

35th INTERNATIONAL SYMPOSIUM ON COMBUSTION
 San Francisco, California USA
 Monday 4 August 2014

WELCOME – 8:00 am
 HOTEL LECTURE–8:30 am

Understanding explosions: From catastrophic accidents to the creation of the universe *Elaine Oran*

Session Chairs: T. Poinsoot and S.-H. Chung
(Ballrooms on Street Level)

BREAK

| Room | Ballroom A | Ballroom B | Ballroom C | Bayview A | Seacliff A & B | Seacliff C & D | Pacific L & M | Pacific N & O |
|-------|---|---|---|---|--|--|---|---|
| | <p>Turbulent Premixed and Edge Flames <i>Chairs:</i> <i>R.W. Dibble</i> <i>L. Vervisch</i></p> | <p>Laminar Flame Speed I <i>Chairs:</i> <i>F. Egolfopoulos</i> <i>V. Giovangigli</i></p> | <p>Oxygenated Fuels <i>Chairs:</i> <i>D.F. Davidson</i> <i>P. Glarborg</i></p> | <p>Engine DNS Simulation <i>Chairs:</i> <i>O. Colin</i> <i>D.C. Haworth</i></p> | <p>CARS, Endoscopes and Tracers <i>Chairs:</i> <i>M. Colket</i> <i>S. Kaiser</i></p> | <p>Biomass and Municipal Waste <i>Chairs:</i> <i>A. Jasper</i> <i>P. Pepiot</i></p> | <p>Flame Spread I <i>Chairs:</i> <i>C. Fernandez-Pello</i> <i>S.L. Olson</i></p> | <p>Biomass and Coal Combustion <i>Chairs:</i> <i>M. Costa</i> <i>D. Zhang</i></p> |
| 10:15 | <p>1A01: Investigation of pressure effects on the small scale wrinkling of turbulent premixed bunsen flames <i>R. Fragner, F. Halter, N. Mazellier, C. Chauveau, I. Gökalp</i></p> | <p>1B01: Uncertainty in stretch extrapolation of laminar flame speed from expanding spherical flames <i>F. Wu, W. Liang, Z. Chen, Y. Ju, C.K. Law</i></p> | <p>1C01: Some aspects of combustion chemistry of C1-C2 oxygenated fuels in low pressure premixed flames <i>G. Vourliotakis, G. Skevis, M.A. Founti</i></p> | <p>1D01: Direct numerical simulation of the effect of compression on the flow, temperature and composition under realistic engine conditions <i>M. Schmitt, C.E. Frouzakis, A.G. Tomboulides, Y.M. Wright, K. Boulouchos</i></p> | <p>1E01: Femtosecond coherent anti-stokes raman scattering thermometry at 5 kHz in a gas turbine model combustor <i>C.N. Dennis, C. Slabaugh, I.G. Boxx, W. Meier, R.P. Lucht</i></p> | <p>1F01: LIBS measurements and numerical studies of potassium release during biomass gasification <i>H. Fatehi, Y. He, Z. Wang, Z.S. Li, X.-S. Bai, M. Aldén, K.F. Cen</i></p> | <p>1G01: Experimental validation of a correlation capturing the boundary layer effect on spread rate in the kinetic regime of opposed-flow flame spread <i>S. Bhattacharjee, W. Tran, M. Laue, C. Paolini, Y. Nakamura</i></p> | <p>1H01: Release of chlorine from the slow pyrolysis of NaCl-loaded cellulose at low temperatures <i>M.U. Rahim, X. Gao, H. Wu</i></p> |
| 10:35 | <p>1A02: LES of turbulent combustion: On the consistency between flame and flow filter scales <i>R. Mercier, V. Moureau, D. Veynante, B. Fiorina</i></p> | <p>1B02: Laminar burning velocities of premixed nitromethane / air flames: An experimental and kinetic modeling study <i>C. Mounaim-Rousselle, F. Halter, G. Dayma, P. Dagaut, P. Brequigny, T. Dubois</i></p> | <p>1C02: Unimolecular decomposition of formic and acetic acids: A shock tube / laser absorption study <i>A.E. Elwardany, E.F. Nasir, E. Es-sebbar, A. Farooq</i></p> | <p>1D02: Ignition in compositionally and thermally stratified <i>n</i>-heptane/air mixtures: A direct numerical simulation study <i>M. Talei, E.R. Hawkes</i></p> | <p>1E02: Development of temperature evaluation of pure Rotational Coherent Anti-Stokes Raman Scattering (RCARS) spectra influenced by spatial averaging effects <i>Y. Gao, T. Seeger, A. Leipertz</i></p> | <p>1F02: Experimental study on the coexistent dual slagging in biomass-fired furnaces: Alkali-induced slagging and silicate melt-induced slagging <i>Y. Niu, Y. Zhu, H. Tan, X. Wang, S. Hui, W. Du</i></p> | <p>1G02: Thermal structure of flame spread in partially premixed atmospheres and effects of fuel Lewis number <i>K. Yamamoto, S. Seo, K. Mori</i></p> | <p>1H02: Radiative intensity, NO emissions, and burnout for oxygen enriched biomass combustion <i>J. Thomock, D. Tovar, D.R. Tree, Y. Xue, R. Tsiava</i></p> |

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| 10:55 | 1A03: Local volumetric dilatation rate and scalar geometries in a premixed methane-air turbulent jet flame <i>L. Cifuentes, C. Dopazo, J. Martín, P. Domingo, L. Vervisch</i> | 1B03: On the accurate determination of burning velocities from spherically expanding flames experimental and numerical study of H ₂ /air flames <i>E. Varea, J. Beeckmann, H. Pitsch, Z. Chen, B. Renou</i> | 1C03: Ab initio and kinetic modeling studies of formic acid oxidation <i>P. Marshall, P. Glarborg</i> | 1D03: Direct numerical simulation of PRF70/air partially premixed combustion under IC engine conditions <i>F. Zhang, R. Yu, X.-S. Bai</i> | 1E03: Development of two-beam femtosecond / picosecond one-dimensional Rotational Coherent Anti-Stokes Raman Spectroscopy: Time-resolved probing of flame wall interactions <i>A. Bohlin, M. Mann, B.D. Patterson, A. Dreizler, C.J. Kliewer</i> | 1F03: Mechanism of chromium oxidation by alkali and alkaline earth metals during municipal solid waste incineration <i>H. Hu, Z. Xu, H. Liu, D. Chen, K. Li, A. Li, H. Yao</i> | 1G03: Temperature and CO ₂ fields of a downward spreading flame over thin cellulose: A comparison of experimental and computational results <i>W. Tran, C. Paolini, J.R. Villaraza, S. Bhattacharjee, S. Takahashi</i> | 1H03: Combustion of biomass in jet flames <i>R. Weber, Y. Poyraz, A.M. Beckmann, S. Brinker</i> |
| BREAK | | | | | | | | |
| | Turbulent Premixed and Edge Flames <i>Chairs:</i> <i>R.W. Dibble</i> <i>L. Vervisch</i> | Laminar Flame Speed II <i>Chairs:</i> <i>F. Egolfopoulos</i> <i>V. Giovangigli</i> | Oxygenated Fuels <i>Chairs:</i> <i>D.F. Davidson</i> <i>P. Glarborg</i> | Engine DNS Simulation <i>Chairs:</i> <i>O. Colin</i> <i>D.C. Haworth</i> | CARS, Endoscopes and Tracers <i>Chairs:</i> <i>M. Colket</i> <i>S. Kaiser</i> | Biomass and Municipal Waste <i>Chairs:</i> <i>A. Jasper</i> <i>P. Pepiot</i> | Flame Spread II <i>Chairs:</i> <i>C. Fernandez-Pello</i> <i>S.L. Olson</i> | Biomass and Coal Combustion <i>Chairs:</i> <i>M. Costa</i> <i>D. Zhang</i> |
| 11:45 | 1A04: Leading edge statistics of turbulent, lean, H ₂ -air flames <i>A. Amato, M.S. Day, R.K. Cheng, J.B. Bell, T.C. Lieuwen</i> | 1B04: The curvature Markstein length and the definition of flame displacement speed for stationary spherical flames <i>G.K. Giannakopoulos, M. Matalon, C.E. Frouzakis, A.G. Tomboulides</i> | 1C04: Experimental study of the kinetics of ethanol pyrolysis and oxidation behind reflected shock waves and in laminar flames <i>M. Bozkurt, D. Nativel, M. Aghsaei, M. Fikri, N. Chaumeix, C. Schulz</i> | 1D04: Modes of reaction front propagation in <i>n</i> -heptane/air mixture with temperature gradient <i>P. Dai, Z. Chen, S. Chen, Y. Ju</i> | 1E04: Application of the tracer combination TEA/acetone for multi-parameter laser-induced fluorescence measurements in IC engines with exhaust gas recirculation <i>S. Lind, J. Trost, L. Zigan, A. Leipertz, S. Will</i> | 1F04: Effect of MgCl ₂ loading on the evolution of reaction intermediates during cellulose fast pyrolysis at 325 °C <i>D. Liu, Y. Yu, Y. Long, H. Wu</i> | 1G04: Flame spread over electric wire with high thermal conductivity metal core at different inclinations <i>L. Hu, Y. Zhang, K. Yoshioka, H. Izumo, O. Fujita</i> | 1H04: Fluidized bed gasification of lignite char with CO ₂ and H ₂ O: A kinetic study <i>F. Scala</i> |
| 12:10 | 1A05: Edge flame structure in a turbulent lifted flame: A direct numerical simulation study <i>S. Karami, M. Talei, E.R. Hawkes, H. Yu</i> | 1B05: Experimental and modeling study of the effect of elevated pressure on lean high-hydrogen syngas flames <i>M. Goswami, J.G.H. van Griensven, R.J.M Bastiaans, A.A. Konnov, L.P.H. de Goeij</i> | 1C05: A shock tube study of CH ₃ OH + OH → products using OH laser absorption <i>L.T. Zaczek, K.-Y. Lam, D.F. Davidson, R.K. Hanson</i> | 1D05: A LES methodology based on reduced schemes to compute knocking in internal combustion engines <i>A. Misdariis, O. Vermorel, T. Poinsot</i> | 1E05: Three-dimensional flame measurements using fiber-based endoscopes <i>M.W. Kang, X. Li, L. Ma</i> | 1F05: Carbonate formation during lignin pyrolysis under CO ₂ and its effect on char gasification <i>H. Watanabe, K. Shimomura, K. Okazaki</i> | 1G05: Upward flame spread in large enclosures: Flame growth and pressure rise <i>S.L. Olson, S.A. Gokoglu, D.L. Urban, G.A. Ruff, P.V. Ferkul</i> | 1H05: Measurement of particulate matter and trace elements from a coal-fired power plant with a novel electrostatic precipitator <i>C. Wang, X. Liu, D. Li, J. Si, B. Zhao, M. Xu</i> |

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|-------|--|---|---|--|--|--|--|--|
| 12:35 | 1A06: Heat release imaging in turbulent premixed methane-air flames close to blow-off <i>J. Kariuki, A. Dowlut, R. Yuan, R. Balachandran, E. Mastorakos</i> | 1B06: Effect of dilution gas on burning velocity of hydrogen-premixed meso-scale spherical laminar flames <i>M. Nakahara, F. Abe, K. Tokunaga, A. Ishihara</i> | 1C06: Adventures on the C ₃ H ₅ O potential energy surface: OH + propyne, OH + allene and related reactions <i>J. Zádor, J.A. Miller</i> | 1D06: Combustion regime classification of HCCI/PCCI combustion using Lagrangian fluid particle tracking <i>N. Fukushima, M. Katayama, Y. Naka, T. Oobayashi, M. Shimura, Y. Nada, M. Tanahashi, T. Miyauchi</i> | 1E06: Endoscopic temperature imaging in a four-cylinder IC engine via two-color toluene fluorescence <i>C. Gessenhardt, C. Schulz, S.A. Kaiser</i> | 1F06: Study on one-dimensional steady combustion of highly densified biomass briquette (Bio-coke) in air flow <i>T. Nakahara, Y. Hui, H. Ito, O. Fujita</i> | 1G06: Upslope fire spread through porous forest fuel beds: The role of convection cooling <i>N. Liu, J. Wu, L. Zhang, Z. Deng, K. Sato</i> | 1H06: LES of swirl-stabilised pulverised coal combustion in IFRF furnace No.1 <i>G. Olenik, O.T. Stein, A. Kronenburg</i> |
| LUNCH | | | | | | | | |
| | Invited Topical Review <i>Chairs:</i> <i>S.B. Pope</i> <i>M. Smooke</i> | Turbulent Combustion Models and Validation <i>Chairs:</i> <i>J.A. Sutton</i> <i>D. Veynante</i> | Novel Fuels <i>Chairs:</i> <i>M. Olzmann</i> <i>X. You</i> | Ignition and Autoignition in all Conditions <i>Chairs:</i> <i>H.G. Im</i> <i>M. Musculus</i> | Diagnostics Advanced Techniques <i>Chairs:</i> <i>R.P. Lucht</i> <i>M.W. Renfro</i> | Coal and Oxyfuel Combustion <i>Chairs:</i> <i>B.S. Haynes</i> <i>R.E. Mitchell</i> | Fire Research <i>Chairs:</i> <i>N. Liu</i> <i>G. Rein</i> | CLC & Fluidized <i>Chairs:</i> <i>D. Che</i> <i>B.B. Dally</i> |
| 14:15 | 1A07/08: Multicomponent transport in laminar flames <i>Vincent Giovangigli</i> | 1B07: Large Eddy Simulation of premixed turbulent combustion using approximate deconvolution and explicit flame filtering <i>P. Domingo, L. Vervisch</i> | 1C07: Unimolecular decomposition of tetrahydrofuran: Carbene vs. Diradical pathways <i>M. Verdicchio, B. Sirjean, L.S. Tran, P.-A. Glaude, F. Battin-Leclerc</i> | 1D07: Ignition delay time measurements behind reflected shock-waves for a representative coal-derived syngas with and without NH ₃ and H ₂ S impurities <i>O. Mathieu, J.W. Hargis, A. Camou, C. Mulvihill, E.L. Petersen</i> | 1E07: Simultaneous planar and volume cross-LIF imaging to identify out-of-plane motion <i>S. Meares, V.N. Prasad, M. Juddoo, K.H. Luo, A.R. Masri</i> | 1F07: A sophisticated model to predict ash inhibition during combustion of pulverized char particles <i>Y. Niu, C.R. Shaddix</i> | 1G07: A study on burning of crude oil in ice cavities <i>H.F. Farahani, X. Shi, A. Simeoni, A.S. Rangwala</i> | 1H07: Magnetite loaded carbon fine particles as low-cost CO ₂ adsorbent in a sound assisted fluidized bed <i>M. Alfé, P. Ammendola, V. Gargiulo, F. Raganati, R. Chirone</i> |
| 14:40 | | 1B08: Filtered density function simulation of a realistic swirled combustor <i>N. Ansari, P.A. Strakey, G.M. Goldin, P. Givi</i> | 1C08: Effect of furans on particle formation in diffusion flames: An experimental and modelling study <i>M. Sirignano, M. Conturso, A. D'Anna</i> | 1D08: A shock tube study of the autoignition characteristics of RP-3 jet fuel <i>C. Zhang, B. Li, F. Rao, P. Li, X. Li</i> | 1E08: Interference free spontaneous Raman spectroscopy for measurements in rich hydrocarbon flames <i>G. Magnotti, D. Geyer, R.S. Barlow</i> | 1F08: Flamelet model for pulverized coal combustion <i>J. Watanabe, K. Yamamoto</i> | 1G08: Chemical characterization of particle emissions from controlled burns of biomass fuels using a high resolution time-of-flight aerosol mass spectrometer <i>L. Qi, D. Cocker III, S. Hosseini, H. Jung, W. Miller, D. Weise, Y. Huang, Z. Zhou</i> | 1H08: Modelling rates of gasification of a char particle in chemical looping combustion <i>M.A. Saucedo, J.S. Dennis, S.A. Scott</i> |

