10th U.S. National Combustion Meeting, College Park, Maryland

Sunday, 23 April 2017
17:00 – 20:00 Registration Open – Chesapeake Foyer
18:00 – 20:00 Welcome Reception – Chesapeake Foyer

Monday, 24 April 2017
07:00 – 08:00 Continental Breakfast – Chesapeake Foyer with seating in the Chesapeake Ballroom
07:00 – 16:00 Registration Open – Chesapeake Foyer
08:00 – 18:00 Combustion Artwork is displayed in LOCATION
Make sure to stop by, visit and vote. Voting closes Tuesday at 17:30
08:00 – 16:35 Sponsors are displayed in the Chesapeake Foyer

Work in Progress Posters (Display Set up 07:00 – 08:00, Poster Session 08:00 – 18:00) – Hall of Distinction

Potomac Ballroom
07:45 Welcome: Darryll J. Pines, University of Maryland, Dean, Clark School of Engineering
07:55 Opening Remarks: Arnaud Trouvé, University of Maryland, Local Host

08:00 – 09:00 Plenary Lecture JoAnn Lighty, National Science Foundation
"Opportunities and Challenges for Combustion Research"
Session Chair: A. Trouvé

09:00 – 09:10 TRANSITION TO MORNING SESSIONS

Room	ROOM 1105	ROOM 0101	ROOM 0105	ROOM 1102	ROOM 2104	ROOM 2115	ROOM 2100	ROOM 2110	ROOM 2106	ROOM 2108
	Chemical Kinetics I *Session Chair:* H.J. Curran	Fire I *Session Chair:* D.L. Blunck	Suppression/ Protection I *Session Chair:* D.P. Stocker	Turbulent Flames I *Session Chair:* M. Ihme	Heterogeneous Combustion I *Session Chair:* P. Papas	IC Engine Chemistry I *Session Chair:* S.H. Won	Extinction and Ignition I *Session Chair:* K.B. Brady	PDF Models *Session Chair:* F. Bisetti	Diagnostics I *Session Chair:* N. Hansen	Soot in Laminar Flames I *Session Chair:* C.R. Shaddix
09:10	1A01: High accuracy thermochemical kinetics for $H + CH_3$ (+M) ⇄ CH_4 (+M) *N.J. Labbe, A.W. Jasper, J.A. Miller, S.J. Klippenstein, B. Ruscic, R. Sivaramakrishnan*	1B01: The thermal structure of the blue whirl using different liquid fuels *S.B. Hariharan, P.M. Anderson, Y. Hu, H. Xiao, M.J. Gollner, E.S. Oran*	1C01: Structure and thermal characterization of expanded intumescent coatings for fire protection *J. Kang, F. Takahashi, J.S. T'ien*	1D01: Theoretical and numerical analysis of oscillatory diffusion flames *M. Miklavčič, I.S. Wichman*	1E01: Ignition of B_4C and B containing solid ramjet fuel *J. Kalman, T. Hedman, E. Tolmachoff, T. Tran*	1F01: Observations of soot optical property characteristics using high-speed, multiple wavelength, extinction imaging in heavy-duty diesel sprays *K. Yasutomi, S.A. Skeen*	1G01: Study of auto-ignition and extinction characteristics of diesel blended with oxygenates in laminar opposed non-premixed flames *R. Khare, K. Narayanaswamy, V. Raghavan*	1H01: Variance consistent mean shift particle model for treating differential molecular diffusion in transported PDF methods for turbulent reactive flows *P. Zhang, H. Wang*	1J01: Characterization of a jet above a catalytic combustor using wavelength modulation spectroscopy *T.R.S. Hayden, C. LaPointe, N.T. Wimer, J.D. Christopher, P.E. Hamlington, G.B. Rieker*	1K01: Effect of aromatic fuels on aromatic species and soot distributions in laminar, co-flow, non-premixed flames at atmospheric pressure. *A. Makwana, S. Iyer, M. Linevsky, R. Santoro, T. Litzinger, J. O'Connor*

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09:30	1A02: Quantum chemical and kinetic modelling of methyl-vinyl+O_2 reaction *X. Chen, C.F. Goldsmith*	1B02: Burning behavior of a pool fire on a water layer with a thin metal wool *H. Sezer, K.S. Arsava, A.S. Rangwala*	1C02: Flame spread over a fire resistant fabric under external heating *M. Thomsen, X. Huang, A. Alonso, C. Fernandez-Pello, D.L. Urban, G.A. Ruff*	1D02: Intermittency in turbulent premixed hydrogen-air flames *S. Whitman, A.Y. Poludnenko, P.E. Hamlington*	1E02: Enhancement of HTPB combustion in a hybrid rocket motor using amorphous Ti–Al–B nanopowder additives *T.L. Connell Jr., Z.J. Huba, A. Epshteyn, R.A. Yetter, B.T. Fisher*	1F02: Soot and spectral radiation modeling for a high-pressure turbulent spray flame *S. Ferreyro Fernandez, C. Paul, A. Sircar, A. Imren, D.C. Haworth, S. Roy, M.F. Modest*	1G02: The effect of residence time on the ignitability of ethylene and air mixtures in a toroidal jet-stirred reactor *R.D. Stachler, J.K. Lefkowitz, T.M. Ombrello, S.D. Stouffer, J.S. Heyne, J.D. Miller*	1H02: Joint scalar probability density function modeling for multiscalar turbulent mixing *B.A. Perry, M.E. Mueller*	1J02: A new diagnostic for hydrocarbon fuels using 3.41-µm diode laser absorption *S. Wang, T. Parise, D.F. Davidson, R.K. Hanson*	1K02: Detailed modelling of CO_2 addition effects on the evolution of soot particle size distribution functions in premixed laminar ethylene flames *A. Naseri, A. Veshkini, M.J. Thomson*
09:50	1A03: Inference of H_2O_2 thermal decomposition rate parameters from experimental statistics *T.A. Casey, M. Khalil, H. Najm*	1B03: Large-scale wind-tunnel experiments and numerical study on moving-type fire whirls *K. Kuwana, T. Suzaki, K. Sekimoto, Y. Nakamura, K. Saito*	1C03: Characterization of thermal degradation behavior for polymers containing reactive flame retardants: Application to glass fiber reinforced polyamide 66 blended with red phosphorous *Y. Ding, S.I. Stoliarov, R.H. Kraemer*	1D03: Analytical study on near-field entrainment in a transient turbulent free jet *M.E. Feyz, R. Nalim, J.P. Gore, A. Tarraf*	1E03: Temperature sensitivity and high-pressure characteristics of nano-sized additives in AP/HTPB-composite propellants *C.A.M. Dillier, A.R. Demko, J.M. Stahl, T. Sammet, E.L. Petersen*	1F03: Reducing the emissions and efficiency penalties of Low Temperature Combustion (LTC) through Low Heat Rejection (LHR) *T. Kroeger, T. Jacobs*	1G03: Computational study of laser ignition of premixed fuel air mixtures in a rapid compression machine *S. Bhoite, C. Dumitrache, A. Yalin, A.J. Marchese*	1H03: A co-located particle method for transported PDF simulations of coal flames *J. Cai*	1J03: A Bayesian processing model for high speed, transient engine exhaust characteriza-tion *D. Wilson, C. Allen*	1K03: Electronic properties of polycyclic aromatic hydrocarbons and their derivatives *D. Chen, H. Wang*

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10:10	1A04: Criteria of filtering the best set of kinetic parameters from the literature database *M. Ferreira Martins, F.H. Sepúlveda Palma*	1B04: Thermal and flow structures of a porous burner flame and an array of micro flame burners: Implications to simulate large scale mass fires and fire whirls in laboratory *A.A. Salaimeh, T. Hirasawa, M. Fuchihata, N. Akafuah, K. Saito*	1C04: Kinetics effect on carbon monoxide yield in burning of polymeric solids containing flame retardants *H. Guo, R.E. Lyon, N. Safronava, R.N. Walters, S. Crowley*	1D04: A jet-stirred chamber for combustion in homogeneous, isotropic, near-zero mean flow turbulence. *A.A. Davani, P.D. Ronney*	1E04: Assembly and encapsulation of aluminum NP's within AP/NC matrix and their reactive properties *H. Wang, R.J. Jacob, J.B. DeLisio, M.R. Zachariah*	1F04: Role of turbulence-chemistry interactions at low temperature engine conditions *P. Kundu, M. Ameen, S. Som*	1G04: Multi-modal counterflow flame structure under autoignitive conditions *T. Grenga, M.E. Mueller*	1H04: Propagation of kinetic uncertainty through surrogate subspace in combustion simulations *W. Ji, J. Wang, B. Yang, Z. Ren, C.K. Law*	1J04: Measurements of low concentration hydrocarbons at elevated temperatures and pressures using supercontin-uum laser absorption spectroscopy *M. Halloran, N. Traina, T. Lee, J. Yoo*	1K04: Flame temperature effect on the transition between soot and graphitic carbon products in premixed stagnation flames *J. Bonpua, J. Camacho*
10:30 – 10:50 Break with coffee available in the Chesapeake Foyer Combustion Artwork is displayed in LOCATION Make sure to stop by, visit and vote. Voting closes Tuesday at 17:30										
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10:50	1A05: HONO decomposition kinetics *C.F. Goldsmith*	1B05: Large-Scale diesel pool fire modeling *C. Cao, M. Corn, V. Sankaran*	1C05: Models for absorption and scattering of radiation by water droplets in fire suppression environments *A. Gupta, K.V. Meredith, Y. Wang, M. Chaos*	1D05: Predicting the conversion efficiencies of any coal type in CFBCS *S. Niksa, Y. Sakurai, N. Fujiwara*	1E05: Combustion behavior of surface functionalized aluminum nanoparticle dispersions in kerosene *M.N. Bello, D.K. Smith, M. Pantoya*	1F05: Effects of non-equilibrium plasma discharge on ignition and LTC of DME/O_2/Ar mixtures: A numerical investigation *Y. Zhang, S. Yang, W. Sun, V. Yang*	1G05: Chemical explosive mode analysis on extinction of 1-D premixed counterflow flames *J.-W. Park, T. Lu*	1H05: Comparative analysis of methods for heat losses in physically-derived reduced-order manifolds *A.C. Nunno, T. Grenga, M.E. Mueller*	1J05: Shock tube study of jet fuel pyrolysis and ignition at elevated pressure *J. Shao, Y. Zhu, S. Wang, D.F. Davidson, R.K. Hanson*	1K05: A modeling tool for household biogas burner flame port design *T. Decker, M. Baumgardner, T. Bradley, J. Prapas*

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11:10	1A06: Automated transition state theory calculations of abstraction reactions by hydroperoxyl, compared to literature model values *N. Harms, B. Slakman, J. Cain, R.H. West*	1B06: A model for fire-whirl movement along fire lines *K. Kuwana, K. Saito, F.A. Williams*	1C06: Firefighting nozzle reaction and hose tension *S.K. Chin, G. Jomaas, P.B. Sunderland*	1D06: Modeling soot in coal systems *A.J. Josephson, T.H. Fletcher, D.O. Lignell*	1E06: Combustion characteristics of hydrocarbon droplets induced by photoignition of aluminum nanoparticles *A. Badakhshan, J.W. Bennewitz, D.G. Talley*	1F06: Plasma-assisted combustion in spray flames at elevated temperatures and pressures *F.G. del Campo, D.E. Weibel, C. Wen, F. Takahashi*	1G06: Flame quenching dynamics in a rectangular cross section channel for different velocity regimes *A.M. Mahuthannan, D.A. Lacoste, J. Damazo, E. Kwon, W.L. Roberts*	1H06: Dependency of turbulent spray combustion modeling on mesh resolution using flamelet generated manifolds *A. Goyal, O.S. Abianeh, L. Bravo*	1J06: FTIR absorption cross section measurements of organo phosphorus compounds *S. Neupane, C.E. Bishop, R. Peale, S. Vasu*	1K06: The effects of inert-placement (Z_{st}) on soot and radiative heat flux in turbulent diffusion flames *A. Gopan, Z. Yang, B.M. Kumfer, R.L. Axelbaum*
11:30	1A07: Importance of pericyclic reactions for biomass pyrolysis and combustion *P.R. Westmoreland, A. Bose, C.J. McGill*	1B07: Numerical description of fire-whirl dynamics over liquid fuel pools *W. Coenen, D. Moreno-Boza, A.L. Sánchez, F.A. Williams*	1C07: An analytical framework for fire sprinkler plume penetration *E. Link, H. Baum, A. Marshall*	1D07: Formation of acid gases from co-firing of coal with raw and torrefied biomasses *E. Rokni, A. Panahi, Y.A. Levendis*	1E07: Investigating the reaction mechanism of Al/PVDF films at 1 atm *M.C. Rehwoldt, J.B. DeLisio, H. Wang, M.R. Zachariah*	1F07: Reduction of flame development time using nanosecond-pulsed high-frequency discharges in flowing mixtures *J.K. Lefkowitz, T. Ombrello*	1G07: Quenching, ignition, flame propagation, and extinction in hot-spots at elevated temperature and pressure *J. Santner, S.S. Goldsborough*	1H07: Physically-derived reduced-order manifolds for multi-modal turbulent combustion *M.E. Mueller*	1J07: Hyperspectral imaging diagnostics of a laminar hydrogen flame *M.R. Rhoby, K.C. Gross*	1K07: Laser-optical investigation of highly radiative, high temperature homogeneous combustion *K. Aanjaneya, W. Cao, Y. Chen, A. Atreya*

