiga,* *Katharina Zähringer,* *Dominique Thévenin*	4B05: Prediction of real-time NO based on the in-cylinder pressure in Diesel engines *Hoimyung Choi* *Wonah Park,* *Junyong Lee,* *Kyoungdoug Min,* *Jun Yu,* *Seungil Park,* *Sunghwan Cho*	4C05: Unwanted combustion enhancement by $C_6F_{12}O$ fire suppressant *G.T. Linteris,* *V.I. Babushok,* *P.B. Sunderland,* *F. Takahashi,* *V. Katta,* *O. Meier*	4D05: Theoretical kinetics for the decomposition of *iso*-butanol and related $(CH_3)_2CH + CH_2OH$ reactions *Chong-Wen Zhou,* *Stephen J. Klippenstein,* *John M. Simmie,* *Henry J. Curran*	4E05: A direct numerical simulation study of frequency and Lewis number effects on sound generation by two-dimensional forced laminar premixed flames *Mohsen Talei,* *Evatt R. Hawkes,* *Michael J. Brear*	4F05:Experimental and kinetic modeling study of tetralin pyrolysis at low pressure *Yuyang Li,* *Lidong Zhang,* *Zhandong Wang,* *Lili Ye,* *Jianghuai Cai,* *Zhanjun Cheng,* *Fei Qi*	4G05: Comparing reaction orders of anthracite chars with bituminous coal chars at high temperature oxidation conditions *Oscar Karlström,* *Anders Brink,* *Enrico Biagini,* *Mikko Hupa,* *Leonardo Tognotti*
12:20	4A06: *A priori* testing of a multi-dimensional unsteady flamelet model for three-feed combustion systems *Eric M. Doran,* *Heinz Pitsch,* *David J. Cook*	4B06: Modelling and speciation of nitrogen oxides in engines *Vincent Knop,* *André Nicolle,* *Olivier Colin*	4C06: Limiting conditions for flame spread in fire resistant fabrics *Andres F. Osorio,* *Carlos Fernandez-Pello,* *David L. Urban,* *Gary A. Ruff*	4D06: A comparison of longer alkane and alcohol ignition including new experimental results for *n*-pentanol and *n*-hexanol *K.A. Heufer,* *J. Bugler,* *H.J. Curran*	4E06: Lock-in and quasiperiodicity in hydrodynamically self-excited flames: Experiments and modeling *Larry K.B. Li,* *Matthew P. Juniper*	4F06: Thermal decomposition of graphene armchair oxyradicals *David E. Edwards,* *Xiaoqing You,* *Dmitry Yu Zubarev,* *William A. Lester Jr.,* *Michael Frenklach*	4G06: Attrition of lignite char under fluidized bed gasification conditions: The effect of carbon conversion *Maurizio Troiano,* *Paola Ammendola,* *Fabrizio Scala*

