

38th INTERNATIONAL SYMPOSIUM ON COMBUSTION
The Adelaide Convention Centre (ACC) – Adelaide, Australia

Hiroshi Tsuji Early Career Researcher Award Winners:

Zheng Chen: *1K07, 2B02, 2B12, 2J12, 3B04, 5G05, 5J10*

Michael Gollner: *4J05*

Aamir Farooq: *1G06, 2A16, 3C10, 3A12, 4A05, 5C03, 5C07*

Greg Rieker: *1G07, 1G10*

Bernard Lewis Fellowship:

Zhi Chen: *5K02*

Wenkai Lang: *4K07*

Yihua Ren: *1H05, 2B15*

Martin Rieth: *1L03, 3L07*

Xu Wen: *1L03, 2D16, 3E06, 5K12*

Xiaoyuan Zhang: *1B09, 1A12, 1H14, 2B04, 3A01, 3A05*

38th INTERNATIONAL SYMPOSIUM ON COMBUSTION
The Adelaide Convention Centre (ACC) – Adelaide, Australia
Monday, 25 January 2021

(Room 3)
WELCOME – 8:20 am

President's Welcome

Chair, Local Host Team: Bassam Dally

Program Co-Chairs: Prof. Tim Liewen and Prof. Fei Qi

HOTTEL LECTURE – 9:10 -10:10

Combustion in the Future: The Importance of Chemistry

Katharina Kohse-Höinghaus, Bielefeld University

Chairs: T. Liewen and F. Qi

10:10

Break (40 minutes)

Room	Room 1	Room 2	Room 3	Room 4	Room 5	Room 6
	Gas-Phase Reaction Kinetics <i>Chairs:</i> <i>N. Labbe</i> <i>J. Zádor</i>	Laminar Flames <i>Chairs:</i> <i>E. Petersen</i> <i>P. Zhao</i>	Industry Speaker/Gas Turbine <i>Chairs:</i> <i>J. Driscoll</i> <i>J. O'Connor</i>	Turbulent Flames <i>Chairs:</i> <i>H. Wang</i>	Solid Fuel <i>Chairs:</i> <i>H. Nozomu</i>	Stationary & Low Carbon <i>Chairs:</i> <i>B. Noble</i> <i>A. Rousso</i>
10:50	1A01: Automated discovery of influential chemically termolecular reactions in energetic material combustion: A case study for RDX <i>R.E. Cornell, M.C. Barbet, M.P. Burke</i>	1B01: Laminar flame speed at high pressure and temperature conditions for kinetic schemes assessment <i>F. Halter, G. Dayma, Z. Serinyel, P. Dagaut, C. Chauveau</i>	1C01: INDUSTRY SPEAKER Recent advances and challenges in gas turbine combustion Keith McManus	1D01: Experimental study of vorticity-strain interactions in turbulent premixed counterflow flame <i>B. Zhou, J.H. Frank</i>	1E01: Effect of cellulose-lignin interactions on char structural changes during fast pyrolysis at 100 – 350 °C <i>Y.W. Chua, H. Wu, Y. Yu</i>	1F01: Interaction mechanism among CO, H ₂ S and CuO oxygen carrier in chemical looping combustion: A density functional theory calculation study <i>C. Zheng, H. Zhao</i>

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11:10	1A02: Termolecular chemistry facilitated by radical-radical recombinations and its impact on flame speed predictions <i>Y. Tao, A.W. Jasper, Y. Georgievskii, S.J. Klippenstein, R. Sivaramakrishnan</i>	1B02: Experimental flat flame study of monoterpenes: Insights into the combustion kinetics of α -pinene, β -pinene, and myrcene <i>T. Bierkandt, M. Höner, N. Gaiser, N. Hansen, M. Köhler, T. Kasper</i>	INDUSTRY SPEAKER Recent advances and challenges in gas turbine combustion Keith McManus	1D02: Flame- and flow-conditioned vorticity transport in premixed swirl combustion <i>A. Kazbekov, A.M. Steinberg</i>	1E02: A new insight into chemical reactions between biomass and alkaline additives during pyrolysis process <i>W. Chen, K. Li, Z. Chen, M.W. Xia, Y. Chen, H. Yang, X. Chen, H. Chen</i>	1F02: Fast redox kinetics of a perovskite oxygen carrier measured using micro-fluidized bed thermogravimetric analysis <i>L. Liu, Z. Li, Z. Li, Y. Larring, Y. Li, N. Cai</i>
11:30	1A03: A statistical model for the product energy distribution in reactions leading to prompt dissociation <i>A.D. Danilack, C.F. Goldsmith</i>	1B03: Insight into fuel isomeric effects on laminar flame propagation of pentanones <i>W. Li, B. Mei, Y. Li, S. Eckart, H. Krause, S. Ma, Y. Zhang</i>		1D03: Application of Helmholtz-Hodge decomposition and conditioned structure functions to exploring influence of premixed combustion on turbulence upstream of the flame <i>V.A. Sabelnikov, A.N. Lipatnikov, N. Nikitin, S. Nishiki, T. Hasegawa</i>	1E03: On the mechanism of xylan pyrolysis by combined experimental and computational approaches <i>B. Hu, W.-l. Xie, H. Li, K. Li, Q. Lu, Y.-p. Yang</i>	1F03: Reduced-order model for redox kinetics of oxygen carrier in chemical looping combustion <i>H. Wang, Z. Li, N. Cai</i>

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11:50	1A04: Approximate reconstruction of torsional potential energy surface based on voronoi tessellation <i>C. He, Y. Chi, P. Zhang</i>	1B04: Isomer-specific speciation behaviors probed from premixed flames fueled by acetone and propanal <i>H. Liao, T. Tao, W. Sun, N. Hansen, B. Yang</i>	1C04: Direct numerical simulation of turbulence modulation by premixed flames in a model annular swirling combustor <i>H. Xiao, K. Luo, T. Jin, H. Wang, J. Fan</i>	1D04: On the combined effect of internal and external intermittency in turbulent non-premixed jet flames <i>M. Gauding, M. Bode, D. Denker, Y. Brahami, L. Danaila, E. Varea</i>	1E04: Mechanism study of hemicellulose pyrolysis by combining in-situ DRIFT, TGA-PIMS and theoretical calculation <i>G. Dai, G. Wang, K. Wang, Z. Zhou, S. Wang</i>	1F04: Mechanistic study of the CO oxidation reaction on the CuO (111) surface during chemical looping combustion <i>L.-N. Wu, Z.-Y. Tian, A. El Kasmí, M. Fahad Arshad, W. Qin</i>
12:10	1A05: The decisive role of pericyclic reactions in the thermal decomposition of organophosphorus <i>J.-C. Lizardo-Huerta, B. Sirjean, L. Verdier, R. Fournet, P.-A. Glaude</i>	1B05: Effect of blending ratios on the reactivity of CH ₂ F ₂ /C ₂ HF ₅ refrigerant blends <i>S. Takahashi, H. Nakamura, T. Tezuka, K. Maruta</i>	1C05: Structure and stability characteristics of turbulent planar flames with inhomogeneous jet in a concentric flow slot burner <i>M.S. Mansour, A.M. Elbaz, W.L. Roberts, M.F. Zayed, M. Juddoo, B. Akoush, A.M. Khedr, H.M. Al-Bulqini, A.R. Masri</i>	1D05: Solenoidal and potential velocity fields in weakly turbulent premixed flames <i>V.A. Sabelnikov, A.N. Lipatnikov, N. Nikitin, S. Nishiki, T. Hasegawa</i>	1E05: On the primary thermal decomposition pathways of hydroxycinnamic acids <i>G. SriBala, R. Van de Vijver, L. Li, O. Dogu, G.B. Marin, K.M. Van Geem</i>	1F05: Experimental and computational investigations of ethane and ethylene kinetics with copper oxide particles for chemical looping combustion <i>C. Burger, W. Zhu, G. Ma, H. Zhao, A. van Duin, Y. Ju</i>

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10:10	Break (40 minutes)				
Room	Room 7	Room 8	Room 9	Room 10	Room 11
	Diagnostics <i>Chairs:</i> <i>T. Lee</i>	Soot, Nano & Large Molecules <i>Chairs:</i> <i>M. Altarawneh</i> <i>Y. Li</i>	Fire Research <i>Chairs:</i> <i>K. Kuwana</i> <i>A. Mensch</i>	Detonations, Explosions & Supersonic <i>Chairs:</i> <i>J. Oefelein</i>	Reciprocating IC Engines <i>Chairs:</i> <i>S. Som</i>
10:50	1G01: High-resolution velocity measurements in turbulent premixed flames using wavelet-based Optical Flow Velocimetry (wOFV) <i>B.E. Schmidt, A.W. Skiba, S.D. Hammack, C.D. Carter, J.A. Sutton</i>	1H01: Atomic insights into the sintering process of polycyclic aromatic hydrocarbon clusters <i>D. Hou, Q. Chu, D. Chen, L. Pascazio, M. Kraft, X. You</i>	1J01: Inhibition of premixed flames of methyl methacrylate by trimethylphosphate <i>D.A. Knyazkov, T.A. Bolshova, V.M. Shvartsberg, A.A. Chernov, O.P. Korobeinichev</i>	1K01: A study on detonation-diffraction reflection point distances in H ₂ /O ₂ , C ₂ H ₂ /O ₂ , and C ₂ H ₄ /O ₂ systems <i>H. Sun, A. Kawasaki, K. Matsuoka, J. Kasahara</i>	1L01: Using deep neural networks to diagnose engine pre-ignition <i>N. Kuzhagaliyeva, A. Thabet, E. Singh, B. Ghanem, S.M. Sarathy</i>
11:10	1G02: Simultaneous 10 kHz three-dimensional CH ₂ O and tomographic PIV measurements in a lifted partially-premixed jet flame <i>B. Zhou, T. Li, J.H. Frank, A. Dreizler, B. Böhm</i>	1H02: Aromatic penta-linked hydrocarbons in soot nanoparticle formation <i>L. Pascazio, J.W. Martin, A. Menon, D. Hou, X. You, M. Kraft</i>	1J02: Near-limit oscillatory behaviors on wick flames of dimethyl carbonate with trimethyl phosphate additions <i>F. Guo, Y. Ozaki, Y. Konno, N. Hashimoto, O. Fujita</i>	1K02: Geometric modeling and analysis of detonation cellular stability <i>J. Crane, X. Shi, J.T. Lipkowitz, A.M. Kempf, H. Wang</i>	1L02: Optical characterization of methanol compression-ignition combustion in a heavy-duty engine <i>A. Matamis, M. Richter, S. Lonn, O. Andersson, M. Tuner, L. Luise</i>

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11:30	1G03: Combustion-relevant aerosol phosphor thermometry imaging using Ce,Pr:LuAG, Ce:GdPO ₄ , and Ce:CSSO <i>J.M. Herzog, D. Witkowski, D.A. Rothamer</i>	1H03: Soot maturity studies in methane-air diffusion flames at elevated pressures using laser-induced incandescence <i>M. Mannazhi, S. Török, J. Gao, P.-E. Bengtsson</i>	1J03: The burning characteristics and flame evolution of hydrocarbon and hydrogen flash fires <i>A.V. Shelke, J.X. Wen</i>	1K03: Effect of boundary layer losses on 2D detonation cellular structures <i>Q. Xiao, A. Sow, B. Maxwell, M.I. Radulescu</i>	1L03: Investigation of the ignition processes of a multi-injection flame in a diesel engine environment using the flamelet model <i>X. Wen, M. Rieth, W. Han, J.H. Chen, C. Hasse</i>
11:50	1G04: Mid-infrared laser-induced thermal grating spectroscopy of hot water lines for flame thermometry <i>D. Hot, A.-L. Sahlberg, M. Aldén, Z. Li</i>	1H04: Effects of maturity and temperature on soot density and specific heat <i>H.A. Michelsen</i>	1J04: A numerical study on the response of chemically active flame inhibitors to strain rate variations <i>P. Badhuk, R.V. Ravikrishna</i>	1K04: Formation and characteristics of composite reaction – Shock clusters in narrow channels <i>H.-W. Ssu, M.-H. Wu</i>	1L04: A statistical analysis of developing knock intensity in a mixture with temperature inhomogeneities <i>M.B. Luong, S. Desai, F.E. Hernández Pérez, R. Sankaran, B. Johansson, H.G. Im</i>
12:10	1G05: Laser-Induced Incandescence Particle Image Velocimetry (LII-PIV) for simultaneous two-phase flame velocity measurement <i>L. Fan, C.T. Chong, B. Tian, Y. Zheng, D. McGrath, S. Hochgreb</i>	1H05: Flame synthesis of carbon metal-oxide nanocomposites in a counterflow burner <i>Y. Ren, K. Ran, S. Kruse, J. Mayer, H. Pitsch</i>	1J05: Transient dynamics of radiative extinction in low-momentum microgravity diffusion flames <i>A. Snegirev, E. Kuznetsov, E. Markus, P. Dehghani, P. Sunderland</i>	1K05: Numerical study of self-sustained oblique detonation in a non-uniform mixture <i>K. Iwata, O. Imamura, K. Akihama, H. Yamasaki, S. Nakaya, M. Tsue</i>	1L05: An experimental investigation on pre-ignition phenomena: Emphasis on the role of turbulence <i>J. Pan, Z. Zheng, H. Wei, M. Pan, G. Shu, X. Liang</i>

12:30	BREAK (90 Minutes)					
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	Gas-Phase Reaction Kinetics <i>Chairs:</i> B. Giri Y. Zhang	Laminar Flames <i>Chairs:</i> E. Hu J. Park	Topical Review/ Gas-Phase Reaction Kinetics II <i>Chairs:</i> A. Dreizler	Turbulent Flames <i>Chairs:</i> B. Savard L. Wang	Solid Fuel <i>Chairs:</i> A. Makino J.J. Yoh	Stationary & Low Carbon <i>Chairs:</i> D. Lacoste
14:00	1A06: Oxidation of di-n-propyl ether: Characterization of low-temperature products N. Belhadj, R. Benoit, P. Dagaut, M. Lailliau, Z. Serinyel, G. Dayma	1B06: Time scale analysis of the homogeneous flame inhibition by alkali metals. O. Dounia, O. Vermorel, T. Jaravel, T. Poinsot	1C06: TOPICAL REVIEW Advances in burst-mode laser diagnostics for reacting and nonreacting flows <i>Mikhail N. Slipchenko,</i> <i>Terrence R. Meyer,</i> Sukesh Roy	1D06: Effects of Rayleigh-Taylor instabilities on turbulent premixed flames in a curved rectangular duct J.P. Sykes, T.P. Gallagher, B.A. Rankin	1E06: Combustion behaviour of composite sandwich propellants containing RDX K. Gnanaprakash, S.R. Chakravarthy, K. Jayaraman, H. Appu, D. Singh, R. Rohit, S. Ananthram	1F06: Effect of flash boiling injection on combustion and PN emissions of DISI optical engine fueled with butanol isomers/TPRF blends M. Nour, Z. Sun, M. Cui, S. Yang, D. Hung, X. Li, M. Xu
14:20	1A07: Comparative study on ethyl butanoate reactivity Experimental investigation and kinetic modeling of the C ₆ ethyl ester P. Morsch, Y. Fenard, K.A. Heufer	1B07: Flame enhancement of ethylene/methane mixtures by ozone addition C.B. Reuter, T.M. Ombrello		1D07: Modeling pressure effects on the turbulent burning velocity for lean hydrogen/air premixed combustion Z. Lu, Y. Yang	1E07: Time-resolved size, velocity, and temperature statistics of aluminum combustion in solid rocket propellants A.W. Marsh, G.T. Wang, J.D. Heyborne, D.R. Guildenbecher, Y.C. Mazumdar	1F07: Soot particles in piston-top pool fires and exhaust at 5 and 15 MPa injection pressure in a gasoline direct-injection engine D. Kim, S. Kook, R. Kusakari, K. Shinohara, K. Iijima, T. Aizawa
14:40	1A08: Pyrolysis of diethyl carbonate: Shock-tube and flow-reactor measurements and modeling P. Sela, Y. Zhang, J. Herzler, M. Fikri, C. Schulz, S. Peukert	1B08: Quantitative evaluation of wall chemical effect in hydrogen flame using two-photon absorption LIF Y. Fan, J. Guo, M. Lee, N. Iki, Y. Suzuki		1D08: Mitigation of Darrieus-Landau instability effects on turbulent premixed flames P.E. Lapenna, G. Troiani, R. Lamioni, F. Creta	1E08: Particle burning behaviors of Al/AP propellant with high-speed digital off-axis holography Y. Wu, Z. Lin, Z. Zhuo, S. Wu, C. Zhou, L. Yao, W. Ao, X. Wu, L. Chen, K. Cen	1F08: Experimental characterization of ultrafine particle emissions from a light-duty diesel engine equipped with a standard DPF B. Rossomando, E. Meloni, G. De Falco, M. Sirignano, I. Arsie, V. Palma

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	Gas-Phase Reaction Kinetics <i>Chairs:</i> <i>B. Giri</i> <i>Y. Zhang</i>	Laminar Flames <i>Chairs:</i> <i>E. Hu</i> <i>J. Park</i>	Topical Review/ Gas-Phase Reaction Kinetics II <i>Chairs:</i> <i>A. Dreizler</i>	Turbulent Flames <i>Chairs:</i> <i>B. Savard</i> <i>L. Wang</i>	Solid Fuel <i>Chairs:</i> <i>A. Makino</i> <i>J.J. Yoh</i>	Stationary & Low Carbon <i>Chairs:</i> <i>D. Lacoste</i>
15:00	1A09: Probing the low-temperature chemistry of methyl hexanoate: Insights from oxygenate intermediates <i>C.O. Rogers, D. Kaczmarek, T. Kasper, N.J. Labbe</i>	1B09: Characterizing ammonia and nitric oxide interaction with outwardly propagating spherical flame method <i>B. Mei, S. Ma, X. Zhang, Y. Li</i>	1C09: Experimental and modeling study on the auto-ignition properties of ammonia/methane mixtures at elevated pressures <i>B. Shu, X. He, C.F. Ramos, R.X. Fernandes, M. Costa</i>	1D09: Thermal and chemical effects of differential diffusion in turbulent non-premixed H ₂ flames <i>W. Han, A. Scholtissek, F. Dietzsch, C. Hasse</i>	1E09: Aluminum combustion in CO ₂ -CO-N ₂ mixtures <i>A. Braconnier, S. Gallier, F. Halter, C. Chauveau</i>	1F09: Soot characteristics of diesel sprays with different split-injection strategies <i>T. Xuan, N. Maes, J.M. García-Oliver, Z. He</i>
15:20	1A10: Exploring the oxidation chemistry of diisopropyl ether: Jet-stirred reactor experiments and kinetic modeling <i>X. Fan, W. Sun, Z. Liu, J. Yang, B. Yang, C.K. Law</i>	1B10: An experimental and modeling study of ammonia with enriched oxygen content and ammonia/hydrogen laminar flame speed at elevated pressure and temperature <i>K.P. Shrestha, C. Lhuillier, A.A. Barbosa, P. Brequigny, F. Contino, C. Mounaïm-Rousselle, L. Seidel, F. Mauss</i>	1C10: Two-stage autoignition and combustion mode evolution in boundary layer flows above a cold flat surface <i>H. Chen, M. Tao, Q. Yang, H. Ge, P. Zhao</i>	1D10: Propagation of Darrieus-Landau unstable laminar and turbulent expanding flames <i>X. Cai, J. Wang, Z. Bian, H. Zhao, Z. Li, Z. Huang</i>	1E10: Characterization of the influence of aluminum particle size on the temperature of composite-propellant flames using CO absorption and AIO emission spectroscopy <i>M.D. Ruesch, A.J. McDonald, G.C. Mathews, S.F. Son, C.S. Goldenstein</i>	1F10: Ability of particulate matter index to describe sooting tendency of various gasoline formulations in a stratified-charge spark-ignition engine <i>N. Kim, D. Vuilleumier, X. He, M. Sjöberg</i>

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	Diagnostics <i>Chairs:</i> <i>X. Chao</i> <i>G. Magnotti</i>	Soot, Nano & Large Molecules <i>Chairs:</i> <i>A. Raj</i> <i>Y. Wang</i>	Fire Research <i>Chairs:</i> <i>J. Jie</i>	Detonations, Explosions & Supersonic <i>Chairs:</i> <i>T.M. Muruganandam</i>	Gas Turbine & Rocket Engine <i>Chairs:</i> <i>J. Heyne</i> <i>L. Li</i>
14:00	1G06: A mid-infrared diagnostic for benzene using a tunable difference-frequency-generation laser <i>M.K. Shakfa, M. Mhanna, H. Jin, D. Liu, K. Djebbi, M. Marangoni, A. Farooq</i>	1H06: Unraveling synergistic effects on pyrolysis reactivity and indene formation in copyrolysis of toluene and acetylene <i>T. Li, Y. Zhang, W. Yuan, C. Cao, W. Li, J. Yang, Y. Li</i>	1J06: Limit conditions of smoldering spread in counterflow configuration: Extinction and smoldering-to-flaming transition <i>O. Kadowaki, M. Suzuki, K. Kuwana, Y. Nakamura, G. Kushida</i>	1K06: Detonation propagation across a stratified layer with a diffuse interface <i>C. Metrow, V. Yousefi, G. Ciccarelli</i>	1L06: Autoignition and flame lift-off behavior of a fuel jet mixing with turbulent hot air coflow <i>S. Li, W. Qian, H. Liu, G. Liu, M. Zhu</i>
14:20	1G07: Mid-Infrared dual frequency comb spectroscopy for combustion analysis from 2.8 to 5 microns <i>A.S. Makowiecki, D.I. Herman, N. Hoghooghi, E.F. Strong, R.K. Cole, G. Ycas, F.R. Giorgetta, C.B. Lapointe, J.F. Glusman, J.W. Daily, P.E. Hamlington, N.R. Newbury, I.R. Coddington, G.B. Rieker</i>	1H07: Revealing the optical properties of polycyclic aromatic hydrocarbon clusters with surface formyl groups <i>H. Li, H. Wang, D. Chen, Z. Kang</i>	1J07: Influence of wind and slope on multidimensional smouldering combustion <i>E.G. Christensen, Y. Hu, D. Purnomo, G. Rein</i>	1K07: Propagation of gaseous detonation across inert layers <i>Y. Wang, C. Huang, R. Deiterding, H. Chen, Z. Chen</i>	1L07: Stabilization mechanisms of CH ₄ premixed swirled flame enriched with a non-premixed hydrogen injection <i>D. Laera, P.W. Agostinelli, L. Selle, Q. Cazères, G. Oztarlik, T. Schuller, L. Gicquel, T. Poinso</i>
14:40	1G08: Time-resolved, single-ended laser absorption thermometry and H ₂ O, CO ₂ , and CO speciation in a H ₂ /C ₂ H ₄ -fueled rotating detonation engine <i>S.J. Cassidy, W.Y. Peng, C.L. Strand, D.F. Dausen, J.R. Codoni, C.M. Brophy, R.K. Hanson</i>	1H08: Identification of the molecular-weight growth reaction network in counterflow flames of the C ₃ H ₄ isomers allene and propyne <i>G. Kukkadapu, S.W. Wagnon, W.J. Pitz, N. Hansen</i>	1J08: Using cellular automata to simulate field-scale flaming and smouldering wildfires in tropical peatlands <i>D.M.J. Purnomo, M. Bonner, S. Moafi, G. Rein</i>	1K08: Detonation-diffuse interface interactions: Failure, re-initiation and propagation limits <i>J. Melguizo-Gavilanes, M. Peswani, B.M. Maxwell</i>	1L08: Numerical analysis of flame shape bifurcation in a two-stage swirled liquid burner using Large Eddy Simulation <i>L.C. C. Mesquita, A. Viéa, L. Zimmer, S. Ducruix</i>