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11:50	1A08: Reaction mechanisms of R and QOOH radicals produced in low-temperature oxidation of butanone *R.L. Caravan, B. Rotavera, E. Papajak, I.O. Antonov, K. Ramasesha, J. Zádor, D.L. Osborn, C.A. Taatjes*	1B08: An experimental study of the flame intermittent frequencies of wind-driven line fires *W. Tang, M. Finney, S. McAllister, M. Gollner*	1C08: Mechanisms for fire suppression with aqueous foams and the role of surfactants *R. Ananth, K. Hinnant*	1D08: Reducing pollutant emissions in a wood burning, natural draft cookstove using lab-based fire power sweep measurements *G. Allawatt, D. Udensen, A. Pundle, B. Sullivan, C. Garland, M. Johnson, P. Means, J. Kramlich, J.D. Posner*	1E08: Ignition and combustion characteristics of Al/RDX/NC nanostructered microparticles *G. Young, D.P. Wilson, J.B. DeLisio, M.R. Zachariah*	1F08: Low temperature kinetics of pentane oxidation in a nanosecond-pulsed plasma discharge *A. Rousso, X. Mao, Y. Ju*	1G08: Experimental investigation of laminar premixed methane-air flame extinction with sand and sodium bicarbonate particles *S. Ranganathan, D. Petrow, S. Rockwell, A.S. Rangwala*	1H08: Effect of numerical approaches for flamelet table integration on flamelet modeling of a turbulent jet flame and a self-excited resonance combustor *C. Han, T. Pant, H. Wang*	1J08: Fourier transform microwave spectroscopic studies of dimethyl ether and ethylene flames *N. Hansen, J. Wullenkord, D.A. Obenchain, K. Kohse-Höinghaus, J.-U. Grabow*	1K08: kW scale combustor for power generation *A. Frank, P. Therkelsen, J.-Y. Chen, R.K. Cheng*
12:10	1A09: An updated comprehensive chemical kinetic model of C_8-C_{20} *n*-alkanes. *G. Kukkadapu, S.W. Wagnon, M. Mehl, K. Zhang, C.K. Westbrook, W.J. Pitz, M.J. Mcnenly, S.M. Sarathy, A. Rodriguez, O. Herbinet, F. Battin-Leclerc, C.-J. Sung*	1B09: Measured and simulated temperature statistics in a buoyancy-driven turbulent line fire *S. Verma, J. White, E. Keller, A. Marshall, P. Sunderland, A. Trouvé*	1C09: Development of an analytical AFFF formulation for the evaluation of alternative surfactants *K. Hinnant, A. Snow, J. Farley, S. Giles, R. Ananth*	1D09: Ignition of a dispersed coal particle stream and measurement of ultrafine particle size distributions *A. Adeosun, Q. Huang, T. Li, X. Wang, A. Gopan, Z. Yang, S. Li, R.L. Axelbaum*	1E09: Effect of milling temperature on structure and reactivity of Al-Ni composites *O.S. Lagoviyer, M. Schoenitz, E.L. Dreizin*	1F09: Ignition and flame propagation enhancement by dual-pulsed laser-induced breakdown *L. Wermer, J.K. Lefkowitz, T. Ombrello, S.-k. Im*	1G09: The influence of stoichiometric mixture fraction on extinction of laminar, nonpremixed DME flame *M. Hunyadi-Gall, G. Mairinger, R. Khare, K. Narayana-swamy, V. Raghavan, K. Seshadri*	1H09: Modeling effective Lewis numbers in non-premixed flames: insights from DNS data of Sandia flame B *N. Burali, G. Blanquart*	1J09: Combined laser absorption and Gas Chromato-graphy (GC) speciation in a shock tube: Validation and application to ethylene pyrolysis *A.M. Ferris, D.F. Davidson, R.K. Hanson*	1K09: A study of radiative flameless combustion in a furnace *A. Atreya, H.R. Baum*

12:30 – 13:30 Section Meetings Lunch

Please report to your Section meeting rooms:
Eastern States Section: Room 2110 (lunch buffet located on the 2nd level)
Central States Section: Room 2100 (lunch buffet located on the 2nd level)
Western States Section: Room 1105 (lunch buffet located in the Chesapeake Foyer)
All other attendees – Chesapeake Ballroom (lunch buffet located in the Chesapeake Foyer)

NSF Discussion: Combustion and Fire Systems Program
S.-C. Kong, Program Director
13:30 – 14:10 Potomac Ballroom

14:10 – 14:15 TRANSITION TO AFTERNOON SESSIONS

Make sure to visit our Sponsors in the Chesapeake Foyer and the Work in Progress Posters in the Hall of Distinction

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	Chemical Kinetic III *Session Chair:* N.J. Labbe	Fire III *Session Chair:* M.J. Gollner	Droplets/Spray I *Session Chair:* S.-Y. Lee	Computational Analysis I *Session Chair:* T. Lu	Coal Combustion Modeling *Session Chair:* S. Niksa	Micro-Combustion/ New Concepts II *Session Chair:* W. Sun	Laminar Flames I *Session Chair:* C.S. McEnally	Turbulent Flame Models II *Session Chair:* Z. Ren	Soot Diagnostics *Session Chair:* J. Camacho	Detonation I *Session Chair:* C.D. Slabaugh
14:15	1A10: Kinetic study of low temperature oxidation of *n*-pentane with nitric oxide addition in a jet stirred reactor *H. Zhao, L. Wu, C. Patrick, Z. Zhang, Y. Rezgui, G. Wysocki, Y. Ju*	1B10: Modeling thermal runaway in lithium-ion packs as a function of scale and heat source *R.C. Shurtz, J.C. Hewson*	1C10: Bouncing to merging transition in drop impact on liquid film: Role of viscosity *X. Tang, A. Saha, C.K. Law, C. Sun*	1D10: Uncertainty of a foundational fuel chemistry model *Y. Tao, G.P. Smith, H. Wang*	1E10: Large Eddy Simulation of dynamic ash deposition in a pulverized coal boiler *M. Zhou, B. Isaac, S.T. Smith, J.N. Thornock, P.J. Smith*	1F10: Exploring the mechanisms of spontaneous combustion of H_2/O_2 in nanobubbles generated by water electrolysis *S. Jain, L. Qiao*	1G10: Fuel wall film effects on premixed flame propagation, quenching and emission *H. Ge, P. Zhao*	1H10: CFD modeling of a homogeny-eously charged turbulent jet ignition system using large eddy simulations *M. Gholamisheeri, E. Toulson*	1J10: Estimating soot primary particle diameter using time-resolved laser-induced incandescence *J.P. Abrahamson, M. Singh, R.L. Vander Wal*	1K10: Simulations of the linear model detonation engine *D. Schwer, K. Kailasanath, J. Burr, K. Yu*
14:35	1A11: Effect of stereoiso-meric structure and bond location on the ignition and reaction pathways of hexenes *C. Liu, C.L. Barraza-Botet, S.W. Wagnon, M.S. Wooldridge*	1B11: A formulation for the mechanisms of flashover in spreading room fires *J.G. Quintiere*	1C11: Drop bouncing on liquid film: Evolution of gas layer *X. Tang, A. Saha, C.K. Law, C. Sun*	1D11: ChemKED: A human- and machine-readable data standard for chemical kinetics experiments *B.W. Weber, K.E. Niemeyer*	1E11: Development of a neural network model for prediction of methane number of producer gas mixtures *D. Wise, R. Seiser, R. Cattolica, D.B. Olsen*	1F11: Flame propagation through Converging-Diverging (C-D) microchannels *S. Biswas, L. Qiao*	1G11: Acoustic suppression of alkane fueled line-flames *A.N. Friedman, S.I. Stoliarov*	1H11: On the comparison of finite-rate kinetics and flamelet based subgrid models for LES of turbulent premixed flame *M. Rieth, R. Ranjan, S. Menon, A. Kempf*	1J11: Repeatability and reproducibility of semi-automated measurements of soot primary particle size distributions from TEM images *P.M. Anderson, H. Guo, P.B. Sunderland*	1K11: Detailed comparison of high-order and low-order methods for simulating DDT in obstacle-laden channels *H. Xiao, V.N. Gamezo, R.W. Houim, C.R. Kaplan, E.S. Oran*

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14:55	1A12: Mechanistic analysis of *n*-propylcyclo-hexane and *n*-butylcyclo-hexane oxidation in low temperature regime *J.A. Corrubia, N.P. Cernansky, D.L. Miller*	1B12: Comparison of thermal decomposition models in chaparral fuels *D.R. Weise, W.E. Mell, X. Zhou, S. Mahalingam*	1C12: Simulation of drop impact on a hot wall using SPH method with Peng-Robinson equation of state *M. Ray, X. Yang, S.-C. Kong*	1D12: Analysis of the errors associated with molecular transport parameters in combustion modeling and their effects on one-dimensional flame simulations *D.I. Pineda, X. Shi, T.A. Casey, J.-Y. Chen*	1E12: Predicting the performance of a natural draft cookstove for the developing world using computational fluid dynamics *A. Pundle, B. Sullivan, G. Allawatt, J. Kramlich, J. Posner*	1F12: Rich-burn, quick-mix, lean-burn combustor with flame-assisted fuel cells *R.J. Milcarek, M.J. Garrett, J. Ahn*	1G12: Extracting length scales of a thermo-diffusively unstable laminar flame *J. Schlup, G. Blanquart*	1H12: High-fidelity simulation of combustion processes in liquid rocket engines *X. Wang, V. Yang*	1J12: Extinction measurements near 3.0 micrometers in nitrogendilute, ethylene, non-premixed flames *R.S. Jacobson, D.M. Bailey, E.M. Adkins, J.H. Miller*	1K12: Optimization of chemical-diffusive models for deflagration-to-detonation transition calculations *C. Kaplan, W. Zheng, H. Xiao, R. Houim, E. Oran*
15:15	1A13: Autoignition of *trans*-decalin, a diesel surrogate compound: Rapid compression machine experiments and chemical kinetic modeling *M. Wang, G. Kukkadapu, K. Zhang, W.J. Pitz, C.-J. Sung*	1B13: Modeling porous PMDI-based polyurethane foam decomposition in pressurizing systems *S.N. Scott, R.M. Keedy, V.E. Brunini, A.B. Dodd*	1C13: Secondary breakup of liquid drops in an accelerating flow at high Weber numbers *N. Ciarlini, M. Gamba*	1D13: Evaluating multi-component pressure dependence of mixture rules for multi-well multi-channel reacting systems *L. Lei, M.P. Burke*	1E13: Coupling an explicit low-Mach projection scheme to various chemistry models and interphase source terms *J. McConnell, T. Saad, J.C. Sutherland*	1F13: Biogas combustion characteriza-tion for flame fuel cell utilization *M.J. Garrett, R. Falkenstein-Smith, R.J. Milcarek, J. Ahn*	1G13: Structure of nonpremixed swirl-type tubular flames burning condensed fuels with unity Lewis numbers *V.M. Sauer, F.F. Fachini, D. Dunn-Rankin*	1H13: Accounting for real gas effects in CFD simulations of high density combustion *C. Zheng , D. Coombs, B. Akih-Kumgeh*	1J13: Chemical composition of carbon inksticks revealed through Raman spectroscopy *J.A. Giaccai, J.H. Miller*	1K13: Role of low-temperature chemistry in detonation of *n*-heptane/oxygen/ diluent mixtures *W. Liang, R. Mével, C.K. Law*