	LUNCH						
Room	**315**	**231**	**306**	**Small Hall**	**219**	**208**	**134**
	Model Development and RANS *Chairs:* *J.Y. Chen* *D. Roekaerts*	**HCCI Engines and Spray Diagnostics** *Chairs:* *M. Linne* *M. Sjöberg*	**Fires from Solid** *Chairs:* *A. Coppalle* *R. Dobashi*	**Elementary Reactions** *Chairs:* *A. Miyoshi* *M. Olzmann*	**Flames Stratified on Porous Media** *Chairs:* *Z. Chen* *H. Kobayashi*	**Topical Review** *Chair:* *A. Ciajolo*	**Stationary Combustion: Mercury/Metal** *Chairs:* *D. Tree* *H. Yao*
14:15	4A07: Chemical kinetic uncertainty quantification for large eddy simulation of turbulent non-premixed combustion *Michael E. Mueller, Gianluca Iaccarino, Heinz Pitsch*	4B07: A DNS study of ignition characteristics of a lean *iso*-octane/air mixture under HCCI and SACI conditions *Chun Sang Yoo, Zhaoyu Luo, Tianfeng Lu, Hongjip Kim, Jacqueline H. Chen*	4C07: Piloted ignition of solid fuels at low ambient pressure and varying igniter location *Jiakun Dai, Michael A. Delichatsios, Lizhong Yang*	4D07: Kinetics of H atom attack on unsaturated hydrocarbons using spectral uncertainty propagation and minimization techniques *David A. Sheen, Claudette M. Rosado-Reyes, Wing Tsang*	4E07: Influence of radiation losses on the stability of premixed flames on a porous-plug burner *Vadim N. Kurdyumov, Mario Sánchez–Sanz*	4F07/4F08: Study of the formation of soot precursors and soot particles in flames using optical diagnostics *Pascale Desgroux,* *Xavier Mercier, Kevin A. Thomson*	4G07: Effect of inorganic particulates on the condensation behavior of lead and zinc vapors upon flue gas cooling *Facun Jiao, Lian Zhang, Wenjia Song, Ying Meng, Naoomi Yamada, Atsushi Sato, Yoshihiko Ninomiya*
14:40	4A08: A chemistry tabulation approach via Rate-Controlled Constrained Equilibrium (RCCE) and Artificial Neural Networks (ANNs), with application to turbulent nonpremixed CH_4 /H_2 /N_2 flames *A.K. Chatzopoulos, Stelios Rigopoulos*	4B08: Influence of ozone on the combustion of *n*-heptane in a HCCI engine *F. Foucher, P. Higelin, C. Mounaim-Rousselle, P. Dagaut*	4C08: Piloted ignition and extinction for solid fuels *Jiakun Dai, Michael A. Delichatsios, Lizhong Yang, Jianping Zhang*	4D08: The decomposition of 2-pentyl and 3-pentyl radicals *Jeffrey A. Manion, Iftikhar A. Awan*	4E08: Behavior of preheated premixed flames at rich conditions *Joseph Gibson, Mohsen Ayoobi, Ingmar Schoegl*	——————— **Optical Diagnostics for Soot** *Chairs:* *A. Ciajolo* *G. Smallwood*	4G08: Mechanism study of mercury-bromine species adsorption on carbonaceous surface *Jing Liu, Wenqi Qu, Chuguang Zheng*

Room	315	231	306	Small Hall	219	208	134
15:05	4A09: Characteristic chemical time scales identification in reactive flows *J. Cudal,* *B. Fiorina,* *M. Massot,* *B. Labégorre,* *N. Darabiha,* *O. Gicquel*	4B09: Thermal stratification in an internal combustion engine due to wall heat transfer measured by laser-induced fluorescence *S.A. Kaiser,* *M. Schild,* *C. Schulz*	4C09: Study of the competing chemical reactions in the initiation and spread of smouldering combustion in peat *Guillermo Rein,* *Rory M. Hadden,* *Claire M. Belcher*	4D09: A quantitative explanation for the apparent anomalous temperature dependence of $OH + HO_2 = H_2O + O_2$ through multi-scale modeling *Michael P. Burke,* *Stephen J. Klippenstein,* *Lawrence B. Harding*	4E09: An analytical model for the prediction of the dynamic response of premixed flames stabilized on a heat-conducting perforated plate *Kushal S. Kedia,* *Ahmed F. Ghoneim*	4F09: Fluorescence anisotropy in a diffusion flame to shed light in the "dark region" *M. Commodo,* *L.A. Sgro,* *X. Wang,* *C. de Lisio,* *P. Minutolo*	4G09: Density functional study of Hg oxidation reaction mechanism on *a*-Fe_2O_3 with H_2S *Tao Liu,* *Xin Guo*
15:30	4A10: Subgrid-scale mixing of mixture fraction, temperature, and species mass fractions in turbulent partially premixed flames *Shuaishuai Liu,* *Chenning Tong*	4B10: Quantitative detection of hydrogen peroxide in an HCCI engine using photofragmentation laser-induced fluorescence *B. Li,* *M. Jonsson,* *M. Algotsson,* *J. Bood,* *Z.S. Li,* *O. Johansson,* *M. Aldén,* *M. Tunér,* *B. Johansson*	4C10: Inert and oxidative pyrolysis of a lignocellulosic material: Corrugated cardboard *Marcos Chaos,* *Mohammed M. Khan,* *Sergey B. Dorofeev*	4D10: Synchrotron photoionization measurements of fundamental autoignition reactions: Product formation in low-temperature isobutane oxidation *Arkke J. Eskola* *Oliver Welz,* *John D. Savee,* *David L. Osborn,* *Craig A. Taatjes*	4E10: Scaling the flame transfer function of confined premixed conical flames *A. Cuquel,* *D. Durox,* *T. Schuller*	4F10: Study on the contribution of different molecular weight species to the absorption UV-visible spectra of flame-formed carbon species *Carmela Russo,* *Fernando Stanzione,* *Anna Ciajolo,* *Antonio Tregrossi*	4G10: Experimental study of homogeneous mercury oxidation under O_2/CO_2 atmosphere *Hui Wu,* *Hao Liu,* *Quanhai Wang,* *Guangqian Luo,* *Hong Yao* *Jianrong Qiu*
15:55	**BREAK**						