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| | Unsteady and Turbulent Flames <i>Chairs:</i> S.B. Pope M. Smooke | Turbulent Combustion Models and Validation <i>Chairs:</i> J.A. Sutton D. Veynante | Novel Fuels <i>Chairs:</i> M. Olzmann X. You | Ignition and Autoignition in all Conditions <i>Chairs:</i> H.G. Im M. Musculus | Diagnostics Advanced Techniques <i>Chairs:</i> R.P. Lucht M.W. Renfro | Coal and Oxyfuel Combustion <i>Chairs:</i> B.S. Haynes R.E. Mitchell | Fire Research <i>Chairs:</i> N. Liu G. Rein | CLC & Fluidized <i>Chairs:</i> D. Che B.B. Dally |
| 15:05 | 1A09: Heat-loss-induced self-excitation in laminar lifted coflow-jet flames <i>W.J. Lee, J. Park, O.B. Kwon, J.H. Yoon, S.I. Keel</i> | 1B09: Favre- and Reynolds-averaged velocity measurements: Interpreting PIV and LDA measurements in combustion <i>M.M. Kamal, S. Balusamy, R. Zhou, S. Hochgreb</i> | 1C09: Influence of temperature and resonance-stabilization on the ortho-effect in cymene oxidation <i>B. Rotavera, A.M. Scheer, H.W. Huang, D.L. Osborn, C.A. Taatjes</i> | 1D09: Ignition characteristics of a bio-derived class of saturated and unsaturated furans for engine applications <i>A. Sudholt, L. Cai, J. Heyne, F.M. Haas, H. Pitsch, F.L. Dryer</i> | 1E09: Formaldehyde fluorescence as a marker for scalar dissipation through local extinction <i>K.R. Gosselin, W.F. Carnell Jr., M.W. Renfro</i> | 1F09: Relationship between pyrolysis and organic aerosol emission during coal combustion <i>X. Wang, E. Cotter, K.N. Iyer, J. Fang, B.J. Williams, P. Biswas</i> | 1G09: Ignition of cellulose fuel beds by hot metal particles <i>J.L. Urban, C.D. Zak, C. Fernandez-Pello</i> | 1H09: Synergetic effects of a mixture of iron ore and copper ore as oxygen carriers in chemical-looping combustion <i>W. Yang, H. Zhao, K. Wang, C. Zheng</i> |
| 15:30 | 1A10: Low temperature oscillations of DME combustion in a jet-stirred reactor <i>K.-D. Stoehr, J. Beeckmann, N. Peters</i> | 1B10: Three-dimensional direct numerical simulation study of conditioned moments in turbulent reacting flows <i>R. Yu, A.N. Lipatnikov, X.-S. Bai</i> | 1C10: Experimental and computational study of the initial decomposition of gamma-valerolactone <i>R. de Bruycker, H.-H. Carstensen, J.M. Simmie, K.M. van Geem, G.B. Marin</i> | 1D10: Computational study of the pressure dependence of sequential auto-ignition for partial fuel stratification with gasoline <i>B.M. Wolk, J.-Y. Chen</i> | 1E10: Advancements in Rayleigh scattering thermometry by means of structured illumination <i>E. Kristensson, A. Ehn, J. Bood, M. Aldén</i> | 1F10: Ash aerosol formation from oxy-coal combustion and its relation to ash deposit chemistry <i>Z. Zhan, A. Fry, Y. Zhang, J.O.L. Wendt</i> | 1G10: Quantitative infrared imaging of impinging turbulent buoyant diffusion flames <i>A.S. Newale, B.A. Rankin, H.U. Lalit, J.P. Gore, R.J. McDermott</i> | 1H10: Prediction of oxy-coal flame stand-off using high-fidelity thermochemical models and the one-dimensional turbulence model <i>B. Goshayesi, J.C. Sutherland</i> |
| <p>BREAK</p> <p>REMINDER: Plan on attending the Member Meeting at 17:45 in Ballroom B Learn what has happened since 2012 and share your ideas for the future</p> <p>Available everyday: Work-in-Progress Posters available on Pacific Level Exhibitors available on Pacific Level</p> <p>Young Researcher Mixer at 18:00 Jillian's Sports Bar 175 Fourth Street Opportunity for students to network with their peers</p> | | | | | | | | |

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| | Unsteady and Turbulent Flames <i>Chairs:</i> <i>S.B. Pope</i> <i>M. Smooke</i> | Laminar Flame Speed IV <i>Chairs:</i> <i>L.P.H. de Goey</i> <i>H. Kobayashi</i> | Rates Coefficients/ Theory <i>Chairs:</i> <i>O. Welz</i> <i>J.A. Miller</i> | Ignition and Autoignition in All Conditions <i>Chairs:</i> <i>H.G. Im</i> <i>M. Musculus</i> | PIV/PLIF <i>Chairs:</i> <i>F. Beyrau</i> <i>J. Frank</i> | Coal and Oxyfuel Combustion <i>Chairs:</i> <i>B.S. Haynes</i> <i>R.E. Mitchell</i> | Fire Research <i>Chairs:</i> <i>N. Liu</i> <i>G. Rein</i> | |
| 16:25 | 1A11: Experimental investigation of Darrieus-Landau instability effects on turbulent premixed flames <i>G. Troiani, F. Creta, M. Matalon</i> | 1B11: Experimental and kinetic studies of acetylene flames at elevated pressures <i>X. Shen, X. Yang, J. Santner, J. Sun, Y. Ju</i> | 1C11: Kinetic studies of the reaction of atomic sulfur with acetylene <i>S. Ayling, Y. Gao, P. Marshall</i> | 1D11: Autoignition behavior of synthetic alternative jet fuels: An examination of chemical composition effects on ignition delays at low to intermediate temperatures <i>D.J. Valco, G. Gentz, C. Allen, M. Colket, T. Edwards, S. Gowdagiri, M.A. Oehlschlaeger, E. Toulson, T. Lee</i> | 1E11: Investigation of flame propagation in a partially premixed jet by high-speed-stereo-PIV and acetone-PLIF <i>J. Weinkauff, P. Trunk, J.H. Frank, M.J. Dunn, A. Dreizler, B. Böhm</i> | 1F11: Accuracy of the single-film model in the prediction of coal char conversion rates under oxy-fuel and conventional combustion conditions <i>C. Gonzalo-Tirado, S. Jiménez</i> | 1G11: An investigation of the detailed flame shape and flame length under the ceiling of channel <i>Z. Gao, J. Ji, H. Wan, J. Sun</i> | |
| 16:50 | 1A12: Performance of conditional source-term estimation model for LES of turbulent premixed flames in thin reaction zones regime <i>N. Shahbazian, M.M. Salehi, C.P.T. Groth, Ö.L. Gülder, W.K. Bushe</i> | 1B12: Influence of the reactant temperature on particle entrained laminar methane – air premixed flames <i>M. Lee, S. Ranganathan, A.S. Rangwala</i> | 1C12: Pressure-dependent branching in the reaction of $^1\text{CH}_2$ with C_2H_4 and other reactions on the C_3H_6 potential energy surface <i>L. Ye, Y. Georgievskii, S.J. Klippenstein</i> | 1D12: The autoignition of Liquefied Petroleum Gas (LPG) in spark-ignition engines <i>K.J. Morganti, M.J. Brear, G. da Silva, Y. Yang, F.L. Dryer</i> | 1E12: 3kHz PIV / OH-PLIF measurements in a gas turbine combustor at elevated pressure <i>I.G. Boxx, C. Slabaugh, P. Kutne, R.P. Lucht, W. Meier</i> | 1F12: Effect of minerals on surface morphologies and competitive reactions during char gasification in mixtures of O_2 and CO_2 <i>H. Watanabe, K. Okazaki</i> | 1G12: Merging behavior of facade flames ejected from two windows of an under-ventilated compartment fire <i>K. Lu, L. Hu, M.A. Delichatsios, F. Tang, Z. Qiu, L. He</i> | |
| 17:15 | 1A13: Conditional moment closure modelling for HCCI with temperature inhomogeneities <i>F. Salehia, M. Talei, E.R. Hawkes, C. S. Yoo, T. Lucchini, G. D'Errico, S. Kook</i> | 1B13: Experimental and modeling studies of the acetone addition in $\text{H}_2/\text{O}_2/\text{Ar}$ flames at low pressure <i>V. Dias, J. Vandooren, H. Jeanmart</i> | 1C13: “Third-body” collision efficiencies for combustion modeling: Hydrocarbons in atomic and diatomic baths <i>A.W. Jasper, C.M. Oana, J.A. Miller</i> | 1D13: Development of a skeletal oxidation mechanism for biodiesel surrogate <i>Y. Chang, M. Jia, Y. Li, Y. Zhang, M. Xie, H. Wang, R.D. Reitz</i> | 1E13: Investigation on rapid consumption of fine scale unburned mixture islands in turbulent flame via 10 kHz simultaneous CH-OH PLIF and SPIV <i>A. Johchi, Y. Naka, M. Shimura, M. Tanahashi, T. Miyauchi</i> | 1F13: Study on N_2O reduction with synthetic coal char and high concentration CO during oxy-fuel combustion <i>C. Wang, Y. Du, D. Che</i> | 1G13: Experimental study on behavior of sidewall fires at varying height in a corridor <i>J. Ji, Y. Fu, K. Li, J. Sun</i> | |
| | 17:45: MEMBERS MEETING in Ballroom B | | | | 18:00: Young Researcher Mixer at Jillian’s Sport Bar | | | |

TUESDAY, 5 AUGUST 2014

PLENARY LECTURE–8:30 am

Advanced laser diagnostics for an improved understanding of flame wall interactions *Andreas Dreizler and B. Böhm*

Session Chairs: M. Aldén and S.-H. Chung
(Ballrooms on Street Level)