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	Chemical Kinetic III *Session Chair:* N.J. Labbe	Fire III *Session Chair:* M.J. Gollner	Droplets/Spray I *Session Chair:* S.-Y. Lee	Computational Analysis I *Session Chair:* T. Lu	Coal Combustion Modeling *Session Chair:* S. Niksa	Micro-Combustion/ New Concepts II *Session Chair:* W. Sun	Laminar Flames I *Session Chair:* C.S. McEnally	Turbulent Flame Models II *Session Chair:* Z. Ren	Soot Diagnostics *Session Chair:* J. Camacho	Detonation I *Session Chair:* C.D. Slabaugh
15:35	1A14: New and realistic pathways from cyclopenta-diene (CPD) to naphthalene, phenanthrene, and other soot precursors *A.E. Long, C.A. Grambow, A.G. Vandeputte, S.S. Merchant, W.H. Green*	1B14: Radiation characteristics of fire-inspired heterogeneous mixtures: A Monte Carlo ray tracing study *B. Wu, X. Zhao*	1C14: Fuel vapor cloud formation during and after low temperature droplet burning in microgravity *D.L. Dietrich, V. Nayagam, F.A. Williams*	1D14: Automated discovery of non-Boltzmann bimolecular pathways in NO_x formation *M. Barbet, K. McCullough, M.P. Burke*	1E14: Validation and Uncertainty Quantification analysis (VUQ) of a char oxidation model *O. Díaz-Ibarra, J. Spinti, P. Smith, C. Shaddix, E. Hecht*	1F14: Micro-combustion of gaseous fuels in the FREI regime *I. Schoegl, P. Sharma, M.J. McNenly*	1G14: Dynamics of pulsating planar premixed flames. *J. Graña-Otero, A. Liñán*	1H14: Hierarchical model form uncertainty quantification for turbulent combustion modeling *M.E. Mueller*	1J14: Dual-pump coherent anti-Stokes Raman scattering measurements in sooting ethylene diffusion flames stabilized on a Yale burner *A. Satija, A. Lowe, L. Thomas, A.R. Masri, R.P. Lucht*	1K14: Magnetic reconnection detonation in supernova remnants *H. Zhang, Y. Gao, C.K. Law*
15:55 – 16:15 Break with coffee available in the Chesapeake Foyer										
Room	ROOM 1105	ROOM 0101	ROOM 0105	ROOM 1102	ROOM 2104	ROOM 2115	ROOM 2100	ROOM 2110	ROOM 2106	ROOM 2108
	Chemical Kinetics IV *Session Chair:* R.S. Tranter	Fire IV *Session Chair:* J.C. Hewson	Droplets/Spray II *Session Chair:* L. Jiang	Computational Analysis II *Session Chair:* P. Pepiot	Biomass Combustion *Session Chair:* Z. Yang	IC Engine Modeling *Session Chair:* T.J. Jacobs	Laminar Flame Propagation I *Session Chair:* Y. Xuan	Turbulent Flame Propagation *Session Chair:* S.P.M. Bane	Diagnostics III *Session Chair:* R. Barlow	Detonation II *Session Chair:* M.R. Rhoby
16:15	1A15: Atomistic scale investigation of PAH curvature effects on soot oxidation *A. Jain, A.C.T. Van Duin*	1B15: Thermogravi-metric analysis and modeling of NOMEX fabric pyrolysis *Y. Li, Y.-T.T. Liao*	1C15: Comprehensive study of the initial diameter for combustion of *n*-heptane/ *iso*-octane mixture droplets *Y. Xu, T. Farouk, Y. Shen, M.C. Hicks, C.T. Avedisian, Y. Xie, A.P. Reeves, F.L. Dryer*	1D15: A midpoint-rule-based extrapolation solver for combustion CFD *A. Imren, D C. Haworth*	1E15: Effect of water-leaching on the fine particle formation during biomass combustion *X. Wang, A. Adeosun, Z. Hu, T. Li, H. Tan, R.L. Axelbaum*	1F15: A numerical investigation of CO formation and consumption pathway in a diesel engine *Y. Li, H. Li, H. Guo*	1G15: Unsteady deflagration speed in an auto-ignitive DME/Air mixture at NTC conditions *S. Desai, R. Sankaran, H.G. Im*	1H15: Effect of stoichiometric mixture fraction on hydrogen edge-flames in a counter-flow burner *Z. Zhou, P.D. Ronney*	1J15: Measurement of carbon monoxide (CO) in sooting flames using femtosecond Two-Photon Laser-Induced Fluorescence (fs-TPLIF) *Y. Wang, W. Kulatilaka*	1K15: Investigation of flame acceleration in gaseous and liquid fuels in the Sandia/Purdue 20 ft. combustion tube facility *T.J. Graziano, P.B. Venkatesh, S.P.M. Bane, S.E. Meyer, M.C. Grubelich*

Room	ROOM 1105	ROOM 0101	ROOM 0105	ROOM 1102	ROOM 2104	ROOM 2115	ROOM 2100	ROOM 2110	ROOM 2106	ROOM 2108
	Chemical Kinetics IV *Session Chair:* R.S. Tranter	Fire IV *Session Chair:* J.C. Hewson	Droplets/Spray II *Session Chair:* L. Jiang	Computational Analysis II *Session Chair:* P. Pepiot	Biomass Combustion *Session Chair:* Z. Yang	IC Engine Modeling *Session Chair:* T.J. Jacobs	Laminar Flame Propagation I *Session Chair:* Y. Xuan	Turbulent Flame Propagation *Session Chair:* S.P.M. Bane	Diagnostics III *Session Chair:* R. Barlow	Detonation II *Session Chair:* M.R. Rhoby
16:35	1A16: Computations of physical and electronic structure of stacks of polynuclear aromatic hydrocarbons of varying topologies *J.A. Giaccai, E.M. Adkins, J.H. Miller*	1B16: Numerical study of pyrolysis and combustion of a carbon fiber-epoxy composite *H. Koo, A.L. Brown, T. Voskuilen, F. Pierce*	1C16: Extinction characteristics of isolate *n*-Alkane fuel droplets during low temperature cool flame burning *T.I. Farouk, F.L. Dryer*	1D16: Modeling study of the anti-knock tendency of substituted phenols as additives *N.W. Yee, P. Zhang, S. Filip, C. Hetrick, B. Yang, W.H. Green*	1E16: Biomass gasification study applied to biomass integrated gasification combined cycle *G. Zang, S. Tejasvi, A. Ratner*	1F16: Large Eddy Simulation of Dimethyl Ether (DME) reacting spray flame in Compression Ignition (CI) engine-relevant conditions *A.A. Moiz, K.D. Cung, L. Zhao, M.M. Ameen, S. Som, S.-Y. Lee*	1G16: Effect of higher hydrocarbon content on laminar burning velocity and flame stability of natural gas *A.R.Khan, M.R.Ravi, A. Ray*	1H16: Turbulent flame speeds at high pressures: Effects of flamefront instability *S. Yang, A. Saha, C.K. Law*	1J16: High-resolution OH and CH_2O visualization in a premixed cavity-anchored ethylene-air flame in a M = 0.6 flowfield *C.M. Geipel, R.D. Rockwell, H.K. Chelliah, A.D. Cutler, C.A. Spelker, Z. Hashem, P.M. Danehy*	1K16: Experiments in the linear model detonation engine *J.R. Burr, K.H. Yu, D. Schwer, K. Kailasanath*
16:55	1A17: A comprehensive detailed kinetic mechanism for the simulation of transportation fuels *M. Mehl, K. Zhang, S. Wagnon, G. Kukkadapu, C.K. Westbrook, W.J. Pitz, Y. Zhang, H. Curran, M. Al Rachidi, N. Atef, S.M. Sarathy*	1B17: Pyrolysis and burning of leaf-like fuel by convective heating: A computational study *B. Shotorban, B. Yashwanth, S. Mahalingam, D.J. Haring, P.R. Borujerdi*	1C17: Cool flame combustion of sub-millimeter sized higher *n*-Alkane droplets at atmospheric condition *F.E. Alam, F.L. Dryer, T.I. Farouk*	1D17: Low-order discrete dynamical system for jet diffusion flame *W. Zeng, J.M. McDonough*	1E17: Predicting fast pyrolysis of biomass particles with different geometries *Y. Pan, S.-C. Kong*	1F17: Modeling radiative heat transfer and turbulence-radiation interactions in engines *C. Paul, A. Sircar, S. Ferreyro-Fernandez, A. Imren, D.C. Haworth, S. Roy, W. Ge, M.F. Modest*	1G17: Predicting real transportation fuel combustion properties: Distinct chemical functionalities in hydrocarbon laminar burning velocities *K. Dussan, F.L. Dryer, S.H. Won, S. Dooley*	1H17: Effect of sodium bicarbonate on the burning velocity of premixed turbulent iron-methane air flames *S.R. Rockwell, J. Taveau, D. Petrow*	1J17: High pressure effects on PLIF of a nonpremixed coflow flame *D. Escofet-Martin, Y.-C. Chien, D. Dunn-Rankin*	1K17: Experimental and numerical study of flame acceleration and transition to detonation in narrow channels *J. Melguizo-Gavilanes, R. Houim*

Room	ROOM 1105	ROOM 0101	ROOM 0105	ROOM 1102	ROOM 2104	ROOM 2115	ROOM 2100	ROOM 2110	ROOM 2106	ROOM 2108
	Chemical Kinetics IV *Session Chair:* R.S. Tranter	Fire IV *Session Chair:* J.C. Hewson	Droplets/Spray II *Session Chair:* L. Jiang	Computational Analysis II *Session Chair:* P. Pepiot	Biomass Combustion *Session Chair:* Z. Yang	IC Engine Modeling *Session Chair:* T.J. Jacobs	Laminar Flame Propagation I *Session Chair:* Y. Xuan	Turbulent Flame Propagation *Session Chair:* S.P.M. Bane	Diagnostics III *Session Chair:* R. Barlow	Detonation II *Session Chair:* M.R. Rhoby
17:15	1A18: The development and validation of a chemical kinetic model for anisole, a compound to represent biomass pyrolysis fuels *S.W. Wagnon, S. Thion, E.J.K. Nilsson, M. Mehl, Z. Serinyel, K. Zhang, P. Dagaut, A.A. Konnov, G. Dayma, W.J. Pitz*	1B18: Numerical investigation of fire dynamics in the presence of burning obstacles under a unidirectional wind *S.P. Kozhumal, G. Di Cristina, N.S. Skowronski, A. Simeoni, S.-k. Im, A.S. Rangwala*	1C18: Distillation-resolved evolution of key combustion properties *J.A. Lefkowitz, F.M. Haas*	1D18: Modeling of plasma assisted combustion in alkali-doped methane flames *J.E. Lynch, T.R. Sippel*	1E18: Torrefied biomass size for combustion in existing boilers *A. Panahi, M. Tarakcioglu, Y.A. Levendis*	1F18: An assessment of CFD-based wall heat transfer models in piston engines *A. Sircar, C. Paul, S. Ferreyro-Fernandez, A. Imren, D.C. Haworth*	1G18: Uncertainty reduction in laminar flame speed extrapolation from expanding spherical flames *J. Huo, S. Yang, Z. Ren, C.K. Law*	1H18: Premixed syngas flame propagation in an enclosed constant volume chamber *Y.M. Najim, N. Müller, I.S. Wichman*	1J18: A simplified approach to multi-scalar imaging for turbulent premixed flames *A.W. Skiba, C.D. Carter, S.D. Hammack, T. Lee*	1K18: Physics and flame structure of a staged transverse jet and pulsed detonation in supersonic crossflow *Y.M. Abul-Huda, M. Gamba*
17:35	1A19: Experimental and kinetic modeling study of *trans*-methyl 2-octenoate oxidation using reaction rate rules from alkanes *K. Zhang, C. Togbé, P. Dagaut, W. Pitz, S. Wagnon*	1B19: Large Eddy Simulations of a turbulent wall fire and a turbulent line burner using FireFOAM *A. Marchand, S. Verma, H. Li, A. Trouvé*	1C19: A UNIFAC-based approach to gasoline droplet evaporation and the role of oxygenates on PM precursor vaporization *S. Burke, M. Ratcliff, R. McCormick, R. Rhoads, B. Windom*	1D19: A quantum mechanics study on early decomposition reactions for liquid-phase HMX *L. Patidar, M. Khichar, S.T. Thynell*	1E19: Pseudo-components of hemicellulose and lignin for the kinetic modelling of biomass pyrolysis *K. Dussan, S. Dooley, R.F.D. Monaghan*	1F19: Multi-cycle Large Eddy Simulation to capture cycle-to-cycle variation (CCV) in spark-ignited (SI) engines *L. Zhao, A.A. Moiz, S. Som, N. Fogla, M. Bybee, S. Wahiduzzaman, M. Mirzaeian, F. Millo, J. Kodavasal*	1G19: Laminar flame speeds of dilute sarin simulants in H_2-CH_4-air mixtures *T. Sikes, N. Niemiec, W. Kulatilaka, E.L. Petersen*	1H19: Lift-off of non-premixed turbulent CH_4 jet flames at elevated pressures *T.F. Guiberti, W.R. Boyette, A.M. Elbaz, A.R. Masri, W.L. Roberts*	1J19: Flame structure and chemiluminescence in premixed flames. *J. Graña-Otero, S. Mahmoudi*	1K19: Flame acceleration and DDT in ethylene/nitrous oxide at elevated pressures *P. B. Venkatesh, T.J. Graziano, S.P.M. Bane, S.E. Meyer, M.C. Grubelich*

Room	ROOM 1105	ROOM 0101	ROOM 0105	ROOM 1102	ROOM 2104	ROOM 2115	ROOM 2100	ROOM 2110	ROOM 2106	ROOM 2108
	Chemical Kinetics IV *Session Chair:* R.S. Tranter	Fire IV *Session Chair:* J.C. Hewson	Droplets/Spray II *Session Chair:* L. Jiang	Computational Analysis II *Session Chair:* P. Pepiot	Biomass Combustion *Session Chair:* Z. Yang	IC Engine Modeling *Session Chair:* T.J. Jacobs	Laminar Flame Propagation I *Session Chair:* Y. Xuan	Turbulent Flame Propagation *Session Chair:* S.P.M. Bane	Diagnostics III *Session Chair:* R. Barlow	Detonation II *Session Chair:* M.R. Rhoby
17:55	1A20: Multidimensional numerical investigation of NO_x formation in a burner coupled flow tube configuration: NO_x kinetics in post, pre and flame locations *S.F. Ahmed, A. Dasgupta, F.L. Dryer, T.I. Farouk*	1B20: Characterization of sloped ceiling jet flow using laser-assisted saltwater modeling technique *P.M.F. Maisto, A.W. Marshall, M.J. Gollner*	1C20: Subgrid mixing and evaporation modeling in Large Eddy Simulation of two-phase reacting flows *A. Panchal, R. Ranjan, S. Menon*	1D20: Computational analysis of RDX thermolysis in liquid state *M. Khichar, L. Patidar, S.T. Thynell*	1E20: Spontaneous ignition of hydrothermal flames in supercritical ethanol/water solutions *M.C. Hicks, U.G. Hegde, J.J. Kojima*	1F20: Dynamic adaptive combustion modeling of diesel spray flames based on chemical explosive mode analysis *C. Xu, M.M. Ameen, S. Som, J.H. Chen, T. Lu*	1G20: Laminar flame speeds of lean H_2/O_2/He at low and elevated pressures *W. Zhang, X. Gou, Z. Chen*	1H20: Turbulent flame speed measurements of multi-component fuels *H. Johnson, II, D. Dasgupta, A. Steinbrenner, D. Wu, D. Noble, T. Asai, T. Lieuwen*	1J20: Continuous wave CEMOR for measurement of HO_2 *M. Stichter, N. Cernansky, D. Miller*	1K20: Effect of combustion products on detonation velocities *D.R. Bean, M.F. Zaiger, R. Nelke, P. Beck, I. Walters, D.L. Blunck*
	Tomorrow, during breaks and transitions make sure to visit: Combustion Artwork is displayed in LOCATION Voting closes Tuesday at 17:30 Winners will be announced Wednesday morning Sponsors are displayed in the Chesapeake Foyer Work in Progress Posters Session is 08:00 – 18:00 in the Hall of Distinction									