Room	315	231	306	Small Hall	219	208	134
	Model Development and RANS *Chairs:* *J.Y. Chen* *D. Roekaerts*	**HCCI Engines and Spray Diagnostics** *Chairs:* *M. Linne* *M. Sjöberg*	**Fires from Solid** *Chairs:* *A. Coppalle* *R. Dobashi*	**Elementary Reactions** *Chairs:* *A. Miyoshi* *M. Olzmann*	**Flames and Electric Field** *Chairs:* *Z. Chen* *H. Kobayashi*	**Optical Diagnostics for Soot** *Chairs:* *A. Ciajolo* *G. Smallwood*	**Stationary Combustion** *Chairs:* *D. Tree* *H. Yao*
16:25	4A11: Hybrid multiple mapping conditioning modeling of local extinction *Andrew P. Wandel, R. Peter Lindstedt*	4B11: Laser sheet dropsizing of evaporating sprays using simultaneous LIEF/MIE techniques *Wei Zeng, Min Xu, Yuyin Zhang, ZhenKan Wang,*	4C11: Influence of confinement geometry on ignition behavior of dust deposits *Kulbhushan A. Joshi, V. Raghavan, Ali S. Rangwala*	4D11: Isomerization kinetics of benzylic and methylphenyl type radicals in single-ring aromatics *Enoch Dames, Hai Wang*	4E11: Transient electric field response of laminar premixed flames *Johannes Kuhl, Gordana Jovicic, Lars Zigan, Alfred Leipertz*	4F11: Evolution of size distributions of nascent soot in *n*- and *i*-butanol flames *Joaquin Camacha, Sydnie Lieb, Hai Wang*	4G11: The effect of pelletization on the attrition of wood under fluidized bed combustion and gasification conditions *Paola Ammendola, Riccardo Chirone, Giovanna Ruoppolo, Fabrizio Scala*
16:50	4A12: A PDF combustion model for turbulent premixed flames *Benjamin T. Zoller, Mathias L. Hack, Patrick Jenny*	4B12: Visualization of secondary atomization in emulsified-fuel spray flow by shadow imaging *Hirotatsu Watanabe, Ken Okazaki*	4C12: Evolution of flame to surface heat flux during upward flame spread on polyspace(methyl methacrylate) *Isaac T. Leventon, Stanislav I. Stoliarov*	4D12: On the kinetics of the $C_5H_5 + C_5H_5$ reaction *Carlo Cavallotti, Daniela Polino*	4E12: Electrical aspects of flame quenching *F.J. Weinberg, D. Dunn-Rankin, F.B. Carleton, S. Karnani, C. Markides, M. Zhai*	4F12: Coagulation of combustion generated nanoparticles in low and intermediate temperature regimes: An experimental study *Mariano Sirignano, Andrea D'Anna*	4G12: Volatilization characteristics of boron compounds during coal combustion *Naoki Noda, Shigeo Ito, Yasuaki Ueki, Ryo Yoshiie, Ichiro Naruse*
	BANQUET AT ROYAL CASTLE KUBICKI ARCADES **BUSSES WILL DEPART FROM UNIVERSITY SQUARE AT *19:00***						

FRIDAY, 3 AUGUST 2012

PLENARY LECTURE—8:30 am
Scaling-up fire *José L. Torero*
Chair: C. Fernandez-Pello
Main Hall