BREAK

WiC Coffee Break –Location will be announced

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| | <p>Turbulent Premixed Flame Structure <i>Chairs:</i> <i>B.R. Coriton</i> <i>Ö.L. Gülder</i></p> | <p>Laminar Premixed and Diffusion Flames <i>Chairs:</i> <i>M.B. Long</i> <i>M.J. Thomson</i></p> | <p>Small Esters and Aldehydes <i>Chairs:</i> <i>H.J. Curran</i> <i>A. Farooq</i></p> | <p>Acoustically Forced Flames <i>Chairs:</i> <i>R.W. Pitz</i> <i>T. Schuller</i></p> | <p>PAH and Soot Formation <i>Chairs:</i> <i>N. Hansen</i> <i>M.J. Wornat</i></p> | <p>Coal Combustion <i>Chairs:</i> <i>S. Niksa</i> <i>Q. Yao</i></p> | <p>Microgravity and Smouldering Combustion <i>Chairs:</i> <i>S. Bhattacharjee</i> <i>O. Fujita</i></p> | <p>Supersonic Combustion and Ignition <i>Chairs:</i> <i>U. Maas</i> <i>M.I. Radulescu</i></p> |
| 10:05 | <p>2A01: Life of flame particles embedded in premixed flames interacting with near isotropic turbulence <i>S. Chaudhuri</i></p> | <p>2B01: Dominant chemical source and reaction modes in lean H₂/air flames <i>M. Ayoobi, I. Schoegl</i></p> | <p>2C01: The role of prompt reactions in ethanol and methylformate low-pressure flames <i>N.J. Labbe, R. Sivaramakrishnan, S.J. Klippenstein</i></p> | <p>2D01: Nonlinear dynamics of a self-excited thermoacoustic system subjected to acoustic forcing <i>S. Balusamy, L.K.B. Li, Z. Han, M.P. Juniper, S. Hochgreb</i></p> | <p>2E01: PAH formation and soot morphology in flames of C₄ fuels <i>M. Schenk, N. Hansen, H. Vieker, A. Beyer, A. Götzhäuser, K. Kohse-Höinghaus</i></p> | <p>2F01: Comprehensive numerical modeling of ignition of coal dust layers in different configurations <i>A.K. Sahu, K.A. Joshi, V. Raghavan, A.S. Rangwala</i></p> | <p>2G01: Phenomenological model of soot production inside a non-buoyant laminar diffusion flame <i>G. Legros, J.L. Torero</i></p> | <p>2H01: Numerical estimation of thrust performance on rotational detonation engine in a hydrogen-oxygen mixture <i>N. Tsuboi, Y. Watanabe, T. Kojima, A.K. Hayashi</i></p> |
| 10:30 | <p>2A02: On the alignment of principal fluid-dynamic strain-rates with the 3D flamelet-normal in a premixed turbulent V-flame <i>T. Sponfeldner, F. Beyrau, I.G. Boxx, Y. Hardalupas, W. Meier, A.M.K.P. Taylor</i></p> | <p>2B02: Chemical interactions between 1,2,4-trimethylbenzene and <i>n</i>-decane in doped counterflow gaseous diffusion flames <i>F. Carbone, A. Gomez</i></p> | <p>2C02: A theoretical kinetics study of the reactions of methylbutanoate with hydrogen and hydroxyl radicals <i>L. Zhang, Q. Chen, P. Zhang</i></p> | <p>2D02: Wall-temperature effects on flame response to acoustic oscillations <i>D. Mejia, L. Selle, R. Bazile, T. Poinso</i></p> | <p>2E02: Flame structure of a low-pressure, laminar premixed and lightly sooting acetylene flame and the effect of ethanol addition <i>T. Bierkandt, T. Kasper, E. Akyildiz, A. Lucassen, P. Oßwald, M. Köhler, P. Hemberger</i></p> | <p>2F02: Interpreting coal conversion under elevated H₂ pressures with FLASHCHAIN and CBK <i>S. Niksa</i></p> | <p>2G02: Simplified model to predict the difference between flammability limits of a thin material in normal gravity and in microgravity environment <i>S. Takahashi, T. Ebisawa, S. Bhattacharjee, T. Ihara</i></p> | <p>2H02: Cavity ignition in supersonic flow by spark discharge and pulse detonation <i>T.M. Ombrello, C.D. Carter, C.-J. Tam, K.-Y. Hsu</i></p> |

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| 10:55 | 2A03: Influence of combustion on principal strain-rate transport in turbulent premixed flames <i>A.M. Steinberg, B.R. Coriton, J.H. Frank</i> | 2B03: Experimental and kinetic modeling investigation on laminar premixed benzene flames with various equivalence ratios <i>J. Yang, L. Zhao, W. Yuan, F. Qi, Y. Li</i> | 2C03: Kinetic studies of methyl acetate pyrolysis and oxidation in a flow reactor and a low-pressure flat flame using molecular-beam mass spectrometry <i>X. Yang, D. Felsmann, N. Kurimoto, J. Krüger, T. Wada, T. Tan, E.A. Carter, K. Kohse-Höinghaus, Y. Ju</i> | 2D03: Thermal versus acoustic response of velocity sensitive premixed flames <i>S. Bomberg, T. Emmert, W. Polifke</i> | 2E03: Dehydrogenation and growth of soot in premixed flames <i>C. Russo, A. Tregrossi, A. Ciajolo</i> | 2F03: Dynamic behavior of sodium release from pulverized coal combustion by phase-selective laser-induced breakdown spectroscopy <i>Y. Yuan, S. Li, Q. Yao</i> | 2G03: Microgravity flammability limits of ETFE insulated wires exposed to external radiation <i>A.F. Osorio, K. Mizutani, O. Fujita, C. Fernandez-Pello</i> | 2H03: Mixing-related low frequency oscillation of combustion in an ethylene-fueled supersonic combustor <i>Z.-G. Wang, M.-B. Sun, H.-B. Wang, J.-F. Yu, J.-H. Liang, F.-C. Zhuang</i> |
| BREAK | | | | | | | | |
| | Turbulent Premixed Flame Structure <i>Chairs: B.R. Coriton, Ö.L. Gülder</i> | Laminar Premixed and Diffusion Flames <i>Chairs: M.B. Long, M.J. Thomson</i> | Small Esters and Aldehydes <i>Chairs: H.J. Curran, A. Farooq</i> | Flame Dynamics <i>Chairs: M.P. Juniper, L. Selle</i> | PAH and Soot Formation <i>Chairs: N. Hansen, M.J. Wornat</i> | Catalytic Combustion <i>Chairs: J. Ellzey, Z.-Y. Tian</i> | Microgravity and Smouldering Combustion <i>Chairs: S. Bhattacharjee, O. Fujita</i> | Supersonic Combustion and Ignition <i>Chairs: U. Maas, M.I. Radulescu</i> |
| 11:35 | 2A04: Simultaneous multi-species and temperature visualization of premixed flames in the distributed reaction zone regime <i>B. Zhou, C. Brackmann, Z.S. Li, M. Aldén, X.-S. Bai</i> | 2B04: Experimental and kinetic modeling study of laminar coflow diffusion methane flames doped with 2-butanol <i>H. Jin, W. Yuan, Y. Wang, Y. Li, F. Qi, A. Cuoci, A. Frassoldati, T. Faravelli</i> | 2C04: Kinetics of premixed acetaldehyde + air flames <i>M. Christensen, M.T. Abebe, E.J.K. Nilsson, A.A. Konnov</i> | 2D04: The response of stratified swirling flames to acoustic forcing: Performance and limits to G-equation models <i>Z. Han, S. Hochgreb</i> | 2E04: Novel aspects in the pyrolysis and oxidation of 2,5-dimethylfuran <i>K. Alexandrino, Á. Millera, R. Bilbao, M.U. Alzueta</i> | 2F04: Direct synthesis of supported palladium catalysts for methane combustion by stagnation swirl flame <i>Y. Zong, S. Li, F. Niu, Q. Yao</i> | 2G04: Parametric study on the smoldering combustion of a thin solid in a narrow space <i>Y. Uchida, K. Kuwana, G. Kushida</i> | 2H04: Weak and strong ignition of hydrogen/oxygen mixtures in shock tube systems <i>K.P. Grogan, M. Ihme</i> |
| 12:00 | 2A05: Turbulence-chemistry interaction in lean premixed hydrogen combustion <i>A.J. Aspden, M.S. Day, J.B. Bell</i> | 2B05: Fuel density effect on near nozzle flow field in small laminar coflow diffusion flames <i>Y. Xiong, M.S. Cha, S.-H. Chung</i> | 2C05: High temperature measurements for the rate constants of C ₁ -C ₄ aldehydes with OH in a shock tube <i>S. Wang, D.F. Davidson, R.K. Hanson</i> | 2D05: Large Eddy Simulations of multiple transcritical coaxial flames submitted to a high-frequency transverse acoustic modulation <i>L. Hakim, A. Ruiz, T. Schmitt, M. Boileau, G. Staffelbach, S. Ducruix, B. Cuenot, S. Candel</i> | 2E05: Influence of substituted furans on the formation of polycyclic aromatic hydrocarbons in flames <i>L.S. Tran, B. Sirjean, P.-A. Glaude, K. Kohse-Höinghaus, F. Battin-Leclerc</i> | 2F05: Hetero-homogeneous combustion of syngas mixtures over platinum at fuel-rich stoichiometries and pressures up to 14 bar <i>M. Schultze, J. Mantzaras, F. Grygier, R. Bombach</i> | 2G05: Computational smouldering combustion: Predicting the roles of moisture and inert contents in peat wildfires <i>X. Huang, G. Rein, H. Chen</i> | 2H05: Ignition by transient hot turbulent jets: An investigation of ignition mechanisms by means of a PDF/REDIM method <i>A. Ghorbani, G. Steinhilber, D. Markus, U. Maas</i> |

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| 12:25 | 2A06: Structure of a high Karlovitz n -C ₇ H ₁₆ premixed turbulent flame <i>B. Savard, B.D. Bobbitt, G. Blanquart</i> | 2B06: A computational and experimental study of coflow laminar methane/air diffusion flames: Effects of fuel dilution, inlet velocity, and gravity <i>S. Cao, B. Ma, B.A.V. Bennett, D. Giassi, D.P. Stocker, F. Takahashi, M.B. Long, M.D. Smooke</i> | 2C06: Kinetics of oxidation of cyclohexanone in a jet-stirred reactor: Experimental and modeling <i>Z. Serinyel, C. Togbé, A. Zaras, G. Dayma, P. Dagaut</i> | 2D06: A reduced-order model for the onset of combustion instability: Physical mechanisms for intermittency and precursors <i>V. Nair, R. Sujith</i> | 2E06: Experimental and kinetic modeling study of premixed <i>o</i> -xylene flames <i>L. Zhao, Z. Cheng, L. Ye, F. Zhang, L. Zhang, F. Qi, Y. Li</i> | 2F06: Characterization of the NO-soot combustion process over the La _{0.8} Ce _{0.2} Mn _{0.7} Bi _{0.3} O ₃ catalyst <i>F. Bin, C. Song, G. Lv, X. Li, X. Cao, J. Song, S. Wu</i> | 2G06: Experimental study on merged flame characteristics from multifire sources with wood cribs <i>W. Weng, D. Kamikawa, Y. Hasemi</i> | 2H06: Numerical study on the spontaneous-ignition features of high-pressure hydrogen released through a tube with burst conditions <i>H.J. Lee, S.D. Kim, S.H. Kim, J.H. Park, I.-S. Jeung</i> |
| LUNCH | | | | | | | | |
| | Invited Topical Review <i>Chairs: M. Linne, J. Shinjo</i> | Laminar Extinction and Edge Flame <i>Chairs: M. Matalon, I. Schoegl</i> | Alkenes/Alkanes <i>Chairs: F. Mauß, C. Westbrook</i> | Thermoacoustics of Annular Combustor <i>Chairs: J. Driscoll, L. Selle</i> | Diffusion/Soot <i>Chairs: A. D'Anna, S. Dworkin</i> | Combustion Synthesis and Catalytic Processes <i>Chairs: M. Mansour, J. Mantzaras</i> | Fire Suppressant <i>Chairs: E.L. Petersen, F. Takahashi</i> | Explosions <i>Chairs: A.R. Kasimov, I.-S. Jeung</i> |
| 14:15 | 2A07/08: The role of separation of scales in the description of spray combustion <i>Antonio Sanchez, J. Urzay, A. Liñán</i> | 2B07: Experimental investigations of the influence of pressure on critical extinction conditions of laminar nonpremixed flames burning condensed hydrocarbon fuels, jet fuels, and surrogates <i>R. Gehmlich, A. Kuo, K. Seshadri</i> | 2C07: Constrained reaction volume shock tube study of <i>n</i> -heptane oxidation: Ignition delay times and time-histories of multiple species and temperature <i>M.F. Campbell, S. Wang, C.S. Goldenstein, R.M. Spearrin, A.M. Tulgestke, L.T. Zaczek, D.F. Davidson, R.K. Hanson</i> | 2D07: Sensitivity of LES-based flame transfer functions for turbulent swirled flames and impact on the stability of azimuthal modes <i>M. Bauerheim, G. Staffelbach, N.A. Worth, J.R. Dawson, L.Y.M. Gicquel, T. Poinsot</i> | 2E07: Modulation of sooting tendency by magnetic effects <i>A. Jocher, H. Pitsch, T. Gomez, G. Legros</i> | 2F07: Doping mechanism of vanadia/titania nanoparticles in flame synthesis by a novel optical spectroscopy technique <i>Y. Ren, Y. Zhang, S. Li, C.K. Law</i> | 2G07: Experimental study of the effect of CF ₃ I addition on the ignition delay time and laminar flame speed of methane, ethylene, and propane <i>O. Mathieu, J. Goulier, F. Gourmel, M.S. Mannan, N. Chaumeix, E.L. Petersen</i> | 2H07: Experimental study of spherical-flame acceleration mechanisms in large-scale propane-air flames <i>C.R. Bauwens, J.M. Berghthorson, S.B. Dorofeev</i> |