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	Diagnostics <i>Chairs:</i> <i>X. Chao</i> <i>G. Magnotti</i>	Soot, Nano & Large Molecules <i>Chairs:</i> <i>A. Raj</i> <i>Y. Wang</i>	Fire Research <i>Chairs:</i> <i>J. Jie</i>	Detonations, Explosions & Supersonic <i>Chairs:</i> <i>T.M. Muruganandam</i>	Gas Turbine & Rocket Engine <i>Chairs:</i> <i>J. Heyne</i> <i>L. Li</i>
15:00	1G09: Tomographic spectrometer for the temporally-resolved 2D reconstruction of gas phase parameters within a generic SCR test rig <i>S. van der Kley, J. Emmert, A. Schmidt, A. Dreizler, S. Wagner</i>	1H09: Highly radiating hydrogen flames: Effect of toluene concentration and phase <i>M.J. Evans, D.B. Proud, P.R. Medwell, H. Pitsch, B.B. Dally</i>	1J09: Smoldering characteristics of high bulk density peat <i>G.C. Krieger Filho, P. Bufacchi, F. Costa, E.V. Cortez, J.C. Andrade, K. Ribeiro, F. de Souza Costa</i>	1K09: The effects of mixture preburning on detonation wave propagation <i>S. Prakash, V. Raman</i>	1L09: Dynamics of spray and swirling flame under acoustic oscillations: A joint experimental and LES investigation <i>G. Vignat, E. Lo Schiavo, D. Laera, A. Renaud, L. Gicquel, D. Durox, S. Candel</i>
15:20	1G10: Temperature and concentration measurements in a high-pressure gasifier enabled by cepstral analysis of dual frequency comb spectroscopy <i>P.J. Schroeder, A.S. Makowiecki, M.A. Kelley, R.K. Cole, N.A. Malarich, R.J. Wright, J.M. Porter, G.B. Rieker</i>	1H10: Pyrene dimerization in controlled temperature environment: An experimental study <i>M. Sirignano, C. Russo</i>	1J10: Effect of density on the smoldering characteristics of cotton bales ignited internally <i>M. He, L. Ding, L. Yu, J. Ji</i>	1K10: Reactive Burgers model for detonation propagation in a non-uniform medium <i>A.R. Kasimov, A.R. Gonchar</i>	1L10: Saturation phenomenon of swirling spray flames at pressure antinodes of a transverse acoustic field <i>F. Baillet, C. Patat, M. Cáceres, J.-B. Blaisot, E. Domingues</i>

15:40	BREAK (50 minutes)					
Room	Room 1	Room 2	Room 3	Room 4	Room 5	Room 6
	Gas-Phase Reaction Kinetics <i>Chairs:</i> Y. Zhang B. Giri	Laminar Flames <i>Chairs:</i> E. Hu J. Park	Gas-Phase Reaction Kinetics II <i>Chairs:</i> M. Braun-Unkhoff O. Herbinet	New Concepts <i>Chairs:</i> D. Lacoste J. Mantzaras	Solid Fuel <i>Chairs:</i> P. Debiagi H. Wu	Spray, Droplet & Supercritical <i>Chairs:</i> R. Kneer M. Linne
16:30	1A11: Experimental and modeling study of the high-temperature combustion chemistry of tetrahydrofurfuryl alcohol <i>L.-S. Tran, H.-H. Carstensen, K.K. Foo, N. Lamoureux, S. Gosselin, L. Gasnot, A. El-Bakali, P. Desgroux</i>	1B11: Radiation effects in confined spherically expanding flames: Application to C ₅ -C ₁₀ flames at engine-relevant conditions <i>A. Movaghar, R. Lawson, F.N. Egolfopoulos</i>	1C11: A comprehensive experimental and improved kinetic modeling study on the pyrolysis and oxidation of propyne <i>S. Panigrahy, J. Liang, S.S. Nagaraja, Z. Zuo, G. Kim, T. MacDougall, S.S. Vasu, H.J. Curran</i>	1D11: Plasma-assisted stabilization of premixed swirl flames by gliding arc discharges <i>J. Sun, Y. Tang, S. Li</i>	1E11: Additional criteria for MILD coal combustion <i>H. Zhou, T.A. Ring, J.C. Sutherland</i>	1F11: Analysis of low-temperature chemistry in a turbulent swirling spray flame near lean blow-out <i>D. Mohaddes, W. Xie, M. Ihme</i>
16:50	1A12: Characterizing the fuel-specific combustion chemistry of acetic acid and propanoic acid: Laminar flame propagation and kinetic modeling studies <i>X. Zhang, B. Mei, S. Ma, Y. Zhang, C. Cao, W. Li, L. Ye, Y. Li</i>	1B12: Entanglement of <i>n</i> -heptane and <i>iso</i> -butanol chemistries in flames fueled by their mixtures <i>M. Braun-Unkhoff, N. Hansen, M. Dietrich, T. Methling, K. Moshhammer, B. Yang</i>	1C12: Experimental and kinetic modeling of the ignition delays of cyclohexane, cyclohexene, and cyclohexadienes: Effect of unsaturation <i>L. Giarracca, F. Isufaj, J.-C. Lizardo-Huerta, R. Fournet, P.-A. Glaude, B. Sirjean</i>	1D12: Improvement of lean blow out performance of spray and premixed swirled flames using nanosecond repetitively pulsed discharges <i>G. Vignat, N. Minesi, P.R. Soundararajan, D. Durox, A. Renaud, V. Blanchard, C.O. Laux, S. Candel</i>	1E12: The effects of oxygen concentration and gas temperature on coal stream ignition and particle surface temperature in reducing-to oxidizing environments <i>D. Khatri, Z. Yang, R.L. Axelbaum</i>	1F12: Chemical and physical effects on lean blowout in a swirl-stabilized single-cup combustor <i>J.G. Colborn, J.S. Heyne, S.D. Stouffer, T.H. Hendershott, E. Corporan</i>
17:10	1A13: Isomer-specific influences on ignition and intermediates of two C ₅ ketones in an RCM <i>S. Kang, C. Huang, Y. Wang, P. Zhang, W. Sun, C.K. Law, B. Yang</i>	1B13: Chemical structure of atmospheric pressure premixed laminar formic acid/hydrogen flames <i>K.N. Osipova, S. Mani Sarathy, O.P. Korobeinichev, A.G. Shmakov</i>	1C13: An experimental and kinetic modeling study on the oxidation of 1,3-dioxolane <i>A. Wildenberg, Y. Fenard, M. Carbonnier, A. Kéromnès, B. Lefort, Z. Serinyel, G. Dayma, L. Le Moyne, P. Dagaut, K.A. Heufer</i>	1D13: Plasma-assisted ignition of methane/air and ethylene/air mixtures: Efficiency at low and high pressures <i>N. Deak, A. Bellemans, F. Bisetti</i>	1E13: Investigation of the transition from single to group coal particle combustion using high-speed scanning OH-LIF and diffuse backlight-illumination <i>T. Li, C. Geschwindner, J. Köser, M. Schiemann, A. Dreizler, B. Böhm</i>	1F13: Coupling effects of physical and chemical properties on jet fuel spray flame blowout <i>R. Alsulami, S. Lucas, M. Hageman, M. Knadler, J.M. Quinlan, B. Windom</i>

Room	Room 1	Room 2	Room 3	Room 4	Room 5	Room 6
	Gas-Phase Reaction Kinetics <i>Chairs:</i> Y. Zhang B. Giri	Laminar Flames <i>Chairs:</i> E. Hu J. Park	Gas-Phase Reaction Kinetics II <i>Chairs:</i> M. Braun-Unkhoff O. Herbinet	New Concepts <i>Chairs:</i> D. Lacoste J. Mantzaras	Solid Fuel <i>Chairs:</i> P. Debiagi H. Wu	Spray, Droplet & Supercritical <i>Chairs:</i> R. Kneer M. Linne
17:30	1A14: Experimental and kinetic modeling studies on the auto-ignition of methyl crotonate at high pressures and intermediate temperatures <i>S.K. Vallabhuni, P.N. Johnson, B. Shu, K. Narayanaswamy, R.X. Fernandes</i>	1B14: Combustion of silane-nitrous oxide-argon mixtures: Analysis of laminar flame propagation and condensed products <i>R. Mével, K.P. Chatelain, Y. He, S. Lapointe, D.A. Lacoste, M. Allix, N. Chaumeix, C.-E. Paillard</i>		1D14: Investigation of the hydrodynamic effect of nanosecond repetitively pulsed discharges on a laminar stagnation flame <i>J. Lambert, S. Coulombe, G. Bourque, J. Bergthorson</i>	1E14: Effect of fuel ratio of coal on the turbulent flame speed of ammonia/coal particle cloud co-combustion at atmospheric pressure. <i>K. Hadi, R. Ichimura, G. Hashimoto, Y. Xia, N. Hashimoto, O. Fujita</i>	1F14: Blow-off mechanisms of turbulent premixed bluff-body stabilised flames operated with vapourised kerosene fuels <i>R.S. Pathania, A.W. Skiba, R. Ciardiello, E. Mastorakos</i>
	SESSIONS END AT 17:50					
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15:40	BREAK (50 minutes)				
Room	Room 7	Room 8	Room 9	Room 10	Room 11
	Reciprocating IC Engines <i>Chairs:</i> <i>R. Cracknell</i>	Soot, Nano & Large Molecules <i>Chairs:</i> <i>A. Raj</i>	Fire Research <i>Chairs:</i>	Stationary & Low Carbon <i>Chairs:</i> <i>M. Cha</i> <i>J.P. Moeck</i>	Stationary & Low Carbon II <i>Chairs:</i> <i>V. Scherer</i>
16:30	1G11: Ultra-lean limit extension for gasoline direct injection engine application via high energy ignition and flash boiling atomization <i>C. Ye, Z. Sun, M. Cui, X. Li, D. Hung, M. Xu</i>	1H11: Formation of phenanthrenyl radicals via the reaction of acenaphthyl with acetylene <i>A.S. Savchenkova, I.V. Chechet, S.G. Matveev, M. Frenklach, A.M. Mebel</i>	1J11: Experimental and numerical studies of downward flame spread over PMMA with and without the addition of tri phenyl phosphate <i>O.P. Korobeinichev, S.A. Trubachev, A.K. Joshi, A. Kumar, A.A. Paletsky, A.G. Tereshchenko, A.G. Shmakov, R.K. Glaznev, V. Raghavan, A.M. Mebel</i>	1K11: Effects of CO ₂ dilution on partially premixed CH ₄ -air flames in swirl and bluff body stabilized combustor <i>S. Aravind, R.K. Gohiya, R.S. Prakash, R. Sadanandan</i>	1L11: Influence of wall heat loss on the emission characteristics of premixed ammonia air swirling flames interacting with the combustor wall <i>E.C. Okafor, M. Tsukamoto, A. Hayakawa, K.D.K.A. Somarathne, T. Kudo, T. Tsujimura, H. Kobayashi</i>
16:50	1G12: Large-Eddy Simulations of a stratified-charge direct-injection spark-ignition engine: Comparison with experiment and analysis of cycle-to-cycle variations <i>S.J. Kazmouz, D.C. Haworth, P. Lillo, V. Sick</i>	1H12: Experimental and theoretical evidence for the temperature-determined evolution of PAH functional groups <i>P. Liu, B. Chen, Z. Li, A. Bennett, S. Sioud, H. Pitsch, S.M. Sarathy, W.L. Roberts</i>	1J12: The effect of triphenyl phosphate inhibition on flame propagation over cast PMMA slabs <i>S.A. Trubachev, O.P. Korobeinichev, A.I. Karpov, A.A. Shaklein, R.K. Glaznev, M.B. Gonchikzhapov, A.A. Paletsky, A.G. Tereshchenko, A.G. Shmakov, A.S. Bespalova, H. Yuan, W. Xin, H. Weizhao</i>	1K12: The blow-off and transient characteristics of co-firing ammonia/methane fuels on a swirl combustor <i>M. Zhang, X. Wei, J. Wang, Z. Huang, H. Tan</i>	1L12: Impact of co- and counter-swirl on flow recirculation and liftoff of non-premixed oxy-flames above coaxial injectors <i>A. Degeneve, R. Vicquelin, C. Mirat, J. Caudal, T. Schuller</i>
17:10	1G13: Cycle resolved control for HCCI engine load range expansion by combining ion current and pressure sensor <i>D. Zhu, J. Deng, S. Wang, H. Zhang, Z. Wu, J. Andert, L. Li</i>	1H13: Kinetic Monte Carlo statistics of curvature integration by HACA growth and bay closure reactions for PAH growth in a counterflow diffusion flame <i>G. Leon, A. Menon, L. Pascazio, E. Bringley, J. Akroyd, M. Kraft</i>	1J13: Downward burning of PMMA cylinders: The effect of pressure and oxygen <i>M. Thomsen, C. Fernandez-Pello, S.L. Olson, P.V. Ferkul</i>	1K13: Turbulent flame propagation limits of ammonia/methane/air premixed mixture in a constant volume vessel <i>G. Hashimoto, K. Hadi, Y. Xia, A. Hamid, N. Hashimoto, A. Hayakawa, H. Kobayashi, O. Fujita</i>	1L13: Characteristics of NH ₃ /H ₂ /air flames in a combustor fired by a swirl and bluff-body stabilized burner <i>M.C. Franco, R.C. Rocha, M. Costa, M. Yehia</i>

Room	Room 7	Room 8	Room 9	Room 10	Room 11
	Reciprocating IC Engines <i>Chairs:</i> <i>R. Cracknell</i>	Soot, Nano & Large Molecules <i>Chairs:</i> <i>A. Raj</i>	Fire Research <i>Chairs:</i>	Stationary & Low Carbon <i>Chairs:</i> <i>M. Cha</i> <i>J.P. Moeck</i>	Stationary & Low Carbon II <i>Chairs:</i> <i>V. Scherer</i>
17:30	1G14: Investigation of cycle-to-cycle variations in a spark-ignition engine based on a machine learning analysis of the early flame kernel <i>A. Hanuschkin, S. Zündorf, M. Schmidt, C. Welch, J. Schorr, S. Peters, A. Dreizler, B. Böhm</i>	1H14: Flow reactor pyrolysis of <i>iso</i> -butylbenzene and <i>tert</i> -butylbenzene at various pressures: Insight into fuel isomeric effects on pyrolysis chemistry of butylbenzenes <i>Y. Zhang, X. Zhang, C. Cao, J. Zou, T. Li, J. Yang, L. Ye, Y. Li</i>	1J14: Composite auto-ignition criterion for PMMA exposed to linearly declining thermal radiation <i>J. Gong, M. Zhang, J. Li, S. Wang, Y. Zhou, Z. Wang</i>	1K14: Effects of OH concentration and temperature on NO emission characteristics of turbulent non-premixed CH ₄ /NH ₃ /air flames in a two-stage gas turbine like combustor at high pressure <i>K.D.K.A. Somarathne, E.C. Okafor, D. Sugawara, A. Hayakawa, H. Kobayashi</i>	1L14: NO and OH* emission characteristics of very-lean to stoichiometric ammonia-hydrogen-air swirl flames <i>X. Zhu, A.A. Khateeb, T.F. Guiberti, W.L. Roberts</i>
SESSIONS END AT 17:50					
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Tuesday, 26 January 2021

(Room 3)

PLENARY LECTURE – 8:30 am

Challenges for Turbulent Combustion*Assaad Masri, University of Sydney**Chairs: J. Chen and T. Poinsot*

Transfer (10 minutes)

Room	Room 1	Room 2	Room 3	Room 4	Room 5	Room 6
	Gas-Phase Reaction Kinetics <i>Chairs:</i> <i>R. Sivaramakrishnan</i> <i>P. Zhang</i>	Laminar Flames <i>Chairs:</i> <i>B.J. Lee</i>	Topical Review <i>Chairs:</i> <i>H. Pitsch</i> <i>T. Turanyi</i>	Turbulent Flames <i>Chairs:</i> <i>H. Wang</i> <i>X. Zhao</i>	Diagnostics <i>Chairs:</i> <i>J.A. Sutton</i> <i>Z. Sun</i>	Spray, Droplet & Supercritical <i>Chairs:</i> <i>A. Caswell</i> <i>K.Y. Huh</i>
9:40	2A01: Automated theoretical chemical kinetics: Predicting the kinetics for the initial stages of pyrolysis <i>S.N. Elliott, K.B. Moore III, A.V. Copan, M. Keçeli, C. Cavallotti, Y. Georgievskii, H.F. Schaefer III, S.J. Klippenstein</i>	2B01: Autoignition of reacting mixtures at engine-relevant conditions using confined spherically expanding flames <i>R. Lawson, V. Gururajan, A. Movaghar, F.N. Egolfopoulos</i>	2C01: TOPICAL REVIEW Towards predictive combustion kinetic models: Progress in model analysis and informative experiments Bin Yang	2D01: In-situ adaptive manifolds: Enabling computationally efficient simulations of complex turbulent reacting flows <i>C.E. Lacey, A.G. Novoselov, M.E. Mueller</i>	2E01: Characterization of wall temperature distributions in a gas turbine model combustor measured by 2D phosphor thermometry <i>C.M. Arndt, P. Nau, W. Meier</i>	2F01: Sub-millimeter sized multi-component jet fuel surrogate droplet combustion: Physicochemical preferential vaporization effects <i>T.I. Farouk, S.H. Won, F.L. Dryer</i>
10:00	2A02: Dynamically evaluating mixture effects on multi-channel reactions in flames: A case study for the CH ₃ + OH reaction <i>L. Lei, M.P. Burke</i>	2B02: Ignition of dimethyl ether/air mixtures by hot particles: Impact of low temperature chemical reactions <i>Y. Wang, H. Zhang, T. Zirwes, F. Zhang, H. Bockhorn, Z. Chen</i>		2D02: Reduced chemistry for sound generation by planar annihilation in premixed methane/hydrogen flames <i>J.Z. Ho, M. Talei, R.L. Gordon, M.J. Brear</i>	2E02: Single-shot imaging of major species and OH mole fractions and temperature in non-premixed H ₂ /N ₂ flames at elevated pressure <i>T.F. Guiberti, Y. Krishna, W.R. Boyette, C. Yang, W.L. Roberts, G. Magnotti</i>	2F02: Numerical study of multicomponent spray flame propagation <i>V. Shastry, Q. Cazerres, B. Rochette, E. Riber, B. Cuenot</i>

Room	Room 1	Room 2	Room 3	Room 4	Room 5	Room 6
	Gas-Phase Reaction Kinetics <i>Chairs:</i> <i>R. Sivaramakrishnan</i> <i>P. Zhang</i>	Laminar Flames <i>Chairs:</i> <i>B.J. Lee</i>	Topical Review <i>Chairs:</i> <i>H. Pitsch</i> <i>T. Turanyi</i>	Turbulent Flames <i>Chairs:</i> <i>H. Wang</i> <i>X. Zhao</i>	Diagnostics <i>Chairs:</i> <i>J.A. Sutton</i> <i>Z. Sun</i>	Spray, Droplet & Supercritical <i>Chairs:</i> <i>A. Caswell</i> <i>K.Y. Huh</i>
10:20	2A03: Theoretical study of the gas-phase thermal decomposition of urea <i>J. Honorien, R. Fournet, P.-A. Glaude, B. Sirjean</i>	2B03: Flame speed scaling in autoignition-assisted freely propagating n-heptane/air flames <i>X. Gong, Z. Ren</i>	TOPICAL REVIEW Towards predictive combustion kinetic models: Progress in model analysis and informative experiments Bin Yang	2D03: Modeling curvature effects in turbulent autoigniting non-premixed flames using tabulated chemistry <i>M.U. Göktolga, P. de Goey, J. van Oijen</i>	2E03: 100 kHz PIV in a liquid-fueled gas turbine swirl combustor at 1 MPa <i>J.J. Philo, M.D. Frederick, C.D. Slabaugh</i>	2F03: Variation of gas phase combustion properties of complex fuels during vaporization: Comparison for distillation and droplet scenarios <i>L. Luo, Y.C. Liu</i>

Tuesday, 26 January 2021

(Room 3)

PLENARY LECTURE – 8:30 am

Challenges for Turbulent Combustion*Assaad Masri, University of Sydney**Chairs: J. Chen and T. Poinsot*

Transfer (10 minutes)

Room	Room 7	Room 8	Room 9	Room 10	Room 1
	New Concepts <i>Chairs:</i> <i>W. Sun</i>	Soot, Nano & Large Molecules <i>Chairs:</i> <i>G. Da Silva</i> <i>X. You</i>	Fire Research <i>Chairs:</i> <i>M.A. Delichatsios</i>	Detonations, Explosions & Supersonic <i>Chairs:</i> <i>M. Ihme</i> <i>A. Schumaker</i>	Gas Turbine & Rocket Engine <i>Chairs:</i> <i>G. Bourque</i> <i>E. Mazumdar</i>
9:40	2G01: Homogeneous ignition of H ₂ /CO/O ₂ /N ₂ mixtures over palladium at pressures up to 8 bar <i>R. Sui, J. Mantzaras, C.K. Law, R. Bombach, M. Khatoonabadi</i>	2H01: The effect of fuel composition and Reynolds number on soot formation processes in turbulent non-premixed toluene jet flames <i>S. Kruse, P. Medwell, M. Davidovic, Z. Sun, J. Ye, H. Pitsch, B. Dally</i>	2J01: A convective heat transfer model for LES fire modeling <i>N. Ren, Y. Wang</i>	2K01: Deflagration to detonation transition in fast flames and tracking with chemical explosive mode analysis <i>T. Jaravel, O. Dounia, Q. Malé, O. Vermorel</i>	2L01: Relationship of gain and phase in the transfer function of swirling flames <i>G. Wang, J. Zheng, L. Li, X. Liu, F. Qi</i>
10:00	2G02: Time-resolved <i>in situ</i> measurements and predictions of plasma-assisted methane reforming in a nanosecond-pulsed discharge <i>T.Y. Chen, T.S. Taneja, A.C. Rousso, S. Yang, E. Kolemen, Y. Ju</i>	2H02: Quantification of PAH concentrations in premixed turbulent flames crossing the soot inception limit <i>H. Shariatmadar, F. Hampp, R.P. Lindstedt</i>	2J02: Heat fluxes under the ceiling induced by wall fires with various burner aspect ratios in a channel <i>F. Tang, P. Hu, J. Zhang, J. Wen</i>	2K02: Flame acceleration and DDT in large-scale obstructed channels filled with methane-air mixtures <i>V.N. Gamezo, C.L. Bachman, E.S. Oran</i>	2L02: Dynamics of periodically-excited vortices in swirling flames <i>G. Wang, X. Liu, X. Xia, S. Wang, F. Qi</i>
10:20	2G03: Effects of microwave radiation on laser induced plasma ignition of n-butane/air mixture under atmospheric conditions <i>P. Kumar, Y. Yamaki, J. Lee, S. Nakaya, M. Tsue</i>	2H03: Soot-flowfield interactions in turbulent non-premixed bluff-body flames of ethylene/nitrogen <i>A. Rowhani, Z. Sun, P.R. Medwell, G.J. Nathan, B.B. Dally</i>	2J03: Experimental study of flame heat transfer in a vertical turbulent wall fire <i>D. Zeng, G. Xiong, G. Agarwal, Y. Wang</i>	2K03: Deflagration-to-detonation transition in an unconfined space: Expanding hydrogen-oxygen flames <i>A. Koksharov, L. Kagan, G. Sivashinsky</i>	2L03: Modeling of the nonlinear flame response of a Bunsen-type flame via multi-layer perceptron <i>N. Tathawadekar, N.A.K. Doan, C.F. Silva, N. Thuerey</i>