BREAK

Room	315	231	306	Small Hall	219	208	134
	Combustion Dynamics *Chairs:* *T. Lieuwen* *T. Schuller*	**Diagnostics - CARS** *Chairs:* *F. Beyrau* *A. Cessou*	**Fire Propagation** *Chairs:* *G. Rein* *A. Trouvé*	**Kinetics of Oxygenated Reactants** *Chairs:* *N. Cernansky* *T. Faravelli*	**Laminar Flames: Syngas** *Chairs:* *J. Bergthorson* *M. Thomson*	**Sooting Flames** *Chairs:* *M. Braun-Unkoff* *A. Violi*	**Stationary Combustion: Ash/Arsenic** *Chairs:* *I. Naruse* *Q. Yao*
9:40	5A01: Effects of Damköhler number on vortex-flame interaction in a gas turbine model combustor *M. Stöhr,* *C.M. Arndt,* *W. Meier*	5B01: Pure rotational CARS measurements of temperature and O_2-concentration in a low swirl turbulent premixed flame *Alexis Bohlin,* *Emil Nordström,* *Henning Carlsson,* *Xue-Song Bai,* *Per-Erik Bengtsson*	5C01: Multiple fire interactions: A further investigation by burning rate data of square fire arrays *Naian Liu,* *Qiong Liu,* *Jesse S. Lozano,* *Linhe Zhang,* *Zhihua Deng,* *Bin Yao,* *Jiping Zhu,* *Kohyu Satoh*	5D01: An experimental and kinetic modeling study of premixed nitroethane flames at low pressure *Kuiwen Zhang,* *Lidong Zhang,* *Mingfeng Xie,* *Lili Ye,* *Feng Zhang,* *Peter Glarborg,* *Fei Qi*	5E01: The effects of water dilution on hydrogen, syngas, and ethylene flames at elevated pressure *Jeffrey Santner,* *Frederick L. Dryer,* *Yiguang Ju*	5F01: An experimental and kinetic modeling investigation on a rich premixed *n*-propylbenzene flame at low pressure *Zhandong Wang,* *Yuyang Li,* *Feng Zhang,* *Lidong Zhang,* *Wenhao Yuan,* *Yizun Wang,* *Fei Qi*	5G01: Non-catalytic after-treatment for diesel particulates using carbon-fiber filter and experimental validation *Kazuhiro Yamamoto,* *Fumihiro Fujikake,* *Kenta Matsui*
10:05	5A02: Parametric study of vortex structures and their dynamics in swirl-stabilized combustion *A.M. Steinberg,* *C.M. Arndt,* *W. Meier*	5B02: *In-situ* determination of N_2 broadening coefficients in flames for rotational CARS thermometry *Yi Gao,* *Alexis Bohlin,* *Thomas Seeger,* *Per-Erik Bengtsson,* *Christopher J. Kliewer*	5C02: A novel apparatus for flame spread study *Subrata Bhattacharjee,* *Mathew Bundy,* *Christopher Paolini,* *Gaurav Patel,* *Wynn Tran*	5D02: Measurements of H_2O_2 in low temperature dimethyl ether oxidation *Huijun Guo,* *Wenting Sun,* *Francis M. Haas,* *Frederick L. Dryer,* *Yiguang Ju*	5E02: Effects of Soret diffusion on the laminar flame speed and Markstein length of syngas/air mixtures *Wenkai Liang,* *Zheng Chen,* *Fan Yang,* *Huiqiang Zhang*	5F02: Sooting limit in counterflow diffusion flames of ethylene/propane fuels and implication to threshold soot index *Peter H. Joo,* *Yu Wang,* *Abhijeet Raj,* *Suk Ho Chung*	5G02: Liquid biofuels co-combustion in PC boilers of 200 MW utility unit *Halina Pawlak-Kruczek,* *Michal Ostrycharczyk,* *Jacek Zgóra*