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| 14:40 | <p>Spray and Turbulent Flames Chairs: M. Linne J. Shinjo</p> | <p>2B08: Structure and extinction of water-laden methane/air nonpremixed flames R.E. Padilla, V. Ricchiutti, S. Karnani, D. Dunn-Rankin, T. Pham</p> | <p>2C08: Shock tube measurements of the rate constants for seven large alkanes + OH J. Badra, A.E. Elwardany, A. Farooq</p> | <p>2D08: The effect of baffles on self-excited azimuthal modes in an annular combustor N.A. Worth, J.R. Dawson</p> | <p>2E08: An experimental and computational study on soot formation in a coflow jet flame under microgravity and normal gravity B. Ma, S. Cao, D. Giassi, D.P. Stocker, F. Takahashi, B.A.V. Bennett, M.D. Smooke, M.B. Long</p> | <p>2F08: Curved wall-jet burner for synthesizing titania and silica nanoparticles M.A. Ismail, N.K. Memon, M.S. Mansour, D.H. Anjum, S.-H. Chung</p> | <p>2G08: Combustion inhibition and enhancement of cup-burner flames by CF₃Br, C₂HF₅, C₂HF₃Cl₂, and C₃H₂F₃Br F. Takahashi, V.R. Katta, G.T. Linteris, V.I. Babushok</p> | <p>2H08: Numerical simulation of dilute and dense layered coal-dust explosions R. Houim, E.S. Oran</p> |
| 15:05 | <p>2A09: LES of a methanol spray flame with a stochastic sub-grid model W.P. Jones, A.J. Marquis, D. Noh</p> | <p>2B09: Extinction limits and flame structures of 1-butanol and diethyl ether non-premixed flames J. Hashimoto, K. Tanoue, N. Taide, Y. Nouno</p> | <p>2C09: Influence of the double bond position on the oxidation of decene isomers at high pressures and temperatures A. Fridlyand, S.S. Goldsborough, K. Brezinsky, S.S. Merchant, W.H. Green</p> | <p>2D09: A new pattern of instability observed in an annular combustor: The slanted mode J.-F. Bourgoin, D. Durox, J.P. Moeck, T. Schuller, S. Candel</p> | <p>2E09: Challenges and artifacts of probing high-pressure counterflow laminar diffusion flames L. Figura, F. Carbone, A. Gomez</p> | <p>2F09: Volumetric flame synthesis of one-dimensional molybdenum oxide nanostructures S. Srivastava, W. Merchan-Merchan, M. Desai, A.V. Saveliev</p> | <p>2G09: Effects of water sprays on the flame propagation in hydrogen / air / steam mixtures H. Cheikhkravat, J. Goulier, A. Bentaib, N. Meynet, N. Chaumeix, C.-E. Paillard</p> | <p>2H09: Self-similar propagation of expanding spherical flames in large scale gas explosions W.K. Kim, T. Mogi, K. Kuwana, R. Dobashi</p> |
| 15:30 | <p>2A10: Influence of spray/combustion interactions on auto-ignition of methanol spray flames C. Heye, V. Raman, A.R. Masri</p> | <p>2B10: Extinction studies of non-premixed <i>iso</i>-Cetane and Decalin flames B. Li, Y. Zhang, H. Zhang, F.N. Egolfopoulos</p> | <p>2C10: Ignition of alkane-rich FACE gasoline fuels and their surrogate mixtures S.M. Sarathy, G. Kukkadapu, M. Mehl, W. Wang, T. Javed, S. Park, M.A. Oehlschlaeger, A. Farooq, W.J. Pitz, C.-J. Sung</p> | <p>2D10: A theoretical study of mean azimuthal flow and asymmetry effects on thermo-acoustic modes in annular combustors M. Bauerheim, M. Cazalens, T. Poinsot</p> | <p>2E10: Numerical study of the effects of pressure on soot formation in laminar coflow <i>n</i>-heptane/air diffusion flames between 1 to 10 atm J.-L. Consalvi, F. Liu</p> | <p>2F10: Mechanically activated combustion synthesis of molybdenum silicides and borosilicides for ultrahigh-temperature structural applications M.S. Alam, E. Shafirovich</p> | <p>2G10: Characterization of interactions between hot air plumes and water sprays for sprinkler protection X. Zhou</p> | <p>2H10: Time-resolved temperature measurements for inert and reactive particles in explosive atmospheres F. Beyrau, M.A. Hadjipanayis, R.P. Lindstedt</p> |
| BREAK | | | | | | | | |

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| | Spray and Turbulent Flames <i>Chairs:</i> <i>M. Linne</i> <i>J. Shinjo</i> | Laminar Extinction and Edge Flame <i>Chairs:</i> <i>M. Matalon</i> <i>I. Schoegl</i> | Branched Aromatics <i>Chairs:</i> <i>Y. Li</i> <i>R. Sivaramakrishnan</i> | Flame Dynamics <i>Chairs:</i> <i>J.R. Dawson</i> <i>D. Durox</i> | Soot Engines <i>Chairs:</i> <i>X. He</i> <i>S. Will</i> | Combustion Synthesis and Catalytic Processes <i>Chairs:</i> <i>M. Mansour</i> <i>J. Mantzaras</i> | | Explosions <i>Chairs:</i> <i>I.-S. Jeung</i> <i>A.R. Kasimov</i> |
| 16:15 | 2A11: Correlations of high-pressure lean methane and syngas turbulent burning velocities: Effects of turbulent Reynolds, Damköhler, and Karlovitz numbers <i>S.S. Shy, C.C. Liu, J.Y. Lin, L.L. Chen, A.N. Lipatnikov, S.I. Yang</i> | 2B11: A flow pattern that sustains an edge flame in a straining mixing layer with finite thermal expansion <i>K.-P. Liao, M. Matalon, C. Pantano</i> | 2C11: The oxidation of large alkylbenzenes: An experimental and modeling study <i>F. Battin-Leclerc, V. Warth, R. Bounaceur, B. Husson, O. Herbinet, P.-A. Glaude</i> | 2D11: Oscillating flames in open tubes <i>J. Yang, F.M.S. Mossa, H.W. Huang, Q. Wang, R. Woolley, Y. Zhang</i> | 2E11: A study of the effects of the ester moiety on soot formation and species concentrations in a laminar coflow diffusion flame of a surrogate for B100 Biodiesel <i>M. Kholghy, J. Weingarten, M.J. Thomson</i> | 2F11: Kinetics of catalytic oxidation of ethylene over palladium oxide <i>Y.X. Xin, B. Yang, H. Wang, S.L. Anderson, C.K. Law</i> | | 2H11: Is the detonation "dead zone" really dead? <i>L.G. Hill</i> |
| 16:40 | 2A12: Propagation speeds of expanding turbulent flames of C ₄ to C ₈ n-alkanes at elevated pressures: Experimental determination, fuel similarity, and stretch-affected local extinction <i>F. Wu, A. Saha, S. Chaudhuri, C.K. Law</i> | 2B12: Tribraichial, tetrabraichial and pentabraichial structures in dimethyl ether edge-flames at NTC conditions <i>A. Krisman, E.R. Hawkes, M. Talei, A. Bhagatwala, J.H. Chen</i> | 2C12: Investigation on primary decomposition of ethylcyclohexane at atmospheric pyrolysis <i>Z. Wang, H. Bian, Y. Wang, L. Zhang, Y. Li, F. Zhang, F. Qi</i> | 2D12: Coupling of flame geometry and combustion instabilities based on Kilohertz formaldehyde PLIF measurements <i>P.M. Allison, Y. Chen, M. Ihme, J.F. Driscoll</i> | 2E12: A comparative study of the physical properties of in-cylinder soot generated from the combustion of n-heptane and toluene / n-heptane in a diesel engine <i>J. Wei, C. Song, G. Lv, J. Song, L. Wang, H. Pang</i> | 2F12: Low-temperature deep oxidation of olefins and DME over cobalt ferrite <i>Z.-Y. Tian, P.M. Kouotou, A.E. Kasmi, P.H.T. Ngamou, K. Kohse-Höinghaus, H. Vieker, A. Beyer, A. Götzhäuser</i> | | 2H12: An analytic method for two-dimensional wall motion and product isentrope from the detonation cylinder test <i>S.I. Jackson</i> |
| 17:05 | 2A13: On flame-turbulence interaction in constant-pressure expanding flames <i>S. Chaudhuri, A. Saha, C.K. Law</i> | 2B13: Stabilization and structure of n-heptane tribraichial flames in axisymmetric laminar jets <i>F. Bisetti, S.M. Sarathy, M. Toma, S.-H. Chung</i> | 2C13: Influence of experimental observations on n-propylbenzene kinetic parameter estimates <i>S. Mosbach, M. Kraft</i> | 2D13: Investigation into the cause of high multi-mode combustion instability of H ₂ /CO/CH ₄ syngas in a partially-premixed gas turbine model combustor <i>M.C. Lee, J.H. Yoon, S. Joo, J. Kim, J. Hwang, Y. Yoon</i> | 2E13: Effect of a homogeneous combustion catalyst on the nanostructure and oxidative properties of soot from biodiesel combustion in a compression ignition engine <i>Y. Ma, M. Zhu, Z. Zhang, D. Zhang</i> | 2F13: Formation of N ₂ and N ₂ O in industrial combustion of ammonia over platinum <i>M. Warner, B.S. Haynes</i> | | 2H13: Computational analysis of re-ignition and re-initiation mechanisms of quenched detonation waves behind a backward facing step <i>Y. Lv, M. Ihme</i> |
| | 17:30 COMBUSTION INSTITUTE SECTION CHAIR MEETING in Ballroom B DEPART FOR CONCERT at SFJAZZ (Bus pickup starts at 19:00) | | | | | | | |

WEDNESDAY, 6 August 2014

PLENARY LECTURE–8:30 am

Combustion noise *Ann P. Dowling and Y. Mahmoudi*

Session Chairs: W. Polifke and T. Poinso

(Ballrooms on Street Level)

BREAK

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| | Turbulent Flame Structure <i>Chairs:</i> <i>F. Bisetti</i> <i>A.R. Masri</i> | Laminar Flames and Alcohols <i>Chairs:</i> <i>T. Kasper</i> <i>R.P. Lindstedt</i> | Low Temperature Kinetics <i>Chairs:</i> <i>F. Battin-Leclerc</i> <i>J. Zádor</i> | Swirled Combustion <i>Chairs:</i> <i>C. Berat</i> <i>M. Stöhr</i> | Soot Kinetics and Diagnostics <i>Chairs:</i> <i>H.A. Michelsen</i> <i>P.E. Bengtsson</i> | Spray Flames <i>Chairs:</i> <i>R. Balachandran</i> <i>B. Cuenot</i> | Electric Field and Plasma Assisted Combustion <i>Chairs:</i> <i>D. Dunn-Rankin</i> <i>S.H. Won</i> | |
| 10:05 | 3A01: Spatio-temporal characteristics of temperature fluctuations in turbulent non-premixed jet flames <i>T.A. McManus,</i> <i>M.J. Papageorge,</i> <i>F. Fuest, J.A. Sutton</i> | 3B01: Combustion chemistry of alcohols: Experimental and modeled structure of a premixed 2-methylbutanol flame <i>A. Lucassen,</i> <i>S. Park, N. Hansen,</i> <i>S.M. Sarathy</i> | 3C01: Towards a quantitative understanding of the role of non-Boltzmann reactant distributions in low-temperature oxidation <i>M.P. Burke,</i> <i>C.F. Goldsmith,</i> <i>Y. Georgievskii,</i> <i>S.J. Klippenstein</i> | 3D01: Key parameters governing the precessing vortex core in reacting flows: An experimental and analytical study <i>C.O. Paschereit,</i> <i>K. Oberleithner,</i> <i>S. Terhaar</i> | 3E01: Kinetics of nascent soot oxidation by molecular oxygen in a flow reactor <i>J. Camacho,</i> <i>H. Wang</i> | 3F01: On the dynamics of spray flames in turbulent flows <i>Y. Dagan, E. Arad,</i> <i>Y. Tambour</i> | 3G01: Effect of an external electric field on the propagation velocity of premixed flames <i>M. Sanchez-Sanz,</i> <i>D.C. Murphy,</i> <i>C. Fernandez-Pello</i> | |
| 10:30 | 3A02: First and second order Lagrangian conditional moment closure method in turbulent nonpremixed flames <i>K. Han, K.Y. Huh</i> | 3B02: Understanding the reaction pathways in premixed flames fueled by blends of 1, 3-Butadiene and n-Butanol <i>N. Hansen,</i> <i>M. Braun-Unkloff,</i> <i>T. Kathrotia,</i> <i>A. Lucassen, B. Yang</i> | 3C02: Probing the low-temperature chain-branching mechanism for n-butane autoignition chemistry via time-resolved measurements of ketohydroperoxide formation in photolytically initiated n-C ₄ H ₁₀ oxidation <i>A.J. Eskola, O. Welz,</i> <i>J. Zádor, I.O. Antonov,</i> <i>L. Sheps, J.D. Savee,</i> <i>D.L. Osborn,</i> <i>C.A. Taatjes</i> | 3D02: Transient effects of fuel-air mixing in a partially-premixed turbulent swirl flame <i>M. Stöhr, C.M. Arndt,</i> <i>W. Meier</i> | 3E02: Detailed modelling of soot oxidation by O ₂ and OH in laminar diffusion flames <i>A. Khosousi,</i> <i>S.B. Dworkin</i> | 3F02: Reaction zone visualisation in swirling spray n-heptane flames <i>R. Yuan, J. Kariuki,</i> <i>A. Dowlut,</i> <i>R. Balachandran,</i> <i>E. Mastorakos</i> | 3G02: Electromagnetically induced vortex in laminar coflow diffusion flames by applying AC electric field <i>Y. Xiong, M.S. Cha,</i> <i>S.-H. Chung</i> | |

| Room | Ballroom A | Ballroom B | Ballroom C | Bayview A | Seacliff A & B | Seacliff C & D | Pacific L & M | Pacific N & O |
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| 10:55 | 3A03: A tabulated chemistry CMC model applied to a lifted methane-air jet flame <i>O. Colin, J.-B. Michel</i> | 3B03: A comparative study of <i>n</i> -propanol, propanal, acetone, and propane in laminar flames <i>J. Gong, S. Zhang, Y. Cheng, Z. Huang</i> | 3C03: Quantitative measurements of HO ₂ / H ₂ O ₂ and intermediate species in low and intermediate temperature oxidation of dimethyl ether <i>N. Kurimoto, B. Brumfield, X. Yang, T. Wada, P. Diévert, G. Wysocki, Y. Ju</i> | 3D03: Reacting flow in an industrial gas turbine combustor: LES and experimental analysis <i>G. Bulat, E. Fedina, C. Fureby, W. Meier, U. Stopper</i> | 3E03: Rate coefficients and product branching ratios for the oxidation of phenyl and naphthyl radicals: A theoretical RRKM-ME study <i>V.V. Kislov, R.I. Singh, D.E. Edwards, A.M. Mebel, M. Frenklach</i> | 3F03: Analysis of segregation and bifurcation in turbulent spray flames: a 3D counterflow configuration <i>A. Vié, B. Franzelli, Y. Gao, T. Lu, H. Wang, M. Ihme</i> | 3G03: Influence of electric fields on premixed laminar flames: Visualization of perturbations and potential for suppression of thermoacoustic oscillations <i>J. Kuhl, G. Jovicic, L. Zigan, S. Will, A. Leipertz</i> | |