10:40	BREAK (30 minutes)					
Room	Room 1	Room 2	Room 3	Room 4	Room 5	Room 6
	Gas-Phase Reaction Kinetics <i>Chairs:</i> <i>R. Sivaramakrishnan</i> <i>P. Zhang</i>	Laminar Flames <i>Chairs:</i> <i>J. Santner</i> <i>B.J. Lee</i>	Stationary & Low Carbon <i>Chairs:</i> <i>P. Papas</i> <i>S.H. Wang</i>	Turbulent Flames <i>Chairs:</i> <i>H. Wang</i> <i>X. Zhao</i>	Solid Fuel <i>Chairs:</i> <i>C.A.M. Dillier</i> <i>M.D. Ruesch</i>	New Concepts <i>Chairs:</i> <i>W. Sun</i>
11:10	2A04: Low-temperature oxidation of diethyl ether: Reactions of hot radicals across coupled potential energy surfaces <i>A.D. Danilack, S.J. Klippenstein, Y. Georgievskii, C.F. Goldsmith</i>	2B04: Exploring fuel isomeric effects on laminar flame propagation of butylbenzenes at various pressures <i>Y. Zhang, B. Mei, X. Zhang, S. Ma, Y. Li</i>	2C04: Simultaneous removal of NO and Hg ⁰ from flue gas over MnSmCo/Ti catalyst at low temperature <i>L. Liu, S. Su, K. Xu, M. Qing, H. Li, S. Hu, Y. Wang, L. Jiang, J. Xiang</i>	2D04: Improved MMC-LES to compute the structure of a mixed-mode turbulent flame series <i>S. Aldawsari, S. Galindo-Lopez, M.J. Cleary, A.R. Masri</i>	2E04: Measurement of admittance and acoustic augmentation of burning rate of composite solid propellants using laser Doppler velocimetry <i>R. Rajak, S.R. Chakravarthy, S. Ganesan</i>	2F04: Catalytic combustion of VOC emissions with CO ₂ effect on Cu-Co binary oxide films <i>A. El Kasmi, M. Waqas, L.-N. Wu, M.F. Arshad, Z.-Y. Tian</i>
11:30	2A05: Kinetics and thermochemistry of the reaction of 1-methylpropargyl radicals with oxygen molecules: Experiments and computations <i>T.T. Pekkanen, S.P. Joshi, G. Lendvay, R.S. Timonen, A.J. Eskola</i>	2B05: Laminar burning velocities of 2-methyltetrahydrofuran at elevated pressures <i>Y. Li, W. Xu, Y. Jiang, K.M. Liew, R. Qiu</i>	2C05: An experimental and numerical investigation of the catalytic-rich/gaseous-lean combustion of H ₂ /CO/air mixtures at 8 bar <i>F. Bolaños-Chaverri, J. Mantzaras, T. Griffin, R. Bombach, D. Winkler</i>	2D05: Modelling of a turbulent premixed flame series using a new MMC-LES model with a shadow-position reference variable <i>Y. Shoraka, S. Galindo-Lopez, M.J. Cleary, A.R. Masri, F. Salehi, A. Y. Klimenko</i>	2E05: A molecular dynamics study on oxidation of aluminum hydride (AlH ₃)/hydroxyl-terminated polybutadiene (HTPB) solid fuel <i>M. Feng, H. Li, K.H. Luo</i>	2F05: Flame spray pyrolysis synthesized CuO-CeO ₂ composite for catalytic combustion of C ₃ H ₆ <i>Y. Lu, L. Duan, Z. Sun, J. Chen</i>

Room	Room 1	Room 2	Room 3	Room 4	Room 5	Room 6
	Gas-Phase Reaction Kinetics <i>Chairs:</i> <i>R. Sivaramakrishnan</i> <i>P. Zhang</i>	Laminar Flames <i>Chairs:</i> <i>J. Santner</i> <i>B.J. Lee</i>	Stationary & Low Carbon <i>Chairs:</i> <i>P. Papas</i> <i>S.H. Wang</i>	Turbulent Flames <i>Chairs:</i> <i>H. Wang</i> <i>X. Zhao</i>	Solid Fuel <i>Chairs:</i> <i>C.A.M. Dillier</i> <i>M.D. Ruesch</i>	New Concepts <i>Chairs:</i> <i>W. Sun</i>
11:50	2A06: Insights on keto-hydroperoxide formation from O ₂ addition to the beta-tetrahydrofuran radical <i>K.S. Lockwood, N.J. Labbe</i>	2B06: A physical relationship between consumption and displacement speed for premixed flames with finite thickness <i>F.H. Vance, Y. Shoshin, L.P.H. de Goey, J.A. van Oijen</i>	2C06: Interplay effect on simultaneous catalytic oxidation of NO _x and toluene over different crystal types of MnO ₂ catalysts <i>J. Shao, Z. Wang, P. Liu, F. Lin, Y. Zhu, Y. He, K. Cen</i>	2D06: Application of quadrature-based moment methods to the conditional moment closure <i>A.D. Ilgun, A. Passalacqua, R.O. Fox</i>	2E06: Response of PETN detonators to elevated temperatures <i>S.A. Coronel, M.J. Kaneshige</i>	2F06: Promotional effects of ruthenium oxide on catalytic oxidation of dichloromethane over the tungsten-titanium binary oxides catalyst <i>C. Zheng, H. Li, Y. Yang, S. Zhang, X. Yu, Q. Xin, S. Liu, X. Gao</i>
12:10	2A07: An insight into the reaction kinetics of CH ₃ + O ₂ (a ¹ Δ _g) and its enhancement effect on methane ignition <i>F. Zhang, C. Huang, X. Wu, B. Xie, L. Shen</i>	2B07: Experimental and kinetic modelling studies of flammability limits of partially dissociated NH ₃ and air mixtures <i>H. Lesmana, M. Zhu, Z. Zhang, J. Gao, J. Wu, D. Zhang</i>	2C07: A shock tube and modeling study on ignition delay times of pyridine under O ₂ /CO ₂ atmospheres at elevated pressures <i>J. Luo, Q. Lin, W. Xia, Y. He, M. Mei, L. Lu, Y. Liu, C. Zou</i>	2D07: Evaluation of quadrature-based moment methods in turbulent premixed combustion <i>M. Pollack, F. Ferraro, J. Janicka, C. Hasse</i>	2E07: Isolating the effects of oxidizer characteristics and catalytic additives on the high-pressure exponent break of AP/HTPB-composite propellants <i>C.A.M. Dillier, E.D. Petersen, E.L. Petersen</i>	2F07: Experimental and theoretical studies on formaldehyde catalytic combustion over Cu-Fe spinel-type catalyst <i>J. Ding, Y. Yang, J. Liu, F. Liu, Y. Yu</i>

10:40	BREAK (30 minutes)				
Room	Room 7	Room 8	Room 9	Room 10	Room 11
	Diagnostics <i>Chairs:</i> <i>Z. Sun</i> <i>J.A. Sutton</i>	Soot, Nano & Large Molecules <i>Chairs:</i> <i>G. Da Silva</i> <i>X. You</i>	Fire Research <i>Chairs:</i> <i>M.A. Delichatsios</i> <i>S.I. Stoliarov</i>	Detonations, Explosions & Supersonic <i>Chairs:</i> <i>M. Ihme</i> <i>A. Schumaker</i>	Gas Turbine & Rocket Engine <i>Chairs:</i> <i>G. Bourque</i> <i>E. Mazumdar</i>
11:10	2G04: Electronic band gap of flame-formed carbon nanoparticles by scanning tunneling spectroscopy <i>G. De Falco, G. Mattiello, M. Commodo, P. Minutolo, X. Shi, A. D'Anna, H. Wang</i>	2H04: Statistical relationship between soot volume fraction, temperature, primary particle diameter and OH radicals along transects normal to the local reaction zone in a turbulent flame <i>Z. Sun, B. Dally, Z. Alwahabi, G. Nathan</i>	2J04: LES/PDF modelling of a one-meter diameter methane fire plume <i>W. Han, J. Lin, G.H. Yeoh, E.R. Hawkes</i>	2K04: Nonlinear dynamics and chaos regularization of one-dimensional pulsating detonations with small sinusoidal density perturbations <i>M. Kim, X. Mi, C.B. Kiyanda, H.D. Ng</i>	2L04: Reheat flames response to entropy waves <i>F. Gant, B. Bunkute, M.R. Bothien</i>
11:30	2G05: Picosecond Kerr-gated Raman spectroscopy for measurements in sooty and PAH rich hydrocarbon flames <i>C. Yang, H. Tang, G. Magnotti</i>	2H05: On the use of oscillating jet flames in a coflow to develop soot models for practical applications <i>A. Jocher, M.J. Evans, P.R. Medwell, B.B. Dally, H. Pitsch, G.J. Nathan</i>	2J05: An investigation of flame tilt transition inside the compartment with horizontal opening in cross wind <i>Z. Ding, X. Chen, S. Lu, Y. Wang</i>	2K05: Numerical analysis on behavior of dilute water droplets in detonation <i>H. Watanabe, A. Matsuo, A. Chinnayya, K. Matsuoka, A. Kawasaki, J. Kasahara</i>	2L05: A data-driven kinematic model of a ducted premixed flame <i>H. Yu, M.P. Juniper, L. Magri</i>
11:50	2G06: Analysis of laser focusing effect on quantification of LII images <i>C.R. Shaddix, T.C. Williams</i>	2H06: Effects of pressure on soot formation in laminar coflow methane/air diffusion flames doped with <i>n</i> -heptane and toluene between 2 and 8 atm <i>M. Gu, F. Liu, J.-L. Consalvi, Ö.L. Gülder</i>	2J06: Experimental study of carriage fire in a tunnel: Evolution of flame geometry characteristics under relative strong crosswinds <i>F. Tang, Q. He, X. Sun, L. Jiang, P. Hu, L. Hu</i>	2K06: The effect of the polytropic index γ on the structure of gaseous detonations <i>A. Sow, S. SM. Lau-Chapdelaine, M.I. Radulescu</i>	2L06: Linear and nonlinear entropy-wave response of technically-premixed jet-flames-array and swirled flame to acoustic forcing <i>M. Weilenmann, U. Doll, R. Bombach, A. Blondé, D. Ebi, Y. Xiong, N. Noiray</i>
12:10	2G07: On the use of PIV, LII, PAH-PLIF and OH-PLIF for the study of soot formation and flame structure in a swirl stratified premixed ethylene/air flame <i>M. Bouvier, G. Cabot, J. Yon, F. Grisch</i>	2H07: Fully coupled sectional modelling of soot particle dynamics in a turbulent diffusion flame <i>L. Tian, M.A. Schiener, R.P. Lindstedt</i>	2J07: Flame geometry of downward buoyant turbulent jet fires under cross flows: Experiments, dimensional analysis and an integral model <i>H. Lu, M.A. Delichatsios, X. Li, S. Liu, J. Lv, L. Hu</i>	2K07: Detonation and its limit in small tubes with ozone sensitization <i>X. Shi, J. Crane, H. Wang</i>	2L07: Non-monotonic flame response behaviors in harmonically forced flames <i>V. Acharya, T. Lieuwen</i>

12:30	BREAK (90 minutes)					
Room	Room 1	Room 2	Room 3	Room 4	Room 5	Room 6
	Reciprocating IC Engines <i>Chairs:</i> S. Kook	Laminar Flames <i>Chairs:</i> M. Cha R. Mével	Gas-Phase/Industry Speaker <i>Chairs:</i> H. Wang	Turbulent Flames <i>Chairs:</i> F. Bisetti Z. Ren	Solid Fuel <i>Chairs:</i> M. Xun Y. Yu	Spray, Droplet & Supercritical <i>Chairs:</i> K. Luo
14:00	2A08: Development of an algebraic wall heat transfer model for LES in IC engines using DNS data M. Bolla, M. Impagnatiello, K. Keskinen, G. Giannakopoulos, C.E. Frouzakis, Y.M. Wright, K. Boulouchos	2B08: The effect of pressure on the hydrodynamic stability limit of premixed flames A. Attili, R. Lamioni, L. Berger, K. Kleinheinz, P.E. Lapenna, H. Pitsch, F. Creta	2C08: Iterative model-based experimental design for efficient uncertainty minimization of chemical mechanisms F. vom Lehn, L. Cai, H. Pitsch	2D08: A simple post-processing method to correct species predictions in artificially thickened turbulent flames P. Gruhlke, E. Inanc, R. Mercier, B. Fiorina, A.M. Kempf	2E08: Mechanism study of selenium retention by iron minerals during coal combustion Y. Huang, H. Hu, H. Gong, H. Xing, B. Yuan, B. Fu, A. Li, H. Yao	2F08: Flame self-interactions in globally stoichiometric spherically expanding flames propagating into fuel droplet-mists G.O. Erol, U. Ahmed, N. Chakraborty
14:20	2A09: LES study of diesel flame/wall interaction and mixing mechanisms at different wall distances M. Pucilowski, M. Jangi, H. Fatehi, K.M. Pang, X.-S. Bai	2B09: Near wall dynamics of premixed flames F. Zhang, T. Zirwes, T. Häber, H. Bockhorn, D. Trimis, R. Suntz	2C09: Towards a high-accuracy kinetic database informed by theoretical and experimental data: CH ₃ + HO ₂ as a case study C.E. LaGrotta, M.C. Barbet, L. Lei, M.P. Burke	2D09: An evaluation of gas-phase micro-mixing models with differential mixing timescales in transported PDF simulations of sooting flame DNS H. Zhou, Z. Li, T. Yang, E.R. Hawkes, Z. Ren, H. Wang, A. Wehrfritz	2E09: Alkali sulfation during combustion of coal in a pilot scale facility using additives to alter the global sulfur to potassium and chlorine to potassium ratios T. Allgurén, J. Viljanen, X. Li, Y. Wang, K. Andersson, J.O.L. Wendt	2F09: Structural analysis and regime diagrams of laminar counterflow spray flames with low-temperature chemistry W. Xie, P.B. Govindaraju, Z. Ren, M. Ihme
14:40	2A10: High-pressure fuel spray ignition behavior with hot surface interaction A. Motily, J.I. Ryu, K. Kim, K. Kim, C.-B.M. Kweon, T. Lee	2B10: Vortex formation and frequency tuning of periodically-excited jet diffusion flames X. Xia, C. Fu, Y. Yang, X. Yang, Y. Gao, F. Qi	2C10: INDUSTRY SPEAKER Combustion applications in a zero CO ₂ world Ahmad Al-Khowaiter	2D10: A new modeling approach for mixture fraction statistics based on dissipation elements D. Denker, A. Attili, M. Gauding, K. Niemietz, M. Bode, H. Pitsch	2E10: Reaction mechanism of elemental mercury oxidation to HgSO ₄ during SO ₂ /SO ₃ conversion over V ₂ O ₅ /TiO ₂ catalyst Y. Yang, J. Liu, Z. Wang, Y. Yu	2F10: Numerical study of a polydisperse spray counterflow diffusion flame J. Wirtz, B. Cuenot, E. Riber

Room	Room 1	Room 2	Room 3	Room 4	Room 5	Room 6
	Reciprocating IC Engines <i>Chairs:</i> <i>S. Kook</i>	Laminar Flames <i>Chairs:</i> <i>M. Cha</i> <i>R. Mével</i>	Gas-Phase/Industry Speaker <i>Chairs:</i> <i>H. Wang</i>	Turbulent Flames <i>Chairs:</i> <i>F. Bisetti</i> <i>Z. Ren</i>	Solid Fuel <i>Chairs:</i> <i>M. Xun</i> <i>Y. Yu</i>	Spray, Droplet & Supercritical <i>Chairs:</i> <i>K. Luo</i>
15:00	2A11: Influence of pilot-fuel mixing on the spatio-temporal progression of two-stage autoignition of diesel-sprays in low-reactivity ambient fuel-air mixture <i>R. Rajasegar, Y. Niki, Z. Li, J.M. Garcia Oliver, M.P.B. Musculus</i>	2B11: Minimum ignition energy and propagation dynamics of laminar premixed cool flames <i>Q. Yang, P. Zhao</i>	INDUSTRY SPEAKER Combustion applications in a zero CO ₂ world Ahmad Al-Khowaiter	2D11: <i>A priori</i> analysis of a power-law mixing model for transported PDF model based on high Karlovitz turbulent premixed DNS flames <i>P. Zhang, T. Xie, H. Kolla, H. Wang, E.R. Hawkes, J.H. Chen, H. Wang</i>	2E11: The roles of added chlorine and sulfur on ash deposition mechanisms during solid fuel combustion <i>X. Li, Y. Wang, T. Allguren, K. Andersson, J.O.L. Wendt</i>	2F11: Inertial effects on globally stoichiometric spherically expanding turbulent flames propagating in droplet-laden mixtures <i>G.O. Erol, N. Chakraborty</i>
15:20	2A12: Split injection flash boiling spray for high efficiency and low emissions in a GDI engine under lean combustion condition <i>Z. Sun, M. Cui, C. Ye, S. Yang, X. Li, D. Hung, M. Xu</i>	2B12: Premixed flames for arbitrary combinations of strain and curvature <i>H. Böttler, A. Scholtissek, X. Chen, Z. Chen, C. Hasse</i>		2D12: Coupling of mixing models with manifold based simplified chemistry in PDF modeling of turbulent reacting flows <i>C. Yu, P. Breda, M. Pfitzner, U. Maas</i>	2E12: Experimental and kinetics studies on the evolution and effects of ash film during pulverized coal char combustion <i>S. Liu, Y. Kang, Y. Niu, L. Wen, D. Wang, S. Hui</i>	2F12: Optical characterization of droplet clusters and group combustion in spray diffusion flames <i>M. Ma, S. Saha</i>

12:30	BREAK (90 minutes)				
Room	Room 7	Room 8	Room 9	Room 10	Room 11
	Diagnostics <i>Chairs:</i> <i>A. Farooq</i>	Soot, Nano & Large Molecules <i>Chairs:</i> <i>D. Chen</i> <i>W. Roberts</i>	Fire Research <i>Chairs:</i> <i>S. Bhattacharjee</i> <i>M.J. Gollner</i>	Detonations, Explosions & Supersonic <i>Chairs:</i> <i>A.Y. Poludnenko</i> <i>V. Raman</i>	Gas Turbine & Rocket Engine <i>Chairs:</i> <i>V. Acharya</i> <i>R. Gordon</i>
14:00	2G08: Shock tube measurement of NO time-histories in nitromethane pyrolysis using a quantum cascade laser at 5.26 μm <i>Y. Shang, Z. Wang, L. Ma, J. Shi, H. Ning, W. Ren, S.-N. Luo</i>	2H08: Radicals in nascent soot from laminar premixed ethylene and ethylene-benzene flames by electron paramagnetic resonance spectroscopy <i>M. Commodo, F. Picca, G. Vitiello, G. De Falco, P. Minutolo, A. D'Anna</i>	2J08: Mechanisms of flame spread and burnout in large enclosure fires <i>V. Gupta, A.F. Osorio, J.L. Torero, J.P. Hidalgo</i>	2K08: Flame dynamics under various backpressures in a model scramjet with and without a cavity flameholder <i>N. Kato, S.-k. Im</i>	2L08: Effect of preheating of the reactants on the transition to thermoacoustic instability in a bluff-body stabilized dump combustor <i>S.A. Pawar, M. Raghunathan, K.V. Reeja, P.R. Midhun, R.I. Sujith</i>
14:20	2G09: Exploiting line-mixing effects for laser absorption spectroscopy at extreme combustion pressures <i>D.D. Lee, F.A. Bendana, A.P. Nair, S.A. Danczyk, W.A. Hargus Jr., R.M. Spearrin</i>	2H09: Quantum confinement and size resolved modeling of electronic and optical properties of small soot particles <i>K. Wan, X. Shi, H. Wang</i>	2J09: Experimental study on flame pulsation behavior of external venting facade fire ejected from opening of a compartment <i>X. Sun, L. Hu, X. Zhang, F. Ren, Y. Yang, X. Fang</i>	2K09: Dual/Scram-mode combustion limits of ethylene and surrogate endothermically-cracked hydrocarbon fuels at Mach 8 equivalent high-enthalpy conditions <i>W.O. Landsberg, T. Vanyai, T.J. McIntyre, A. Veeraragavan</i>	2L09: Investigation of thermoacoustic instability in sequential combustor during first stage lean blow-off <i>Y. Xiong, J. Droujko, O. Schulz, N. Noiray</i>
14:40	2G10: In-situ monitoring of transient gas phase K-Cl-S chemistry in a pilot-scale combustor <i>J. Viljanen, T. Allgurén, Y. Wang, X. Li, J. Toivonen, K. Andersson, J.O.L. Wendt</i>	2H10: On the growth of Polycyclic Aromatic Hydrocarbons (PAHs) in a coflow diffusion flame of ethylene <i>T. Mitra, Y. Amidpour, C. Chu, N.A. Eaves, M.J. Thomson</i>	2J10: Temperature evolution from stratified- to well-mixed condition inside a fire compartment with an opening subjected to external wind <i>F. Ren, L. Hu, X. Zhang, X. Sun, X. Fang</i>	2K10: Ignition mechanisms of pulse detonator initiated scramjet cavity <i>D.A. Rosato, T. Ombrello, D. Cuppoletti, C. Carter, S.D. Hammack, K.A. Ahmed</i>	2L10: A new pattern of flame/flow dynamics for lean-premixed, low-swirl hydrogen turbulent jet flames under thermoacoustic instability <i>T. Shoji, S. Tachibana, T. Suzuki, Y. Nakazumi, T. Yokomori</i>