	BREAK						
Room	**315**	**231**	**306**	**Small Hall**	**219**	**208**	**134**
	Combustion Dynamics *Chairs:* *T. Lieuwen* *T. Schuller*	**Diagnostics in Turbulent Flames** *Chairs:* *F. Beyrau* *A. Cessou*	**Fire Propagation** *Chairs:* *G. Rein* *A. Trouvé*	**Kinetics of Oxygenated Reactants** *Chairs:* *N. Cernansky* *T. Faravelli*	**Laminar Flames: Alkanes and Diesel** *Chairs:* *P. Oßwald* *P. Westmoreland*	**Sooting Flames** *Chairs:* *M. Braun-Unkoff* *A. Violi*	**Stationary Combustion: Ash/Arsenic** *Chairs:* *I. Naruse* *Q. Yao*
11:05	5A03: Experimental investigation of noise induced triggering in thermoacoustic system *Vivekanandan Jegadeesan,* *R.I. Sujith*	5B03: Simultaneous visualization of OH, CH, CH_2O and toluene PLIF in a methane jet flame with varying degrees of turbulence *Johan Sjöholm,* *Joakim Rosell,* *Bo Li,* *Mattias Richter,* *Zhongshan Li,* *Xue-Song Bai,* *Marcus Aldén*	5C03: A study of *in situ* burning of crude oil in an ice channel *Peter W. Bellino,* *Ali S. Rangwala,* *Morris R. Flynn*	5D03: Uncertainty quantification in the *ab initio* rate-coefficient calculation for the $CH_3CH(OH)CH_3$ + OH → $CH_3C(OH)CH_3$ + H_2O reaction *Jens Prager,* *Habib N. Najm,* *Judit Zádor*	5E03: Ignition of non-premixed counterflow flames of octane and decane isomers *Ning Liu,* *S. Mani Sarathy,* *Charles K. Westbrook,* *Fokion N. Egolfopoulos*	5F03: Probing structures of soot formed in premixed flames of methane, ethylene and benzene flames *Carmela Russo,* *Michela Alfè,* *Jean-Noël Rouzaud,* *Fernando Stanzione,* *Antonio Tregrossi,* *Anna Ciajolo*	5G03: Development of a dry bottom ash extraction/ afterburning system from pulverized fuel co-fired utility boilers *Osvalda Senneca,* *Piero Salatino,* *Daniele Ricci*
11:30	5A04: Acoustic characterization of a partially-premixed gas turbine model combustor: Syngas and hydrocarbon fuel comparisons *Patton M. Allison,* *James F. Driscoll,* *Matthias Ihme*	5B04: Premixed flame propagation in turbulent flow by means of stereoscopic PIV and dual-plane OH-PLIF at sustained KHz repetition rates *P.J. Trunk,* *I. Boxx,* *C. Heeger,* *W. Meier,* *B. Böhm,* *A. Dreizler*	5C04: Experimental research on flame revolution and precession of fire whirls *Jiao Lei,* *Naian Liu,* *Jesse S. Lozano,* *Linhe Zhang,* *Zhihua Deng,* *Kohyu Satoh*	5D04: Dissociation of dimethyl ether at high temperatures *Robert S. Tranter,* *Patrick T. Lynch,* *Xueliang Yang*	5E04: A counterflow diffusion flame study of branched octane isomers *S.M. Sarathy,* *U. Niemann,* *C. Yeung,* *R. Gehmlich,* *C.K. Westbrook,* *M. Plomer,* *Z. Luo,* *M. Mehl,* *W.J. Pitz,* *K. Seshadri,* *M.J. Thomson,* *T. Lu*	5F04: Experimental and detailed kinetic modeling study of PAH formation in laminar co-flow methane diffusion flames *Alberto Cuoci,* *Alessio Frassoldati,* *Tiziano Faravelli,* *Hanfeng Jin,* *Yizun Wang,* *Kuiwen Zhang,* *P. Glarborg,* *Fei Qi*	5G04: Fate of chromium during thermal treatment of MSWI fly ash *Hongyun Hu,* *Guangqian Luo,* *Huan Liu,* *Yu Qiao,* *Minghou Xu,* *Hong Yao*

Room	315	231	306	Small Hall	219	208	134
11:55	5A05: Effects of hydrogen on the thermo-acoustics coupling mechanisms of low-swirl injector flames in a model gas turbine combustor *D.W. Davis, P.L. Therkelsen, D. Littlejohn, R.K. Cheng*	5B05: Temperature measurements in turbulent non-premixed flames by two-line atomic fluorescence *Paul R. Medwell, Qing N. Chan, Bassam B. Dally, Saleh Mahmoud, Zeyad T. Alwahabi, Graham J. Nathan*	5C05: Experimental study of upward flame spread and burning of an inclined fuel surface *M.J. Gollner, X. Huang, J. Cobian, A.S. Rangwala, F.A. Williams*	5D05: Jet-stirred reactor and flame studies of propanal oxidation *P.S. Veloo, P. Dagaut, C. Togbe, G. Dayma, S.M. Sarathy, C.K. Westbrook, F.N. Egolfopoulos*	5E05: Characteristics of *n*-heptane and toluene weak flames in a micro flow reactor with a controlled temperature profile *Mikito Hori, Hisashi Nakamura, Takuya Tezuka, Susumu Hasegawa, Kaoru Maruta*	5F05: Polycyclic aromatic hydrocarbons from the co-pyrolysis of 1,3-butadiene and propyne *Nimesh B. Poddar, Shiju Thomas, Mary J. Wornat*	5G05: Effects of coal types on ash fragmentation and coagulation behaviors in pulverized coal combustion *Ryo Yoshiie, Takuro Tsuzuki, Yasuaki Ueki, Ichiro Naruse, Naoki Sato, Yoshiaki Matsuzawa, Takamasa Ito, Toshiyuki Suda*
12:20	5A06: Self-excited circumferential instabilities in a model annular gas turbine combustor: Global flame dynamics *Nicholas A. Worth, James R. Dawson*	5B06: Simultaneous measurement of localized heat-release with OH/CH_2O-LIF imaging and spatially integrated OH* chemiluminescence in turbulent swirl flames *M. Röder, T. Dreier, C. Schulz*	5C06: Scale-model experiments of moving fire whirl over a line fire *Kazunori Kuwana, Kozo Sekimoto, Takeaki Minami, Takahiro Tashiro, Kozo Saito*	5D06: Multi-species time-history measurements during high-temperature acetone and 2-butanone pyrolysis *King-Yiu Lam, Wei Ren, Sung Hyun Pyun, Aamir Farooq, David F. Davidson, Ronald K. Hanson*	5E06: Study on cetane number dependence of diesel surrogates/air weak flames in a micro flow reactor with a controlled temperature profile *Satoshi Suzuki, Mikito Hori, Hisashi Nakamura, Takuya Tezuka, Susumu Hasegawa, Kaoru Maruta*	5F06: Tar conversion in biogas by partial combustion: A numerical and experimental study of Polycyclic Aromatic Hydrocarbons in a laminar diffusion flame *L.M. Verhoeven, M.H. de Andrade Oliveira, A. Lantz, B. Li, Z.S. Li, C.C.M. Luijten, J.A. van Oijen, M. Aldén, L.P.H. de Goey*	5G06: Arsenic emissions and speciation in the oxy-fuel fly ash collected from lab-scale drop-tube furnace *Fiona Low, Lian Zhang*
	LUNCH						