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| | Turbulent Flame Structure <i>Chairs:</i> <i>F. Bisetti</i> <i>A.R. Masri</i> | Laminar Flames and Alcohols <i>Chairs:</i> <i>T. Kasper</i> <i>R.P. Lindstedt</i> | Low Temperature Kinetics, Ignition <i>Chairs:</i> <i>F. Battin-Leclerc</i> <i>J. Zádor</i> | Swirled Combustion <i>Chairs:</i> <i>C. Berat</i> <i>M. Stöhr</i> | Soot Kinetics and Diagnostics <i>Chairs:</i> <i>H.A. Michelsen</i> <i>P.E. Bengtsson</i> | Spray Flames <i>Chairs:</i> <i>R. Balachandran</i> <i>B. Cuenot</i> | Electric Field and Plasma Assisted Combustion <i>Chairs:</i> <i>D. Dunn-Rankin</i> <i>S. H. Won</i> | |
|-------|---|--|---|---|---|---|--|--|
| 11:35 | 3A04: Large eddy simulation / conditional moment closure modeling of swirl-stabilized non-premixed flames with local extinction <i>H. Zhang, A. Garmory, D.E. Cavaliere, E. Mastorakos</i> | 3B04: A DNS study of self-accelerating cylindrical hydrogen-air flames with detailed chemistry <i>Y.X. Xin, C.S. Yoo, J.H. Chen, C.K. Law</i> | 3C04: Effect of non-thermal product energy distributions on ketohydroperoxide decomposition kinetics <i>C.F. Goldsmith, M.P. Burke, Y. Georgievskii, S.J. Klippenstein</i> | 3D04: Detection and prevention of blowout in a lean premixed gas-turbine model combustor using dynamical system theory <i>S. Domen, H. Gotoda, T. Kuriyama, Y. Okuno, S. Tachibana</i> | 3E04: Soot nanostructure evolution in premixed flames by High Resolution Electron Transmission Microscopy (HRTEM) <i>B. Apicella, P. Pré, M. Alfé, A. Ciajolo, V. Gargiulo, C. Russo, A. Tregrossi, D. Deldique, J.-N. Rouzaud</i> | 3F04: Droplet/ligament modulation of local small-scale turbulence and scalar mixing in a dense fuel spray <i>J. Shinjo, J. Xia, A. Umemura</i> | 3G04: Partial oxidation of methane in a temperature-controlled dielectric barrier discharge reactor <i>X. Zhang, M.S. Cha</i> | |

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| 12:00 | 3A05: Filtered tabulated chemistry for non-premixed flames <i>A. Coussement, T. Schmitt, B. Fiorina</i> | 3B05: Differential diffusion effects inclusion with flamelet generated manifolds for the modeling of stratified premixed cooled flames <i>A. Donini, R.J.M. Bastiaans, J.A. van Oijen, L.P.H. de Goey</i> | 3C05: An analytical approximation for low- and high-temperature autoignition for dimethyl ether-air mixtures <i>J. Beeckmann, L. Cai, A. Berens, N. Peters, H. Pitsch</i> | 3D05: Flame shape transition in a swirl stabilised liquid fueled burner <i>A. Renaud, S. Ducruix, P. Scouflaire, L. Zimmer</i> | 3E05: Morphology of nascent soot in ethylene flames <i>M. Schenk, S. Lieb, H. Vieker, A. Beyer, A. Götzhäuser, H. Wang, K. Kohse-Höinghaus</i> | 3F05: Evidence for supercritical mixing layers in the ECN spray A <i>Z. Falgout, M. Rahm, Z. Wang, M. Linne</i> | 3G05: An experimental investigation of oil gasification process by microwave induced non-equilibrium plasma combustion <i>T. Yamamoto, T. Tsuboi, Y. Iwama, R. Tanaka</i> | |
| 12:25 | 3A06: Numerical and experimental investigation of turbulent DME jet flames <i>A. Bhagatwala, T. Lu, H. Shen, J.A. Sutton, J.H. Chen</i> | 3B06: Direct numerical simulations of probe effects in low-pressure flame sampling <i>V. Gururajan, F.N. Egolfopoulos, K. Kohse-Höinghaus</i> | 3C06: Ignition delay times of diethyl ether measured in a high-pressure shock tube and a rapid compression machine <i>M. Werler, L.R. Cancino, R. Schiessl, U. Maas, C. Schulz, M. Fikri</i> | 3D06: Short- and long-term dynamic modes of turbulent swirling premixed flame in a cuboid combustor <i>K. Aokia, M. Shimura, S. Ogawa, N. Fukushima, Y. Naka, Y. Nada, M. Tanahashi, T. Miyauchi</i> | 3E06: Probing the smallest soot particles in low-sooting premixed flames using laser-induced incandescence <i>H. Bladh, N.-E. Olofsson, T. Mouton, J. Simonsson, X. Mercier, A. Faccinetto, P.-E. Bengtsson, P. Desgroux</i> | 3F06: Non-equilibrium gas-liquid interface dynamics in high-pressure liquid injection systems <i>R.N. Dahms, J.C. Oefelein</i> | 3G06: Plasma assisted combustor dynamics control <i>W.K. Kim, J. Snyder, J. Cohen</i> | |
| LUNCH | | | | | | | | |
| | Invited Topical Review <i>Chairs: J. Torero A. Trouvé</i> | Flames in Narrow Channels <i>Chairs: P.D. Ronney T. Yokomori</i> | Ether and Alcohol Kinetics <i>Chairs: A. Frassoldati S.M. Sarathy</i> | Swirl Combustion and Piston Engines <i>Chairs: J. Oefelein S. Richard</i> | Effects of PAH and Soot Formation <i>Chairs: M. Alzueta M. Frenklach</i> | Mild Combustion <i>Chairs: C. Devaud M. de Joannon</i> | Plasma Assisted Combustion I <i>Chairs: M.S. Cha T. Ombrello</i> | |
| 14:15 | 3A07/08: Solid combustion research in microgravity as a base of fire safety in space <i>Osamu Fujita</i> | 3B07: Effect of thermal expansion on flame propagation in channels with nonslip walls <i>B. Demirgok, D.M. Valiev, V. Akkerman</i> | 3C07: A computational study on the kinetics of unimolecular reactions of ethoxyethylperoxy radicals employing CTST and VTST <i>Y. Sakai, H. Ando, H.K. Chakravarty, H. Pitsch, R.X. Fernandes</i> | 3D07: Modeling heat loss effects in the large eddy simulation of a model gas turbine combustor with premixed flamelet generated manifolds <i>F. Proch, A.M. Kempf</i> | 3E07: Further experimental and modelling evidences of soot fragmentation in flames <i>M. Sirignano, A. D'Anna</i> | 3F07: Visualization of MILD combustion from jets in cross-flow <i>J. Sidey, E. Mastorakos</i> | 3G07: <i>In-situ</i> species diagnostics and kinetic study of plasma activated ethylene pyrolysis and oxidation in a low temperature flow reactor <i>J.K. Lefkowitz, M. Uddi, B.C. Windom, G. Lou, Y. Ju</i> | |

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| 14:40 | Turbulent Flames Structure Chairs: J. Torero A. Trouvé | 3B08: An asymptotic study of the transition from slow to fast burning in narrow channels L. Kagan, P. Gordon, G. Sivashinsky | 3C08: Chlorine atom-initiated low-temperature oxidation of prenil and isoprenol: The effect of C=C double bonds on the peroxy radical chemistry in alcohol oxidation O. Welz, J.D. Savee, D.L. Osborn, C.A. Taatjes | 3D08: Large-eddy simulations of the ignition sequence of an annular multiple-injector combustor M. Philip, M. Boileau, R. Vicquelin, E. Riber, T. Schmitt, B. Cuenot, D. Durox, S. Candel | 3E08: Experimental study of soot size decrease with pyrolysis temperature rise A. Emelianov, A. Eremin, E. Gurentsov, E. Mikheyeva, M. Yurischev | 3F08: Subgrid scale modelling for MILD combustion Y. Minamoto, N. Swaminathan | 3G08: Time-resolved radical species and temperature distributions in an Ar-O ₂ -H ₂ mixture excited by a nanosecond pulse discharge Z. Yin, Z. Eckert, I.V. Adamovich, W.R. Lempert | |
| 15:05 | 3A09: Stabilization of piloted turbulent flames with inhomogeneous inlets S. Meares, V.N. Prasad, G. Magnotti, R.S. Barlow, A.R. Masri | 3B09: Self-accelerating flames in long narrow channels V.N. Kurdyumov, M. Matalon | 3C09: Kinetics of the high-temperature combustion reactions of dibutylether using composite computational methods M.J.A. Rashidi, A.C. Davis, S.M. Sarathy | 3D09: Ignition probability of a partially premixed burner using LES L. Esclapeza, E. Riber, B. Cuenot | 3E09: Influence of sulphur addition on emissions of polycyclic aromatic hydrocarbons during biomass combustion T. Streibel, F. Mühlberger, R. Geißler, M. Saraji-Bozorgzad, T. Adam, R. Zimmermann | 3F09: Scaling for high intensity swirl based ultra-low emission flameless combustor operating with liquid fuels V.M. Reddy, A. Katoch, W.L. Roberts, S. Kumar | 3G09: Nanosecond plasma enhanced H ₂ /O ₂ /N ₂ premixed flat flames S. Nagaraja, T. Li, J.A. Sutton, I.V. Adamovich, V. Yang | |
| BREAK | | | | | | | | |
| | Turbulent Flames Structure Chairs: J. Torero A. Trouvé | Laminar Flames Structure Chairs: W. Kim C.K. Law | Ether and Alcohol Kinetics Chairs: S.M. Sarathy A. Frassoldati | Swirl Combustion and Piston Engines Chairs: J. Oefelein S. Richard | | Mild Combustion Chairs: C. Devaud M. de Joannon | Plasma Assisted Combustion II Chairs: M.S. Cha T. Ombrello | |
| 15:50 | 3A10: Numerical simulation of oxy-fuel jet flames using unstructured LES-CMC A. Garmory, E. Mastorakos | 3B10: Electron ionization, photoionization and photoelectron/photoion coincidence spectroscopy in mass-spectrometric investigations of a low-pressure ethylene/oxygen flame D. Felsmann, K. Moshhammer, J. Krüger, A. Lackner, A. Brockhinke, T. Kasper, T. Bierkandt, E. Akyildiz, N. Hansen, A. Lucassen, P. Oßwald, M. Köhler, G.A. Garcia, L. Nahon, P. Hemberger, A. Bodi, T. Gerber, K. Kohse-Höinghaus | 3C10: Pyrolysis of ethanol: A shock-tube/TOF-MS and modeling study J. Kiecherer, C. Bänsch, T. Bentz, M. Olzmann | 3D10: The effect of spark timing and negative valve overlap on spark assisted compression ignition combustion heat release rate R.J. Middleton, J.B. Martz, L.K. Manofskv Olesky, G.A. Lavoie, M.S. Wooldridge, D.N. Assanis | | 3F10: Effect of hydrogen addition on the flame structure of natural-gas jet-in-hot-coflow flames L.D. Arteaga Mendez, E.H. van Veen, M.J. Tummers, D.J.E.M. Roekaerts | 3G10: Effect of non-equilibrium plasma on two-stage ignition of <i>n</i> -heptane S. Nagaraja, W. Sun, V. Yang | |

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| 16:15 | 3A11: Uncertainty quantification in LES of a turbulent bluff-body stabilized flame <i>M. Khalil, G. Lacaze, J.C. Oefelein, H.N. Najm</i> | 3B11: Validation of a novel numerical model for the electric currents in burner-stabilized methane-air flames <i>N. Speelman, M. Kiefer, D. Markus, U. Maas, L.P.H. de Goey, J.A. van Oijen</i> | 3C11: Pyrolysis of 2-methyl-1-butanol at low and atmospheric pressures: Mass spectrometry and modeling studies <i>X. Zhang, B. Yang, W. Yuan, Z. Cheng, L. Zhang, Y. Li, F. Qi</i> | 3D11: Understanding the relationship between ignition delay and burn duration in a constant volume vessel at diesel engine conditions <i>S. Rabl, T.J. Davies, A.P. McDougall, R.F. Cracknell</i> | | 3F11: Numerical simulation of the Delft-Jet-In-Hot-Coflow (DJHC) flame using conditional source-term Estimation <i>J.W. Labahn, D. Dovizio, C.B. Devaud</i> | 3G11: Plasma assisted combustion: Effects of O ₃ on large scale turbulent combustion studied with laser diagnostics and large eddy simulations <i>A. Ehn, J. Zhu, P. Petersson, Z.S. Li, M. Aldén, C. Fureby, T. Hurtig, N. Zettervall, A. Larsson, J. Larfeldt</i> | |
| 16:40 | 3A12: Effect of molecular transport on PDF modeling of turbulent flames <i>H. Wang, K. Kim</i> | 3B12: NO formation / reduction mechanisms of ammonia/air premixed laminar flames at various equivalence ratios and ambient pressures <i>A. Hayakawa, T. Goto, R. Mimoto, T. Kudo, H. Kobayashi</i> | 3C12: An experimental and modeling study of <i>n</i> -octanol combustion <i>L. Cai, Y. Uygun, C. Togbé, H. Pitsch, H. Olivier, P. Dagaut, S.M. Sarathy</i> | 3D12: The effect of diluent composition on homogeneous charge compression ignition auto-ignition and combustion duration <i>J. Kodavasal, G.A. Lavoie, D.N. Assanis, J.B. Martz</i> | | | 3G12: Self-sustaining <i>n</i> -heptane cool diffusion flames activated by ozone <i>S.H. Won, B. Jiang, P. Diévar, C.H. Sohn, Y. Ju</i> | |
| 17:30 | Banquet – First Bus departs for California Academy of Sciences Presentation of the Gold and Silver Medals Congratulations to the Bernard Lewis Fellowship Awardees: Casey Allen, Marquette University Benedetta Franzelli, Stanford University Carmela Russo, Istituto di Ricerche sulla Combustione Zhandong Wang, University of Science & Technology of China Fujia Wu, Princeton University | | | | | | | |