TUESDAY, 25 April 2017

07:00 – 08:00 Continental Breakfast – Chesapeake Foyer with seating in the Chesapeake Ballroom
07:00 – 16:00 Registration Open – Chesapeake Foyer
08:00 – 18:00 Combustion Artwork is displayed in LOCATION
Make sure to visit and vote before voting closes at 17:30
08:00 – 16:35 Sponsors are displayed in the Chesapeake Foyer

Work in Progress Posters (Display Set up 07:00 – 08:00, Poster Session 08:00 – 18:00) – Hall of Distinction

Potomac Ballroom
07:55 Announcements: Arnaud Trouvé, University of Maryland, Local Host

08:00 – 09:00 Plenary Lecture Donald Truhlar, University of Minnesota
"Advances Variational Transion State Theory for Combustion Reactions"
Session Chair: C.E.A. Finney

09:00 – 09:10 TRANSITION TO MORNING SESSIONS

Room	ROOM 1105	ROOM 0101	ROOM 0105	ROOM 1102	ROOM 2104	ROOM 2115	ROOM 2100	ROOM 2110	ROOM 2106	ROOM 2108
	Chemical Kinetics V *Session Chair:* C.F. Goldsmith	Fire V *Session Chair:* X. Huang	Norbert Peters Memorial Session I *Session Chair:* F.A. Williams	Oxygenated Fuels I *Session Chair:* R.H. West	DNS I *Session Chair:* H. Najm	IC Engine Measurements *Session Chair:* D.B. Olsen	Laminar Flames II *Session Chair:* W.D. Kulatilaka	Turbulent Flame Measurements I *Session Chair:* J.A. Sutton	Soot in Laminar Flames II *Session Chair:* J. O'Connor	Cool Flames *Session Chair:* T. Farouk
09:10	2A01: A new jet-stirred reactor for chemical kinetics investigations *A.A. Davani, P.D. Ronney*	2B01: Low pressure flame blowoff from the forward stagnation region of a blunt-nosed cast PMMA cylinder in axial mixed convective flow *J. W. Marcum, P. Rachow, P. V. Ferkul, S.L. Olson*	2C01: What causes hydrocarbon autoignition? An ongoing debate *C.K. Westbrook*	2D01: Autoignition of methyl valerate at low to intermediate temperatures and elevated pressures in a rapid compression machine *B.W. Weber, J. Bunnell, K. Kumar, C.-J. Sung*	2E01: A novel flamelet-based model for 3D DNS of Mild combustion with CH_4/H_2 fuels *E. Abtahizadeh, J. van Oijen, R. Bastiaans, P. de Goey*	2F01: Spark and laser ignition of iso-octane and ethanol blends *N.D. Peters, B. Akih-Kumgeh*	2G01: Thermal-diffusional instability in white dwarf flames: Regimes of flame pulsation *G. Xing, Y. Zhao, M. Modestov, C. Zhou, Y. Gao, C.K. Law*	2H01: Effects of fuel properties on the structure of a turbulent bluff-body stabilized conical premixed flame *B.R. Chowdhury, B.M. Cetegen*	2J01: A numerical study of the effects of *n*-propylbenzene addition to *n*-dodecane on soot formation and aggregate structure in a laminar coflow diffusion flame *T. Zhang, M.J. Thomson*	2K01: Kinetic effects of *n*-propylbenzene on *n*-dodecane diffusion cool flame extinction *O.R. Yehia, C.B. Reuter, Y. Ju*

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	Chemical Kinetics V *Session Chair:* C.F. Goldsmith	Fire V *Session Chair:* X. Huang	Norbert Peters Memorial Session I *Session Chair:* F.A. Williams	Oxygenated Fuels I *Session Chair:* R.H. West	DNS I *Session Chair:* H. Najm	IC Engine Measurements *Session Chair:* D.B. Olsen	Laminar Flames II *Session Chair:* W.D. Kulatilaka	Turbulent Flame Measurements I *Session Chair:* J.A. Sutton	Soot in Laminar Flames II *Session Chair:* J. O'Connor	Cool Flames *Session Chair:* T. Farouk
09:30	2A02: Investigation of pressure measurements in a high-pressure shock tube *M. Karimi, S. Carpenter, D. Ranjan, W. Sun*	2B02: The Saffire experiment: Large-scale combustion aboard spacecraft *P. Ferkul, D.L. Urban, S. Olson, G.A. Ruff, J. Easton, J.S. T'ien, Y.-T.T. Liao, A.C. Fernandez-Pello, J.L. Torero, G. Legros, C. Eigenbrod, N. Smirnov, O. Fujita, S. Rouvreau, B. Toth, G. Jomaas*	2C02: The impact of thermal diffusion on the structure of non-premixed laminar flames *A. Scholtissek, F. Hunger, F. Dietzsch, C. Hasse*	2D02: Development of a chemical kinetic mechanism for biodiesel Surrogate *A.D. Lele, A. Krishnasamy, K. Narayanaswamy*	2E02: DNS of spherically expanding turbulent premixed flames of pressurized lean methane/air mixtures in homogeneous isotropic turbulence *R. Buttay, T. Kulkarni, S. Luca, A. Attili, F. Bisetti*	2F02: The impact of carbon dioxide and water on single-pulse nanosecond discharge behavior at elevated density *B. Wolk, I. Ekoto*	2G02: The impact of pressure on methane combustion with CO_2 dilution *K.R. V Manikantachari, S. Martin, J.O. Bobren-Diaz, S. Vasu*	2H02: Flame stabilization behavior of a heated reacting premixed jet in a hot vitiated crossflow *J. Dayton, B.M. Cetegen*	2J02: On the effects of oxygen-enrichment and fuel unsaturation on PAHs and soot emissions in ethylene, propane, and propene flames *K.C. Kalvakala, V.R. Katta, S.K. Aggarwal*	2K02: Experimental characterization of freely propagating propane cool flames at sub-atmospheric pressures *M. Hajilou, E. Belmont*
09:50	2A03: Laser absorption measurements of ethylene and carbon monoxide time-histories during *n*-heptane oxidation at low temperatures behind reflected shock waves *A.M. Tulgestke, D.F. Davidson, R.K. Hanson*	2B03: Emulation of condensed fuel flames using a Burning Rate Emulator (BRE) in microgravity *A. Markan, J.G. Quintiere, P.B. Sunderland, J. L. de Ris, D. P. Stocker*	2C03: Constrained-temperature solutions of coflow laminar diffusion flames *N.J. Kempema, R.R. Dobbins, M.B. Long, M.D. Smooke*	2D03: A detailed cyclic ether oxidation mechanism for tetrahydrofuran radicals: A theoretical study *H. Wang, S.M. Sarathy*	2E03: Direct numerical simulation of a turbulent nonpremixed "cool" flame *A.G. Novoselov, M.E. Mueller*	2F03: Comparing infrared emission from hydrocarbon C-H stretch during direct injection with and without reaction in an optical heavy duty engine *W.E. Eagle, G. Roberts, M.P.B. Musculus, L.-M. Malbec, L. Sequino, E. Mancaruso*	2G03: Global and local response of premixed flames during flame-vortex interactions under distinct configurations *P.L.K. Paes, J.G. Brasseur, Y. Xuan*	2H03: A detailed characterization of a high pressure experimental apparatus for flame dynamic studies *F. Di Sabatino, D.A. Lacoste, W.L. Roberts*	2J03: Effect of distillate fraction of real jet fuel on sooting propensity – Part 1: Nascent soot formation in premixed stretch-stabilized flames *C. Saggese, A.V. Singh, J. Camacho, H. Wang*	2K03: The effects of CH_4 addition on DME non-premixed cool flames *R. Zhang, C.B. Reuter, Y. Ju*

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	Chemical Kinetics V *Session Chair:* C.F. Goldsmith	Fire V *Session Chair:* X. Huang	Norbert Peters Memorial Session I *Session Chair:* F.A. Williams	Oxygenated Fuels I *Session Chair:* R.H. West	DNS I *Session Chair:* H. Najm	IC Engine Measurements *Session Chair:* D.B. Olsen	Laminar Flames II *Session Chair:* W.D. Kulatilaka	Turbulent Flame Measurements I *Session Chair:* J.A. Sutton	Soot in Laminar Flames II *Session Chair:* J. O'Connor	Cool Flames *Session Chair:* T. Farouk
10:10	2A04: End wall imaging of CO_2 diluted $CH_4/O_2/Ar$ ignition inside a shock tube *O. Pryor, S. Barak, E. Ninnemann, S. Vasu*	2B04: Time-resolved analysis of thermal failure of prismatic lithium ion batteries *A.O. Said, X. Liu, Z. Wu, C. Lee, S.I. Stoliarov*	2C04: A theoretical analysis of the first-stage ignition delay in hydrocarbon oxidation chemistry *C.K. Law, W. Liang*	2D04: Shock tube investigations of methyl tert butyl ether and methyl tetrahydrofuran high-temperature kinetics *S. Jouzdani, A. Zhou, B. Akih-Kumgeh*	2E04: A direct numerical simulation study of the quenching of jet fuel flame kernels subject to intense isotropic turbulence *A. Krisman, T. Lu, J.H. Chen*	2F04: Chemical imaging in a diesel-ignited dual-fuel optical engine using high-speed infrared narrowband imaging *M.-A. Gagnon, E. Mancaruso, L. Sequino, P. Tremblay, S. Savary, E. Guyot, V. Morton*	2G04: The effects of reactant dilution on lengths of laminar gas jet diffusion flames *Z. Wang, P.B. Sunderland, R.L. Axelbaum*	2H04: Reaction zone detection and characterization from Raman/ Rayleigh line measurements in methane/air flames *S. Hartl, D. Geyer, A. Dreizler, R.S. Barlow, C. Hasse*	2J04: Effect of distillate fraction of real jet fuel on sooting propensity – Part 2: Soot formation in nonpremixed counterflow flames *X. Xue, C.-J. Sung, H. Wang*	2K04: Study of the low-temperature reactivity of large *n*-alkanes through cool diffusion flame extinction *C.B. Reuter, M. Lee, S.H. Won, Y. Ju*
10:30 – 10:50 Break with coffee available in the Chesapeake Foyer Make sure to visit our Sponsors in the Chesapeake Foyer and the Work in Progress Posters in the Hall of Distinction										
Room	ROOM 1105	ROOM 0101	ROOM 0105	ROOM 1102	ROOM 2104	ROOM 2115	ROOM 2100	ROOM 2110	ROOM 2106	ROOM 2108
	Chemical Kinetics VI *Session Chair:* M. Mehl	Fire VI *Session Chair:* S.S. McAllister	Norbert Peters Memorial Session II *Session Chair:* C. Hasse	Coal Pyrolysis and Gasification *Session Chair:* D.O. Lignell	DNS II *Session Chair:* M. Ayoobi	IC Engines I *Session Chair:* J.H. Mack	Laminar Flames III *Session Chair:* J. Graña-Otero	Turbulent Flame Measurements II *Session Chair:* B. Rankin	Soot in Laminar Flames III *Session Chair:* C. Saggese	Laminar Flame Propagation II *Session Chair:* I. Schoegl
10:50	2A05: Shock-tube measurements by laser absorption of CO and H_2O time-histories from nitromethane pyrolysis *O. Mathieu, C. Mulvihill, E.L. Petersen*	2B05: Ignition kinetics of combustible solids *R.E. Lyon, N. Safronava, S. Crowley*	2C05: Recent advances in understanding quasi-steady droplet combustion supported by cool-flame chemistry *F.A. Williams, D.L. Dietrich, V. Nayagam*	2D05: Co-gasification of Powder River Basin coal and biochar in carbon dioxide *E. Beagle, Y. Wang, D. Bell, E. Belmont*	2E05: Effects of pressure fluctuations on the combustion process in turbulent premixed flames *G. Beardsell, G. Blanquart*	2F05: Numerical and experimental investigation of cyclic variability of a large bore spark-ignited natural gas engine *A. Mashayekh, J. Brown, T. Jacobs, M. Patterson, J. Etcheverry*	2G05: Enhanced flame ion production through external electric fields *J. Tinajero, G. Bernard, L. Autef, D. Dunn-Rankin*	2H05: Simultaneous PIV and formaldehyde PLIF measurements in the broadened preheat – thin reactions layer regime *T.M. Wabel, A.W. Skiba, J.F. Driscoll*	2J05: Comparisons of computed and measured soot distribution in ethylene/ hydrogen/ nitrogen laminar diffusion flames *M. Yen, V. Magi, J. Abraham*	2K05: Premixed flame oscillations in open obstructed channels *A. Adebiyi, A. Cathreno, D. Valiev, V. Akkerman*