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	Diagnostics <i>Chairs:</i> <i>A. Farooq</i>	Soot, Nano & Large Molecules <i>Chairs:</i> <i>D. Chen</i> <i>W. Roberts</i>	Fire Research <i>Chairs:</i> <i>S. Bhattacharjee</i> <i>M.J. Gollner</i>	Detonations, Explosions & Supersonic <i>Chairs:</i> <i>A.Y. Poludnenko</i> <i>V. Raman</i>	Gas Turbine & Rocket Engine <i>Chairs:</i> <i>V. Acharya</i> <i>R. Gordon</i>
15:00	2G11: Determination of gas-phase absorption cross-sections of FeO in a shock tube using intracavity absorption spectroscopy near 611 nm <i>P. Fjodorow, M.R. Lalanne, D. He, M. Nanjaiah, A. Pilipodi-Best, V.M. Baev, S. Cheskis, J. Herzler, M. Fikri, I. Wlokas, C. Schulz, I. Rahinov</i>	2H11: Molecular structures in flames: A comparison between SNapS2 and recent AFM results <i>Q. Wang, J.C. Saldinger, P. Elvati, A. Violi</i>	2J11 Flame behavior from an opening at different elevations on the facade wall of a fire compartment <i>K. Lu, Z. Wang, Y. Ding, J. Wang, J. Zhang, M.A. Delichatsios, L. Hu</i>	2K11: Spatio-temporal evolution of cavity ignition in supersonic flow <i>S.D. Hammack, T.M. Ombrello</i>	2L11: A Gaussian-process-based framework for high-dimensional uncertainty quantification analysis in thermoacoustic instability predictions <i>S. Guo, C.F. Silva, K.J. Yong, W. Polifke</i>
15:20	2G12: Spontaneous Raman-LIF-CO-OH measurements of species concentration in turbulent spray flames <i>M.J. Dunn, A.R.W. Macfarlane, R.S. Barlow, D. Geyer, K. Dieter, A.R. Masri</i>	2H12: Self-preserving size distribution and collision frequency of flame-made nanoparticles in the transition regime <i>G.A. Kelesidis, E. Goudeli</i>	2J12: Experimental investigation and analysis of flame height transition and air entrainment of near-wall rectangular-source fires at various distances <i>X. Zhang, L. Hu, X. Zhang, F. Ren</i>	2K12: Experimental investigation of ethylene/air combustion instability in a model scramjet combustor using image-based methods <i>S. Nakaya, H. Yamana, M. Tsue</i>	2L12: Thermoacoustic instability drivers and mode transitions in a lean premixed methane-air combustor at various swirl intensities <i>B. Zhang, M. Shamsavari, Z. Rao, S. Yang, B. Wang</i>

15:40	BREAK (50 minutes)					
Room	Room 1	Room 2	Room 3	Room 4	Room 5	Room 6
	Gas-Phase Reaction Kinetics <i>Chairs:</i> <i>H. Curran</i> <i>K. Moshhammer</i>	Laminar Flames <i>Chairs:</i> <i>B. Renou</i> <i>B. Shi</i>	Gas-Phase Reaction Kinetics II <i>Chairs:</i> <i>L. Cai</i> <i>U. Maas</i>	Turbulent Flames <i>Chairs:</i> <i>S. Hartl</i>	Solid Fuel <i>Chairs:</i> <i>K.M. Van Geem</i> <i>S. Wang</i>	Spray, Droplet & Supercritical <i>Chairs:</i> <i>E. Riber</i>
16:30	2A13: A pyrolysis study on C ₄ –C ₈ symmetric ethers <i>Z. Serinyel, G. Dayma, V. Glasziou, M. Lailliau, P. Dagaut</i>	2B13: Flame acceleration in a narrow channel with flow compressibility and diverging or converging walls <i>M. Short, S. Voelkel, D.A. Kessler</i>	2C13: Automatic identification and lumping of high-temperature fuel decomposition pathways for chemical kinetics mechanism reduction <i>L. Backer, P. Pepiot</i>	2D13: High-fidelity flame-front wrinkling measurements derived from fractal analysis of turbulent premixed flames with large Reynolds numbers <i>A.W. Skiba, C.D. Carter, S.D. Hammack, J.F. Driscoll</i>	2E13: Formation of reaction intermediates and primary volatiles during acid-catalysed fast pyrolysis of cellulose in a wire-mesh reactor <i>J. Cao, S.B. Liaw, Y. Long, Y. Yu, H. Wu</i>	2F13: Droplet vaporization for conventional and alternative jet fuels at realistic temperature conditions: Systematic measurements and numerical modeling <i>M. Stöhr, S. Ruoff, B. Rauch, W. Meier, P. Le Clercq</i>
16:50	2A14: Laminar flame speed and shock-tube multi-species laser absorption measurements of dimethyl carbonate oxidation and pyrolysis near 1 atm <i>T. Atherley, S. de Persis, N. Chaumeix, Y. Fernandes, A. Bry, A. Comandini, O. Mathieu, S. Alturaiji, C.R. Mulvihill, E.L. Petersen</i>	2B14: Dynamics of ball-like flames in extremely low-speed counterflow field in near-lean limit low-Lewis number mixture <i>T. Akiba, T. Okuno, H. Nakamura, Y. Morii, T. Tezuka, R. Fursenko, S. Minaev, M. Kikuchi, K. Maruta</i>	2C14: Reduced modeling of flame-wall-Interactions of premixed isoctane-air systems including detailed transport and surface reactions <i>C. Strassacker, V. Bykov, U. Maas</i>	2D14: Surface morphology and inner fractal cutoff scale of spherical turbulent premixed flames in decaying isotropic turbulence <i>T. Kulkarni, F. Bisetti</i>	2E14: Catalytic mechanisms of potassium salts on pyrolysis of β -O4 type lignin model polymer based on DFT study <i>Y. Fang, L. Yin, H. Yang, X. Gong, Y. Chen, H. Chen</i>	2F14: An experimental assessment of the enhancement of fuel droplet vaporization in a very high turbulence intensity environment <i>C. Verwey, M. Birouk</i>

Room	Room 1	Room 2	Room 3	Room 4	Room 5	Room 6
	Gas-Phase Reaction Kinetics <i>Chairs:</i> <i>H. Curran</i> <i>K. Moshhammer</i>	Laminar Flames <i>Chairs:</i> <i>B. Renou</i> <i>B. Shi</i>	Gas-Phase Reaction Kinetics II <i>Chairs:</i> <i>L. Cai</i> <i>U. Maas</i>	Turbulent Flames <i>Chairs:</i> <i>S. Hartl</i>	Solid Fuel <i>Chairs:</i> <i>K.M. Van Geem</i> <i>S. Wang</i>	Spray, Droplet & Supercritical <i>Chairs:</i> <i>E. Riber</i>
17:10	2A15: The influence of pressure and equivalence ratio on the NTC behavior of methane <i>D. Kaczmarek, S. Shaqiri, B. Atakan, T. Kasper</i>	2B15: Influences of heat flux on extinction characteristics of steady/unsteady premixed stagnation flames <i>J. Sun, Y. Ren, Y. Tang, S. Li</i>	2C15: Computationally-efficient and accurate particle PDF simulations of turbulent combustion using coupled pre-partitioned adaptive chemistry and tabulation <i>A.S. Newale, S.B. Pope, P. Pepiot</i>	2D15: Evolution and scaling of the peak flame surface density in spherical turbulent premixed flames subjected to decaying isotropic turbulence <i>T. Kulkarni, F. Bisetti</i>	2E15: Gas-phase hydrodeoxygenation of bio-oil model compound over nitrogen-doped carbon-supported palladium catalyst <i>C. Liu, C. Zhou, Y. Wang, X. Liu, L. Zhu, H. Ma, Z. Zhou, F. Qi</i>	2F15: Oxymethylene ether - <i>n</i> -dodecane blend spray combustion: Experimental study and large-eddy simulations <i>D. Goeb, M. Davidovic, L. Cai, P. Pancharia, M. Bode, S. Jacobs, J. Beeckmann, W. Willems, K.A. Heufer, H. Pitsch</i>
17:30	2A16: High temperature branching ratio of acetaldehyde + OH reaction <i>D. Liu, B.R. Giri, A. Farooq</i>	2B16: Local statistics of laminar expanding flames subjected to Darrieus-Landau instability <i>Z. Liu, V.R. Unni, S. Chaudhuri, C.K. Law, A. Saha</i>	2C16: Evaluation of reduced combustion kinetic mechanism using global sensitivity-based similarity analysis <i>S. Lin, W. Zhou, Y. Wu, C.K. Law, M. Xie, B. Yang</i>	2D16: Flame structure analysis of turbulent premixed/stratified flames with H ₂ addition considering differential diffusion and stretch effects <i>X. Wen, S. Hartl, A. Dreizler, J. Janicka, C. Hasse</i>	2E16: Occurrence forms and leachability of inorganic species in ash residues from self-sustaining smouldering combustion of sewage sludge <i>C. Feng, M. Cheng, X. Gao, Y. Qiao, M. Xu</i>	2F16: Measurement of the effect of water droplets on strained laminar flames using two-phase PIV <i>L. Fan, C.T. Chong, K. Tanno, D. McGrath, Y. Zheng, S. Hochgreb</i>
SESSIONS END AT 17:50						

15:40	BREAK (50 minutes)				
Room	Room 7	Room 8	Room 9	Room 10	Room 11
	Diagnostics <i>Chairs:</i> <i>B. Peterson</i>	Soot, Nano & Large Molecules <i>Chairs:</i> <i>A. Cuoci</i>	Fire Research <i>Chairs:</i> <i>S. Bhattacharjee</i> <i>M.J. Gollner</i>	Detonations, Explosions & Supersonic <i>Chairs:</i> <i>C. Fureby</i> <i>R. Mével</i>	Gas Turbine & Rocket Engine <i>Chairs:</i> <i>C. Arndt</i>
16:30	2G13: A method to convert stand-alone OH fluorescence images into OH mole fraction <i>L. Angelilli, P.P. Ciottoli, T.F. Guiberti, R.M. Galassi, F.E. Hernández Pérez, W.R. Boyette, G. Magnotti, W.L. Roberts, M. Valorani, H.G. Im</i>	2H13: Experimental and numerical study on the influence of equivalence ratio on key intermediates and silica nanoparticles in flame synthesis <i>Y. Karakaya, H. Janbazi, I. Wlokas, A. Levish, M. Winterer, T. Kasper</i>	2J13: Numerical modeling of soot radiation in optically-thin, buoyant diffusion flames at varying oxygen concentrations <i>P. Chatterjee, D. Zeng, Y. Wang</i>	2K13: Autoignition in stratified mixtures for pressure gain combustion <i>F.C. Yücel, F. Habicht, M. Bohon, C.O. Paschereit</i>	2L13: Impact of ethanol blending on soot in turbulent swirl-stabilized Jet A-1 spray flames in a model gas turbine combustor <i>T.M. Rault, R.B. Vishwanath, Ö.L. Gülder</i>
16:50	2G14: Simultaneous imaging of H and OH in flames using a single broadband femtosecond laser source <i>A. Jain, Y. Wang, W.D. Kulatilaka</i>	2H14: Dual liquid/vapor-fed flame synthesis for the effective preparation of SiO ₂ @YAlO ₃ :Nd ³⁺ nanophosphors <i>Z. Wu, Y. Zhang, X. Zhao, H. Wang, S. Li</i>	2J14: Effects of radiative loss on premixed planar flame propagation <i>Z. Chen</i>	2K14: Effects of mixing on the detonation-wave structure and dynamics in a non-premixed rotating detonation combustor <i>V. Athmanathan, J. Braun, Z. Ayers, J. Fisher, G. Paniagua, M. Slipchenko, C. Fugger, S. Roy, T. Meyer</i>	2L14: Influence of flow field dynamics on soot evolution in an aero-engine model combustor <i>M. Grader, Z. Yin, K.P. Geigle, P. Gerlinger</i>
17:10	2G15: Quantitative oxygen atom measurements in lean, premixed, H ₂ tubular flames <i>G.J. Marshall, P.S. Walsh, R.W. Pitz</i>	2H15: Experimental and numerical investigation of iron-doped flames: FeO formation and impact on flame temperature <i>M. Nanjiah, A. Pilipodi-Best, M. Lallane, P. Fjodorow, C. Schulz, S. Cheskis, A. Kempf, I. Wlokas, I. Rahinov</i>	2J15: Assessment of subfilter-scale turbulence-radiation interaction in non-luminous pool fires <i>F. Nmira, L. Ma, J.-L. Consalvi</i>	2K15: Experimental study of internal flow structures in cylindrical rotating detonation engines <i>R. Yokoo, K. Goto, J. Kasahara, V. Athmanathan, J. Braun, G. Paniagua, T. Meyer, A. Kawasaki, K. Matsuoka, A. Matsuo, I. Funaki</i>	2L15: Hydrophilic properties of soot particles exposed to OH radical: A possible new mechanism involved in the contrail formation <i>S. Grimonprez, J. Wu, A. Faccinnetto, S. Gosselin, E. Riber, B. Cuenot, M. Cazaunau, E. Pangui, P. Formenti, J.-F. Doussin, D. Petitprez, P. Desgroux</i>

Room	Room 7	Room 8	Room 9	Room 10	Room 11
	Diagnostics <i>Chairs:</i> <i>B. Peterson</i>	Soot, Nano & Large Molecules <i>Chairs:</i> <i>A. Cuoci</i>	Fire Research <i>Chairs:</i> <i>S. Bhattacharjee</i> <i>M.J. Gollner</i>	Detonations, Explosions & Supersonic <i>Chairs:</i> <i>C. Fureby</i> <i>R. Mével</i>	Gas Turbine & Rocket Engine <i>Chairs:</i> <i>C. Arndt</i>
17:30	2G16: Assessment of single-shot temperature measurements by thermally-assisted OH PLIF using excitation in the $A^2\Sigma^+ - X^2\Pi$ (1-0) band <i>V. Dulin, D. Sharaborin, R. Tolstoguzov, A. Lobasov, L. Chikishev, D. Markovich, S. Wang, C. Fu, X. Liu, Y. Li, Y. Gao</i>	2H16: Kinetics for the hydrolysis of $Ti(OC_3H_7)_4$: A molecular dynamics simulation study <i>J. Wei, A. Ostadhossein, S. Li, M. Ihme</i>	2J16: Radiation-kinetics interactions: A comparison of opposed-flow flame spread in a low-velocity microgravity and low-pressure downward environments <i>S. Bhattacharjee, L. Carmignani</i>	2K16: Investigation of combustion modes and pressure of reflective shuttling detonation combustor <i>M. Yamaguchi, T. Taguchi, K. Matsuoka, A. Kawasaki, J. Kasahara, H. Watanabe, A. Matsuo</i>	2L16: Soot particle size distribution measurements in a turbulent ethylene swirl flame <i>G. De Falco, I. El Helou, P.M. de Oliveira, M. Sirignano, R. Yuan, A. D'Anna, E. Mastorakos</i>
SESSIONS END AT 17:50					

Wednesday, 27 January 2021

(Room 3)
PLENARY LECTURE – 8:30 am

Progress towards Nanoengineered Energetic Materials

Richard A. Yetter, The Pennsylvania State University

Chairs: J. Bergthorson and A. Violi

Transfer (10 minutes)

Room	Room 1	Room 2	Room 3	Room 4	Room 5	Room 6
	Gas-Phase Reaction Kinetics <i>Chairs:</i> <i>M.P. Burke</i>	Laminar Flames <i>Chairs:</i> <i>N. Kim</i> <i>X. Xia</i>	Topical Review <i>Chairs:</i> <i>K. Luo</i> <i>R. Pitz</i>	Turbulent Flames <i>Chairs:</i> <i>S. Chaudhuri</i> <i>J. Frank</i>	Solid Fuel <i>Chairs:</i> <i>H. Hu</i> <i>K. Hadi</i>	New Concepts <i>Chairs:</i> <i>T. Farouk</i>
9:40	3A01: Probing the fuel-specific intermediates in the low-temperature oxidation of 1-heptene and modeling interpretation <i>C. Cao, X. Zhang, Y. Zhang, J. Zou, Y. Li, J. Yang, F. Qi</i>	3B01: Numerical description of axisymmetric blue whirls over liquid-fuel pools <i>J. Carpio, W. Coenen, A.L. Sánchez, E. Oran, F.A. Williams</i>	3C01: TOPICAL REVIEW A new LES approach to trans-critical mixing and combustion processes in high-pressure liquid-injectant engines <i>Akira Umemura,</i> <i>J. Shinjo</i>	3D01: Combustion modeling using principal component analysis: A posteriori validation on Sandia flames D, E and F <i>M.R. Malik, P.O. Vega, A. Coussement, A. Parente</i>	3E01: Experimental and modeling assessment of sulfur release from coal under low and high heating rates <i>P. Debiagi, C. Yildiz, M. Richter, J. Ströhle, B. Eppe, T. Faravelli, C. Hassel</i>	3F01: Analyzing the ignition differences between conventional, spark discharges and nanosecond-pulsed high-frequency discharges <i>K.C. Opacich, T. Ombrello, J.S. Heyne, J.K. Lefkowitz, R.J. Leiweke, K. Busby</i>
10:00	3A02: A comparative reactivity study of 1-alkene fuels from ethylene to 1-heptene <i>S. Dong, K. Zhang, P.K. Senecal, G. Kukkadapu, S.W. Wagon, S. Barrett, N. Lokachari, S. Panigaphy, W.J. Pitz, H.J. Curran</i>	3B02: Subgrid modeling of intrinsic instabilities in premixed flame propagation <i>P.E. Lapenna, R. Lamioni, F. Creta</i>		3D02: Extracting information overlap in simultaneous OH-PLIF and PIV fields with neural networks <i>S. Barwey, V. Raman, A. Steinberg</i>	3E02: Emissions of PM ₁₀ from the co-combustion of high-Ca pyrolyzed biochar and high-Si coal under air and oxyfuel atmosphere <i>W. Wang, C. Wen, T. Liu, C. Li, H. Liu, E. Liu, M. Xu</i>	3F02: Elevated OH production from NPHFD and its effect on ignition <i>J. Lefkowitz, S.D. Hammack, C. Carter, T. Ombrello</i>

Room	Room 1	Room 2	Room 3	Room 4	Room 5	Room 6
	Gas-Phase Reaction Kinetics <i>Chairs:</i> <i>M.P. Burke</i>	Laminar Flames <i>Chairs:</i> <i>N. Kim</i> <i>X. Xia</i>	Topical Review <i>Chairs:</i> <i>K. Luo</i> <i>R. Pitz</i>	Turbulent Flames <i>Chairs:</i> <i>S. Chaudhuri</i> <i>J. Frank</i>	Solid Fuel <i>Chairs:</i> <i>H. Hu</i> <i>K. Hadi</i>	New Concepts <i>Chairs:</i> <i>T. Farouk</i>
10:20	3A03: The impact of the third O ₂ addition reaction network on ignition delay times of <i>neo</i> -pentane <i>N. Hansen, G. Kukkadapu, B. Chen, S. Dong, H.J. Curran, C.A. Taatjes, A.J. Eskola, D.L. Osborn, L. Sheps, W. J. Pitz, K. Moshhammer, A. W. Jasper, W. Chen, J. Yang, Z. Wang</i>	3B03: Framework for simulating stationary spherical flames <i>F. Ruiz, G. Beardsell, G. Blanquart</i>	TOPICAL REVIEW A new LES approach to trans-critical mixing and combustion processes in high-pressure liquid-injectant engines Akira Umemura, <i>J. Shinjo</i>	3D03: Conditional scalar dissipation rate modeling for turbulent spray flames using artificial neural networks <i>S. Yao, B. Wang, A. Kronenburg, O.T. Stein</i>	3E03: Insight into the calcium carboxylate release behavior during Zhundong coal pyrolysis and combustion <i>D. Hong, T. Si, X. Guo</i>	3F03: Effects of dilution and pressure on combustion characteristics within externally heated micro-tubes <i>S.N.R. Isfahani, V.M. Sauer, I. Schoegl</i>

Wednesday, 27 January 2021

(Room 3)

PLENARY LECTURE – 8:30 am

Progress towards Nanoengineered Energetic Materials

Richard A. Yetter, The Pennsylvania State University

Chairs: Chairs: J. Bergthorson and A. Violi

Transfer (10 minutes)

Room	Room 7	Room 8	Room 9	Room 10	Room 11
	Stationary & Low Carbon <i>Chairs:</i> <i>S. Deng</i> <i>L. Jiang</i>	Soot, Nano & Large Molecules <i>Chairs:</i> <i>M.E. Mueller</i> <i>C. Saggese</i>	Fire Research <i>Chairs:</i> <i>S.L. Manzello</i>	Detonations, Explosions & Supersonic <i>Chairs:</i> <i>G. Ciccarelli</i>	Gas Turbine & Rocket Engine <i>Chairs:</i> <i>J. Meadows</i>
9:40	3G01: Combustion characteristics of crude oils for gas turbine applications by DCN measurements and NMR spectroscopy <i>S.H. Won, S.J. Lim, S. Nates, A.K. Alwahaibi, F.L. Dryer, F. Farid, M. Hase</i>	3H01: Experimental study of impact of lubricant-derived ash on oxidation reactivity of soot generated in diesel engines <i>X. Liang, Y. Wang, K. Wang, Y. Wang, H. Zhang, B. Zhao, X. Lv</i>	3J01: The effect of convective motion within liquid fuel on the mass burning rates of pool fires – a numerical study <i>B. Xu, J. Wen</i>	3K01: Methane-oxygen detonation characteristics at elevated pre-detonation pressures <i>S.A. Schumaker, A.M. Knisely, J.L. Hoke, K.D. Rein</i>	3L01: Investigation of CO recombination in the boundary layer of CH ₄ /O ₂ rocket engines <i>N. Perakis, O.J. Haidn, M. Ihme</i>
10:00	3G02: Pressurized oxy-fuel combustion of a char particle in the fluidized bed combustor <i>L. Li, L. Duan, Z. Yang, Z. Sun, C. Zhao</i>	3H02: Properties and oxidation of in-cylinder soot associated with Exhaust Gas Recirculation (EGR) in diesel engines <i>W. Zhang, C. Song, G. Lv, F. Bi, Y. Qiao, L. Wang, X. Zhang</i>	3J02: The effect of blend ratio on the combustion process of mutually stratified blended fuels pool fire <i>Z. Gao, H. Wan, J. Ji</i>	3K02: Experimental measurement of energy release from an initiating layer in an insensitive explosive <i>E.K. Anderson, C. Chiquete, S.I. Jackson</i>	3L02: Scaling of oxygen-methane reacting coaxial jets using x-ray fluorescence to measure mixture fraction <i>J.W. Bennewitz, S.A. Schumaker, C.F. Lietz, A.L. Kastengren</i>
10:20	3G03: Water vapour effects on temperature and soot loading in ethylene flames in hot and diluted coflows <i>M.J. Evans, A. Chinnici</i>	3H03: Nanostructural and morphological characteristics of single soot aggregates during low-temperature oxidation <i>F.P. Hagen, H. Bockhorn, H. Störmer, A. Loukou, R. Suntz, D. Trimis</i>	3J03: Experimental and theoretical research on flame emissivity and radiative heat flux from heptane pool fires <i>J. Ji, F. Ge, T. Qiu</i>	3K03: The influence of multi-layer confinement on detonation propagation in condensed-phase explosives <i>M. Short, C. Chiquete, J.J. Quirk</i>	3L03: Measuring the velocity field of a shear-coaxial, cryogenic flame in a high-pressure rocket thrust chamber <i>M. Son, W. Armbruster, J. Hardi, M. Oschwald</i>