THURSDAY, 7 August 2014

PLENARY LECTURE—8:30 am

Developments in internal combustion engines and implications for combustion science and future transport fuels *Gautam T. Kalghatgi*

Session Chairs: V. Sick and T. Poinso
(Ballrooms on Street Level)

BREAK

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| | Turbulent Flames <i>Chairs:</i> <i>R.S. Cant</i> <i>P. Domingo</i> | Instability and Thermoacoustics <i>Chairs:</i> <i>L. Gicquel</i> <i>C.H. Sohn</i> | Hydrocarbon Fuels <i>Chairs:</i> <i>M. Braun-Unkoff</i> <i>R. Tranter</i> | Droplet and Microgravity Combustion <i>Chairs:</i> <i>E. Gutheil</i> <i>E. Mastorakos</i> | Soot and Nanoparticle Diagnostics <i>Chairs:</i> <i>P. Desgroux</i> <i>C. Schulz</i> | Pool Fire and Fire Modeling <i>Chairs:</i> <i>M.A. Delichatsios</i> <i>A. Simeoni</i> | Micro Reactor and Micro-Channel Combustion <i>Chairs:</i> <i>D. Kyritsis</i> <i>R. Yetter</i> | Detonation <i>Chairs:</i> <i>C.R. Bauwens</i> <i>S. Navarro-Martinez</i> |
| 10:05 | 4A01: Impact of heat loss on V to M shape transition of confined swirling flames <i>T.F. Guiberti, D. Durox, P. Scoufflaire, T. Schuller</i> | 4B01: Numerical study of unstable hydrogen/air flames: shape and propagation speed <i>C.E. Frouzakis, N. Foglia, A.G. Tomboulides, C. Altantzis, M. Matalon</i> | 4C01: Laminar flame speeds, counterflow ignition, and kinetic modeling of the butene isomers <i>P. Zhao, W. Yuan, H. Sun, Y. Li, A.P. Kelley, X. Zheng, C.K. Law</i> | 4D01: A detailed numerical simulation of spherically symmetric <i>n</i> -butanol droplet combustion and comparisons with experimental data <i>E.A Fahd, Y.C. Liu, C.T. Avedisian, F.L. Dryer, T.I. Farouk</i> | 4E01: Species measurements in a nitrogen-diluted, ethylene air diffusion flame using direct sampling mass spectrometry and tunable diode laser absorption spectroscopy <i>H.R. Melroy, E.M. Adkins, M.J. Pause, J.H. Miller</i> | 4F01: Effect of gravity on puffing phenomenon of liquid pool fires <i>H. Abe, A. Ito, H. Torikai</i> | 4G01: Sooting limits and PAH formation of <i>n</i> -hexadecane and 2,2,4,4,6,8,8-heptamethylnonane in a micro flow reactor with a controlled temperature profile <i>H. Nakamura, S. Suzuki, T. Tezuka, S. Hasegawa, K. Maruta</i> | 4H01: Propagation mechanisms of supersonic combustion waves <i>M.D. Kellenberger, G. Ciccarelli</i> |
| 10:30 | 4A02: Unburned mixture fingers in premixed turbulent flames <i>A.N. Lipatnikov, V.A. Sabelnikov, S. Nishiki, T. Hasegawa</i> | 4B02: Pulsating instability in H ₂ -air partially premixed flames <i>F. Yang, W. Kong</i> | 4C02: High temperature rate constants for H/D + <i>n</i> -C ₄ H ₁₀ and I-C ₄ H ₁₀ <i>S.L. Peukert, R. Sivaramakrishnan, J.V. Michael</i> | 4D02: Autoignition behavior of a spherical cluster consisted of a center fine droplet and surrounding twelve fine droplets <i>H. Kataoka, H. Yamashita, J. Tada, Y. Oka, Y. Morinaga, M. Itai, D. Segawa, T. Kadota</i> | 4E02: Local gas heating in sooting flames by heat transfer from laser-heated particles investigated using rotational CARS and LII <i>E. Nordström, N.-E. Olofsson, J. Simonsson, J. Johnsson, H. Bladh, P.-E. Bengtsson</i> | 4F02: Evolution of heat feedback in medium pool fires with cross air flow and scaling of mass burning flux by a stagnant layer theory solution <i>L. Hu, J. Hu, S. Liu, W. Tang, X. Zhang</i> | 4G02: Effect of radical quenching on CH ₄ /air flames in a micro flow reactor with a controlled temperature profile <i>Y. Kizakii, H. Nakamura, T. Tezuka, S. Hasegawa, K. Maruta</i> | 4H02: The effect of transverse shock propagation on the shock-to-detonation transition process for an insensitive explosive <i>E.K. Anderson, T.D. Aslam, S.I. Jackson</i> |

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| 10:55 | 4A03: Modelling of mean flame shape during premixed flame flashback in turbulent boundary layers <i>A. Gruber, A.R. Kerstein, D. Valiev, C.K. Law, H. Kolla, J.H. Chen</i> | 4B03: Minor-species structure of premixed cellular tubular flames <i>C.A. Hall, W.D. Kulatilaka, N. Jiang, J.R. Gord, R.W. Pitz</i> | 4C03: Experimental and kinetic modeling study of trans-2-butene oxidation in a jet-stirred reactor and a combustion bomb <i>Y. Fenard, P. Dagaut, G. Dayma, F. Halter, F. Foucher</i> | 4D03: Ferrofluid droplet vaporization under very large magnetic power: Effects of pressure and effective thermal conductivity of liquid <i>C.F.C. Cristaldo, M.M. Vargas, F.F. Fachini</i> | 4E03: Single-shot, time-resolved planar laser-induced incandescence (TR-LII) for soot primary particle sizing in flames <i>Z.W. Sun, D.H. Gu, G.J. Nathan, Z.T. Alwahabi, B.B. Dally</i> | 4F03: Buoyant pool fires under imposed circulations before the formation of fire whirls <i>J. Lei, N. Liu, K. Satoh</i> | 4G03: Characteristics of <i>n</i> -butane weak flames at elevated pressures in a micro flow reactor with a controlled temperature profile <i>S. Kikui, T. Kamada, H. Nakamura, T. Tezuka, S. Hasegawa, K. Maruta</i> | 4H03: An experimental study on the onset processes of detonation waves downstream of a perforated plate <i>H. Qin, J.H.S. Lee, Z. Wang, F.-C. Zhuang</i> |
| BREAK | | | | | | | | |
| | Turbulent Flames <i>Chairs:</i> <i>R.S. Cant</i> <i>P. Domingo</i> | Instability and Thermoacoustics <i>Chairs:</i> <i>L. Gicquel</i> <i>C.H. Sohn</i> | Hydrocarbon Fuels <i>Chairs:</i> <i>M. Braun-Unkoff</i> <i>R. Tranter</i> | Droplet and Microgravity Combustion <i>Chairs:</i> <i>E. Gutheil</i> <i>E. Mastorakos</i> | Soot and Nanoparticle Diagnostics <i>Chairs:</i> <i>P. Desgroux</i> <i>C. Schulz</i> | Pool Fire and Fire Modeling <i>Chairs:</i> <i>M.A. Delichatsios</i> <i>A. Simeoni</i> | Micro Reactor and Micro-Channel Combustion <i>Chairs:</i> <i>D. Kyritsis</i> <i>R. Yetter</i> | Detonation <i>Chairs:</i> <i>C.R. Bauwens</i> <i>S. Navarro-Martinez</i> |
| 11:35 | 4A04: Impact of fuel composition on the recirculation zone structure and its role in lean premixed flame anchoring <i>S.H. Hong, S.J. Shanbhogue, A.F. Ghoniem</i> | 4B04: Flames in context of thermo-acoustic stability bounds <i>M. Hoeijmakers, V. Kornilov, I. Lopez, L.P.H. de Goey, H. Nijmeijer</i> | 4C04: Experimental and modelling study of speciation and benzene formation pathways in premixed 1-hexene flames <i>A. Nawdiyal, N. Hansen, T. Zeuch, L. Seidel, F. Mauß</i> | 4D04: The role of micro-convection induced by support fiber in droplet combustion processes <i>Y.C. Liu, Y. Xu, M.C. Hicks, C.T. Avedisian</i> | 4E04: A new diagnostic for volume fraction measurement of metal-oxide nanoparticles in flames using phase-selective laser-induced breakdown spectroscopy <i>Y. Zhang, S. Li, Y. Ren, Q. Yao, S.D. Tse</i> | 4F04: Treatment of local extinction in CFD fire modeling <i>A.Y. Snegirev, A.S. Tsoy</i> | 4G04: Direct numerical simulation of micro combustion in a narrow circular channel with a detailed kinetic mechanism <i>E. Miyata, N. Fukushima, Y. Naka, M. Shimura, M. Tanahashi, T. Miyauchi</i> | 4H04: Detonation limits in rough-walled tubes <i>A. Starr, J.H.S. Lee, H.D. Ng</i> |
| 12:00 | 4A05: Fuel effects on leading point curvature statistics of high hydrogen content fuels <i>A. Marshall, J. Lundrigan, P. Venkateswaran, J. Seitzman, T.C. Lieuwen</i> | 4B05: Time-domain analysis of thermo-acoustic instabilities in a ducted flame <i>T. Sayadi, V. le Chenadec, P. Schmid, F. Richecoeur, M. Massot</i> | 4C05: Dissociation of ortho-benzene radicals in the high temperature fall-off regime <i>P.T. Lynch, C.J. Annesley, R.S. Tranter</i> | 4D05: Multistage oscillatory “cool flame” behavior for isolated alkane droplet combustion in elevated pressure microgravity condition <i>T.I. Farouk, M.C. Hicks, F.L. Dryer</i> | 4E05: Laser-based <i>in-situ</i> measurement and simulation of gas-phase temperature and iron atom concentration in a pilot-plant nanoparticle synthesis reactor <i>O.M. Feroughi, S. Hardt, I. Wlokas, T. Hülser, H. Wiggers, T. Dreier, C. Schulz</i> | 4F05: Numerical simulation of under-ventilated liquid-fueled compartment fires with flame extinction and thermally-driven fuel evaporation <i>S. Vilfayeau, N. Ren, Y. Wang, A. Trouvé</i> | 4G05: Characteristics of opposed flow partially premixed flames in mesoscale channels at low strain rates <i>M.J. Lee, M.S. Cho, N.I. Kim</i> | 4H05: Effect of spatial heterogeneity on near-limit propagation of a stable detonation <i>J. Li, X. Mi, A.J. Higgins</i> |

| Room | Ballroom A | Ballroom B | Ballroom C | Bayview A | Seacliff A & B | Seacliff C & D | Pacific L & M | Pacific N & O |
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| 12:25 | 4A06: Turbulence-flame interaction and fractal characteristics of H ₂ -air premixed flame under pressure rising condition <i>B. Yenerdag, N. Fukushima, M. Shimura, M. Tanahashi, T. Miyauchi</i> | 4B06: The response of a harmonically forced premixed flame stabilized on a heatconducting bluff-body <i>K.S. Kedia, A.F. Ghoniem</i> | 4C06: Production of major reaction products in the initial steps of the thermal decomposition of naphthalene. Experimental shock-tube results and computer simulation <i>A. Laskin, C. Tamburu, F. Dubnikov, A. Lifshitz</i> | 4D06: Numerical modeling of auto-ignition of isolated fuel droplets in microgravity <i>A. Cuoci, A. Frassoldati, T. Faravelli, E. Ranzi</i> | 4E06: Numerical and experimental investigation of the process steps in a spray flame reactor for nanoparticle synthesis <i>C. Weise, J. Menser, S.A. Kaiser, A.M. Kempf, I. Wlokas</i> | 4F06: Application of a subgrid soot-radiation model in the numerical simulation of a heptane pool fire <i>P. Chatterjee, Y. Wang, K.V. Meredith, S.B. Dorofeev</i> | 4G06: Experimental and numerical investigations on premixed CH ₄ /air combustion in a mesoscale channel with cavities <i>J. Wan, A. Fan, Y. Liu, H. Yao, W. Liu</i> | 4H06: Effects of porous walled tubes on detonation transmission into unconfined space <i>N. Mehrjoo, Y. Gao, C.B. Kiyanda, H.D. Ng, J.H.S. Lee</i> |
| LUNCH | | | | | | | | |
| | Turbulent Flame Structure Analysis <i>Chairs:</i> <i>A. Dreizler</i> <i>K.Y. Huh</i> | Instabilities in Swirled Flames <i>Chairs:</i> <i>I. Boxx</i> <i>T.C. Lieuwen</i> | Ignition Delay and Flame Speeds for Larger Fuels <i>Chairs:</i> <i>N. Chaumeix</i> <i>T. Zeuch</i> | LES of Spray Flames <i>Chairs:</i> <i>G. Lacaze</i> <i>M. Ihme</i> | Liquid Propellant <i>Chairs:</i> <i>B.D. Shaw</i> <i>F. Williams</i> | Fire Modeling II <i>Chairs:</i> <i>R. Dobashi</i> <i>L.W. Kostiuk</i> | Micro-Channel Combustion <i>Chairs:</i> <i>Y. Nakamura</i> <i>M. Tanahashi</i> | Detonation <i>Chairs:</i> <i>A.J. Higgins</i> <i>H.D. Ng</i> |
| 14:15 | 4A07: Three-dimensional topology of turbulent premixed flame interaction <i>H. Kolla, J.H. Chen, R. Griffiths, S.R. Cant, W. Kollmann</i> | 4B07: Thermo-acoustic instabilities in lean premixed swirl-stabilized combustion and their link to acoustically coupled and decoupled flame macrostructures <i>S. Taamallah, Z.A. LaBry, S.J. Shanhogue, A.F. Ghoniem</i> | 4C07: Experimental and modeling study of fuel interactions with an alkyl nitrate cetane enhancer, 2-ethyl-hexyl nitrate <i>S.S. Goldsborough, M.V. Johnson, C. Banyon, W.J. Pitz, M. McNenly</i> | 4D07: Analysis of high-pressure diesel fuel injection processes using LES with real-fluid thermodynamics and transport <i>G. Lacaze, A. Misdariis, A. Ruiz, J.C. Oefelein</i> | 4E07: Thermal and electrolytic decomposition and ignition of HAN-water solutions <i>P. Khare, V. Yang, G.A. Risha, R.A. Yetter</i> | 4F07: Estimation of local mass burning rates for steady laminar boundary layer diffusion flames <i>A.V. Singh, M.J. Gollner</i> | 4G07: An experimental and numerical investigation of premixed syngas combustion dynamics in mesoscale channels with controlled wall temperature profiles <i>A. Brambilla, M. Schultze, C.E. Frouzakis, J. Mantzaras, R. Bombach, K. Boulouchos</i> | 4H07: Qualitative modeling of the dynamics of detonation with losses <i>L.M. Faria, A.R. Kasimov</i> |
| 14:40 | 4A08: Flame structure analysis for categorization of lean premixed CH ₄ /air and H ₂ /air flames at high Karlovitz numbers: Direct numerical simulation studies <i>H. Carlsson, R. Yu, X.-S. Bai</i> | 4B08: Stability analysis of a swirled spray combustor based on flame describing function <i>C. Mirat, D. Durox, T. Schuller</i> | 4C08: Ignition delay times of conventional and alternative fuels behind reflected shock waves <i>Y. Zhu, S. Li, D.F. Davidson, R.K. Hanson</i> | 4D08: Large eddy simulation of dilute acetone spray flames using CMC coupled with tabulated chemistry <i>S. Ukai, A. Kronenburg, O.T. Stein</i> | 4E08: Hypergolic ignition and flame structures of hydrazine/nitrogen tetroxide co-flowing plane jets <i>H. Tani, H. Terashima, M. Koshi, Y. Daimon</i> | 4F08: Numerical modeling of melting and dripping process of polymeric material subjected to moving heat flux: Prediction of drop time <i>Y. Kim, A. Hossain, Y. Nakamura</i> | 4G08: Analysis of the flame structure for lean methane-air combustion in porous inert media by resolving the hydroxyl radical <i>B. Stelzner, C. Keramiotis, S. Voss, M.A. Founti, D. Trimis</i> | 4H08: Modelling of deflagration to detonation transition using flame thickening <i>S. Yu, S. Navarro-Martinez</i> |