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	Chemical Kinetics VI *Session Chair:* M. Mehl	Fire VI *Session Chair:* S.S. McAllister	Norbert Peters Memorial Session II *Session Chair:* C. Hasse	Coal Pyrolysis and Gasification *Session Chair:* D.O. Lignell	DNS II *Session Chair:* M. Ayoobi	IC Engines I *Session Chair:* J.H. Mack	Laminar Flames III *Session Chair:* J. Graña-Otero	Turbulent Flame Measurements II *Session Chair:* B. Rankin	Soot in Laminar Flames III *Session Chair:* C. Saggese	Laminar Flame Propagation II *Session Chair:* I. Schoegl
11:10	2A06: A shock tube laser Schlieren study of phenyl chloride pyrolysis *J. Lockhart, P.T. Lynch, C.J. Annesley, A.M. Mebel, S.J. Klippenstein, R.S. Tranter*	2B06: Investigation of merging flames in horizontal and vertical geometries *M. Rhamati, M.-S. Safdari, E. Amini, T.H. Fletcher*	2C06: The role of cool-flame dynamics in high-pressure spray ignition *R.N. Dahms, G.A. Paczko, S.A. Skeen, L.M. Pickett*	2D06: Miscanthus gasification in a downdraft gasifier *T. Sharma, D. Yepes, R. Nascimento, Y. Shi, G. Zang, A. Ratner, E.S. Lora*	2E06: Assessing the importance of multicompo-nent transport properties using direct numerical simulations of premixed, turbulent flames *A.J. Fillo, J. Schlup, G. Blanquart, K.E. Niemeyer*	2F06: A comparison of combustion dynamics for multiple 7-point lean direct injection combustor configurations *K.M. Tacina, Y.R. Hicks*	2G06: Simulations of a micro-liter fuel ignition tester *S. Lapointe, I. Schoegl, C. Druzgalski, M. McNenly*	2H06: Experimental study of the effects of free stream turbulence on lean blowoff and near blowoff dynamics of a bluff-body stabilized conical premixed propane flame *B.R. Chowdhury, B.M. Cetegen*	2J06: Multi-angle light scattering for investigating soot particle/ aggregate parameters in a counterflow flame at elevated pressures *H.M.F. Amin, W.L. Roberts*	2K06: Characteristics of lifted laminar flames of methane diluted with nitrogen and helium in oxygen-enhanced co-flow *P. Sharma, B.Y. Gebreyesus, A. Ray*
11:30	2A07: A shock tube laser Schlieren study of 1-pentene pyrolysis *J.B. Randazzo, C.J. Annesley, R.S. Tranter*	2B07: Measurement of gas temperatures in buoyant turbulent diffusion flames under air and reduced-oxygen environments *G. Agarwal, D. Zeng, Y. Wang*	2C07: Turbulent premixed flames - hydrodynamic theory *M. Matalon*	2D07: Crack formation during material thermal degradation in combustion *Y. Nguyen, T.J. Pence, I.S. Wichman*	2E07: Direct numerical simulation of a turbulent autoigniting *n*-dodecane jet at low-temperature diesel conditions *G. Borghesi, J.H. Chen, A. Krisman, T. Lu*	2F07: Analysis of a differential stroke cycle for high fuel efficiency *Z.B. Harris, J.A. Bittle, A.K. Agrawal*	2G07: Observations of double reaction zones in inverse gas jet diffusion flames *Z. Wang, P.B. Sunderland, R.L. Axelbaum*	2H07: The structure of turbulent premixed flames subjected to extreme turbulence and the development of a new measured regime diagram *A.W. Skiba, T.M. Wabel, C.D. Carter, S.D. Hammack, J.E. Temme, J.F. Driscoll*	2J07: Soot formation of conventional and alternative jet fuels in counterflow nonpremixed flames *X. Xue, X. Hui, P. Singh, C.-J. Sung*	2K07: Flame propagation in narrow channels at varying Lewis numbers *S. Shen, X. Ma, J. Wongwiwat, J. Gross, P. Ronney*

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	Chemical Kinetics VI *Session Chair:* M. Mehl	Fire VI *Session Chair:* S.S. McAllister	Norbert Peters Memorial Session II *Session Chair:* C. Hasse	Coal Pyrolysis and Gasification *Session Chair:* D.O. Lignell	DNS II *Session Chair:* M. Ayoobi	IC Engines I *Session Chair:* J.H. Mack	Laminar Flames III *Session Chair:* J. Graña-Otero	Turbulent Flame Measurements II *Session Chair:* B. Rankin	Soot in Laminar Flames III *Session Chair:* C. Saggese	Laminar Flame Propagation II *Session Chair:* I. Schoegl
11:50	2A08: Thermal pyrolysis of *n*-dodecane in the presence of vitiates *K. Dang, G. Simms, H. Chelliah*	2B08: Mass-loss measurements on solid materials after pulsed radiant heating at high heat flux *J.D. Engerer, A.L. Brown, J.M. Christian*	2C08: A concentric flow slot burner for turbulent flames of partially premixed and inhomogeneous mixtures of gaseous fuels *M. Mansour, A. Masri, H. Pitsch, S. Kruse, M. Zayed, M. Senousi, M. Juddoo*	2D08: A comprehensive model for predicting elemental composition of coal pyrolysis products *A.P. Richards, T. Shutt, T.H. Fletcher*	2E08: Direct numerical simulation of premixed autoignition in non-linear subsonic and sonic compressible turbulence *C.A.Z. Towery, A.Y. Poludnenko, P.E. Hamlington*	2F08: Combustion instabilities of ultra-lean premixed H_2/air mixtures by prechamber hot jet ignition *S. Biswas, L. Qiao*	2G08: Extinction analysis of a methane-oxygen counterflow flame at high pressure *A.J. Juanós, W.A. Sirignano*	2H08: Combustion characteristics of GCH_4/GO_2 coaxial jet flames at low-temperature injection conditions in a model combustor *S. Choi, T.Y. Kim, H.K. Kim, O.C. Kwon*	2J08: Scaling of coflow flames at constant Reynolds and Grashof numbers with application to sooting flames at elevated pressure *A. Abdelgadir, S.A. Steinmetz, A. Attili, F. Bisetti, W.L. Roberts*	2K08: Propagation velocities for neighboring triple flames *S.W. Grib, M.W. Renfro*
12:10	2A09: Ab initio investigation of the nitrosation reactions of hydroxylamine in aqueous solutions *K. Zhang, S.T. Thynell*	2B09: Moisture content effects on energy and emissions released during the combustion of pyrophytic vegetation from various regional ecosystems *N.A. May, E. Ellicott, M.J. Gollner*	2C09: Rate-ratio asymptotic analysis of the influence of addition of carbon monoxide on the structure and mechanisms of extinction of nonpremixed methane flames *K. Seshadri, X.-S. Bai*	2D09: Synergistic effects in steam gasification of combined biomass and plastic waste mixtures *K.G. Burra, A.K. Gupta*	2E09: Modeling differential diffusion of strain-sensitive gas-phase species in turbulent nonpremixed sooting flames *J.K. Lew, M.E. Mueller*	2F09: Working fluid replacement in gaseous direct-injection internal combustion engines: A fundamental and applied experimental investigation *M. Sierra-Aznar, D.I. Pineda, B.S. Cage, X. Shi, J.P. Corvello, J.-Y. Chen, R.W. Dibble*	2G09: Effects of natural convection on critical conditions for thermal explosions in spherical vessels *D. Moreno-Boza, I. Iglesias, A.L. Sánchez, A. Liñán, F.A. Williams*	2H09: Investigation of the pilot stagnation region in a high power liquid-fueled combustor *R. Zhang, A.C. Pratt, R.P. Lucht, C.D. Slabaugh*	2J09: Influence of co-directional, axisymmetric air injection on soot generation within a laminar pool fire *T.J. Borth, S.K. Lakkundi, K. Arsava, S.P. Kozhumal, A.S. Rangwala*	2K09: Numerical study of thermal gas expansion influence on premixed flame propagation in a shear flow *H. Zhong, R. Feng, D. Valiev*

All attendees will take from the buffet located in the Chesapeake Foyer and then go to their lunch location noted below.

12:30 – 13:30 Lunch in the Chesapeake Ballroom
12:30 – 13:30 Women in Combustion Lunch in Chasen Room
12:30 – 13:30 USSCI Board Meeting in Room 2116

NASA Panel: The Microgravity Wind Tunnel: Come give your input on the research ideas and design of a new International Space Station facility for combustion research in low speed forced flow
S.L. Olson, D.L. Urban, D.P. Stocker
13:30 – 14:10 Potomac Ballroom

14:10 – 14:15 TRANSITION TO AFTERNOON SESSIONS										
Room	ROOM 1105	ROOM 0101	ROOM 0105	ROOM 1102	ROOM 2104	ROOM 2115	ROOM 2100	ROOM 2110	ROOM 2106	ROOM 2108
	Chemical Kinetics VII *Session Chair:* M.B. Colket	Fire VII *Session Chair:* D.R. Weise	Flame Spread I *Session Chair:* P.V. Ferkul	Computational Analysis III *Session Chair:* A. Imren	Gas Turbine Combustion I *Session Chair:* M.E. Baumgardner	IC Engines II *Session Chair:* S.S. Goldsborough	Laminar Flame Propagation III *Session Chair:* J.G. Brasseur	Turbulent Flames II *Session Chair:* J.H. Chen	Temperature Diagnostics I *Session Chair:* A.D. Tuesta	Micro-Combustion/ New Concepts III *Session Chair:* L. Qiao
14:15	2A10: Evidence supporting a simplified approach to modeling high-temperature combustion chemistry *R. Xu, H. Wang, D.F. Davidson, R.K. Hanson, C.T. Bowman, F.N. Egolfopoulos*	2B10: Investigating streak-like structures in boundary layer combustion via heated plates *C. Miller, M. Finney, S. McAllister, T. Grumstrup, E. Sluder, W. Tang, M. Gollner*	2C10: An experimental study of upward flame spread over wavy thin solids *J.S. T'ien, J. Jordan, Z. Wu, G. Nastac*	2D10: An iterative uncoupled quasi-steady-state method for dynamic chemical stiffness removal *C. Xu, T. Lu*	2E10: Investigation of initial droplet distribution and importance of secondary breakup model on lean blowout predictions of a model gas turbine combustor *J. Labahn, P.C. Ma, L. Esclapez, M. Ihme*	2F10: The effect of heavy working fluids on hydrogen combustion *M. Shahsavan, J.H. Mack*	2G10: Effect of surface conditions on fast flame acceleration in obstructed cylindrical pipes *A. Adebiyi, D. Valiev, V. Akkerman*	2H10: Detailed transitional process of the flames in hot and diluted environments from lifted flames to MILD combustion *C. Liu, J. Zhang*	2J10: A new method to compute the proper radiant heat transfer correction of bare-wire thermocouple measurements *C.R. Shaddix*	2K10: Catalytic combustion driven thermal transpiration pump for self-sustaining power generation devices *J. Wongwiwat, P.D. Ronney*
14:35	2A11: HyChem model: Application to petroleum-derived jet fuels *R. Xu, D. Chen, K. Wang, Y. Tao, J.K. Shao, T. Parise, Y. Zhu, S. Wang, R. Zhao, D.J. Lee, F.N. Egolfopoulos, D.F. Davidson, R.K. Hanson, C.T. Bowman, H. Wang*	2B11: Enhanced ignition potential of oxidizing iron sparks *J.L. Urban, D.C. Murphy, C. Fernandez-Pello*	2C11: Downward and upward spread of smoldering peat fire *X. Huang, G. Rein*	2D11: Investigating stiffness detection metrics for chemical kinetics *A. Alferman, K.E. Niemeyer*	2E11: Experimental investigation of boundary layer flashback in stratified swirl flames *R. Ranjan, N.T. Clemens*	2F11: Simulated investigations of low heat rejection concepts applied to low temperature combustion *T. Li, J. Caton, T. Jacobs*	2G11: Methane-air triple flames in strained mixing layers *P. Rajamanickam, W. Coenen, A. L. Sànchez, F.A. Williams*	2H11: Stability and liftoff of non-premixed large hydrocarbon combustion in MILD conditions *E. Walters, P. Medwell, D.L. Blunck*	2J11: Demosaicing algorithms for the improvement of spatial resolution and accuracy in color ratio pyrometry *D. Giassi, M.B. Long*	2K11: A Swiss Roll style combustion reactor for non-catalytic reforming *R. Zelinsky, J. Crawmer, B. Richard, C.-H. Chen, H. Pearlman*