10:40	BREAK (30 minutes)					
Room	Room 1	Room 2	Room 3	Room 4	Room 5	Room 6
	Gas-Phase Reaction Kinetics <i>Chairs:</i> <i>M.P. Burke</i>	Laminar Flames <i>Chairs:</i> <i>N. Kim</i> <i>X. Xia</i>	Spray, Droplet & Supercritical <i>Chairs:</i> <i>T. Ombrello</i> <i>S. Shanbhogue</i>	Turbulent Flames <i>Chairs:</i> <i>S. Chaudhuri</i> <i>J. Frank</i>	Solid Fuel <i>Chairs:</i> <i>K. Hadi</i> <i>H. Hu</i>	New Concepts <i>Chairs:</i> <i>T. Farouk</i> <i>Y.-T. Liao</i>
11:10	3A04: First direct kinetic Measurement of $i\text{-C}_4\text{H}_5$ ($\text{CH}_2\text{CHCCH}_2$) + O_2 reaction: Toward quantitative understanding of aromatic ring formation chemistry <i>A.J. Eskola, T.T. Reijonen, T.T. Pekkanen, P. Heinsonen, S.P. Joshi, R.S. Timonen</i>	3B04: In-situ flame particle tracking based on barycentric coordinates for studying local flame dynamics in pulsating Bunsen flames <i>T. Zirwes, F. Zhang, Y. Wang, P. Habisreuther, J.A. Denev, Z. Chen, H. Bockhorn, D. Trimis</i>	3C04: DNS and LES of primary atomization of turbulent liquid jet injection into a gaseous crossflow environment <i>A.A. Mukundan, G. Tretola, T. Ménard, M. Herrmann, S. Navarro-Martinez, K. Vogiatzaki, J.C. Brändle de Motta, A. Berlemont</i>	3D04: Optimized chemistry for Large Eddy Simulations of wrinkled flames <i>C. Mehl, M. Cailler, R. Mercier, V. Moureau, B. Fiorina</i>	3E04: Effect of ammonia/oxygen/nitrogen equivalence ratio on spherical turbulent flame propagation of pulverized coal/ammonia co-combustion <i>Y. Xia, K. Hadi, G. Hashimoto, N. Hashimoto, O. Fujita</i>	3F04: Numerical investigations of turbulent premixed flame ignition by a series of nanosecond repetitively pulsed discharges <i>Y. Bechane, B. Fiorina</i>
11:30	3A05: Exploring the low-temperature oxidation chemistry of 1-butene and i -butene triggered by dimethyl ether <i>X. Zhang, J. Zou, C. Cao, W. Chen, J. Yang, F. Qi, Y. Li</i>	3B05: Fully compressible simulations of the impact of acoustic waves on the dynamics of laminar premixed flames for engine-relevant conditions <i>G. Beardsell, G. Blanquart</i>	3C05: Fuel placement and atomization inside a gas-turbine fuel injector at realistic operating conditions <i>K.P. Shanmugas, E.S. Manuprasad, R.N. Chiranthan, S.R. Chakravarthy</i>	3D05: Large Eddy Simulation of a turbulent lifted flame using multi-modal manifold-based models: Feasibility and interpretability <i>A.G. Novoselov, C.E. Lacey, B.A. Perry, M.E. Mueller</i>	3E05: Investigation on ignition behaviors of pulverized coal particles in a tubular swirl burner <i>Y. Xu, C. Axt, M. Song, R. Kneer, S. Li</i>	3F05: Kinetic study of plasma-assisted n-dodecane/ O_2/N_2 pyrolysis and oxidation in a nanosecond-pulsed discharge <i>H. Zhong, X. Mao, A.C. Rousso, C.L. Patrick, C. Yan, W. Xu, Q. Chen, G. Wysocki, Y. Ju</i>
11:50	3A06: Chemistry deriving from OOOOH radicals in alkane low-temperature oxidation: A first combined theoretical and electron-ion coincidence mass spectrometry study <i>F. Battin-Leclerc, J. Bourgalais, Z. Gouid, O. Herbinet, G. Garcia, P. Arnoux, Z. Wang, L.-S. Tran, G. Vanhove, L. Nahon, M. Hochlaf</i>	3B06: Temperature and CH^* measurements and simulations of laminar premixed ethylene jet-wall stagnation flames <i>J. Dreyer, E.J. Bringley, M.Y. Manuputty, J. Akroyd, M. Kraft</i>	3C06: Effects of detailed geometry and real fluid thermodynamics on Spray G atomization <i>M. Arienti, E. Wenzel, B. Sforzo, C. Powell</i>	3D06: Closure modeling for the conditional Reynolds stresses in turbulent premixed combustion <i>J. Lee, M.E. Mueller</i>	3E06: Detailed analysis of early-stage NO_x formation in turbulent pulverized coal combustion with fuel-bound nitrogen <i>X. Wen, A. Shamooni, O.T. Stein, L. Cai, A. Kronenburg, H. Pitsch, A. Kempf, C. Hasse</i>	3F06: P-DRGEP: A novel methodology for the reduction of kinetics mechanisms for plasma-assisted combustion applications <i>A. Bellemans, N. Kincaid, N. Deak, P. Pepiot, F. Bisetti</i>

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	Gas-Phase Reaction Kinetics <i>Chairs:</i> <i>M.P. Burke</i>	Laminar Flames <i>Chairs:</i> <i>N. Kim</i> <i>X. Xia</i>	Spray, Droplet & Supercritical <i>Chairs:</i> <i>T. Ombrello</i> <i>S. Shanbhogue</i>	Turbulent Flames <i>Chairs:</i> <i>S. Chaudhuri</i> <i>J. Frank</i>	Solid Fuel <i>Chairs:</i> <i>K. Hadi</i> <i>H. Hu</i>	New Concepts <i>Chairs:</i> <i>T. Farouk</i> <i>Y.-T. Liao</i>
12:10	3A07: Numerical study on the effect of electric field on n-pentane oxidation in a flow reactor under low temperature <i>Z. Jia, D. Jin, W. Zhou</i>	3B07: A localized thickened flame model for simulations of flame propagation and autoignition under elevated pressure conditions <i>H. Terashima, Y. Hanada, S. Kawai</i>	3C07: Detailed numerical simulation of primary atomization by crossflow under gas turbine engine combustor conditions <i>T. Nambu, Y. Mizobuchi</i>	3D07: Modeling subfilter soot-turbulence interactions in Large Eddy Simulation: An <i>a priori</i> study <i>L. Berger, A. Wick, A. Attili, M.E. Mueller, H. Pitsch</i>	3E07: Phosphor thermometry at the surface of single reacting large-diameter spherical coke particles to characterise combustion for packed bed furnaces <i>T. Cai, M. Khodsiani, B. Hallak, C. Abram, F. Beyrau, E. Specht</i>	3F07: A numerical investigation of NH ₃ /O ₂ /He ignition limits in a non-thermal plasma <i>G. Faingold, J.K. Lefkowitz</i>

10:40	BREAK (30 minutes)				
Room	Room 7	Room 8	Room 9	Room 10	Room 11
	Diagnostics Chairs: <i>P. Allison</i> <i>B. Zhou</i>	Soot, Nano & Large Molecules Chairs: <i>M.E. Mueller</i> <i>C. Saggese</i>	Fire Research Chairs: <i>S.L. Manzello</i>	Detonations, Explosions & Supersonic Chairs: <i>G. Ciccarelli</i>	Gas Turbine & Rocket Engine Chairs: <i>J. Meadows</i>
11:10	3G04: The kinetics of methane ignition in fuel-rich HCCI engines: DME replacement by ozone <i>D. Schröder, K. Banke, S.A. Kaiser, B. Atakan</i>	3H04: Effects of benzene, cyclohexane and <i>n</i> -hexane addition to methane on soot yields in high-pressure laminar diffusion flames <i>S.S. Yang, Ö.L. Gülder</i>	3J04: Study on the flaming-transition behavior of a downwardly smoldering biomass stick utilizing low pressure <i>T. Yamazaki, T. Matsuoka, K. Kuwana, Y. Nakamura</i>	3K04: Controlled detonation initiation in hypersonic flow <i>J. Sosa, G.B. Goodwin, D. Rosato, C. Bachman, E.S. Oran, K.A. Ahmed</i>	3L04: Near blowout dynamics of a premixed, swirl stabilized flame <i>R.M. Kumar, I. Chtereve, D. Stepien, M. Sirignano, B.L. Emerson, C.A. Fugger, N. Jiang, S. Roy, T.C. Lieuwen</i>
11:30	3G05: Ignition delay measurements of four component model gasolines exploring the impacts of biofuels and aromatics <i>A.L. Boehman, J. Luecke, L. Fouts, M. Ratcliff, B.T. Zigler, R. McCormick</i>	3H05: Effects of gas preheat temperature on soot formation in co-flow methane and ethylene diffusion flames <i>S. Qi, Z. Sun, Z. Wang, Y. Liu, Y. He, S. Liu, K. Wan, G. Nathan, M. Costa</i>	3J05: Quenching of smoldering: Effect of wall cooling on extinction <i>S. Lin, X. Huang</i>	3K05: Mixing and detonation structure in a rotating detonation engine with an axial air inlet <i>T. Sato, F. Chacon, L. White, V. Raman, M. Gamba</i>	3L05: Stability diagram and blow-out mechanisms of turbulent non-premixed combustion <i>D. Li, M. Ihme</i>
11:50	3G06: Understanding multi-stage HCCI combustion caused by thermal stratification and chemical three-stage auto-ignition <i>M.B. Houidi, A. AlRamadan, J. Sotton, M. Bellenoue, S.M. Sarathy, B. Johansson</i>	3H06: Elucidating the chemical pathways responsible for the sooting tendency of 1 and 2- phenylethanol <i>B.D. Etz, G.M. Fioroni, R.A. Messerly, M.J. Rahimi, P.C. St. John, D.J. Robichaud, E.D. Christensen, B.P. Beekley, C.S. McEnally, L.D. Pfefferle, Y. Xuan, S. Vyas, R.S. Paton, R.L. McCormick, S. Kim</i>	3J06: Propagation of glowing combustion front in a packed bed of activated carbon particles and the role of CO oxidation <i>J. Gao, X. Qi, D. Zhang, T. Matsuoka, Y. Nakamura</i>	3K06: The dynamics of a non-premixed rotating detonation engine from time-resolved temperature measurements <i>C.A. Fugger, J.G. Lopez, K.D. Rein, S. Roy, A.W. Caswell</i>	3L06: Analysis of core-noise contributions in a realistic gas-turbine combustor operated near lean blow-out <i>C. Shao, K. Maeda, M. Ihme</i>
12:10	3G07: Effects of fuel blending on first stage and overall ignition processes <i>E.K. Mayhew, C.M. Mitsingas, V.D. Coburn, J.E.G. Temme, C.-B.M. Kweon</i>	3H07: Visualization of soot formation from evaporating fuel films by laser-induced fluorescence and incandescence <i>N. Jüngst, S.A. Kaiser</i>	3J07: Pressure effects on morphology of isotropic char layer, shrinkage, cracking and reduced heat transfer of wooden material <i>K. Li, Y. Zou, S. Bourbigot, J. Ji, X. Chen</i>	3K07: An empirical model for stagnation pressure gain in rotating detonation combustors <i>E. Bach, C.O. Paschereit, P. Stathopoulos, M.D. Bohon</i>	3L07: A comparison of the blow-out behaviour of turbulent premixed ammonia/hydrogen/nitrogen-air and methane-air flames <i>S. Wiseman, M. Rieth, A. Gruber, J.R. Dawson, J.H. Chen</i>

12:30	BREAK (90 minutes)					
Room	Room 1	Room 2	Room 3	Room 4	Room 5	Room 6
	Gas-Phase Reaction Kinetics <i>Chairs:</i> <i>Z. Tian</i>	Laminar Flames <i>Chairs:</i> <i>Z. Chen</i> <i>C.S. Yao</i>	Gas-Phase Reaction Kinetics II <i>Chairs:</i> <i>M. Sarathy</i>	Turbulent Flames <i>Chairs:</i> <i>S. Hemchandra</i>	Solid Fuel <i>Chairs:</i> <i>H. Wu</i> <i>Z. Zhou</i>	Reciprocating IC Engines <i>Chairs:</i> <i>D. Dasgupta</i>
14:00	3A08: High-speed imaging of <i>n</i> -heptane ignition in a high-pressure shock tube <i>J. Shao, R. Choudhary, A.J. Susa, D.F. Davidson, R.K. Hanson</i>	3B08: Pore-resolved simulations of porous media combustion with conjugate heat transfer <i>J.C. Ferguson, S. Sobhani, M. Ihme</i>	3C08: A kinetic study on pyrolysis of <i>iso</i> -propylcyclohexane: Fuel structure effects of alkylcyclohexane isomers on reaction mechanisms <i>Q. Wang, C. Wang, Y. Huang, M. Ding, J. Yang, J. Wang</i>	3D08: Turbulence/flame/wall interactions in non-premixed inclined slot-jet flames impinging at a wall using direct numerical simulation <i>H. Wang, G. Chen, K. Luo, E.R. Hawkes, J.H. Chen, J. Fan</i>	3E08: Three-dimensional analysis of the pyrolysis behavior of solid fuel by ultra high-speed X-ray CT <i>K. Murai, T. Daitoku, T. Tsuruda</i>	3F08: Detailed measurements of transient two-stage ignition and combustion processes in high-pressure spray flames using simultaneous high-speed formaldehyde PLIF and Schlieren imaging <i>H.S. Sim, N. Maes, L.M. Pickett, S.A. Skeen</i>
14:20	3A09: An experimental and modeling study of the auto-ignition of natural gas blends containing C ₁ –C ₇ <i>n</i> -alkanes <i>A. Abd El-Sabor Mohamed, S. Panigrahy, A.B. Sahu, G. Bourque, H. Curran</i>	3B09: Detailed simulation of laser-induced ignition, spherical-flame acceleration, and the origins of hydrodynamic instability <i>J.F. MacArt, J.M. Wang, P.P. Popov, J.B. Freund</i>	3C09: Experimental and theoretical investigation of the combustion characteristics of Di- <i>tert</i> -butyl peroxide <i>M. Preußker, M. Döntgen, D. Firaha, K. Leonhard, K.A. Heufer</i>	3D09: Turbulent flame speed and reaction layer thickening in premixed jet flames at constant Karlovitz and increasing Reynolds numbers <i>A. Attili, S. Luca, D. Denker, F. Bisetti, H. Pitsch</i>	3E09: An in-situ method for time-resolved sodium release behaviour during coal combustion and its application in industrial coal-fired boilers <i>C. Lou, Y. Pu, Y. Zhao, Y. Bai, B. Yao, D. Yu</i>	3F09: Three-stage auto-ignition of <i>n</i> -heptane and methyl-cyclohexane mixtures at lean conditions in a flat piston rapid compression machine <i>A.S. AlRamadan, M. Ben Houidi, J. Sotton, M. Bellenoue, B. Johansson, S.M. Sarathy</i>

Room	Room 1	Room 2	Room 3	Room 4	Room 5	Room 6
	Gas-Phase Reaction Kinetics <i>Chairs:</i> <i>Z. Tian</i>	Laminar Flames <i>Chairs:</i> <i>Z. Chen</i> <i>C.S. Yoo</i>	Gas-Phase Reaction Kinetics II <i>Chairs:</i> <i>M. Sarathy</i>	Turbulent Flames <i>Chairs:</i> <i>S. Hemchandra</i>	Solid Fuel <i>Chairs:</i> <i>H. Wu</i> <i>Z. Zhou</i>	Reciprocating IC Engines <i>Chairs:</i> <i>D. Dasgupta</i>
14:40	3A10: An improved detailed chemical kinetic model for C3-C4 linear and iso-alcohols and their blends with gasoline at engine-relevant conditions <i>C. Saggese, C.M. Thomas, S.W. Wagnon, G. Kukkadapu, S. Cheng, D. Kang, S.S. Goldsborough, W.J. Pitz</i>	3B10: A computational analysis of strained laminar flame propagation in a stratified CH ₄ /H ₂ /air mixture <i>T. Tomidokoro, T. Yokomori, T. Ueda, H.G. Im</i>	3C10: Experimental and kinetic modeling study of tetralin: A naphtho-aromatic fuel for gasoline, jet and diesel surrogates <i>G. Issayev, K. Djebbi, G. Kukkadapu, M. Mehl, S.W. Wagnon, W.J. Pitz, A. Farooq</i>	3D10: Experimental assessment of the progress variable space structure of premixed flames subjected to extreme turbulence <i>A.W. Skiba, C.D. Carter, S.D. Hammack, J.F. Driscoll</i>	3E10: Simultaneous in-situ measurements of gas temperature and pyrolysis of biomass smoldering via X-ray computed tomography <i>E. Boigné, N.R. Bennett, A. Wang, K. Mohri, M. Ihme</i>	3F10: Influence of intermediate temperature heat release on autoignition reactivity of single-stage ignition fuels with varying octane sensitivity <i>K.H. Yoo, A.K. Voice, A.L. Boehman</i>
15:00	3A11: A kinetics and dynamics study on the auto-ignition of dimethyl ether at low temperatures and low pressures <i>W. Huang, Q. Zhao, Z. Huang, H.J. Curran, Y. Zhang</i>		3C11: Chemical effects of ferrocene and 2-ethylhexyl nitrate on a low-octane gasoline: An experimental and numerical RCM study <i>M.D. Le, M. Matrat, A.B. Amara, F. Foucher, B. Moreau, Y. Yu, P.-A. Glaude</i>	3D11: Evaluation of mean species mass fractions in premixed turbulent flames: A DNS study <i>A.N. Lipatnikov, V.A. Sabelnikov</i>	3E11: Temporal temperature measurement on burning biomass pellets using phosphor thermometry and two-line atomic fluorescence <i>W. Weng, H. Feuk, S. Li, M. Richter, M. Aldeń, Z. Li</i>	3F11: Autoignition characteristics of bio-based fuels, farnesane and TPGME, in comparison with fuels of similar cetane rating <i>S. Wu, D. Kang, R. Xiao, A.L. Boehman</i>

12:30	BREAK (90 minutes)				
Room	Room 7	Room 8	Room 9	Room 10	Room 11
	Diagnostics <i>Chairs:</i> <i>S. Biswas</i> <i>T. Guiberti</i>	Soot, Nano & Large Molecules <i>Chairs:</i> <i>H. Jin</i> <i>W. Yuan</i>	New Concepts <i>Chairs:</i> <i>H. Im</i> <i>K. Maruta</i>	Detonations, Explosions & Supersonic <i>Chairs:</i> <i>J. Bennewitz</i>	Gas Turbine & Rocket Engine <i>Chairs:</i> <i>J. Bergthorson</i>
14:00	3G08: 4D temperature measurements using tomographic two-color pyrometry <i>T. Yu, F.J. Bauer, F.J.T. Huber, S. Will, W. Cai</i>	3H08: Determination of the volume fraction of soot accounting for its composition and morphology <i>G.A. Kelesidis, S.E. Pratsinis</i>	3J08: Heterogeneous and homogeneous combustion of fuel-lean $C_3H_8/O_2/N_2$ mixtures over rhodium at pressures up to 6 bar <i>J. Mantzaras, R. Sui, C.K. Law, R. Bombach</i>	3K08: Numerical simulation of a methane-oxygen rotating detonation rocket engine <i>S. Prakash, V. Raman, C. Lietz, W. Hargus, Jr., S. Schumaker</i>	3L08: An investigation of ammonia primary flame combustor concepts for emissions reduction with OH^* , NH_2^* and NH^* chemiluminescence at elevated conditions <i>D. Pugh, J. Runyon, P. Bowen, A. Giles, A. Valera-Medina, R. Marsh, B. Goktepe, S. Hewlett</i>
14:20	3G09: In situ nanopowder combustion visualization using laser systems with brightness amplification <i>L. Li, A.V. Mostovshchikov, A.P. Ilyin, P.A. Antipov, D.V. Shiyanov, F.A. Gubarev</i>	3H09: Experimental and numerical study on soot formation in laminar diffusion flames of biodiesels and methyl esters <i>B. Tian, A. Liu, C.T. Chong, L. Fan, S. Ni, J.-H. Ng, S. Rigopoulos, K.H. Luo, S. Hochgreb</i>	3J09: Flame spray pyrolysis made Pt/TiO ₂ photocatalysts with ultralow platinum loading and high hydrogen production activity <i>F. Gao, Z. Xu, H. Zhao</i>	3K09: Stabilization mechanisms of longitudinal pulsations in rotating detonation combustors <i>R. Bluemner, E.J. Gutmark, C.O. Paschereit, M.D. Bohon</i>	3L09: Attached and lifted flame stabilization in a linear array of swirl injectors <i>S.E. Jella, W.Y. Kwong, A.M. Steinberg, J.-W. Park, T. Lu, J.M. Bergthorson, G. Bourque</i>

Room	Room 7	Room 8	Room 9	Room 10	Room 11
	Diagnostics <i>Chairs:</i> <i>S. Biswas</i> <i>T. Guiberti</i>	Soot, Nano & Large Molecules <i>Chairs:</i> <i>H. Jin</i> <i>W. Yuan</i>	New Concepts <i>Chairs:</i> <i>H. Im</i> <i>K. Maruta</i>	Detonations, Explosions & Supersonic <i>Chairs:</i> <i>J. Bennewitz</i>	Gas Turbine & Rocket Engine <i>Chairs:</i> <i>J. Bergthorson</i>
14:40	3G10: Interpreting diffusion flame structure by simultaneous mixture fraction and temperature measurements using optical and acoustic signals from laser-induced plasmas <i>W. Wu, R.L. Axelbaum</i>	3H10: Application of chemical graph theory to PAH isomer enumeration and structure in laser desorption/ionization mass spectrometry studies of particulate from an ethylene diffusion flame <i>J.H. Miller, R.J. Golden, J.A. Giaccai, A. Kamischke, A. Korte, A. Vertes</i>	3J10: Transient behavior and reaction mechanism of CO catalytic ignition over a CuO-CeO ₂ mixed oxide <i>R. Kang, P. Ma, J. He, H. Li, F. Bin, X. Wei, B. Dou, K.N. Hui, K.S. Hui</i>	3K10: Sensitizing gaseous detonations for hydrogen/ethylene-air mixtures using ozone and H ₂ O ₂ as dopants for application in rotating detonation engines <i>D.S. Kumar, K. Ivin, A.V. Singh</i>	3L10: Direct comparison of self-excited instabilities in mesoscale multinozzle flames and conventional large-scale swirl-stabilized flames <i>T. Lee, K.T. Kim</i>
15:00	3G11: Phase-selective laser-induced breakdown spectroscopy in flame spray pyrolysis for Iron oxide nanoparticle synthesis <i>M.F.B. Stodt, C. Liu, S. Li, L. Mädler, U. Fritsching, J. Kiefer</i>	3H11: A comparison of computational models for predicting yield sooting index <i>T. Kessler, P. St. John, J. Zhu, C.S. McEnally, L.D. Pfefferle, J.H. Mack</i>	3J11: Experimental investigation of the influence of solar-to-fuel ratio on performance and stability characteristics of hybrid solar-MILD hydrogen processes <i>A. Chinnici, G.J. Nathan, B.B. Dally</i>		3L11: Study of inter-sector spray flame propagation in a linear arrangement of swirled burners <i>F. Collin-Bastiani, E. Riber, B. Cuenot</i>