Room	315	231	306	Small Hall	219	208	134
	Blowoff, Cross-Flow and Ignition *Chairs:* *S. Hochgreb* *W. Meier*	**Absorption and ps-LIF** *Chairs:* *TBA* *TBA*	**Low Gravity – Low Pressure** *Chairs:* *G. Linteris* *TBA*	**Sulfur and Nitrogen Chemistry** *Chairs:* *D. Davidson* *C. Taatjes*	**Laminar Flames: Acetylene and Jet-fuel** *Chairs:* *A. Konnov* *U. Maas*	**Modeling Soot and PAH Formation** *Chairs:* *P. Glarborg* *H. Wang*	**Topical Review** *Chairs:* *T. Niioka*
14:15	5A07: Prediction of blowoff in a fully controllable low-swirl burner burning alternative fuels: Effects of burner geometry, swirl, and fuel composition *Graham E. Ballachey,* *Matthew R. Johnson*	5B07: TDL absorption sensors for gas temperature and concentrations in a high-pressure entrained-flow coal gasifier *Kai Sun,* *Ritobrata Sur,* *Xing Chao,* *Jay B. Jeffries,* *Ronald K. Hanson,* *Randy J. Pummill,* *Kevin J. Whitty*	5C07: Gravity modulation study on opposed flame spread over thin solid fuels *Chenthil Kumar,* *Amit Kumar*	5D07: Experimental and kinetic modelling study of H_2S oxidation *Chenlai Zhou,* *Karina Sendt,* *Brian S. Haynes*	5E07: Studies of laminar opposed-flow diffusion flames of acetylene at low pressures with photoionization mass spectrometry *S.A. Skeen,* *B. Yang,* *H.A. Michelsen,* *J.A. Miller,* *A. Violi,* *N. Hansen*	5F07: Thermodynamics of Poly-Aromatic Hydrocarbon clustering and the effects of substituted aliphatic chains *Paolo Elvati,* *Angela Violi*	5G07/5G08: Realization of oxyfuel combustion for near zero emission power generation *Toshiro Fujimori,* *Toshihiko Yamada,* *Toshiyuki Suda,* *Makoto Takafuji,* *Takamasa Ito,* *Takashi Kiga,* *Chris Spero*
14:40	5A08: Unsteady flame: Wall interactions in a reacting jet injected into a vitiated cross-flow *Ryan Sullivan,* *Benjamin Wilde,* *David R. Noble,* *Karthik Periagaram,* *Jerry M. Seitzman,* *Tim C. Lieuwen*	5B08: Development of laser absorption techniques for real-time, *in-situ* dual-species monitoring (NO/NH_3, CO/O_2) in combustion exhaust *Xing Chao,* *Jay B. Jeffries,* *Ronald K. Hanson*	5C08: Study on unsteady molten insulation volume change during flame spreading over wire insulation in microgravity *Shuhei Takahashi,* *Hiroyuki Takeuchi,* *Hiroyuki Ito,* *Yuji Nakamura,* *Osamu Fujita*	5D08: Effects of NO_2 addition on hydrogen ignition behind reflected shock waves *Olivier Mathieu,* *Anthony Levacque,* *Eric L. Petersen*	5E08: Flame studies of C_2 hydrocarbons *Okjoo Park,* *Peter S. Veloo,* *Fokion N. Egolfopoulos*	5F08: Experimental and computational determinations of optical band gaps for PAH and soot in a N_2-diluted, ethylene/air non-premixed flame *J. Houston Miller,* *Jennifer D. Herdman* *Candace D.O. Green,* *Erin M. Webster*	——————— **Coal Combustion** *Chairs:* *M. Costa* *T. Niioka*