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	Chemical Kinetics VII *Session Chair:* M.B. Colket	Fire VII *Session Chair:* D.R. Weise	Flame Spread I *Session Chair:* P.V. Ferkul	Computational Analysis III *Session Chair:* A. Imren	Gas Turbine Combustion I *Session Chair:* M.E. Baumgardner	IC Engines II *Session Chair:* S.S. Goldsborough	Laminar Flame Propagation III *Session Chair:* J.G. Brasseur	Turbulent Flames II *Session Chair:* J.H. Chen	Temperature Diagnostics I *Session Chair:* A.D. Tuesta	Micro-Combustion/ New Concepts III *Session Chair:* L. Qiao
14:55	2A12: Sensitivity to experimental uncertainty in surrogate descriptions of aviation fuels *P.B. Govindaraju, M. Ihme*	2B12: Quantifying gas-phase ignition processes during the autoignition of wood *S. McAllister*	2C12: Experimental study of vertical upward flame spread and dripping behavior over polystyrene foams at different altitudes *X. Huang, G. Chen, W. Liu, J. Sun, M.J. Gollner*	2D12: Assessment of stiffness reduction in chemical reacting systems using principal component analysis *E. Armstrong, M.A. Hansen, J.C. Sutherland*	2E12: Chemical functional group descriptor for jet fuel surrogate *S.H. Won, F.M. Haas, S. Dooley, F.L. Dryer*	2F12: Effects of confinement on lean direct injection combustion using an air-blast atomizer *J. Allen, J. Kornegay, A.K. Agrawal*	2G12: Analysis of non-equidiffusive premixed flames in obstructed channels *A. Adebiyi, G. Idowu, D. Valiev, V. Akkerman*	2H12: Turbulent flame speed behavior in lean methane/air mixtures with applications to engines *Z. Wang, J. Abraham*	2J12: A quantitative Schlieren system for microgravity flame diagnostics *S. Karn, F. Takahashi*	2K12: Thermal transpiration based pumping and power generation *T.S. Welles, R.J. Milcarek, A. Baskaran, J. Ahn, P.D. Ronney*
15:15	2A13: Reduced HyChem models for jet fuel combustion *Y. Gao, T. Lu*	2B13: Semi-empirical model for fire spread in chamise and big sagebrush shrubs with spatially-defined fuel elements and flames *C. Shen, D.R. Prince, J. Gallacher, M.E. Fletcher, T.H. Fletcher*	2C13: Flame spread and dripping behaviors in horizontal and vertical wires *Y. Kobayashi, X. Huang, Y. Konno, S. Nakaya, M. Tsue, N. Hashimoto, O. Fujita, C. Fernandez-Pello*	2D13: SIMD-vectorized chemical source term evaluation *N. Curtis, C.-J. Sung*	2E13: Experimental study of the effects of hydrogen addition on the self-excited thermoacoustic instability *J. Zhang, A. Ratner*	2F13: Single fuel RCCI combustion using reformed fuel *F.D.F. Chuahy, S.L. Kokjohn*	2G13: Model development for laminar flame speed of stratified methane/air mixtures *X. Shi, J.-Y. Chen*	2H13: Simulation of the evolution of premixed flame kernels in a turbulent channel flow *R. Ranjan, A. Panchal, B. Muralidharan, S. Menon*	2J13: Visualization of probe-perturbed 2D temperature fields of laminar premixed flames *N. Hansen, R.S. Tranter, K. Moshammer, J.B. Randazzo, J.P.A. Lockhart, T. Tao, A.L. Kastengren*	2K13: Composite oxygen transport membrane reactors for oxy-fuel combustion processes *R. Falkenstein-Smith, M. Rushby, J. Ahn*

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15:35	2A14: Fuel structure effects on surrogate alternative jet fuel combustion *G. Flora, J.P. Cain, M.S.P. Kahandawala, S.S. Sidhu*	2B14: Analysis of pyrolysis products from live shrub fuels *M.-S. Safdari, M. Rahmati, E. Amini, T.H. Fletcher*	2C14: Downward flame spread at various gravitational levels in vertical narrow channels *M. Saitta, F.J. Miller, S. Olson, I. Wichman*	2D14: Using global pathway to understand chemical kinetics *X. Gao, W. Sun*	2E14: Experimental characteriza-tion of fuel-dependent resonance in a representative swirl combustor *J.R. Monfort, S.D. Stouffer, T.H. Hendershott, E. Corporan, A. Caswell*	2F14: Intermediate combustion modes between conventional diesel combustion and reactivity-controlled compression ignition *J. Martin, A. Boehman, R. Topkar, S. Chopra, U. Subramaniam, H. Chen*	2G14: Impact of thermal expansion and Lewis number on premixed flame propagation in channels with adiabatic and isothermal, nonslip walls *S.R. Shetty, S. Demir, D. Valiev, V. Akkerman*	2H14: Soot volume-fraction fields and kinematics of turbulent non-premixed jet flames burning jet fuel and its surrogates *O. Park, N.T. Clemens*	2J14: Characteriza-tion of different microflame burner designs seeded with TaN particles through emission spectroscopy *Z. Diao, M. Winter, T. Hirasawa, K. Saito*	2K14: A novel *in-situ* combustion concept for hazardous waste clean up *S. Arava, A.J. Walawalkar, K.S. Arsava, H. Sezer, A.S. Rangwala*

15:55 – 16:15 Break with coffee available in the Chesapeake Foyer

During breaks and transitions make sure to visit:

Combustion Artwork is displayed in LOCATION
Voting closes today at 17:30
Winners will be announced Wednesday morning

Sponsors are displayed in the Chesapeake Foyer

Work in Progress Posters Session is 08:00 – 18:00 in the Hall of Distinction

Room	ROOM 1105	ROOM 0101	ROOM 0105	ROOM 1102	ROOM 2104	ROOM 2115	ROOM 2100	ROOM 2110	ROOM 2106	ROOM 2108
	Chemical Kinetics VIII *Session Chair:* W.J. Pitz	Fire VIII *Session Chair:* K. McGrattan	Flame Spread II *Session Chair:* R.E. Lyon	Computational Analysis IV *Session Chair:* J.C. Sutherland	Gas Turbine Combustion II *Session Chair:* F.M. Haas	IC Engines III *Session Chair:* J. Santner	Environmental Aspects I *Session Chair:* P.T. Lynch	Turbulent Flames III *Session Chair:* G. Borghesi	Temperature Diagnostics II *Session Chair:* S. Vasu	Micro-Combustion/ New Concepts IV *Session Chair:* C.P. Cadou
16:15	2A15: Combustion kinetics of conventional and alternative jet fuels using a Hybrid Chemistry (HyChem) approach *K. Wang, R. Xu, T. Parise, J.K. Shao, D.J. Lee, A. Movaghar, D.F. Davidson, R.K. Hanson, H. Wang, C.T. Bowman, F.N. Egolfopoulos*	2B15: Flame scaling in laboratory fires spreading with wind and slope *M.A. Finney, J.D. Forthofer, T. Grumstrup*	2C15: Experimental and theoretical study on downward flame spread over two parallel PMMA slabs in different pressure environments *K. Zhao, L. Yang, W. Tang, M. Gollner*	2D15: Time scale analysis for rate-controlled constrained-equilibrium constraint selection *F. Hadi, V. Yousefian, M.R.H. Sheikhi, H. Metghalchi*	2E15: Model of combustion instabilities within a coupled dual-chamber to explain trends measured in a gas turbine model combustor *Y.T. Chen, J.F. Driscoll*	2F15: Homogenous Charge Compression Ignition (HCCI) operation with navy jet fuel in a Waukesha diesel CFR engine *K. Bowes, M. Walker, L. Hamilton, D.L. Prak, J. Cowart*	2G15: Grouped Monte-Carlo simulation of multicompo-nent aerosol dynamics in combustion processes *Z. Xiao, A. Adeosun, J. Zhuo, Q. Yao, R.L. Axelbaum*	2H15: Numerical study of auto-ignition in a liquid *n*-heptane jet *S. Yellapantula, M. Bode, A.A. Mukundan, H. Pitsch*	2J15: Temperature measurements in a turbulent spray flame using coherent anti-Stokes Raman scattering spectroscopy *A.D. Tuesta, B.T. Fisher, S.G. Tuttle*	2K15: An innovative volatile organic compound incinerator *J. Crawmer, C.-H. Chen, B. Richard, R. Zelinsky, H. Pearlman*
16:35	2A16: Evaluation of a hybrid chemistry approach for combustion of blended petroleum and bio-derived jet fuels *K. Wang, R. Xu, T. Parise, J.K. Shao, D.F. Davidson, R.K. Hanson, H. Wang, C.T. Bowman*	2B16: Qualitative flow visualization of flame attachment on slopes *T.P. Grumstrup, S.S. McAllister, M.A. Finney*	2C16: Correlating the burning rate with spread rate for downward flame spread over PMMA *S. Bhattacharjee, L. Carmignani, B. Rhoades*	2D16: Combustion simulation of propane/air mixtures using rate-controlled constrained-equilibrium *G. Yu, H. Metghalchi, O. Askari*	2E16: Stability analysis of multiple reacting wakes *J. Sebastian, B. Emerson, T. Lieuwen*	2F16: Flow structure comparison for two 7-Point LDI configurations *Y.R. Hicks, K.M. Tacina*	2G16: Nanostructure as a paradigm for describing carbon structure, interpreting its reactivity and quantifying its transformations *R.L. Vander Wal, J.P. Abrahamson, M. Singh, C.K. Gaddam, K. Yehliu, C.-H. Huang*	2H16: Auto-ignition dynamics of pulsed turbulent hydrocarbon fuel jets issuing into high-temperature vitiated coflows *R. Saksena, J.A. Sutton*	2J16: First-stage ignition delay: Application of a fast *in-situ* temperature sensor *E.F. Nasir, A. Farooq*	2K16: Manipulating turbulent mixing behavior through particle injection *G. Di Cristina, S.P. Kozhumal, A. Rangwala, S.-k. Im*

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	Chemical Kinetics VIII *Session Chair:* W.J. Pitz	Fire VIII *Session Chair:* K. McGrattan	Flame Spread II *Session Chair:* R.E. Lyon	Computational Analysis IV *Session Chair:* J.C. Sutherland	Gas Turbine Combustion II *Session Chair:* F.M. Haas	IC Engines III *Session Chair:* J. Santner	Environmental Aspects I *Session Chair:* P.T. Lynch	Turbulent Flames III *Session Chair:* G. Borghesi	Temperature Diagnostics II *Session Chair:* S. Vasu	Micro-Combustion/ New Concepts IV *Session Chair:* C.P. Cadou
16:55	2A17: Shock-tube studies of Sarin surrogates *O. Mathieu, W.D. Kulatilaka, E.L. Petersen*	2B17: Experimental study of anaerobic pyrolysis of Poly(vinyl chloride) *J.D. Swann, Y. Ding, S.I. Stoliarov*	2C17: Gap height influence on thin fuel flame spread in a narrow channel *S. Hossain, G. Sidebotham, S.L. Olson, F.J. Miller, I.S. Wichman*	2D17: Capturing component interactions in a reduced multi-component fuel mechanism *L. Backer, P. Pepiot*	2E17: Modal analysis of direct core noise in a model combustor *J. O'Brien, F. Bake, M. Ihme*	2F17: Heat loss from a turbo-charged spark ignition off-road engine operated on gaseous fuels *A. Yao, X. Shi, H. Li, F. Xiao, T. Li, P. Zeng*	2G17: Smouldering combustion as an emerging technology for contaminated site clean-up: Computational simulations *M.A.B. Zanoni, J.L. Torero, J.I. Gerhard*	2H17: The effect of ozonolysis activated autoignition on jet flame dynamics *X. Gao, W. Sun, T. Ombrello, C. Carter*	2J17: Femtosecond chirped-probe-pulse coherent anti-Stokes Raman scattering thermometry in a piloted spray burner *L.M. Thomas, A. Lowe, A. Satija, R.P. Lucht, A. Masri*	2K17: The visualization and combustion characteristics of artificial methane hydrate flames *Y.-C. Chien, D. Dunn-Rankin*
17:15	2A18: Meta-models for ignition delay times with applications to surrogate fuel mixture generation *R.A. Whitesides, M.J. McNenly*	2B18: Sensitivity of smoldering combustion to cellulose and hemicellulose content *D.A. Cowan, B.D. Smucker, D.L. Blunck*	2C18: Transient flame growth and spread processes over thin solids in concurrent low-speed flows in microgravity – a comparison between large and small sample sizes *C. Li, Y.-T.T. Liao*	2D18: An improved pre-partitioned adaptive chemistry methodology for particle PDF methods *A.S. Newale, Y. Liang, P. Pepiot, S.B. Pope*	2E18: Solid-state electrochemical NO sensor performance in the exhaust of a commercial 60kW gas turbine *R. Ehlig, E. Sullivan-Lewis, V. McDonell*	2F18: Combustion process of a turbocharged SI natural gas engine operated on stoichiometric mixture *H. Li, T. Gatts, S. Liu, S. Wayne, N. Clark, D. Mather*	2G18: Sooting tendencies of renewable biofuels for gasoline direct-injection engines *A.J. Vella, C.S. McEnally, D.D. Das, L.D. Pfefferle*	2H18: Karlovitz number effects on velocity and scalar statistics in turbulent premixed combustion *J.F. MacArt, T. Grenga, M.E. Mueller*	2J18: Acoustic-based laser induced breakdown thermometry *W. Wu, A. Adeosun, R.L. Axelbaum*	2K18: A link between O_2 deficient metabolism in organs and group combustion in engineering *K. Annamalai, M. Miller*