15:20	BREAK (50 minutes)					
Room	Room 1	Room 2	Room 3	Room 4	Room 5	Room 6
	Gas-Phase Reaction Kinetics <i>Chairs:</i> C. Huang Z. Serinyel	Laminar Flames <i>Chairs:</i> Z. Chen C.S. Yoo	Industry Speaker <i>Chairs:</i> B. Cuenot	Turbulent Flames <i>Chairs:</i> E.C. Okafor F. Salehi	Solid Fuel <i>Chairs:</i> T. Faravelli C. Hasse	Spray, Droplet & Supercritical <i>Chairs:</i> R. Kneer L. Selle
16:10	3A12: Combustion behavior of ammonia blended with diethyl ether <i>G. Issayev, B.R. Giri, A.M. Elbaz, K.P. Shrestha, F. Mauss, W.L. Roberts, A. Farooq</i>	3B12: A projection procedure to obtain adiabatic flames from non-adiabatic flames using heat flux method <i>X. Han, Z. Wang, Y. He, S. Wang, Y. Zhu, Y. Liu, A.A. Konnov</i>	3C12: INDUSTRY SPEAKER Unresolved aspects of gas phase detonations in the chemical process industry Hans-Peter Schildberg	3D12: Large Eddy Simulation of turbulent reacting flows with conjugate heat transfer and radiative heat transfer <i>C. Fureby</i>	3E12: Quantitative characterization of coal structure by high-resolution CP/MAS ¹³ C solid-state NMR Spectroscopy <i>H. Yang, Y. Xiong, Z. Xie, L. Jin, Y. Li, J. Yang, H. Hu</i>	3F12: Space-based microgravity experiments on flame spread over randomly distributed <i>n</i> -decane-droplet clouds: Anomalous behavior in flame spread <i>M. Mikami, K. Matsumoto, Y. Yoshida, M. Kikuchi, D.L. Dietrich</i>
16:30	3A13: Ethanol ignition in a high-pressure shock tube: Ignition delay time and high-repetition-rate imaging measurements <i>D. Nativel, P. Niegemann, J. Herzler, M. Fikri, C. Schulz</i>	3B13: Numerical study of premixed flame dynamics in a closed tube: Effect of wall boundary condition <i>X. Li, H. Xiao, Q. Duan, J. Sun</i>		3D13: LES of oxy–fuel jet flames using the Eulerian Stochastic Fields method with differential diffusion <i>M. Hansinger, M. Pfitzner, V. Sabelnikov</i>	3E13: Transformation of nitrogen during hydrothermal carbonization of sewage sludge: Effects of temperature and Na/Ca acetates addition <i>J. Huang, Z. Wang, Y. Qiao, B. Wang, Y. Yu, M. Xu</i>	3F13: Large-Eddy Simulation of <i>n</i> -dodecane spray flame: Effects of nozzle diameters on autoignition at varying ambient temperatures <i>J.C. Ong, K.M. Pang, X.-S. Bai, M. Jangi, J.H. Walther</i>

Room	Room 1	Room 2	Room 3	Room 4	Room 5	Room 6
	Gas-Phase Reaction Kinetics <i>Chairs:</i> C. Huang Z. Serinyel	Laminar Flames <i>Chairs:</i> Z. Chen C.S. Yoo	Industry Speaker <i>Chairs:</i> B. Cuenot	Turbulent Flames <i>Chairs:</i> E.C. Okafor F. Salehi	Solid Fuel <i>Chairs:</i> T. Faravelli C. Hasse	Spray, Droplet & Supercritical <i>Chairs:</i> R. Kneer L. Selle
16:50	3A14: Experimental and modeling study of C2-C4 alcohol autoignition at intermediate temperature conditions <i>S. Cheng, D. Kang, S.S. Goldsborough, C. Saggese, S. Wagnon, W.J. Pitz</i>	3B14: Proper interpretation and overall accuracy of laminar flame speed measurements of single- and multi-component liquid fuels <i>C.L. Keesee, B. Guo, E.L. Petersen</i>	INDUSTRY SPEAKER Unresolved aspects of gas phase detonations in the chemical process industry Hans-Peter Schildberg	3D14: Chemistry computation without a sub-grid PDF model in LES of turbulent non-premixed flames showing moderate local extinction <i>P. Breda, M. Hansinger, M. Pfitzner</i>	3E14: High-temperature pyrolysis of petroleum coke and its correlation to in-situ char-CO ₂ gasification reactivity <i>X. Yu, D. Yu, F. Liu, J. Wu, M. Xu</i>	3F14: Study of spray structure from non-flash to flash boiling conditions with space-time tomography <i>J. Du, G. Zang, B. Mohan, R. Idoughi, J. Sim, T. Fang, P. Wonka, W. Heidrich, W.L. Roberts</i>
17:10	3A15: An experimental and kinetic modeling study of a four-component surrogate fuel for RP-3 kerosene <i>Y. Mao, J. Xia, C. Ruan, Z. Wu, Y. Feng, J. Zhu, S. Wang, L. Yu, X. Lu</i>	3B15: 2D computations of FREI with cool flames for n-heptane/air mixture <i>K. Akita, Y. Morii, H. Nakamura, T. Tezuka, K. Maruta</i>		3D15: <i>A-priori</i> and <i>a-posteriori</i> studies of a direct moment closure approach for turbulent combustion using DNS data of a premixed flame <i>K. Luo, R. Liu, Y. Bai, A. Attili, H. Pitsch, F. Bisetti, J. Fan</i>	3E15: Modeling char surface area evolution during coal pyrolysis: Effect of swelling and gasification at high pressures <i>H. Yang, S.V. Pisupati, H. Hu</i>	3F15: Reactive and electron force field molecular dynamics simulations of electric field assisted ethanol oxidation reactions <i>X.Z. Jiang, K.H. Luo</i>
	SESSIONS END AT 17:30 Recognition Ceremony – <i>Live Broadcast via Chime</i> at 18:30					

15:20	BREAK (50 minutes)				
Room	Room 7	Room 8	Room 9	Room 10	Room 11
	Reciprocating IC Engines <i>Chairs:</i> <i>L. Tartakovsky</i>	Stationary & Low Carbon <i>Chairs:</i> <i>Y. Minamoto</i>	Fire Research <i>Chairs:</i> <i>Y. Nakamura</i> <i>J. Sun</i>	Detonations, Explosions & Supersonic <i>Chairs:</i> <i>D. Michaels</i> <i>M. Short</i>	Gas Turbine & Rocket Engine <i>Chairs:</i> <i>D. Blunck</i>
16:10	3G12: An experimental and numerical investigation to characterize the low-temperature heat release in Stoichiometric and lean combustion <i>M. Waqas, S. Cheng, S.S. Goldsborough, T. Rockstroh, B. Johansson, C.P. Kolodziej</i>	3H12: Mineral-derived Li_4SiO_4 -based adsorbent for post-combustion CO_2 capture: An experimental and kinetic investigation <i>Y. Yang, Q. Chen, W. Liu, S. Yao, J. Cao, Q. Li, M. Xu</i>	3J12: Predicting radiative heat fluxes from two buoyant turbulent diffusion flames from burning propane under cross wind <i>B. Li, H. Wan, L. Ding, J. Ji</i>	3K12: Detonation Performance of the CL-20-based Explosive LX-19 <i>C. Chiquete, S.I. Jackson</i>	3L12: Modal dynamics of high-frequency transverse combustion instabilities <i>J.-w. Kim, W. Gillman, B. Emerson, D. Wu, T. John, V. Acharya, M. Isono, T. Saitoh, T. Lieuwen</i>
16:30	3G13: Effects of octane sensitivity on knocking combustion under modern SI engine operating conditions <i>X. Zhao, H. Wang, D. Liu, Z. Zheng, M. Yao</i>	3H13: Quantitative K-Cl-S chemistry in thermochemical conversion processes using in situ optical diagnostics <i>W. Weng, Z. Li, H. Wu, M. Aldén, P. Glarborg</i>	3J13: Low global-warming-potential refrigerant CH_2F_2 (R-32): Integration of a radiation heat loss correction method to accurately determine experimental flame speed metrics <i>R. Hesse, L. Berger, C. Bariki, M.J. Hegetschweiler, G.T. Linteris, H. Pitsch, J. Beeckmann</i>	3K13: Experimental and modeling analysis of detonation in circular arcs of the conventional high explosive PBX 9501 <i>M. Short, E.K. Anderson, C. Chiquete, S.I. Jackson</i>	3L13: Experiments and low-order modelling of intermittent transitions between clockwise and anticlockwise spinning thermoacoustic modes in annular combustors <i>A. Faure-Beaulieu, T. Indlekofer, J.R. Dawson, N. Noiray</i>

Room	Room 7	Room 8	Room 9	Room 10	Room 11
	Reciprocating IC Engines <i>Chairs:</i> <i>L. Tartakovsky</i>	Stationary & Low Carbon <i>Chairs:</i> <i>Y. Minamoto</i>	Fire Research <i>Chairs:</i> <i>Y. Nakamura</i> <i>J. Sun</i>	Detonations, Explosions & Supersonic <i>Chairs:</i> <i>D. Michaels</i> <i>M. Short</i>	Gas Turbine & Rocket Engine <i>Chairs:</i> <i>D. Blunck</i>
16:50	3G14: Investigation of the end-gas autoignition process in natural gas engines and evaluation of the methane number index <i>D. Bestel, S. Bayliff, A. Marchese, D. Olsen, B. Windom, H. Xu</i>	3H14: Effect of alkali metals on nitrogen oxide emission: Role of Na and its occurrence in coal <i>J. Zhao, X. Wei, T. Li, S. Li</i>	3J14: Accessing the soot-related radiative heat feedback in a flame spreading in microgravity: optical designs and associated limitations <i>A. Guibaud, J.-M. Citerne, J.-L. Consalvi, J.L. Torero, O. Fujita, M. Kikuchi, P. Ferkul, N. Smirnov, G. Jomaas, B. Toth, S. Rouvreau, G. Legros</i>	3K14: Numerical investigation of the accuracy of particle image velocimetry technique in gas-phase detonations <i>S.S. Dammati, Y. Kozak, C. Rising, J. Reyes, K. Ahmed, A.Y. Poludnenko</i>	3L14: Nonlinear analysis of self-sustained oscillations in an annular combustor model with electroacoustic feedback <i>S.C. Humbert, F. Gensini, A. Andreini, C.O. Paschereit, A. Orchini</i>
17:10	3G15: Effects of low-temperature chemistry on the wall heat flux in HCCI combustion <i>Y. Minamoto, Y. Kondo, K. Osawa, Y. Harada, M. Shimura, M. Tanahashi</i>	3H15: High-temperature transformation of pyrite in CO ₂ : Effects of residence time and the presence of O ₂ <i>J. Wu, D. Yu, X. Yu, F. Liu, S. Chen, M. Xu</i>			3L15: Symmetry breaking modelling for azimuthal combustion dynamics <i>G. Ghirardo, H.T. Nygård, A. Cuquel, N.A. Worth</i>
SESSIONS END AT 17:30					
Recognition Ceremony – <i>Live Broadcast via Chime</i> at 18:30					

Thursday, 28 January 2021

(Room 3)

PLENARY LECTURE – 8:30 am

Understanding Cool Flames and Warm Flames*Yiguang Ju, Princeton University**Chairs: H. Curran*

Transfer (10 minutes)

Room	Room 1	Room 2	Room 3	Room 4	Room 5	Room 6
	Gas-Phase Reaction Kinetics <i>Chairs:</i> <i>N. Hansen</i> <i>P. Pepiot</i>	Laminar Flames <i>Chairs:</i> <i>L. Hu</i>	Industry Speaker <i>Chairs:</i> <i>M. Xu</i>	Turbulent Flames <i>Chairs:</i> <i>J. Chen</i> <i>F. Egolfopolous</i>	Solid Fuel <i>Chairs:</i> <i>Y. Qiao</i> <i>Z. Yang</i>	Stationary & Low Carbon <i>Chairs:</i> <i>L. Baxter</i> <i>T. Fujimori</i>
9:40	4A01: Ring opening in cycloheptane and dissociation of 1-heptene at high temperatures <i>T. Sikes, K.B. Burdett, R.L. Speth, C.F. Goldsmith, R. Sivaramakrishnan, R.S. Tranter</i>	4B01: Counterflow ignition and extinction of FACE gasoline fuels <i>A. Alfazazi, G. Mairinger, H. Selim, K. Seshadri, S.M. Sarathy</i>	4C01: INDUSTRY SPEAKER Challenge to improve the thermal efficiency of automobile internal combustion engine Tomonori Urushihara	4D01: Conventional spark versus nanosecond repetitively pulsed discharge for a turbulence facilitated ignition phenomenon <i>M.T. Nguyen, S.S. Shy, Y.R. Chen, B.L. Lin, S.Y. Huang, C.C. Liu</i>	4E01: Oxy-coal combustion in a 30 kW _{th} pressurized fluidized bed: Effect of combustion pressure on combustion performance, pollutant emissions and desulfurization <i>L. Pang, Y. Shao, W. Zhong, H. Liu</i>	4F01: Digital twin of a combustion furnace operating in flameless conditions: Reduced-order model development from CFD simulations <i>G. Aversano, M. Ferrarotti, A. Parente</i>
10:00	4A02: A single pulse shock tube study of pentene isomer pyrolysis <i>S.S. Nagaraja, J. Power, G. Kukkadapu, S. Dong, S.W. Wagnon, W.J. Pitz, H.J. Curran</i>	4B02: Studies of the dynamics of autoignition assisted outwardly propagating spherical cool and double flames under shock-tube conditions <i>T. Zhang, A.J. Susa, R.K. Hanson, Y. Ju</i>		4D02: The localised forced ignition and early stages of flame development in a turbulent planar jet <i>C.T. d'Auzay, N. Chakraborty</i>	4E02: Modeling of the submicron particles formation and initial layer ash deposition during high temperature oxy-coal combustion <i>Z. Zhan, A. Chiodo, M. Zhou, K. Davis, D. Wang, J. Beutler, M. Cremer, Y. Wang, J. Wendt</i>	4F02: Thermo-chemical manifold reduction for tabulated chemistry modeling. Temperature and dilution constraints for SMOOTH combustion reactors <i>G. Sorrentino, G. Ceriello, A. Cavaliere, M. de Joannon, R. Ragucci</i>

Room	Room 1	Room 2	Room 3	Room 4	Room 5	Room 6
	Gas-Phase Reaction Kinetics <i>Chairs:</i> <i>N. Hansen</i> <i>P. Pepiot</i>	Laminar Flames <i>Chairs:</i> <i>L. Hu</i>	Industry Speaker <i>Chairs:</i> <i>M. Xu</i>	Turbulent Flames <i>Chairs:</i> <i>J. Chen</i> <i>F. Egolfopolous</i>	Solid Fuel <i>Chairs:</i> <i>Y. Qiao</i> <i>Z. Yang</i>	Stationary & Low Carbon <i>Chairs:</i> <i>L. Baxter</i> <i>T. Fujimori</i>
10:20	4A03: Thermal decomposition of 1-hexene by flash pyrolysis: A study of initial decomposition mechanism <i>X. Liu, W. Yuan, J. Zhang, J. Yang, Z. Zhou</i>	4B03: On the oscillating flame characteristics in nonpremixed laminar coflowjets: An experimental and numerical study <i>S. Oh, K.H. Van, K.S. Jung, C.S. Yoo, M.S. Cha, S.H. Chung, J. Park</i>	INDUSTRY SPEAKER Challenge to improve the thermal efficiency of automobile internal combustion engine Tomonori Urushihara	4D03: Probabilistic modeling of forced ignition of alternative jet fuels <i>Y. Tang, M. Hassanaly, V. Raman, B. Sforzo, J. Seitzman</i>	4E03: Characteristics of the sub-micron ash aerosol generated during oxy-coal combustion at atmospheric and elevated pressures <i>X. Li, Y. Wang, J.O.L. Wendt</i>	4F03: Influence of water addition on MILD ammonia combustion performances and emissions <i>G.B. Ariemma, P. Sabia, G. Sorrentino, P. Bozza, M. de Joannon, R. Ragucci</i>

Thursday, 28 January 2021

(Room 3)

PLENARY LECTURE – 8:30 am

Understanding Cool Flames and Warm Flames*Yiguang Ju, Princeton University**Chairs: H. Curran*

Transfer (10 minutes)

Room	Room 7	Room 8	Room 9	Room 10	Room 11
	Diagnostics <i>Chairs:</i> <i>H. Stauffer</i>	New Concepts <i>Chairs:</i> <i>S. Sobhani</i>	Fire Research <i>Chairs:</i> <i>H. Do</i> <i>L. Kostiuik</i>	Detonations, Explosions & Supersonic <i>Chairs:</i> <i>J. Kasahara</i> <i>C.D. Slabaugh</i>	Gas Turbine & Rocket Engine <i>Chairs:</i> <i>Y. Gao</i> <i>M. Klassen</i>
9:40	4G01: 10-kHz 2D thermometry in turbulent reacting flows using two-color OH PLIF <i>P.S. Hsu, N. Jiang, D. Lauriola, S.W. Grib, A.W. Caswell, S. Roy</i>	4H01: Laser induced fluorescence investigation of the chemical impact of nanosecond repetitively pulsed glow discharges on a laminar methane-air flame <i>D. Del Cont-Bernard, T.F. Guibert, D.A. Lacoste</i>	4J01: Lifted flame in fire whirl: An experimental investigation <i>J. Lei, X. Miao, Z. Liu, N. Liu, L. Zhang</i>	4K01: Experimental and theoretical observations on DDT in smooth narrow channels <i>J. Melguizo-Gavilanes, Y. Balossier, L.M. Faria</i>	4L01: Experimental and numerical study of transcritical oxygen-hydrogen rocket flame response to transverse acoustic excitation <i>S.K. Beinke, J.S. Hardi, D.T. Banuti, S. Karl, B.B. Dally, M. Oswald</i>
10:00	4G02: Direct quantification of O-atom in low-pressure methane flames by using two-photon LIF <i>N. Lamoureux, P. Desgroux</i>	4H02: Optimization of flame kernel ignition and evolution induced by modulated nanosecond-pulsed high-frequency discharge <i>I. Dunn, K.A. Ahmed, R.J. Leiweke, T. Ombrello</i>	4J02: An analysis of the stabilization of fire whirls <i>S. Li, Q. Yao, C.K. Law</i>	4K02: Enhanced DDT mechanism from shock-flame interactions in thin channels <i>H. Yang, M.I. Radulescu</i>	4L02: Heat-release dynamics in a doubly-transcritical LO ₂ /LCH ₄ cryogenic coaxial jet flame subjected to fuel inflow acoustic modulation <i>C. Laurent, G. Staffelbach, F. Nicoud, T. Poinot</i>
10:20	4G03: Simultaneous 1D hybrid fs/ps rotational CARS, phosphor thermometry, and CH* imaging to study transient near-wall heat transfer processes <i>D. Escofet-Martin, A.O. Ojo, N.T. Mecker, M.A. Linne, B. Peterson</i>	4H03: Elevated pressure increases the effect of electric fields on ionic wind in methane premixed jet flames <i>S.H. Park, J.W. Son, J. Park, M.S. Cha</i>	4J03: Evolution from conical to cylindrical fire whirl: An experimental study <i>Z. Liu, N. Liu, J. Lei, X. Miao, L. Zhang</i>	4K03: Effect of the plasma location on the deflagration-to-detonation transition of a hydrogen-air flame enhanced by nanosecond repetitively pulsed discharges <i>J.A.T. Gray, D.A. Lacoste</i>	4L03: Flame-acoustic response measurements in a high-pressure, 42-injector, cryogenic rocket thrust chamber <i>W. Armbruster, J.S. Hardi, M. Oswald</i>

10:40	BREAK (30 minutes)					
Room	Room 1	Room 2	Room 3	Room 4	Room 5	Room 6
	Gas-Phase Reaction Kinetics <i>Chairs:</i> N. Hansen P. Pepiot	Laminar Flames <i>Chairs:</i> L. Hu	Gas-Phase Reaction Kinetics II <i>Chairs:</i> K. Maruta B. Yang	Turbulent Flames <i>Chairs:</i> J. Chen F. Egolfopolous	Solid Fuel <i>Chairs:</i> S. Li	Spray, Droplet & Supercritical <i>Chairs:</i> J. Gore A. Ratner
11:10	4A04: Probing PAH formation chemical kinetics from benzene and toluene pyrolysis in a single-pulse shock tube <i>W. Sun, A. Hamadi, S. Abid, N. Chaumeix, A. Comandini</i>	4B04: Dynamics and stability of premixed hydrogen-air flames in square microchannels with wall temperature gradients <i>S. Lee, B.J. Lee</i>	4C04: From inherent correlation to constrained measurement: Model-assisted calibration in MBMS experiments <i>C. Huang, Z. Zhou, S. Li, T. Tao, F. Zhang, N. Hansen, C.K. Law, B. Yang</i>	4D04: An <i>a priori</i> evaluation of a principal component and artificial neural network based combustion model in diesel engine conditions <i>D.K. Dalakoti, A. Wehrfritz, B. Savard, M.S. Day, J.B. Bell, E.R. Hawkes</i>	4E04: A DNS study on temporally evolving pulverized coal/biomass co-firing jet flames with different blending ratios <i>J. Xing, K. Luo, H. Wang, T. Jin, R. Cai, J. Fan</i>	4F04: Two-phase coupling for MMC-LES of spray combustion <i>M. Sontheimer, A. Kronenburg, O.T. Stein</i>
11:30	4A05: A high temperature shock tube study of phenyl recombination reaction using laser absorption spectroscopy <i>H. Jin, B.R. Giri, D. Liu, A. Farooq</i>	4B05: Explosive dynamics of bluff-body-stabilized lean premixed hydrogen flames at blow-off <i>Y.J. Kim, W. Song, F.E. Hernández Pérez, H.G. Im</i>	4C05: Adjoint sensitivity analysis of kinetic, thermochemical, and transport data of nitrogen and ammonia chemistry <i>R. Langer, J. Lotz, L. Cai, F. vom Lehn, K. Leppkes, U. Naumann, H. Pitsch</i>	4D05: Machine learning for detailed chemistry reduction in DNS of a syngas turbulent oxy-flame with side-wall effects <i>K. Wan, C. Barnaud, L. Vervisch, P. Domingo</i>	4E05: Numerical investigation of pulverized coal particle group combustion using tabulated chemistry <i>H. Nicolai, T. Li, C. Geschwindner, F. di Mare, C. Hasse, B. Böhm, J. Janicka</i>	4F05: LES of a lifted methanol spray flame series using the sparse Lagrangian MMC approach <i>E. Sharma, S. De, M.J. Cleary</i>
11:50	4A06: Laser schlieren study of the thermal decomposition of 2-ethylhexyl-nitrate <i>C.A. Almodovar, C.F. Goldsmith</i>	4B06: Flame stabilization regimes for premixed flames anchored behind cylindrical flame holders <i>F.H. Vance, Y. Shoshyn, L.P.H. de Goey, J.A. van Oijen</i>	4C06: Comparative analysis of reaction-diffusion manifold based reduced models for head-on- and side-wall-quenching flames <i>C. Strassacker, V. Bykov, U. Maas</i>	4D06: Using physics-informed enhanced super-resolution generative adversarial networks for subfilter modeling in turbulent reactive flows <i>M. Bode, M. Gauding, Z. Lian, D. Denker, M. Davidovic, K. Kleinheinz, J. Jitsev, H. Pitsch</i>	4E06: Non-gray chemical composition based radiative property model of fly ash particles <i>J. Wan, J. Guo, P. Li, Z. Liu</i>	4F06: Two-phase sparse-Lagrangian MMC-LES of dilute ethanol spray flames <i>J. Kirchmann, A. Kronenburg, O.T. Stein, M.J. Cleary</i>