| Room | Ballroom A | Ballroom B | Ballroom C | Bayview A | Seacliff A & B | Seacliff C & D | Pacific L & M | Pacific N & O |
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| 15:05 | | 4B09: Combined effect of spatial and temporal variations of equivalence ratio on combustion instability in a low-swirl combustor <i>S. Tachibana, K. Kanai, S. Yoshida, K. Suzuki, T. Sato</i> | 4C09: Experimental and modeling study of burning velocities for alkyl aromatic components relevant to diesel fuels <i>M. Mehl, O. Herbinet, P. Dirrenberger, R. Bounaceur, P.-A. Glaude, F. Battin-Leclerc, W.J. Pitz</i> | | | | | |
| 15:30 | DEPART FOR HORNBLOWER (Cruise begins to board at 16:00 and departs at 17:00) Enjoy the music of Johnny Hi-Fi and be one of the last cruises to watch the Bay Lights display | | | | | | | |

FRIDAY, 8 AUGUST 2014

PLENARY LECTURE—8:30 am

Combustion kinetic and fuel property effects of transportation fuels *Fred Dryer*

Session Chairs: S.-H. Chung and K. Kohse-Höinghaus
(Ballrooms on Street Level)

BREAK

| Room | Ballroom A | Ballroom B | Ballroom C | Bayview A | Seacliff A & B | Seacliff C & D | Pacific L & M | Pacific N & O |
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| | Flame Dynamics and Turbulent Flames <i>Chairs:</i> <i>S. Ducruix</i> <i>H.Najm</i> | Unsteady Flame and Ignition/Extinction <i>Chairs:</i> <i>J. Park</i> <i>A.L. Sanchez</i> | Species Sensing <i>Chairs:</i> <i>B. Böhm</i> <i>J.B. Jeffries</i> | Piston Engines: Emissions and Diagnostics <i>Chairs:</i> <i>J.-Y. Chen</i> <i>D. Reuss</i> | Clusters, Particle Inception and Growth <i>Chairs:</i> <i>P. Minutolo</i> <i>H. Wang</i> | New Approaches and Propellants <i>Chairs:</i> <i>A. Cessou</i> <i>S.R. Chakravarthy</i> | Microscale Combustion <i>Chairs:</i> <i>N.I. Kim</i> <i>K. Maruta</i> | Supersonic Combustion <i>Chairs:</i> <i>J.P. Boris</i> <i>V. Raman</i> |
| 10:05 | 5A01: Prediction of NO _x in premixed high-pressure lean methane flames with a MMC-partially stirred reactor <i>B. Sundaram, A.Y. Klimenko, M.J. Cleary, U. Maas</i> | 5B01: Flame dynamics of equivalence ratio oscillation in a stagnating laminar lean methane/air premixed flame <i>H. Tomita, R.A.M. Rosdzimin, S. Miyamae, T. Yokomori, T. Ueda</i> | 5C01: Measurements and modelling of HCN and CN species profiles in laminar CH ₄ /O ₂ /N ₂ low pressure flames using LIF/CRDS techniques <i>N. Lamoureux, H.E. Merhubi, L. Gasnot, C. Schoemaeker, P. Desgroux</i> | 5D01: Improving ion current of sparkplug ion sensors in HCCI combustion using sodium, potassium, and cesium acetates: experimental and numerical modeling <i>R.H. Butt, Y. Chen, J.H. Mack, S. Saxena, R.W. Dibble, J.-Y. Chen</i> | 5E01: Surface reactivity of homogenous polycyclic aromatic hydrocarbon nano-clusters <i>D. Chen, J. Akroyd, S. Mosbach, M. Kraft</i> | 5F01: Rate-ratio asymptotic analysis of the structure and mechanisms of extinction of nonpremixed CH ₄ /N ₂ -O ₂ /N ₂ O/N ₂ flames <i>K. Seshadri, X.-S. Bai, F. Williams</i> | 5G01: Radical quenching on metal surface in a methane-air premixed flame <i>Y. Saiki, Y. Suzuki</i> | 5H01: Influence of hydrodynamic instabilities on the propagation mechanism of fast flames <i>L. Maley, R. Bhattacharjee, S.-M. Lau-Chapdelaine, M.I. Radulescu</i> |
| 10:30 | 5A02: Impacts of turbulence-chemistry interaction and low temperature ignition on premixed <i>n</i> -heptane/air flames <i>B.C. Windom, S.H. Won, B. Jiang, Y. Ju, S.D. Hammack, T.M. Ombrello, C.D. Carter</i> | 5B02: Impact of chemistry models on flame-vortex interaction <i>S. Lapointe, B.D. Bobbitt, G. Blanquart</i> | 5C02: Towards simultaneous calibration-free and ultra-fast sensing of temperature and species in the intrapulse mode <i>R.S.M. Chrystie, A. Farooq</i> | 5D02: Investigation of <i>iso</i> -octane combustion in a homogeneous charge compression ignition engine seeded by ozone, nitric oxide and nitrogen dioxide <i>J-B. Masurier, F. Foucher, G. Dayma, P. Dagaut</i> | 5E02: Towards a predictive model for polycyclic aromatic hydrocarbon dimerization propensity <i>J.S. Lowe, J.Y.W. Lai, P. Elvati, A. Violi</i> | 5F02: Supercritical pyrolysis of <i>n</i> -dodecane with colloidal platinum-decorated graphene sheets <i>H.S. Sim, R.A. Yetter, D.M. Dabbs, I.A. Aksay</i> | 5G02: Thermal and chemical structures formed in the micro burner of miniaturized hydrogen-air jet flames <i>A. Hossain, Y. Nakamura</i> | 5H02: Ignition and supersonic combustion behavior of liquid ethanol in a scramjet model combustor with cavity flame holder <i>S. Nakaya, Y. Hikichi, Y. Nakazawa, K. Sakaki, M. Choi, M. Tsue, M. Kono, S. Tomioka</i> |

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| Room | Ballroom A | Ballroom B | Ballroom C | Bayview A | Seacliff A & B | Seacliff C & D | Pacific L & M | Pacific N & O |
| 10:55 | 5A03: Turbulent transport in premixed flames approaching extinction <i>K.H.H. Goh, P. Geipel, R.P. Lindstedt</i> | 5B03: Structure and stability of premixed flames stabilized behind the trailing edge of a cylindrical rod at low Lewis numbers <i>V.N. Kurdyumov, Y. Shoshin, L.P.H. de Goey</i> | 5C03: High-temperature <i>iso</i> -butene absorption diagnostic for shock tube kinetics using a pulsed quantum cascade laser near 11.3 μm <i>R.M. Spearrin, S. Li, D.F. Davidson, J.B. Jeffries, R.K. Hanson</i> | 5D03: In-cylinder soot precursor growth in a low-temperature combustion diesel engine: Laser-induced fluorescence of polycyclic aromatic hydrocarbons <i>C.A.J. Leermakers, M.P.B. Musculus</i> | 5E03: Reaction pathways for the growth of polycyclic aromatic hydrocarbons during the supercritical pyrolysis of <i>n</i> -decane, as determined from doping experiments with 1- and 2-methylnaphthalene <i>S.V. Kalpathy, N.B. Poddar, S.P. Bagley, M.J. Wornat</i> | 5F03: A detailed kinetic study of the thermal decomposition of tetraethoxysilane <i>D. Nurkowski, P. Buerger, J. Akroyd, M. Kraft</i> | 5G03: Experimental and theoretical study on the interaction between two identical micro-slot diffusion flames: Burner pitch effects <i>A. Kosugi, N. Sato, K. Kuwana, T. Hirasawa, Y. Nakamura</i> | 5H03: Simultaneous gas density and fuel concentration measurements in a supersonic combustor using laser induced breakdown <i>H. Do, C.D. Carter, Q. Liu, T.M. Ombrello, S.D. Hammack, T. Lee, K.-Y. Hsu</i> |
| <p>BREAK</p> <p>Farewell Reception begins at 17:30 at Justin Herman Plaza, outside Hyatt Regency</p> | | | | | | | | |
| | Flame Dynamics and Turbulent Flames <i>Chairs:</i> <i>S. Ducruix, H. Najm</i> | Unsteady Flame and Ignition/Extinction <i>Chairs:</i> <i>A.L. Sanchez, J. Park</i> | Species Sensing <i>Chairs:</i> <i>B. Böhm, J.B. Jeffries</i> | Piston Engines: Emissions and Diagnostics <i>Chairs:</i> <i>J.-Y. Chen, D. Reuss</i> | Clusters, Particle Inception and Growth <i>Chairs:</i> <i>P. Minutolo, H. Wang</i> | New Approaches and Propellants <i>Chairs:</i> <i>K. Brezinsky, S.R. Chakravarthy</i> | Oxy Fuel Combustion <i>Chairs:</i> <i>B. Dlugogorski, D. Trimis</i> | Supersonic Combustion <i>Chairs:</i> <i>J.P. Boris, V. Raman</i> |
| 11:35 | 5A04: Propagation, dissipation, and dispersion of disturbances on harmonically forced, non-premixed flames <i>N.A. Magina, V. Acharya, T. Sun, T.C. Lieuwen</i> | 5B04: The influence of carbon monoxide and hydrogen on the structure and extinction of nonpremixed and premixed methane flames <i>V. Amin, G. Katzlinger, P. Saxena, K. Seshadri, E. Pucher</i> | 5C04: Early flame propagation in a spark-ignition engine measured with quasi 4D-diagnostics <i>B. Peterson, E. Baum, B. Böhm, A. Dreizler</i> | 5D04: Two-tracer LIF imaging of preferential evaporation of multi-component gasoline fuel sprays under engine conditions <i>L.M. Itani, G. Bruneaux, A. di Lella, C. Schulz</i> | 5E04: The importance of reversibility in modeling soot nucleation and condensation processes <i>N.A. Eaves, M.J. Thomson, S.B. Dworkin</i> | 5F04: Simulations of heterogeneous propellant combustion: Effect of particle orientation and shape <i>M. Plaud, S. Gallier, M. Morel</i> | 5G04: Fundamental investigation on the fuel-NO _x emission of the oxy-fuel combustion using a tubular flame burner <i>D. Shimokuri, S. Fukuba, S. Ishizuka</i> | 5H04: A computational study of supersonic combustion in strut injector and hypermixer flow fields <i>C. Fureby, K. Nordin-Bates, K. Petterson, A. Bresson, V.A. Sabelnikov</i> |