Room	ROOM 1105	ROOM 0101	ROOM 0105	ROOM 1102	ROOM 2104	ROOM 2115	ROOM 2100	ROOM 2110	ROOM 2106	ROOM 2108
	Chemical Kinetics VIII *Session Chair:* W.J. Pitz	Fire VIII *Session Chair:* K. McGrattan	Flame Spread II *Session Chair:* R.E. Lyon	Computational Analysis IV *Session Chair:* J.C. Sutherland	Gas Turbine Combustion II *Session Chair:* F.M. Haas	IC Engines III *Session Chair:* J. Santner	Environmental Aspects I *Session Chair:* P.T. Lynch	Turbulent Flames III *Session Chair:* G. Borghesi	Temperature Diagnostics II *Session Chair:* S. Vasu	Micro-Combustion/ New Concepts IV *Session Chair:* C.P. Cadou
17:35	2A19: A reduced chemistry model for multiple gasoline-ethanol surrogates by a Jacobian-aided DRGEP approach *Y. Chen, M. Mehl, J.-Y. Chen*	2B19: Development of a mobile medium scale dispersed dust flame effects testing apparatus *S.R. Rockwell, D. Petrow, C. Hanks, E. Curran*	2C19: Opposed flow flame spread over thick degrading combustible materials *Y. Chu, I.S. Wichman*	2D19: UConnRCMPy: Python-based data analysis for rapid compression machines *B.W. Weber, C.-J. Sung*	2E19: Gas turbine nvPM formation and oxidation semi-empirical model for commercial aviation *J. Abrahamson, R. Vander Wal*	2F19: Investigation of substitution limits and emissions of an in-line six cylinder diesel-natural gas dual fuel engine *R.H. Mitchell, D.B. Olsen*	2G19: Variation in the size distribution of particles emitted from a biomass gasifier cookstove with operating mode *J. Tryner, J. Volckens, A.J. Marchese*	2H19: Effects of Karlovitz number on flame surface wrinkling in lean methane/air flames *Z. Wang, J. Abraham*	2J19: Quantitative 2D temperature imaging in turbulent nonpremixed jet flames using filtered Rayleigh scattering *T.A. McManus, J.A. Sutton*	2K19: Design of complex reactors using additive manufacturing *P.R. Radyjowski, S.R. Newcomb, J.L. Ellzey*
	18:00 – 19:00 Cocktail Hour in the Chesapeake Foyer 19:00 – 22:00 Banquet and Entertainment in the Chesapeake Ballroom									

WEDNESDAY, 26 April 2017

07:00 – 08:00 Continental Breakfast – Chesapeake Foyer with seating in the Chesapeake Ballroom
08:00 – 12:00 Sponsors are displayed in the Chesapeake Foyer

Potomac Ballroom
07:55 Announcement of combustion artwork winners: Arnaud Trouvé, University of Maryland, Local Host

08:00 – 09:00 Plenary Lecture Jonathan Frank, Sandia National Laboratories
"Advances in Laser Imaging Diagnostics for Understanding Turbulence-Flame Interactions"
Session Chair: A.J. Marchese

09:00 – 09:10 TRANSITION TO MORNING SESSIONS

Room	ROOM 1105	ROOM 0101	ROOM 0105	ROOM 1102	ROOM 2104	ROOM 2115	ROOM 2100	ROOM 2110	ROOM 2106	ROOM 2108
	Chemical Kinetics IX *Session Chair:* M.P. Burke	Fire IX *Session Chair:* X. Zhao	Droplets/Spray III *Session Chair:* B. Windom	Oxygenated Fuels II *Session Chair:* B. Rotavera	Heterogeneous Combustion III *Session Chair:* E. Shafirovich	IC Engine Chemistry II *Session Chair:* O.S. Abianeh	Laminar Flames IV *Session Chair:* F. Takahashi	Turbulent Flame Chemistry I *Session Chair:* M.E. Mueller	Combustor Design *Session Chair:* V. Acharya	Environmental Aspects II *Session Chair:* J. Lockhart
09:10	3A01: Ignition delay time measurements in a high repetition rate shock tube shock *A.R. Laich, P.T. Lynch*	3B01: Effects of fuel composition and size on ember generation characteristics for wildland fire applications *T.R. Hudson, M. Carter, D.L. Blunck*	3C01: Fundamental droplet and combustion measurements of neat, emulsified, and weathered crude oil spray *S.G. Tuttle, T.N. Loegel, K.M. Hinnant, A.D. Tuesta, B.T. Fisher*	3D01: High-pressure autoignition of binary blends of methanol and dimethyl ether *H. Wang, B.W. Weber, R. Fang, C.-J. Sung*	3E01: Biocidal effectiveness of combustion products of reactive materials: A phenomenological model *S. Wang, M. Schoenitz, S.A. Grinshpun, E.L. Dreizin*	3F01: Evaluation of ethanol substitution in diesel engines: On-engine laboratory demonstration *C. Van Roekel, D.B. Olsen*	3G01: Autoignition of jet fuels and surrogates in nonpremixed flows at elevated pressures *G. Mairinger, A. Frassoldati, A. Cuoci, E. Pucher, K. Seshadri*	3H01: Influence of large aromatic species on soot formation in turbulent non-premixed jet flames *A. Jain, Y. Xuan*	3J01: Design and characterization of a two-stage Hencken burner for combustion of solid fuels *A. Adeosun, Q. Huang, T. Li, S. Li, R.L. Axelbaum*	3K01: Optical properties of flame-synthesized carbon nanoparticles *A.V. Singh, C. Liu, K. Wan, H. Wang*
09:30	3A02: Autoignition of low and high octane gasolines *A. Farooq, T. Javed, E.F. Nasir, C. Lee, A. Ahmed, H. Curran, S.M. Sarathy*	3B02: Flow visualization of buoyant instability in a cross-flow: An implication for flame spread over forest fuel beds. *N.K. Akafuah, N. Gustenyov, A. Salaimeh, K. Saito, M. Finney, S. McAllister*	3C02: Investigation of combustion characteristics of straight vegetable oil for a novel twin-fluid fuel injector *L. Jiang, O.S. Akinyemi, V. Danh*	3D02: Influence of blending *n*-butanol with *iso*-octane and *n*-heptane on ignition delay times in a fuel ignition tester *Q. Xu, R. Leathers, D. Savage, K. Kumar, C.-J. Sung*	3E02: Aerosol synthesis of phase pure iodine/iodic biocide microparticles, and their performance as oxidizers in thermite systems *T. Wu, X. Wang, M.R . Zachariah*	3F02: Analysis of acoustic pressure response in hydrocarbon-oxygen strained diffusion flames *A.D. Weiss, W. Coenen, C. Jiménez, A.L. Sánchez, F.A. Williams*	3G02: Comparative study of hybrid multi-timescale and G-Scheme methods for MARCS with detailed chemical kinetics *W. Sun, L. Wang, T. Grenga, Y. Ju*	3H02: Effects of turbulent unsteadiness on aromatic species in a turbulent planar jet flame *A. Jain, P. Patki, Y. Xuan*	3J02: Scaling and burner design concepts of a staged-pressurized oxy-combustion boiler *A. Gopan, Z. Yang, A. Adeosun, B.M. Kumfer, R.L. Axelbaum*	3K02: Ionization energy of flame-synthesized carbon nanoparticles *C. Liu, K. Wan, A.V. Singh, H. Wang*

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	Chemical Kinetics IX *Session Chair:* M.P. Burke	Fire IX *Session Chair:* X. Zhao	Droplets/Spray III *Session Chair:* B. Windom	Oxygenated Fuels II *Session Chair:* B. Rotavera	Heterogeneous Combustion III *Session Chair:* E. Shafirovich	IC Engine Chemistry II *Session Chair:* O.S. Abianeh	Laminar Flames IV *Session Chair:* F. Takahashi	Turbulent Flame Chemistry I *Session Chair:* M.E. Mueller	Combustor Design *Session Chair:* V. Acharya	Environmental Aspects II *Session Chair:* J. Lockhart
09:50	3A03: Ignition delay measurements for alternative jet fuels at mid to low temperatures *G. Flora, M.S.P. Kahandawala, M. DeWitt, E. Corporan*	3B03: On the effect of fuel moisture content on the smoldering ignition of a natural fuel by firebrands *J. Song, J.L. Urban, N. Liu, C. Fernandez-Pello*	3C03: Effect of iso-pentanol on the ignition and combustion of *n*-heptane/ and 1-heptene sprays *S. Sharma, S.K. Aggarwal*	3D03: Assessing the impact of reaction rate variation on autoignition model performance: butanol *K.E. Niemeyer, M.A. Mayer, S.K. Sirumalla, R. West*	3E03: Investigating the relationship between the atomic properties of doped perovskite and fuel-oxidizer thermite ignition *X. Wang, T. Wu, M.R. Zachariah*	3F03: A kinetic modeling study on octane rating and fuel sensitivity under HCCI conditions *T. Wu, M. Tao, H. Ge, D. DelVescovo, P. Zhao*	3G03: A method for measurement of spatially resolved radiation intensity and radiative fraction of laminar flames of gaseous and solid fuels *C. Hamel, F. Raffan-Montoya, S. Stoliarov*	3H03: Effect of low-temperature reactivity on the turbulent combustion of *n*-octane/iso-octane mixtures in a reactor-assisted turbulent slot burner *C.B. Reuter, O.R. Yehia, S.H. Won, Y. Ju*	3J03: A transient state-space heat transfer model of natural draft biomass fueled rocket stoves *G. Allawatt, D. Udensen, A. Pundle, B. Sullivan, P. Means, N. Figliola, J. Kramlich, J.D. Posner*	3K03: Analyzing the robustness of YSI as a measure of sooting tendency *M.J. Montgomery, C.S. McEnally, D.D. Das, L.D. Pfefferle*
10:10	3A04: Autoignition behavior of jet fuel relevant pure hydrocarbon components in a rapid compression machine *K. Min, D. Valco, A. Oldani, T. Lee*	3B04: Thermo-mechanical breakage mechanism of firebrands *A. Tohidi, S. Caton, M. Gollner, N. Bryner*	3C04: Experimental study of Dimethyl Ether (DME) in a swirl-stabilized spray combustor *J.E. Madero, R.L. Axelbaum*	3D04: An experimental and theoretical kinetic study of the reaction of OH radicals with 1,4-dioxane *F. Khaled, B.R. Giri, M. Szőri, J.R. Barker, A. Farooq*	3E04: Effect of purity and surface functionalization on stability and oxidation kinetics of boron powders *X. Liu, J. Gonzales, M. Schoenitz, E.L. Dreizin*	3F04: Application of response surface methodology to investigate the hot-jet ignition of methane-hydrogen mixtures in a constant-volume combustor *A. Tarraf, R. Ebrahimi, M.E. Feyz, R. Nalim*	3G04: Understanding crystal phase equilibrium of TiO_2 in flames *C. Liu, J. Camacho, H. Wang*	3H04: Impact of fuel chemistry and stretch rate on the global consumption speed of large hydrocarbon fuel/air flames *A.J. Fillo, J.M. Bonebrake, D.L. Blunck*	3J04: Autoignition of liquid hydrocarbon droplets in lean, high pressure natural gas mixtures in a rapid compression machine *C. Gould, S. Bhoite, M. Baumgardner, J. Mohr, C. Dumitrache, A.J. Marchese*	3K04: Measurements and prediction of sooting tendencies of pure hydrocarbons *D.D. Das, P. St. John, C.S. McEnally, S. Kim, L.D. Pfefferle*
10:30 – 10:50 Break with coffee available in the Chesapeake Foyer										

Room	ROOM 1105	ROOM 0101	ROOM 0105	ROOM 1102	ROOM 2104	ROOM 2115	ROOM 2100	ROOM 2110	ROOM 2106	ROOM 2108
	Chemical Kinetics X *Session Chair:* B.W. Weber	Fire X *Session Chair:* P.B. Sunderland	Droplets/Spray IV *Session Chair:* A. Saha	Oxy-Coal Combustion *Session Chair:* E.L. Belmont	Heterogeneous Combustion IV *Session Chair:* S.R. Rockwell	IC Engine Chemistry III *Session Chair:* J. Kodavasal	Laminar Flames V *Session Chair:* W. Coenen	Turbulent Flame Chemistry II *Session Chair:* G. Kukkadapu	Diagnostic IV *Session Chair:* J.B. Randazzo	Supersonic Combustion *Session Chair:* K. Ahmed
10:50	3A05: Ignition delay measurements of straight run naphtha *M. Alabbad, G. Issayev, B. Giri, J. Badra, A. Voice, Y. Zhang, T. Tzanetakis, K. Djebbi, M. Abdulwahab, A. Ahmed, M. Sarathy, A. Farooq*	3B05: Statistical description of transport and deposition of firebrands in a turbulent atmospheric boundary layer *B. Shotorban, C. Anand, S. Mahalingam*	3C05: Effect of non-paraffinic component in low octane naphtha fuel combustion *S.K. Jain, S.K. Aggarwal*	3D05: Ash deposition during advanced oxy-coal combustion using minimum recycled flue gas *Y. Wang, A. Fry, J.O.L. Wendt*	3E05: Impact of clustering on heterogeneous reactions in a riser *H. Goyal, J. Capecelatro, O. Desjardins, P. Pepiot*	3F05: Experimental and numerical study of diesel vs. DME in a constant volume combustion vessel *L. Zhao, A. Abdul Moiz, X. Zhu, S.-Y. Lee*	3G05: Lean flammability limit of pure hydrocarbon fuels and aviation fuels *A. Li, G. Kilaz, L. Qiao*	3H05: Sensitivity to chemical kinetics models in time-evolving turbulent non-premixed flames *S. Yang, R. Ranjan, V. Yang, W. Sun, S. Menon*	3J05: Turbulence measurements in a diesel fuel spray using rainbow Schlieren deflectometry *C.T. Wanstall, A.K. Agrawal, J.A. Bittle*	3K05: Mid-infrared imaging of an optically accessible non-premixed rotating detonation engine *B.A. Rankin, J.R. Codoni, K.Y. Cho, J.L. Hoke, F.R. Schauer*
11:10	3A06: Effect of CO_2 addition on syngas ignition delay times in a shock tube *S. Barak, O. Pryor, J. Lopez, E. Ninnemann, S. Vasu*	3B06: Progress in modeling wildland fires using computational fluid dynamics *K. McGrattan*	3C06: Experimental spray ignition and soot forming characteristics of high reactivity gasoline and diesel fuel in a heavy-duty single-hole injector *M. Tang, J. Zhang, T. Menucci, H. Schmidt, J. Naber, S.-Y. Lee, T. Tzanetakis*	3D06: A comprehensive model of single particle pulverized coal combustion extended to oxy-coal conditions *T. Holland, T.H. Fletcher*	3E06: Investigating the effectiveness of polymer-encased aluminum clusters subjected to high heating rates *J.B. DeLisio, D.H. Mayo, B.W. Eichhorn, M.R. Zachariah*	3F06: Lube oil chemistry influences on autoignition as measured in an ignition quality tester *F.M. Haas, S.H. Won, F.L. Dryer, C. Pera*	3G06: Lean flammability limits of renewable gas mixtures at elevated temperatures and pressures *D. Jaimes, V. McDonell*	3H06: Sensitivity of chemical pathways to reaction mechanisms for *n*-dodecane *D. Dasgupta, W. Sun, M. Day, T. Lieuwen*	3J06: A closer look at determining flame speeds with imaging diagnostics *R. Bratton, M.L. Pantoya*	3K06: Modeling and simulation of the inlet mixing process in a rotating detonation engine *K. Grogan, B. Rankin, M. Ihme*