12:10	<p>4A07: Nitromethane pyrolysis in shock tubes and a micro flow reactor with a controlled temperature profile <i>O. Mathieu, N. Chaumeix, Y. Yamamoto, S. Abid, C.-E. Paillard, T. Tezuka, H. Nakamura, C. Mulvihill, E.L. Petersen</i></p>	<p>4B07: Exploring a critical diameter for thermo-acoustic instability of downward propagating flames in tubes <i>A.K. Dubey, Y. Koyama, N. Hashimoto, O. Fujita</i></p>	<p>4C07: Impact of “missing” third-body efficiencies on kinetic model predictions of combustion properties <i>M.C. Barbet, M.P. Burke</i></p>	<p>4D07: Deep learning-based model for progress variable dissipation rate in turbulent premixed flames <i>S. Yellapantula, B.A. Perry, R.W. Grout</i></p>	<p>4E07: The slagging propensity of Zn-rich scrap tyre ash in reducing environments consisting of CO and CO₂ and its promotion of the slagging of Si-rich coal ash <i>M. Issac, L. Zhang</i></p>	
12:30	<p>SESSIONS END AT 12:30 Recognition Ceremony – <i>Replay at 12:30</i></p>					

10:40	BREAK (30 minutes)				
Room	Room 7	Room 8	Room 9	Room 10	Room 11
	Diagnostics <i>Chairs:</i> <i>H. Stauffer</i>	Soot, Nano & Large Molecules <i>Chairs:</i> <i>A. Fuentes</i>	Fire Research <i>Chairs:</i> <i>H. Do</i> <i>L. Kostiuik</i>	Detonations, Explosions & Supersonic <i>Chairs:</i> <i>C.R. Bauwens</i> <i>A. Hayakawa</i>	Gas Turbine & Rocket Engine <i>Chairs:</i> <i>Y. Gao</i> <i>M. Klassen</i>
11:10	4G04: Single-shot fs/ns rotational CARS for temporally and spectrally resolved gas-phase diagnostics <i>A. Hosseinnia, M. Ruchkina, P. Ding, J. Bood, P.E. Bengtsson</i>	4H04: The role of resonance-stabilized radical chain reactions in polycyclic aromatic hydrocarbon growth: Theoretical calculation and kinetic modeling <i>Q. Mao, L. Cai, R. Langer, H. Pitsch</i>	4J04: Air/fuel mixing in jet flames <i>A. Palacios, D. Bradley, Q. Wang, X. Li, L. Hu</i>	4K04: Ignition of stoichiometric hydrogen-oxygen by water hammer <i>S.A. Coronel, J.C. Veilleux, J.E. Shepherd</i>	4L04: The effects of turbulence on the lean blowout mechanisms of bluff-body flames <i>A.J. Morales, J. Reyes, K.A. Ahmed, I. Boxx</i>
11:30	4G05: Post-detonation fireball thermometry via femtosecond-picosecond Coherent Anti-Stokes Raman Scattering (CARS) <i>D.R. Richardson, S.P. Kearney, D.R. Guildenbecher</i>	4H05: Thermochemistry of organosilane compounds and organosilyl radicals <i>H. Janbazi, C. Schulz, I. Wlokas, H. Wang, S. Peukert</i>	4J05: Stability of laminar flames on upper and lower inclined fuel surfaces <i>R.S.P. Hakes, W. Coenen, A.L. Sánchez, M.J. Gollner, F.A. Williams</i>	4K05: Hot-spot initiated burn waves in heterogeneous-explosive detonation reaction zones: Mixed-mode reaction and the reactive-thermal wave model <i>L.G. Hill</i>	4L05: Impact of turbulence on the coherent flame dynamics in a bluff-body stabilized flame <i>A. Karmarkar, A. Tyagi, S. Hemchandra, J. O'Connor</i>
11:50	4G06: CO ₂ chirped-probe-pulse femtosecond CARS for thermometry measurement <i>M. Gu, A. Satija, R.P. Lucht</i>	4H06: Investigation of structural effects of aromatic compounds on sooting tendency with mechanistic insight into ethylphenol isomers <i>Y. Kim, B.D. Etz, G.M. Fioroni, C.K. Hays, P. St. John, R. Messerly, S. Vyas, B.P. Beekley, F. Guo, C.S. McEnally, L.D. Pfeifferle, R.L. McCormick, S. Kim</i>	4J06: Physical models of flame height and air entrainment of two adjacent buoyant turbulent jet non-premixed flames with different heat release rates <i>J. Ji, C. Wang, L. Yu</i>	4K06: Experimental characterization of detonation initiation modes using small tubes in a confined chamber <i>J. Zheng, Q. Lei, X. Zhao, W. Fan</i>	4L06: On the bi-stable nature of turbulent premixed bluff-body stabilized flames at elevated pressure and near lean blow-off <i>A.W. Skiba, T.F. Guiberti, W.R. Boyette, W.L. Roberts, E. Mastorakos</i>
12:10	4G07: Coherent Raman imaging thermometry with <i>in-situ</i> referencing of the impulsive excitation efficiency <i>F. Mazza, L. Castellanos, D. Kliukin, A. Bohlin</i>	4H07: Molecular content of nascent soot: Family characterization using two-step laser desorption laser ionization mass spectrometry <i>H. Sabbah, M. Commodo, F. Picca, G. de Falco, P. Minutolo, A. D'Anna, C. Joblin</i>	4J07: Instability transition of a jet diffusion flame in quiescent environment <i>H. Zhang, X. Xia, Y. Gao</i>	4K07: Spontaneous initiation and development of hydrogen-oxygen detonation with ozone sensitization <i>W. Han, W. Liang, C. Wang, J. Wen, C.K. Law</i>	4L07: The Influence of spanwise nonuniformity on lean blowoff in bluff body stabilized turbulent premixed flames <i>C.A. Fugger, A.W. Caswell</i>
12:30	SESSIONS END AT 12:30 Recognition Ceremony – <i>Replay at 12:30</i>				

Friday, 29 January 2021

(Room 3)

PLENARY LECTURE – 8:30 am

Combustion Dynamics of Large-Scale Wildfires*Naian Liu, University of Science and Technology**J. Lei, W. Gao, H. Chen, X. Xie**Chairs: O. Fujita and P. Pepiot*

Transfer (10 minutes)

Room	Room 1	Room 2	Room 3	Room 4	Room 5	Room 6
	Gas-Phase Reaction Kinetics <i>Chairs:</i> <i>K. Brezinsky</i> <i>F. Zhang</i>	Laminar Flames <i>Chairs:</i> <i>S. Deng</i> <i>Z. Huang</i>	Gas-Phase Reaction Kinetics II <i>Chairs:</i> <i>C.F. Goldsmith</i> <i>W. Pitz</i>	Soot, Nano & Large Molecules <i>Chairs:</i> <i>J. Camacho</i>	Solid Fuel <i>Chairs:</i> <i>J. Gao</i>	New Concepts <i>Chairs:</i> <i>L. Jiang</i>
9:40	5A01: Acetaldehyde oxidation at elevated pressure <i>H. Hashemi, J.M. Christensen, P. Marshall, P. Glarborg</i>	5B01: Effects of Schmidt number on non-monotonic liftoff height behavior in laminar coflow-jet flames with diluted methane and ethylene <i>K.H. Van, S.H. Oh, M.S. Cha, C.S. Yoo, J. Park, S.H. Chung</i>	5C01: Determination of rate constants for thermoneutral H-abstraction reactions: Allylic hydrogen abstraction from 1,5-hexadiene by allyl radical <i>C. Huang, P. Zhang, J. Wang, S. Kang, F. Zhang, C.K. Law, B. Yang</i>	5D01: Surface properties of heterogeneous polycyclic aromatic hydrocarbon clusters <i>K. Bowal, L. Pascazio, H. Wang, D. Chen, M. Kraft</i>	5E01: Critical condition relevant to the extinction of a carbon particle in the course of combustion <i>A. Makino, H. Sano</i>	5F01: Dynamics of laminar ethylene lifted flame with ozone addition <i>B. Wu, M. Hastings, W. Sun, T. Ombrello, C. Carter</i>
10:00	5A02: Studies of high-pressure <i>n</i> -butane oxidation with CO ₂ dilution up to 100 atm using a supercritical pressure jet-stirred reactor <i>H. Zhao, C. Yan, T. Zhang, G. Ma, M.J. Souza, C. Zhou, Y. Ju</i>	5B02: Effect of hydrogen enrichment of laminar ethylene diffusion flames on thermal structure and soot yields at pressures up to 10 bar <i>S.S. Yang, A.E. Karatas, Ö.L. Gülder</i>	5C02: Kinetic study of reaction C ₂ H ₅ + HO ₂ in a photolysis reactor with time-resolved faraday rotation spectroscopy <i>H. Zhong, C. Yan, C.C. Teng, G. Ma, G. Wysocki, Y. Ju</i>	5D02: Evolution of MoO ₃ nanobelts and nanoplatelets formation with flame synthesis <i>C. Ma, X. Zou, A. Li, H. Li, S. Rigopoulos, L. Zhu, Z. Huang</i>	5E02: Counter-current flame propagation in a cylindrical bed of activated carbon saturated with artificial volatile matter in an upward flow of O ₂ /N ₂ mixture <i>X. Qi, S. Zhou, J. Gao, M. Zhu, Z. Zhang, D. Zhang</i>	5F02: Experimental feasibility of tailored porous media burners enabled via additive manufacturing <i>S. Sobhani, P. Muhunthan, E. Boigné, D. Mohaddes, M. Ihme</i>

Room	Room 1	Room 2	Room 3	Room 4	Room 5	Room 6
	Gas-Phase Reaction Kinetics <i>Chairs:</i> <i>K. Brezinsky</i> <i>F. Zhang</i>	Laminar Flames <i>Chairs:</i> <i>S. Deng</i> <i>Z. Huang</i>	Gas-Phase Reaction Kinetics II <i>Chairs:</i> <i>C.F. Goldsmith</i> <i>W. Pitz</i>	Soot, Nano & Large Molecules <i>Chairs:</i> <i>J. Camacho</i>	Solid Fuel <i>Chairs:</i> <i>J. Gao</i>	New Concepts <i>Chairs:</i> <i>L. Jiang</i>
10:20	5A03: High pressure ignition delay times of H ₂ /CO mixture in carbon dioxide and argon diluent <i>M. Karimi, B. Ochs, W. Sun, D. Ranjan</i>	5B03: Effect of ammonia addition on suppressing soot formation in methane co-flow diffusion flames <i>M.J. Montgomery, H. Kwon, J.A.H. Dreyer, Y. Xuan, C.S. McEnally, L.D. Pfeifferle</i>	5C03: Kinetics and thermochemistry of cyclohexadienes reactions with hydroxyl radicals <i>D. Liu, B.R. Giri, M. Szőri, B. Viskolcz, L.K. Huynh, A. Farooq</i>	5D03: Reaction pathways of molecular growth for bay-region methyl-substituted polycyclic aromatic hydrocarbons during supercritical pyrolysis of <i>n</i> -decane, as determined from experiments with 4-methylchrysene dopant <i>K. Vutukuru, A.R. Mali, M.J. Wornat</i>	5E03: Aluminum-propane-air hybrid flames in a Hele-Shaw cell <i>J. Palečka, J. Park, S. Goroshin, J.M. Bergthorson</i>	5F03: Numerical study of combustion regimes in thermally coupled system with solid phase reaction and premixed gas flame in porous medium <i>E.V. Sereshchenko, R.V. Fursenko, S.S. Minaev</i>

Friday, 29 January 2021

(Room 3)
PLENARY LECTURE – 8:30 am**Combustion Dynamics of Large-Scale Wildfires***Naian Liu, University of Science and Technology**J. Lei, W. Gao, H. Chen, X. Xie**Chairs: O. Fujita and P. Pepiot*

Transfer (10 minutes)

Room	Room 7	Room 8	Room 9	Room 10	Room 11
	Reciprocating IC Engines <i>Chairs:</i> <i>K. Senecal</i>	Fire Research <i>Chairs:</i> <i>C. Fernandez-Pello</i>	Fire Research II <i>Chairs:</i> <i>S. McAllister</i> <i>S. Suzuki</i>	Stationary & Low Carbon <i>Chairs:</i> <i>R. Axelbaum</i>	Diagnostics <i>Chairs:</i> <i>A. Fuentes</i> <i>X. Liu</i>
9:40	5G01: Endoscopic fuel film, chemiluminescence, and soot incandescence imaging in a direct-injection spark-ignition engine <i>M.A. Shahbaz, N. Jüngst, S.A. Kaiser</i>	5H01: Experimental study on the evolution of heat feedback in multiple pool fires <i>F. Ge, A. Simeoni, J. Ji, H. Wan</i>	5J01: Numerical and experimental studies of extinguishment of cup-burner flames by C ₆ F ₁₂ O <i>F. Takahashi, V.R. Katta, V.I. Babushok, G.T. Linteris</i>	5K01: Identification of combustion mode under MILD conditions using chemical explosive mode analysis <i>N.A.K. Doan, S. Bansude, K. Osawa, Y. Minamoto, T. Lu, J.H. Chen, N. Swaminathan</i>	5L01: Soot formation and growth with palladium acetylacetonate-toluene injection in ethylene base flames investigated by <i>in situ</i> synchrotron small-angle Xray scattering <i>F. Zhang, C. Wang, W. Han, Y. Zou, J. Wang, S. Seifert, R.E. Winans</i>
10:00	5G02: Experimental and numerical investigation of temperature fluctuations in the near-wall region of an optical reciprocating engine <i>M.K. Alzuabi, A. Wu, V. Sick</i>	5H02: Mixture fraction analysis of combustion products in medium-scale pool fires <i>R. Falkenstein-Smith, K. Sung, A. Hamins</i>	5J02: Experimental study of water droplet impact on burning wood surfaces <i>A. Albadi, Y. Zhang</i>	5K02: An a-priori assessment of the Partially Stirred Reactor (PaSR) model for MILD combustion <i>S. Iavarone, A. Péquin, Z. Chen, N.A.K. Doan, N. Swaminathan, A. Parente</i>	5L02: Detection of the keto-enol tautomerization in acetaldehyde, acetone, cyclohexanone, and methyl vinyl ketone with a novel VUV light source <i>D.E. Couch, Q. L.D. Nguyen, A. Liu, D.D. Hickstein, H.C. Kapteyn, M.M. Murnane, N.J. Labbe</i>
10:20	5G03: Simultaneous rainbow Schlieren deflectometry and OH* chemiluminescence Imaging of a diesel spray flame in constant pressure flow rig <i>A. Parker, C.T. Wanstall, S. Reggeti, J.A. Bittle, A.K. Agrawal</i>	5H03: Experimental study on mass burning rate and heat feedback mechanism of pair of unequal circular pool fires of heptane <i>H. Wan, L. Yu, J. Ji</i>	5J03: Data driven forecast of droplet combustion <i>X. Xi, J.L. Torero, W. Jahn</i>	5K03: Study of MILD combustion using LES and advanced analysis tools <i>Z. Li, S. Tomasch, Z.X. Chen, A. Parente, I.S. Ertesvåg, N. Swaminathan</i>	5L03: Detecting combustion intermediates via broadband chirped-pulse microwave spectroscopy <i>S.M. Fritz, P. Mishra, J. Wullenkord, P.G. Fugazzi, K. Kohse-Höinghaus, T.S. Zwier, N. Hansen</i>

10:40	BREAK (30 minutes)					
Room	Room 1	Room 2	Room 3	Room 4	Room 5	Room 6
	Gas-Phase Reaction Kinetics <i>Chairs:</i> K. Brezinsky F. Zhang	Laminar Flames <i>Chairs:</i> S. Deng Z. Huang	Gas-Phase Reaction Kinetics II <i>Chairs:</i> C.F. Goldsmith W. Pitz	Turbulent Flames <i>Chairs:</i> K.-T. Kim S. Som	Solid Fuel <i>Chairs:</i> C. Shaddix D. Yu	Spray, Droplet & Supercritical <i>Chairs:</i> R. Kurose B. Shotorban
11:10	5A04: An extended methodology for automated calculations of non-Boltzmann kinetic sequences: $H + C_2H_2 + X$ and combustion impact <i>L. Lei, M.P. Burke</i>	5B04: Constrained-temperature solutions of coflow laminar diffusion flames <i>N.J. Kempema, R.R. Dobbins, M.B. Long, M.D. Smooke</i>	5C04: Ammonia-methane interaction in jet-stirred and flow reactors: An experimental and kinetic modeling study <i>S. Arunthanayothin, A. Stagni, Y. Song, O. Herbinet, T. Faravelli, F. Battin-Leclerc</i>	5D04: Effects of the cold wall boundary on the flame structure and flame speed in premixed turbulent combustion <i>P. Zhao, L. Wang, N. Chakraborty</i>	5E04: Effect of phosphorus (P) on the structure and reactivity of biochars produced from the pyrolysis of acid-washed biomass loaded with P of various forms <i>X. Chen, H. Wu</i>	5F04: Dynamic self-tuning, flickering and shedding in buoyant droplet diffusion flames under acoustic excitation <i>K. Pandey, S. Basu, B. Krishan, V. Gautham</i>
11:30	5A05: Oxidation of pentan-2-ol – Part I: Theoretical investigation on the decomposition and isomerization reactions of pentan-2-ol radicals <i>J. Bai, Y. Zhu, C.-W. Zhou, G. Dayma, Z. Serinyel, P. Dagaut</i>	5B05: Kinetic effects of NO addition on <i>n</i> -dodecane cool and warm diffusion flames <i>M. Zhou, O.R. Yehia, C.B. Reuter, C.M. Burger, Y. Murakami, H. Zhao, Y. Ju</i>	5C05: Insights into the interaction kinetics between propene and NO_x at moderate temperatures with experimental and modeling methods <i>W. Yuan, L. Ruwe, S. Schwarz, C. Cao, J. Yang, O. Deutschmann, K. Kohse-Höinghaus, F. Qi</i>	5D05: DNS analysis of boundary layer flashback in turbulent flow with wall-normal pressure gradient <i>J.R. Bailey, E.S. Richardson</i>	5E05: Effect of gasification reactions on biomass char conversion under pulverized fuel combustion conditions <i>H. Luo, Z. Lu, P.A. Jensen, P. Glarborg, W. Lin, K. Dam-Johansen, H. Wu</i>	5F05: Reference data set for three-dimensional measurements of double droplet combustion of <i>p</i> -xylene <i>H. Li, N. Riefler, T. Wriedt, L. Mädler</i>
11:50	5A06: Proceeding on the riddles of ketene pyrolysis by applying <i>ab initio</i> quantum chemical computational methods in a detailed kinetic modeling study <i>H. Minwegen, M. Döntgen, Y. Fenard, P. Morsch, K.A. Heufer</i>	5B06: Experimental and computational investigation of extinction and autoignition of propane and <i>n</i> -heptane in nonpremixed flows <i>M. Hunyadi-Gall, K. Narayanaswamy, E. Hockner, M. Innerkofler, L. Badiali, K. Seshadri, F. Williams</i>	5C06: An experimental and kinetic modelling study on nitric oxide formation in premixed C_3 alcohols flames <i>G. Capriolo, C. Brackmann, M. Lubrano Lavadera, T. Methling, A.A. Konnov</i>	5D06: Insights into flashback-to-flameholding transition of hydrogen-rich stratified swirl flames <i>R. Ranjan, N.T. Clemens</i>	5E06: The effect of CO on CO_2 -char gasification <i>Y. Zheng, E. Marek, S.A. Scott</i>	5F06: Spontaneous ignition of droplet pairs of <i>n</i> -decane and <i>n</i> -tetradecane in microgravity <i>C. Eigenbrod, V. Wagner, W. Paa</i>

Room	Room 1	Room 2	Room 3	Room 4	Room 5	Room 6
	Gas-Phase Reaction Kinetics <i>Chairs:</i> <i>K. Brezinsky</i> <i>F. Zhang</i>	Laminar Flames <i>Chairs:</i> <i>S. Deng</i> <i>Z. Huang</i>	Gas-Phase Reaction Kinetics II <i>Chairs:</i> <i>C.F. Goldsmith</i> <i>W. Pitz</i>	Turbulent Flames <i>Chairs:</i> <i>K.-T. Kim</i> <i>S. Som</i>	Solid Fuel <i>Chairs:</i> <i>C. Shaddix</i> <i>D. Yu</i>	Spray, Droplet & Supercritical <i>Chairs:</i> <i>R. Kurose</i> <i>B. Shotorban</i>
12:10	5A07: Unimolecular reactions of the resonance-stabilized cyclopentadienyl radicals and their role in the polycyclic aromatic hydrocarbon formation <i>Q. Mao, C. Huang, M. Baroncelli, L. Shen, L. Cai, K. Leonhard, H. Pitsch</i>	5B07: Studies of autoignition-assisted nonpremixed cool flames <i>Y. Murakami, C.B. Reuter, O.R. Yehia, Y. Ju</i>	5C07: On the redox reactions between allyl radicals and NO _x <i>D. Liu, B.R. Giri, M. Szőri, B. Viskolcz, A. Farooq</i>	5D07: Swirl flame boundary layer flashback at elevated pressure: Modes of propagation and effect of hydrogen addition <i>D. Ebi, R. Bombach, P. Jansohn</i>	5E07: The transformation and fate of sulphur during CO ₂ gasification of a spent tyre pyrolysis char <i>J. Zhang, M. Zhu, I. Jones, C.O. Okoye, Z. Zhang, D. Zhang</i>	5F07: Comparison of the burning of a single diesel droplet with volume and surface contamination of soot particles <i>A.F. Abdul Rasid, Y. Zhang</i>