Room	315	231	306	Small Hall	219	208	134
15:05	5A09: Autoignition of hydrogen/nitrogen jets in vitiated air crossflows at different pressures *Julia M. Fleck, Peter Griebel, Adam M. Steinberg, Christoph M. Arndt, Clemens Naumann, Manfred Aigner*	5B09: HCN quantitative measurement in a laminar low pressure flame at 1036 nm using pulsed CRDS technique *N. Lamoureux, H. El Merhubi, X. Mercier, J.F. Pauwels, P. Desgroux*	5C09: Ignition limit of short-term overloaded electric wire in microgravity *Yoshitomo Takano, Osamu Fujita, Naoki Shigeta, Yuji Nakamura, Hiroyuki Ito*	5D09: Prompt NO formation in flames: The influence of NCN thermochemistry *Elke Goos, Christina Sickfeld, Fabian Mauß, Lars Seidel, Branko Ruscic, Alexander Burcat, Thomas Zeuch*	5E09: Flame propagation of mixtures of air with high molecular weight neat hydrocarbons and practical jet and diesel fuels *Bo Li, Ning Liu, Runhua Zhao, Hai Zhang, Fokion N. Egolfopoulos*	5F09: A fully coupled simulation of PAH and soot growths with a population balance model *Dongping Chen, Zakwan Zainuddin, Jethro Akroyd, Sebastian Mosbach, Markus Kraft*	5G09: Line of sight soot volume fraction measurements in air- and oxy-coal flames *Curtis K. Stimpson, Andrew Fry, Trevor Blanc, Dale R Tree*
15:30	5A10: Shock-tube study of the ignition of multi-component syngas mixtures with and without ammonia impurities *O. Mathieu, M.M. Kopp, E.L. Petersen*	5B10: Picosecond excitation for reduction of photolytic effects in two-photon laser-induced fluorescence of CO *Christian Brackmann, Joakim Rosell, Johan Sjöholm, Mattias Richter, Joakim Bood, Marcus Aldén*	5C10: Ignition-to-spread transition of externally-heated electrical wire *Xinyan Huang, Yuji Nakamura, Forman A. Williams*	5D10: An experimental and theoretical study of pyrrolidine pyrolysis at low pressure *Arnas Lucassen, Zhandong Wang, Lidong Zhang, Feng Zhang, Wenhao Yuan, Yizun Wang, Fei Qi, Katharina Kohse-Höinghaus*	5E10: A numerical and experimental study of soot formation in a laminar coflow diffusion flame of a Jet A-1 surrogate *Meghdad Saffaripour, Mohammadreza Kholghy, Qingan Zhang, Seth B. Dworkin, Murray J. Thomson*	5F10: Modeling of soot particle size distributions in premixed stagnation flow flames *R.P. Lindstedt, B.B.O. Waldheim*	5G10: Characterization of a primary-swirled, high oxygen participation coal flame: Flame temperature, emissivity, NO, and burnout measurements *Teri Draper, Darrel Zeltner, Dale R. Tree, Yuan Xue, Chendhil Periasamy, Taekyu Kang, Remi Tsiava*
15:55	**BREAK**						