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| 12:00 | 5A05: Irreversible entropy production rate in high-pressure turbulent reactive flows <i>G. Borghesi, J. Bellan</i> | 5B05: Fundamental physics of flame development in an autoigniting dual fuel mixture <i>Z. Wang, J. Abraham</i> | 5C05: Calibration-free, high-speed, in-cylinder laser absorption sensor for cycle-resolved, absolute H ₂ O measurements in a production IC engine <i>O. Witzel, A. Klein, C. Meffert, C. Schulz, S.A. Kaiser, V. Ebert</i> | 5D05: Determination of soot onset and background particulate levels in a spark-ignition engine <i>M.D. Hageman, S.S. Sakai, D.A. Rothamer</i> | 5E05: Damköhler number effects on soot formation and growth in turbulent nonpremixed flames <i>A. Attili, F. Bisetti, M.E. Mueller, H. Pitsch</i> | 5F05: Experimental investigation of cellular instability in Ammonium Perchlorate (AP) and fine AP-binder mixtures <i>N. Gurram S.R. Chakravarthy</i> | 5G05: The chemical role of CO ₂ in pyrite thermal decomposition <i>W. Lv, D. Yu, J. Wu, L. Zhang, M. Xu</i> | 5H05: Direct numerical simulation of supersonic combustion with thermal nonequilibrium <i>H. Koo, V. Raman, P.L. Varghese</i> |
| 12:25 | 5A06: Sound generation by premixed flame annihilation with full and simple chemistry <i>C. Jiménez, A. Haghir, M.J. Brear, M. Talei, E.R. Hawkes</i> | 5B06: Multi-scale modeling of dynamics and ignition to flame transitions of high pressure stratified <i>n</i> -heptane/toluene mixtures <i>W. Sun, S.H. Won, X. Gou, Y. Ju</i> | 5C06: Infrared laser absorption sensors for multiple performance parameters in a detonation combustor <i>C.S. Goldenstein, R.M. Spearrin, J.B. Jeffries, R.K. Hanson</i> | 5D06: Study on the phase relation between ion current signal and combustion phase in a HCCI combustion engine <i>G. Dong, Y. Chen, Z. Wu, L. Li, R. Dibble</i> | 5E06: Soot precursor formation and limitations of the stabilomer grid <i>K.O. Johansson, J.Y.W. Lai, S.A. Skeen, D.M. Popolan-Vaida, K.R. Wilson, N. Hansen, A. Violi, H.A. Michelsen</i> | 5F06: Flame structure and particle combustion regimes in premixed methane-iron-air suspensions <i>P. Julien, S. Whiteley, S. Goroshin, M.J. Soo, D.L. Frost, J.M. Bergthorson</i> | 5G06: Experimental investigation of structure and stabilization of spray oxyfuel flames diluted by carbon dioxide <i>G. Cléon, D. Honoré, C. Lacour, A. Cessou</i> | 5H06: Large Eddy Simulations of the HIFiRE scramjet using a compressible flamelet/progress variable approach <i>A. Saghafian, D.A. Philips, L. Shunn, F. Ham</i> |
| LUNCH | | | | | | | | |
| | Invited Topical Review <i>Chairs: S. Hochgreb H. Pitsch</i> | Laminar Flame Speed III <i>Chairs: G. Blanquart C.-J. Sung</i> | Mechanisms and Uncertainty Analysis <i>Chairs: T. Faravelli A. Tomlin</i> | Piston Engine Modeling and Emission <i>Chairs: G. Bruneaux G. Kalghatgi</i> | Turbulence and Soot <i>Chairs: M. Kraft G. Smallwood</i> | Aluminum Combustion Synthesis <i>Chairs: J.M. Bergthorson S. Li</i> | Coal and Biomass <i>Chairs: J.S. Lighty R. Weber</i> | Solid Waste and Emission <i>Chairs: X. Guo H. Yao</i> |
| 14:15 | 5A07/08: Partial premixing and stratification in turbulent flames <i>Assaad R. Masri</i> | 5B07: High temperature oxidation of formaldehyde and formyl radical: A study of 1,3,5-trioxane laminar burning velocities <i>J. Santner, F.M. Haas, F.L. Dryer, Y. Ju</i> | 5C07: Fast solvers for large kinetic mechanisms using adaptive preconditioners <i>M.J. McNenly, R.A. Whitesides, D.L. Flowers</i> | 5D07: Turbulence-chemistry interactions in a heavy-duty compression-ignition engine <i>V.R. Raj Mohan, D.C. Haworth</i> | 5E07: Investigation of soot formation in pressurized swirl flames by laser measurements of temperature, flame structures and soot concentrations <i>K.P. Geigle, M. Köhler, W. O'Loughlin, W. Meier</i> | 5F07: Computer modelling of nano-aluminium agglomeration during the combustion of composite solid propellants <i>K. Balbudhe, A. Roy, S.R. Chakravarthy</i> | 5G07: Large eddy simulation of coal combustion in a large-scale laboratory furnace <i>M. Rabaçal, B.M. Franchetti, F.C. Marincola, F. Proch, M. Costa, C. Hasse, A.M. Kempf</i> | 5H07: The experimental and mechanism study of novel heterogeneous Fenton-like reactions using Fe _{3-x} Ti _x O ₄ catalysts for Hg ₀ absorption <i>C. Zhou, L. Sun, J. Xiang, S. Hu, S. Su, A. Zhang</i> |

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|-------|--|--|---|--|---|---|--|--|
| 14:40 | <p>Partially Premixed Turbulent Flames</p> <p><i>Chairs:</i> S. Hochgreb H. Pitsch</p> | <p>5B08: A study of propagation of spherically expanding and counterflow laminar flames using direct measurements and numerical simulations</p> <p><i>J. Jayachadran, A. Lefebvre, R. Zhao, F. Halter, E. Varea, B. Renou, F.N. Egolfopoulos</i></p> | <p>5C08: Validating and exploiting predictive models by incorporating an instrumental model</p> <p><i>D.R. Yeates, W. Li, P.R. Westmoreland, W. Speight, T. Russi, A. Packard, M. Frenklach,</i></p> | <p>5D08: LES prediction and analysis of knocking combustion in a spark ignition engine</p> <p><i>A. Robert, S. Richard, O. Colin, L. Martinez, L. de Francqueville</i></p> | <p>5E08: Simultaneous planar measurements of temperature and soot volume fraction in a turbulent non-premixed jet flame</p> <p><i>S.M. Mahmoud, G.J. Nathan, P.R. Medwell, B.B. Dally, Z.T. Alwahabi</i></p> | <p>5F08: Gas-surface thermochemistry and kinetics for aluminum particle combustion</p> <p><i>J. Glorian, L. Catoire, S. Gallier, N. Cesco</i></p> | <p>5G08: Use of synthetic oxygen carriers for chemical looping combustion of Victorian brown coal</p> <p><i>S. Rajendran, S. Zhang, R. Xiao, S. Bhattacharya</i></p> | <p>5H08: Hg oxidation reaction mechanism on Fe₂O₃ with H₂S: Comparison between theory and experiments</p> <p><i>L. Xue, T. Liu, X. Guo, C. Zheng</i></p> |
| 15:05 | <p>5A09: Imaging measurements and LES-CMC modeling of a partially-premixed turbulent dimethyl ether/air jet flame</p> <p><i>B.R. Coriton, M. Zendejdel, S. Ukai, A. Kronenburg, O.T. Stein, S.-K. Im, M. Gamba, J.H. Frank</i></p> | <p>5B09: Comparative study on the laminar flame speed enhancement of methane with ethane and ethylene addition</p> <p><i>S. Ravi, T.G. Sikes, A. Morones, C.L. Keesee, E.L. Petersen</i></p> | <p>5C09: Determining predictive uncertainties and global sensitivities for large parameter systems: A case study for <i>n</i>-butane oxidation</p> <p><i>É. Hébrard, A.S. Tomlin, R. Bounaceur, F. Battin-Leclerc</i></p> | <p>5D09: Combined effects of flow/spray interactions and EGR on combustion variability for a stratified DISI engine</p> <p><i>W. Zeng, M. Sjöberg, D. Reuss</i></p> | <p>5E09: Simultaneous instantaneous measurements of soot volume fraction, primary particle diameter, and aggregate size in turbulent buoyant diffusion flames</p> <p><i>B.M. Crosland, K.A. Thomson, M.R. Johnson</i></p> | <p>5F09: Quenching distance of flames in hybrid methane-aluminum mixtures</p> <p><i>J. Palecka, P. Julien, S. Goroshin, J. M. Bergthorson, D.L. Frost, A.J. Higgins</i></p> | <p>5G09: Combustion kinetics and particle fragmentation of raw and torrefied biomass in a drop tube furnace</p> <p><i>F.F. Costa, G. Wang, M. Costa</i></p> | <p>5H09: Analysis of mercury species over CuO-MnO₂-Fe₂O₃/γ-Al₂O₃ catalysts by thermal desorption</p> <p><i>P. Wang, S. Hu, J. Xiang, S. Su, L. Sun, F. Cao, X. Xiao, A. Zhang</i></p> |
| 15:30 | <p>5A10: The influence of combustion SGS sub-models on the resolved flame propagation. Application to the LES of the cambridge stratified flames</p> <p><i>R. Mercier, T. Schmitt, D. Veynante, B. Fiorina</i></p> | <p>5B10: Laminar flame speeds of <i>n</i>-decane, <i>n</i>-butylbenzene, and <i>n</i>-propylcyclohexane mixtures</p> <p><i>A. Comandini, T. Dubois, N. Chaumeix</i></p> | <p>5C10: Uncertainty analysis of the kinetic model prediction for high-pressure H₂/CO combustion</p> <p><i>X. Li, X. You, F. Wu, C.K. Law</i></p> | <p>5D10: Influence of flow and ignition fluctuations on cycle-to-cycle variations in early flame kernel growth</p> <p><i>C. Pera, V. Knop, J. Reveillon</i></p> | <p>5E10: Comparison of one-dimensional turbulence and direct numerical simulations of soot formation and transport in a nonpremixed ethylene jet flame</p> <p><i>D.O. Lignell, G.C. Fredline, A.D. Lewis</i></p> | <p>5F10: Combustion characteristics of monodispersed aluminum nanoparticle streams in post flame environment</p> <p><i>C. Kong, Q. Yao, D. Yu, S. Li</i></p> | <p>5G10: Ignition behaviors of pulverized coal particles in O₂/N₂ and O₂/H₂O mixtures in a drop tube furnace using flame monitoring techniques</p> <p><i>C. Zou, L. Cai, D. Wu, Y. Liu, S. Liu, C. Zheng</i></p> | <p>5H10: Insights into the mechanism of heterogeneous mercury oxidation by HCl over VO_x/TiO₂ catalyst: Periodic density functional theory study</p> <p><i>B. Zhang, J. Liu, G. Dai, M. Chang, C. Zheng</i></p> |
| BREAK | | | | | | | | |

| Room | Ballroom A | Ballroom B | Ballroom C | Bayview A | Seacliff A & B | Seacliff C & D | Pacific L & M | Pacific N & O |
|-------|---|------------|--|---|---|----------------|---------------|---|
| | Partially Premixed Turbulent Flames <i>Chairs:</i> <i>S. Hochgreb</i> <i>H. Pitsch</i> | | Small Hydrocarbons <i>Chairs:</i> <i>M. Fikri</i> <i>C. Taatjes</i> | Piston Engine Modeling and Emission <i>Chairs:</i> <i>G. Bruneaux</i> <i>G. Kalghatgi</i> | Turbulence and Soot <i>Chairs:</i> <i>M. Kraft</i> <i>G. Smallwood</i> | | | Solid Waste and Emission <i>Chairs:</i> <i>X. Guo</i> <i>H. Yao</i> |
| 16:15 | 5A11: Large eddy simulation of a partially-premixed gas turbine model combustor <i>Y.C. See, M. Ihme</i> | | 5C11: Optimization of a hydrogen combustion mechanism using both direct and indirect measurements <i>T. Varga, T. Nagy, C. Olm, I.G. Zsély, R. Pálvölgyi, É. Valkó, G. Vincze, M. Cserhádi, H.J. Curran, T. Turányi</i> | 5D11: Simultaneous formaldehyde PLIF and high-speed Schlieren imaging for ignition visualization in high-pressure spray flames <i>S.A. Skeen, J. Manin, L.M. Pickett</i> | 5E11: Time-resolved spatial patterns and interactions of soot, PAH and OH in a turbulent diffusion flame <i>B. Franzelli, P. Scoufflaire, S. Candel</i> | | | 5H11: Release of organic sulfur as sulfur-containing gases during low temperature pyrolysis of sewage sludge <i>S. Liu, M. Wei, Y. Qiao, Z. Yang, B. Gui, Y. Yu, M. Xu</i> |
| 16:40 | 5A12: High-speed tomographic PIV measurements of strain rate intermittency and clustering in turbulent partially-premixed jet flames <i>B.R. Coriton, J.H. Frank</i> | | 5C12: Hydrogen oxidation at high pressure and intermediate temperatures: Experiments and kinetic modeling <i>H. Hashemi, J.M. Christensen, S. Gersen, P. Glarborg</i> | 5D12: Spray-induced temperature stratification dynamics in a gasoline direct-injection engine <i>B. Peterson, E. Baum, B. Böhm, V. Sick, A. Dreizler</i> | 5E12: Further details on particle inception and growth in premixed flames <i>M. Commodo, G. Tessitore, G. de Falco, A. Bruno, P. Minutolo, A. D'Anna</i> | | | 5H12: Catalytic role of conditioner CaO in nitrogen transformation during sewage sludge pyrolysis <i>H. Liu, Q. Zhang, H. Hu, P. Liu, X. Hu, A. Li, H. Yao</i> |
| 17:05 | 5A13: Scalar structure of turbulent partially-premixed dimethyl ether/air jet flames <i>F. Fuest, G. Magnotti, R.S. Barlow, J.A. Sutton</i> | | 5C13: The reactions supporting or opposing the development of explosive modes: Auto-ignition of a homogeneous methane/air mixture <i>D.J. Diamantis, D. Kyritsis, D.A. Goussis</i> | 5D13: Spray-combustion interaction mechanism of multiple-injection under diesel engine condition <i>K.D. Cung, A. Moiz, J. Johnson, S.-Y. Lee, C.-B. Kweon, A. Montanaro</i> | 5E13: Effects of aromatic chemistry-turbulence interactions on soot formation in a turbulent non-premixed flame <i>Y. Xuan, G. Blanquart</i> | | | 5H13: Speciation transformation of arsenic during municipal solid waste incineration <i>H. Hu, H. Liu, J. Chen, A. Li, H. Yao, F. Low, L. Zhang</i> |
| | 17:30: FAREWELL RECEPTION in Justin Herman Plaza See you in Seoul, Korea 36 th International Symposium on Combustion 31 July – 5 August 2016 | | | | | | | |