Room	ROOM 1105	ROOM 0101	ROOM 0105	ROOM 1102	ROOM 2104	ROOM 2115	ROOM 2100	ROOM 2110	ROOM 2106	ROOM 2108
	Chemical Kinetics X *Session Chair:* B.W. Weber	Fire X *Session Chair:* P.B. Sunderland	Droplets/Spray IV *Session Chair:* A. Saha	Oxy-Coal Combustion *Session Chair:* E.L. Belmont	Heterogeneous Combustion IV *Session Chair:* S.R. Rockwell	IC Engine Chemistry III *Session Chair:* J. Kodavasal	Laminar Flames V *Session Chair:* W. Coenen	Turbulent Flame Chemistry II *Session Chair:* G. Kukkadapu	Diagnostic IV *Session Chair:* J.B. Randazzo	Supersonic Combustion *Session Chair:* K. Ahmed
11:30	3A07: Autoignition temperature measurements of hydrogen mixtures *K. Olchewsky, C. Fuller, M. Holton, P. Gokulakrishnan*	3B07: Large Eddy Simulation of unstably stratified boundary layer flow for understanding the structure of wildland fire flames *S. Verma, A. Trouvé*	3C07: Simulations of vaporizing droplets in turbulence *J. Palmore Jr., O. Desjardins*	3D07: A kinetic evaluation on NO_2 formation in the post-flame region of pressurized oxy-combustion process *X. Wang, Z. Liu, A. Adeosun, Y. Sun, G. Yablonsky, H. Tan, R.L. Axelbaum*	3E07: Nanocomposite thermite powders with improved flowability prepared by mechanical milling *Q. Nguyen, C. Huang, M. Schoenitz, K.T. Sullivan, E.L. Dreizin*	3F07: Durability testing of biomass based oxygenated fuel components in a compression ignition engine *M.E. Baumgardner, A. Lakshminarayanan, D. Olsen, M.A. Ratcliff, R.L. McCormick, A.J. Marchese*	3G07: Parametric study of the impact of vitiation on fundamental reactor/flame characteristics *K.B. Brady, B.A. Rankin, A.W. Caswell*	3H07: A graphical user interface for model reduction of complex fuels based on principal component analysis and artificial neural networks *S. Alqahtani, T. Echekki*	3J07: Whole-flame image analysis using geometric and complexity measures *C.E.A. Finney, C.W. Kulp, C.S. Daw, T.A. Fuller, T.J. Flynn, T. Osborne, N. Stewart*	3K07: Scramjet cavity ignition using nanosecond-pulsed high-frequency discharges *T. Ombrello, J.K. Lefkowitz, S.D. Hammack, C. Carter, K. Busby*
11:50	3A08: Analytical explosion limits of $H_2/CO/O_2$ and $H_2/CH_4/O_2$ mixtures *W. Liang, C.K. Law*	3B08: Understanding ignition susceptibility of wildland-urban interface fuels to firebrand attack *R.S.P. Hakes, M.J. Weston-Dawkes, S.E. Caton, E.T. Sluder, M.J. Gollner, J. Yang*	3C08: Using a GMDH-type neural network algorithm for modeling of droplet combustion *M. Ghamari, A. Ratner*	3D08: Predicting ash deposition from non-isothermal, turbulent parallel flows *Z. Yang, A. Gopan, R.L. Axelbaum*	3E08: Enhanced combustion characteristics of electrospray assembled nanothermite composites *R.J. Jacob, E. Wainwright, M. Mueller, T.P. Weihs, M.R. Zachariah*	3F08: Surrogate fuel formulation for light naphtha fuel *K. Al-Qurashi, I. Khesho, W. Roberts*	3G08: Hot surface ignition of ethylene-air mixtures: Selection of reaction models for CFD simulations *R. Mével, J. Melguizo-Gavilanes, L.R. Boeck, J.E. Shepherd*	3H08: Effects of turbulent advection on thermochemi-cal trajectories in premixed flames *P.E. Hamlington, R. Darragh, A.Y. Poludnenko*	3J08: Towards seedless velocimetry in reacting flows using a wavelet-based optical flow technique *B.E. Schmidt, J.A. Sutton*	3K08: Hyperspectral imaging diagnostics of a scramjet combustor cavity *M.R. Rhoby, A.M. Kerst, K.C. Gross, T.M. Ombrello*

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	Chemical Kinetics X *Session Chair:* B.W. Weber	Fire X *Session Chair:* P.B. Sunderland	Droplets/Spray IV *Session Chair:* A. Saha	Oxy-Coal Combustion *Session Chair:* E.L. Belmont	Heterogeneous Combustion IV *Session Chair:* S.R. Rockwell	IC Engine Chemistry III *Session Chair:* J. Kodavasal	Laminar Flames V *Session Chair:* W. Coenen	Turbulent Flame Chemistry II *Session Chair:* G. Kukkadapu	Diagnostic IV *Session Chair:* J.B. Randazzo	Supersonic Combustion *Session Chair:* K. Ahmed
12:10	3A09: Inverse Livengood-Wu integration method for analyzing ignition delay times in reactors with varying conditions *M. Tao, P. Zhao, P.T. Lynch*	3B09: Front shape comparison in data-driven wildland fire spread simulations *C. Zhang, M. Rochoux, A. Collin, W. Tang, M. Gollner, E. Ellicott, P. Moireau, A. Trouvé*	3C09: Effects of aluminum nanoparticle additives on liquid fuel droplet combustion with and without acoustic excitation *H. Sim, M. Plascencia, A. Vargas, J. Bennewitz, O. Smith, A. Karagozian*		3E09: Magnesiother-mic combustion synthesis of zirconium diboride *S. Cordova, L.I. Gutierrez Sierra, E. Shafirovich*		3G09: Computational study of premixed flame propagation in a gaseous-dusty environment with various dust distributions *S. Demir, H. Sezer, T. Bush, V. Akkerman*		3J09: Demonstration of a dual-pulse laser heating technique for ignition of propane-air mixtures *C. Dumitrache, R. VanOsdol, C.M. Limbach, A. Yalin*	3K09: Heat transfer evaluation of a HVOF combustor under several operating parameters with interest in plasma production for future MHD channel analysis *E.D. Zeuthen, C.R. Woodside, H. Kim, E.D. Huckaby, D.L. Blunck*
12:30	3A10: Ignition delay time correlation of fuel blends based on Livengood-Wu description *F. Khaled, J. Badra, A. Farooq*	3B10: A study to investigate pyrolysis of wood particles of various shapes and sizes *Y. Chen, K. Aanjaneya, A. Atreya*	3C10: Energetic additives to liquid propellants composed of nitrocellulose-bound nanoparticle assemblies or molecular aluminum clusters for enhanced droplet combustion *P.M. Guerieri, J.B. DeLisio, R.J. Jacob, S. DeCarlo, B. Eichhorn, M.R. Zachariah*		3E10: Burn rate enhancement of a solid nitrocellulose monopropel-lant using functionalized graphene foam microstructure *S. Jain, L. Qiao*		3G10: Characteristics and parameteriza-tion of spray combustion in laminar counter-flow jet flames *U. Jain, C. Han, H. Wang*		3J10: Joint soot temperature-volume fraction statistics of buoyant turbulent diffusion flames in air and reduced-oxygen environment *D. Zeng, G. Agarwal, Y. Wang*	3K10: Simulating interactions of detonation, ionization chemistry, and magnetohydro-dynamics *M.F. Zaiger, D.L. Blunck, K.E. Niemeyer*
	For those that requested a box lunch, please pick them up between 12:00 – 13:30 in the Chesapeake Ballroom Safe travels home and we hope to see you at the 11th United States National Combustion Meeting hosted by the Western States Section of the Combustion Institute									

10th United States National Combustion Meeting Work in Progress Posters

P01 Estimating soot primary particle size using time resolved laser induced incandescence
Madhu Singh, Joseph Abrahamson, Randy Vander Wal

P02 High repetition rate CN planar laser induced fluorescence of energetic materials
Michael Powell, Steven Son, Aman Satija, Robert Lucht, Ibrahim Gunduz, Morgan Ruesch

P03 Filtered Rayleigh scattering of cellular flames in tubular burner
Chad Carpenter, Robert Pitz

P04 Ignition behavior and spark kernel interaction for jet fuel/air flow
Wei Sheng, Brandon Sforzo, Jerry Seitzman

P05 The effective regenerative flame stability for liquid hydrocarbon fuels
Radi Alsulami, Colin Curtis, Thomas Bruno, Bret Windom

P06 Reaction CH_3 + Cl studied over the 292 – 558 K temperature and 1 – 100 bar pressure ranges
Chao Yan, Lev Krasnoperov

P07 Kinetics of the reaction of CH_3 radicals with HO_2 over the 292 – 558 K temperature range
Chao Yan, Lev Krasnoperov

P08 Reactions of hex-5-en-1-yl radicals
Miroslaw Liszka, Kenneth Brezinsky, Xu Han

P09 Kinetic modeling of pyrolysis and oxidation of tetralin, a surrogate compound for naphtho-aromatics.
Goutham Kukkadapu, Scott Wagnon, Kuiwen Zhang, Marco Mehl, William Pitz, Charles Westbrook

P10 "Third Body" collision parameters for alcohols, peroxides, and their radicals in atomic and diatomic baths
Ahren Jasper

P11 Fast sampling system for simultaneous speciation and ignition delay measurements in a rapid compression machine
Ruozhou Fang, Bryan Weber, Chih-Jen Sung

P12 Brown shock tube
Mark Fuller, Franklin Goldsmith

P13 Shock tube studies of propulsion fuels at low temperatures
Juan Guzman, Kenneth Brezinsky

P14 Shock tube study of the pyrolysis of the jet fuels JP10 and Jet A2
Xu Han, Miroslaw Liszka, Kenneth Brezinsky

P15 Further developments of the multi-scale informatics approach
Lei Lei, Mark Barbet, Robert Grado, Carly LaGrotta, Michael Burke

P16 Partial oxidation of hydrocarbons in novel fluidized bed reactors
David Wagner, Christopher Hagen, Zoe Lavrich, Zachary Taie, Devin Halliday

P17 A combustion mode analysis of pollutant formation at ECN spray A thermochemical conditions using DNS
Alexander Krisman, Evatt Hawkes, Jacqueline Chen, Tianfeng Lu, Yang Gao

P18 Development of a two-mixture combustion experiment in a constant volume chamber to study stratified mixture flame propagation
Daniel Pineda, Xian Shi, Bradley Cage, Chenkun Zheng, Spandan Gangopadhyay, Jyh-Yuan Chen, Robert Dibble

P19 Validation of acoustics mode/assessment technique for combustion and stability prediction
Dorsa Shirazi

P20 Investigation of methane oxycombustion in dilutions of argon: Improving thermodynamic efficiency and developing advanced engine technology
Charles Scudiere, Jyh-Yuan Chen, Miguel Aznar

P21 Measuring and modeling pyrolysis to improve prediction of prescribed fire behavior
David Weise, Thomas H. Fletcher, Babak Shotorban, Bret Butler, Marko Princevac, Timothy J. Johnson, Mark Dietenberger, William Mell, Roger Ottmar, Andrew Hudak, Sara McAllister, Wei Min Hao, Joseph O'Brien, Shankar Mahalingam, James Reardon

P22 A study of radiative heat loss from a solid fuel in simulated microgravity combustion in a narrow channel apparatus
Fletcher Miller, Thao Pham

P23 Computational modeling using fire dynamics simulator to replicate the burning of thermally thick polymethyl methacrylate in a narrow channel apparatus
Fletcher Miller, Nicholas Lage

P24 The impact of bromine- and phosphorous-based flame retardants on flame stability and heat feedback from laminar wall flames
Isaac Leventon, Stanislav Stoliarov, Roland Kraemer

P25 Particulates and toxic-gas sensors for firefighters
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