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	LES of GT Combustion *Chairs:* *T. Poinsot* *TBA*	**Thermographic Phosphores and Calibration** *Chairs:* *M. Aldén* *T. Settersten*	**Fires under Low Gravity or Low Pressure** *Chairs:* *G. Linteris* *TBA*	**Progress in Experimental Methodology** *Chairs:* *G. Dayma* *TBA*	**Laminar Flames: Ketones and Cyclic Hydrocarbons** *Chairs:* *R.X. Fernandes* *C. Schulz*	**Soot in Engines and Fires** *Chairs:* *F. Winter* *M.J. Wornat*	**Stationary Combustion: Glycerin** *Chairs:* *G. Nathan* *W. Roberts*
16:25	5A11: Large Eddy Simulations of the Darmstadt Turbulent Stratified Flame series *F. Cavallo Marincola,* *T. Ma,* *A.M. Kempf*	5B11: Phosphor thermometry: A comparison of the luminescence lifetime and the intensity ratio approach *N. Fuhrmann,* *J. Brübach,* *A. Dreizler*	5C11: Flame characteristics of small-scale pool fires under low gravity environments *Naohiro Yoshihara,* *Akihiko Ito,* *Hiroyuki Torikai*	5D11: On the rate constants of OH + HO_2 and HO_2 + HO_2: A comprehensive study of H_2O_2 thermal decomposition using multi-species laser absorption *Zekai Hong,* *King-Yiu Lam,* *Ritobrata Sur,* *Shengkai Wang,* *David F. Davidson,* *Ronald K. Hanson*	5E11: Chemical effects of 1,2,4-trimethyl benzene addition in counterflow gaseous diffusion flames *Francesco Carbone,* *Alessandro Gomez*	5F11: Nanostructure and oxidative properties of soot from a compression ignition engine: The effect of a homogeneous combustion catalyst *Dongke Zhang,* *Yu Ma,* *Mingming Zhu*	5G11: Co-combustion of crude glycerin with natural gas and hydrogen *P. Queirós,* *M. Costa,* *R.H. Carvalho*
16:50	5A12: Large Eddy Simulation of an industrial gas-turbine combustion chamber using sub-grid PDF method *G. Bulat,* *W.P. Jones,* *A.J. Marquis*	5B12: Thermographic phosphor thermometry in transient combustion: A theoretical study of heat transfer and accuracy *Burak Atakan,* *Dennis Roskosch*	5C12: Experimental study of burning rates of cardboard box fires near sea level and at high altitude *Yi Niu,* *Yaping He,* *Xiaokang Hu,* *Dechuang Zhou,* *Chao-Hsin Lin,* *Joe Yin,* *Wei Yao,* *Jian Wang*	5D12: Dynamics of excited hydroxyl radicals in hydrogen-based mixtures behind reflected shock waves *Remy Mèvel,* *Servane Pichon,* *Laurent Catoire,* *Nabiha Chaumeix,* *Claude-Etienne Paillard,* *Joseph E. Shepherd*	5E12: Uncertainty assessment of species measurements in acetone counterflow diffusion flames *Joseph K. Lefkowitz,* *Sang Hee Won,* *Yann Fenard,* *Yiguang Ju*	5F12: Aliphatic C–H and oxygenated surface functional groups of diesel in-cylinder soot: Characterizations and impact on soot oxidation behavior *Lin Wang,* *Chonglin Song,* *Jinou Song,* *Gang Lv,* *Huating Pang,* *Wei Zhang*	5G12: Crude glycerol combustion: Particulate, acrolein, and other volatile organic emissions *Scott A. Steinmetz,* *Jason S. Herrington,* *Chris K. Winterrowd,* *William L. Roberts,* *Jost O.L. Wendt,* *William P. Linak*

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17:15	5A13: LES evaluation of the effects of equivalence ratio fluctuations on the dynamic flame response in a real Gas Turbine Combustion Chamber *S. Hermeth, G. Staffelbach, L.Y.M. Gicquel, T. Poinsot*	5B13: Absolute light calibration using S-type thermocouples *Bin Ma, Marshall B. Long*	5C13: Effects of low air pressure on radiation-controlled rectangular ethanol and *n*-heptane pool fires *Ran Tu, Jun Fang, Yongming Zhang, Jun Zhang, Yi Zeng*	5D13: Methodology to account for multi-stage ignition phenomena during simulations of RCM experiments *S.S. Goldsborough, G. Mittal, C. Banyon*	5E13: Ignition of non-premixed cyclohexane and mono-alkylated cyclohexane flames *Ning Liu, Chunsheng Ji, Fokion N. Egolfopoulos*	5F13: 2-D soot concentration and burning rate of a vertical PMMA slab using Laser-Induced Incandescence *Damien Hebert, Alexis Coppalle, Martine Talbaut*	5G13: NO_x emissions from high swirl turbulent spray flames with highly oxygenated fuels *Myles D. Bohon, William L. Roberts*
17:40	**FAREWELL RECEPTION IN MAIN HALL**						

ADJOURN

35th INTERNATIONAL SYMPOSIUM ON COMBUSTION
SAN FRANCISCO, CALIFORNIA, USA
AUGUST 3-8, 2014