10:40	BREAK (30 minutes)				
Room	Room 7	Room 8	Room 9	Room 10	Room 11
	Reciprocating IC Engines Chairs: <i>A.L. Boehman</i>	Fire Research Chairs: <i>C. Fernandez-Pello</i>	Fire Research II Chairs: <i>S. McAllister</i> <i>S. Suzuki</i>	Stationary & Low Carbon Chairs: <i>R. Axelbaum</i>	Gas Turbine & Rocket Engine Chairs: <i>T. Fujimori</i>
11:10	5G04: Bowl piston geometry as an alternative to enlarged crevice pistons for rapid compression machines <i>D.K. Dasrath, R. Biwalkar, S. Singh, W.F. Northrop</i>	5H04: Effect of core metal on flame spread and extinction for horizontal electrical wire with applied AC electric fields <i>M.S. Kang, S.H. Park, C.S. Yoo, J. Park, S.H. Chung</i>	5J04: Opposed-flow flame spread over carbon fiber reinforced plastic under variable flow velocity and oxygen concentration: The effect of in-plane thermal isotropy and anisotropy <i>Y. Kobayashi, K. Terashima, R. Oiwa, M. Tokoro, S. Takahashi</i>	5K04: Mechanistic insights into effect of feeding rate on soot formation during rapid pyrolysis of biomass model components in a drop-tube furnace at high temperature <i>C. Deng, H. Wu</i>	5L04: Instability and mode transition analysis of a hydrogen-rich combustion in a model afterburner <i>S. Nakaya, K. Omi, T. Okamoto, Y. Ikeda, C. Zhao, M. Tsue, H. Taguchi</i>
11:30	5G05: Autoignition and detonation development from a hot spot inside a closed chamber: Effects of end wall reflection <i>P. Dai, Z. Chen, X. Gan, M.A. Liberman</i>	5H05: Predicting cell-to-cell failure propagation and limits of propagation in lithium-ion cell stacks <i>A. Kurzawski, L. Torres-Castro, R. Shurtz, J. Lamb, J.C. Hewson</i>	5J05: Stabilized combustion of circular fuel duct with liquid oxygen <i>A. Tsuji, Y. Saito, L. Kamps, M. Wakita, H. Nagata</i>	5K05: Fundamental investigation into characteristics of particulate matter produced from rapid pyrolysis of biochar in a drop-tube furnace at 1300 °C <i>C. Deng, S.B. Liaw, H. Wu</i>	5L05: Vortex merging events during amplitude switching in mixed-mode pressure oscillations in a partially premixed backward facing combustor <i>R. Sampath, V. Ramanan, N. Baladandayuthapani, S.R. Chakravarthy</i>
11:50	5G06: Hydrogen oxidation near the second explosion limit in a flow reactor <i>Z. Lu, J. Jiang, Y. Yang, J. Lacey, M.J. Brear</i>	5H06: Effect of transverse flow on flame spread and extinction over polyethylene-insulated wires <i>Y. Ma, X. Zhang, Y. Lu, J. Lv, N. Zhu, L. Hu</i>	5J06: Flame spread behavior characterization of discrete fuel array under a forced flow <i>G. Di Cristina, N.S. Skowronski, A. Simeoni, A.S. Rangwala, S.-k. Im, L. Hu</i>	5K06: The role of DME addition on the evolution of soot and soot precursors in laminar ethylene jet flames <i>H.A. Ahmed, M.A. Ashraf, S.A. Steinmetz, M.J. Dunn, A.R. Masri</i>	5L06: Influence of asymmetric flame transfer functions on can-to-can acoustic interactions between two lean-premixed combustors <i>H. Jegal, J. Gu, L. K.B. Li, K.T. Kim</i>
12:10	5G07: Effects of isoalcohol blending with gasoline on autoignition behavior in a rapid compression machine: Isopropanol and isobutanol <i>S.S. Goldsborough, S. Cheng, D. Kang, C. Saggese, S.W. Wagnon, W.J. Pitz</i>	5H07: Effect of ambient pressure on the extinction limit for opposed flame spread over an electrical wire in microgravity <i>M. Nagachi, J.-M. Citerne, H. Dutilleul, A. Guibaud, G. Jomaas, G. Legros, N. Hashimoto, O. Fujita</i>	5J07: Effects of ambient conditions on concurrent-flow flame spread over a wide thin solid in microgravity <i>C. Li, Y.-T. T. Liao</i>	5K07: Importance of flue gas cooling conditions in particulate matter formation during biomass combustion under conditions pertinent to pulverized fuel applications <i>S.B. Liaw, H. Wu</i>	5L07: Experimental investigation of combustion instabilities of a mesoscale multinozzle array in a lean-premixed combustor <i>H. Kang, T. Lee, U. Jin, K.T. Kim</i>

12:30	BREAK (90 minutes)					
Room	Room 1	Room 2	Room 3	Room 4	Room 5	Room 6
	Gas-Phase Reaction Kinetics <i>Chairs:</i> Y. Yang Z. Wang	Laminar Flames <i>Chairs:</i> D. Knyazkov G. Wang	Topical Review <i>Chairs:</i> H. Im	Turbulent Flames <i>Chairs:</i> Y. Kobayashi A. Steinberg	Solid Fuel <i>Chairs:</i> H. Yang	Spray, Droplet & Supercritical <i>Chairs:</i> S.R. Chakravarthy M. Xu
14:00	5A08: Measurement of time histories of stable intermediates during first stage ignition of n-heptane and its two isomers in a shock tube <i>R. Choudhary, J.J. Girard, S. Clees, S.E. Johnson, J. Shao, D.F. Davidson, R.K. Hanson, A.A. Aradi</i>	5B08: Back to basics – NO concentration measurements in atmospheric lean-to-rich, low-temperature, premixed hydrogen-air flames diluted with argon <i>A. Durocher, M. Meulemans, P. Versailles, G. Bourque, J.M. Bergthorson</i>	5C08: TOPICAL REVIEW Dynamical systems and complex systems theory to study unsteady combustion Raman I. Sujith, <i>Vishnu R. Unni</i>	5D08: Assessing multi-regime combustion in a novel burner configuration with Large Eddy Simulations using tabulated chemistry <i>S. Popp, S. Hartl, D. Butz, D. Geyer, A. Dreizler, L. Vervisch, C. Hasse</i>	5E08: Structures and burning velocities of flames in iron aerosols <i>T. Hazenberg, J.A. van Oijen</i>	5F08: Combustion of aqueous HAN/methanol propellants at high pressures <i>R.E. Ferguson, A.A. Esparza, E. Shafirovich</i>
14:20	5A09: Low- and high-temperature study of n-heptane combustion chemistry <i>L. Ruwe, L. Cai, J. Wullenkord, S.C. Schmitt, D. Felsmann, M. Baroncelli, B. Chen, K. Moshhammer, N. Hansen, H. Pitsch, K. Kohse-Höinghaus</i>	5B09: Combined isochoric and isobaric acquisition methodology for accurate flame speed measurements from ambient to high pressures and temperatures <i>C. Bariki, R. Hesse, F. Halter, H. Pitsch, J. Beeckmann</i>		5D09: Capturing multi-regime combustion in turbulent flames with a virtual chemistry approach <i>G. Maio, M. Cailler, N. Darabiha, B. Fiorina</i>	5E09: Numerical study on K-Cl-S release during devolatilization of pulverized biomass at high temperature <i>H. Fatehi, M. Costa, X.-S. Bai</i>	5F09: Experimental and numerical investigation of high-pressure nitromethane combustion <i>G. Derk, E. Boyer, G.A. Risha, R.A. Yetter, R. Dobbins, M.D. Smooke</i>
14:40	5A10: On the combustion and sooting behavior of standard and hydro-treated jet fuels: An experimental and modeling study on the compositional effects <i>M. Pelucchi, P. Osswald, W. Pejpichestakul, A. Frassoldati, M. Mehl</i>	5B10: Experimental and numerical study of product gas characteristics of ammonia/air premixed laminar flames stabilized in a stagnation flow <i>A. Hayakawa, Y. Hirano, E.C. Okafor, H. Yamashita, T. Kudo, H. Kobayashi</i>		5D10: Characterization of multi-regime reaction zones in a piloted inhomogeneous jet flame with local extinction <i>R.S. Barlow, S. Hartl, C. Hasse, H.C. Cutcher, A.R. Masri</i>	5E10: Particle temperature and potassium release during combustion of single pulverized biomass char particles <i>W. Weng, S. Li, M. Costa, Z. Li</i>	5F10: Experimental and numerical studies of the diluent influence (N ₂ , Ar, He, Xe) on stable premixed methane flames in micro-combustion <i>H. Chouraqui, G. Dayma, G. Ribert, F. Halter, C. Chauveau, P. Dagaut</i>

Room	Room 1	Room 2	Room 3	Room 4	Room 5	Room 6
	Gas-Phase Reaction Kinetics <i>Chairs:</i> <i>Y. Yang</i> <i>Z. Wang</i>	Laminar Flames <i>Chairs:</i> <i>D. Knyazkov</i> <i>G. Wang</i>	Topical Review <i>Chairs:</i> <i>H. Im</i>	Turbulent Flames <i>Chairs:</i> <i>Y. Kobayashi</i> <i>A. Steinberg</i>	Solid Fuel <i>Chairs:</i> <i>H. Yang</i>	Spray, Droplet & Supercritical <i>Chairs:</i> <i>S.R. Chakravarthy</i> <i>M. Xu</i>
15:00	5A11: Oxidation of pentan-2-ol – Part II: Experimental and modeling study <i>G. Dayma, Z. Serinyel, M. Carbonnier, J. Bai, Y. Zhu, C.-W. Zhou, A. Kéromnès, B. Lefort, L. LeMoyné, P. Dagaut</i>	5B11: Structure of premixed flames of propylene oxide: Molecular beam mass spectrometric study and numerical simulation <i>D.A. Knyazkov, A.M. Dmitriev, O.P. Korobeinichev, K.N. Osipova, G. Pio, A.G. Shmakov, E. Salzano</i>	5C11: Insights into the oxidation of propylene oxide through the analysis of experiments and kinetic modeling <i>A. Ramalingam, H. Minwegen, Y. Fenard, K.A. Heufer</i>	5D11: Mixing and scalar dissipation rate in a decaying jet <i>X. Hua, Y. Liu, C. Chen, Y. Hardalupas, A. M.K.P. Taylor</i>	5E11: Insights into aging mechanism of Ti-metal based pyrotechnics and changes in thermo-kinetic characteristics <i>J. Oh, J.J. Yoh</i>	

12:30	BREAK (90 minutes)				
Room	Room 7	Room 8	Room 9	Room 10	Room 11
	Reciprocating IC Engines <i>Chairs:</i> <i>B. Johansson</i> <i>B. Wagner</i>	Fire Research <i>Chairs:</i> <i>Y. Gopala</i> <i>S. Son</i>	Fire Research II <i>Chairs:</i> <i>E. Petersen</i> <i>A. Singh</i>	Stationary & Low Carbon <i>Chairs:</i> <i>N. Labbe</i> <i>H. Zhang</i>	Gas Turbine & Rocket Engine <i>Chairs:</i> <i>K.-T. Kim</i>
14:00	5G08: Understanding the synergistic blending octane behaviour of 2-methylfuran <i>V.S.B. Shankar, Y. Li, E. Singh, S.M. Sarathy</i>	5H08: Flame lengths in two directions underneath a ceiling induced by line-source fire: An experimental study and global model <i>X. Zhang, L. Hu, X. Zhang</i>	5J08: Electric field measurement in electric-field modified flames <i>T.D. Butterworth, M.S. Cha</i>	5K08: Correlations between vapor-phase Na/K/As adsorption capacities of kaolinite and temperature-dependent derivation of its Al-containing groups <i>H. Xing, H. Liu, X. Zhang, B. Huang, Y. Huang, H. Hu, H. Yao</i>	5L08: Investigation on the intrinsic thermoacoustic instability of a lean-premixed swirl combustor with an acoustic liner <i>L. Xu, J. Zheng, G. Wang, Z. Feng, X. Tian, L. Li, F. Qi</i>
14:20	5G09: On the importance of species selection for the formulation of fuel surrogates <i>D. Kim, A. Violi</i>	5H09: Correction of laser-induced incandescence signal trapping in soot measurement in a microgravity boundary layer laminar diffusion flame <i>F. Escudero, J.J. Cruz, F. Liu, A. Fuentes</i>	5J09: Estimating flammability limits through predicting non-adiabatic laminar flame properties <i>V.J. Mascarenhas, C.N. Weber, P.R. Westmoreland</i>	5K09: Understanding the effect of CaO on HCN conversion and NO _x formation during the circulating fluidized combustion process using DFT calculations <i>L.-N. Wu, Z.-Y. Tian, W. Qin, X.-Y. Hu, C.-Q. Dong</i>	5L09: Control of intrinsic thermoacoustic instabilities using hydrogen fuel <i>A. Ghani, W. Polifke</i>
14:40	5G10: Evaluating a novel gasoline surrogate containing isopentane using a rapid compression machine and an engine <i>S. Gail, R.F. Cracknell, D. Corrigan, A. Festa, V. Shankar, B. Poulet, G. Lovett, R.D. Büttgen, K.A. Heufer, R. Mariconti, M. Cucchi, F. Mortellaro</i>	5H10: VWETKF for wildfire propagation prediction employing observations with missing values and/or spatial variations of error variance <i>T. Zhou, L. Ding, J. Ji, S. Luo</i>	5J10: On the prediction of hot spot induced ignition by the Livengood-Wu integral <i>X. Chen, P. Zhao, P. Dai, Z. Chen</i>	5K10: Alleviation of thermal corrosion caused by molten ash on heat-exchange tubes in MSW incinerators: Effects of Ni-, Co-, Fe-based HVOF coatings <i>X. Zhang, H. Liu, T. Chen, H. Li, G. Wang, Y. Wu, H. Yao</i>	5L10: Flame dynamics during intermittency and secondary bifurcation to longitudinal thermoacoustic instability in a swirl-stabilized annular combustor <i>A. Roy, S. Singh, A. Nair, S. Chaudhuri, R.I. Sujith</i>
15:00	5G11: Impact of preferential vaporization on combustion chamber deposit generation from a gasoline surrogate: A parametric study <i>A. Roque, J. Hélie, F. Foucher</i>	5H11: Piloted ignition of thermally thick PMMA exposed to constant thermal radiation in cross forced airflow <i>D. Lai, J. Gong, X. Zhou, X. Ju, Y. Zheng, L. Yang, F. Peng</i>	5J11: A multi-step reaction scheme to simulate self-heating ignition of coal: Effects of oxygen adsorption and smouldering combustion <i>H. Yuan, F. Richter, G. Rein</i>	5K11: Prediction and validation of ash sticking probability under fouling conditions in pulverized coal combustion <i>Y. Zhao, Q. Huang, Q. Yao, S. Li</i>	5L11: System identification and early warning detection of thermoacoustic oscillations in a turbulent combustor using its noise-induced dynamics <i>M. Lee, K.T. Kim, V. Gupta, L. K.B. Li</i>

BREAK (30 minutes)						
Room	Room 1	Room 2	Room 3	Room 4	Room 5	Room 6
	Gas-Phase Reaction Kinetics <i>Chairs:</i> Z. Wang Y. Yang	Laminar Flames <i>Chairs:</i> F. Halter	Gas Phase Reaction Kinetics II <i>Chairs:</i> T. Faravelli B. Sirjean	Turbulent Flames <i>Chairs:</i> H. Pitsch W. Polifke	Solid Fuel <i>Chairs:</i> S. Gallier	Spray, Droplet & Supercritical <i>Chairs:</i> S.R. Chakravarthy M. Xu
15:50	5A12: Combustion of ethylamine, dimethylamine and diethylamine: Theoretical and kinetic modeling study <i>C. A.R. Pappijn, F.H. Vermeire, R. Van de Vijver, M.-F. Reyniers, G.B. Marin, K.M. Van Geem</i>	5B12: Resolving flame thickness using high-speed chemiluminescence imaging of OH* and CH* in spherically expanding methane-air flames <i>M.A. Turner, T.T. Paschal, P. Parajuli, W.D. Kulatilaka, E.L. Petersen</i>	5C12: A theoretical kinetics study on low-temperature oxidation of n-C ₄ H ₉ radicals <i>J. Duan, J. Ji, L. Ye, Y. Zhai, L. Zhang</i>	5D12: On the validity of Damköhler's second hypothesis in statistically planar turbulent premixed flames in the thin reaction zones regime <i>U. Ahmed, A. Herbert, N. Chakraborty, M. Klein</i>	5E12: Ignition and combustion behaviour of zirconium-based pyrotechnic igniters and pyrotechnic delays under aging <i>K. Gnanaprakash, B. Han, J.J. Yoh</i>	5F12: A molecular dynamics study of binary-component n-alkane fuel vaporization characteristics at sub/supercritical nitrogen environments <i>Y. Zhang, M. Jia, P. Yi, Y. Chang, Z. He, Q. Wang</i>
16:10	5A13: Experimental and kinetic modeling study of oxidation of acetonitrile <i>M.U. Alzueta, M. Guerrero, Á. Millera, P. Marshall, P. Glarborg</i>	5B13: Spatially resolved measurements of soot and gaseous precursors in ethylene counterflow diffusion flames up to 32atm <i>K. Gleason, F. Carbone, A. Gomez</i>	5C13: Thermal decomposition of furans with oxygenated substituents: A combined experimental and quantum chemical study <i>F.H. Vermeire, J. Yang, C. Cao, Z. Liu, G.B. Marin, K.M. Van Geem</i>	5D13: Particle pair dispersion and eddy diffusivity in a high-speed premixed flame <i>R. Darragh, C. A.Z. Towery, A.Y. Poludnenko, P.E. Hamlington</i>	5E13: High-speed multi-spectral imaging of the hypergolic ignition of ammonia borane <i>M.J. Baier, A.J. McDonald, K.A. Clements, C.S. Goldenstein, S.F. Son</i>	5F13: Surrogate-based modeling for emulation of supercritical injector flow and combustion <i>X. Wang, Y.-H. Chang, Y. Li, V. Yang, Y.-H. Su</i>
16:30	5A14: Experimental and modeling study of laminar burning velocities and nitric oxide formation in premixed ethylene/air flames <i>M.L. Lavadera, C. Brackmann, A.A. Konnov</i>	5B14: The effect of elevated reactant temperatures on soot nanostructures in a coflow diffusion ethylene flame <i>C. Chu, A. Naseri, T. Mitra, M. Dadsetan, A. Sediako, M.J. Thomson</i>	5C14: Insight into the low-temperature oxidation of dimethylamine radicals <i>Y. Shang, H. Ning, J. Shi, S.-N. Luo</i>	5D14: Topological imaging of turbulent premixed, prevaporized liquid fuel jet flames using CH (C-X) band PLIF <i>T.A. McManus, A. Gandomkar, C. Carter, P.M. Allison</i>	5E14: A tabulated chemistry method for heterogeneous solid propellant combustion <i>R. Mercier, L. Lacassagne, M. Plaud</i>	5F14: Spray-flame synthesis of LaMO ₃ (M = Mn, Fe, Co) perovskite nanomaterials: Effect of spray droplet size and esterification on particle size distribution <i>S. Angel, F. Schneider, S. Apazeller, W. Kaziur-Cegla, T.C. Schmidt, C. Schulz, H. Wiggers</i>

Room	Room 1	Room 2	Room 3	Room 4	Room 5	Room 6
	Gas-Phase Reaction Kinetics <i>Chairs:</i> <i>Z. Wang</i> <i>Y. Yang</i>	Laminar Flames <i>Chairs:</i> <i>F. Halter</i>	Gas Phase Reaction Kinetics II <i>Chairs:</i> <i>T. Faravelli</i> <i>B. Sirjean</i>	Turbulent Flames <i>Chairs:</i> <i>H. Pitsch</i> <i>W. Polifke</i>	Solid Fuel <i>Chairs:</i> <i>S. Gallier</i>	Spray, Droplet & Supercritical <i>Chairs:</i> <i>S.R. Chakravarthy</i> <i>M. Xu</i>
16:50	5A15: Reactive localized π -radicals on rim-based pentagonal rings: Properties and concentration in flames <i>A. Menon, J. Martin, G. Leon, D. Hou, L. Pascazio, X. You, M. Kraft</i>	5B15: Soot emission reduction in oxygenated co-flow jet flames <i>K.C. Kalvakala, V.R. Katta, S.K. Aggarwal</i>	5C15: Probing the antiknock effect of anisole through an ignition, speciation and modeling study of its blends with isooctane <i>C.S. Mergulhão, H.-H. Carstensen, H. Song, S.W. Wagnon, W.J. Pitz, G. Vanhove</i>	5D15: A comparison of entrainment velocity and displacement speed statistics in different regimes of turbulent premixed combustion <i>N. Chakraborty, M. Klein, H.G. Im</i>	5E15: Hypergolic combustion of boron based propellants <i>M.B. Padwal, D.A. Castaneda, B. Natan</i>	
	SESSIONS END AT 17:10 See you in Vancouver, Canada, 2022					

15:20	BREAK (30 minutes)				
Room	Room 7	Room 8	Room 9	Room 10	Room 11
	Reciprocating IC Engines <i>Chairs:</i> <i>C. Westbrook</i>	New Concepts <i>Chairs:</i> <i>T. Li</i> <i>X. Zhang</i>	Fire Research <i>Chairs:</i> <i>O. Senneca</i> <i>A. Singh</i>	Stationary & Low Carbon <i>Chairs:</i> <i>M. de Joannon</i> <i>N. Worth</i>	Gas Turbine & Rocket Engine <i>Chairs:</i> <i>F. Güthe</i>
15:50	5G12: Numerical study on the stratification thickness dependence of ethanol flame speed under engine-relevant conditions <i>Q. Fan, Y. Qi, Y. Wang, Z. Wang</i>	5H12: Controlled dy-doping to nickel-rich cathode materials in high temperature aerosol synthesis <i>C. Yan, X. Yang, H. Zhao, H. Zhong, G. Ma, Y. Qi, B.E. Koel, Y. Ju</i>	5J12: Thermal dynamics of deposited firebrands using phosphor thermometry <i>Y.M. Abul-Huda, N. Bouvet</i>	5K12: Flamelet LES of a swirl-stabilized multi-stream pulverized coal burner in air and oxy-fuel atmospheres with pollutant formation <i>X. Wen, H. Nicolai, H. Schneider, L. Cai, J. Janicka, H. Pitsch, C. Hasse</i>	5L12: Self-excited longitudinal and azimuthal modes in a pressurised annular combustor <i>M. Mazur, Y.H. Kwah, T. Indlekofer, J.R. Dawson, N.A. Worth</i>
16:10	5G13: Experimental investigation on ammonia combustion behavior in a spark-ignition engine by means of laminar and turbulent expanding flames <i>C. Lhuillier, P. Brequigny, F. Contino, C. Mounaïm-Rousselle</i>	5H13: Flame spray pyrolysis synthesis and H ₂ S sensing properties of CuO-doped SnO ₂ nanoparticles <i>Z. Chen, Z. Xu, H. Zhao</i>	5J13: Ignition of pine needle fuel bed by the coupled effects of a hot metal particle and thermal radiation <i>W. Fang, Z. Peng, H. Chen</i>	5K13: Large Eddy Simulation of Cambridge bluff-body coal (CCB2) flames with a flamelet progress variable model <i>J. Xing, K. Luo, Y. Chen, O.T. Stein, A. Kronenburg, K.H. Luo, C. Hasse, J. Fan</i>	5L13: Cross-frequency coupling during thermoacoustic oscillations in a pressurized aeronautical gas turbine model combustor <i>M.L. Passarelli, T.M. Wabel, A. Cross, K. Venkatesan, A.M. Steinberg</i>
16:30	5G14: Numerical simulation of a mixed-mode reaction front in a PPC engine <i>C. Ibron, H. Fatehi, Z. Wang, P. Stamatoglou, M. Lundgren, M. Aldén, M. Richter, Ö. Andersson, X.-S. Bai</i>	5H14: Reduced simulation of the evaporation and decomposition of droplets and films of urea-water solution in exhaust gas environment <i>M. Stein, V. Bykov, U. Maas</i>	5J14: Deformation of wood slice in fire: Interactions between heterogeneous chemistry and thermomechanical stress <i>S. Wang, P. Ding, S. Lin, X. Huang, A. Usmani</i>	5K14: Prediction improvements of ignition characteristics of isolated coal particles with a one-dimensional transient model <i>W. Yang, B. Liu, H. Zhang, Y. Zhang, Y. Wu, J. Lyu</i>	5L14: Nonlinear interaction between clustered unstable thermoacoustic modes in can-annular combustors <i>J.G. R. von Saldern, J.P. Moeck, A. Orchini</i>
16:50	5G15: Efficient bifurcation and tabulation of multi-dimensional combustion manifolds using deep mixture of experts: An <i>a priori</i> study <i>O. Owoyele, P. Kundu, P. Pal</i>	5H15: Transformation of <i>n</i> -heptane using an in-liquid submerged microwave plasma jet of argon <i>A. Hamdan, J.-L. Liu, M.S. Cha</i>	5J15: Evaluation of a zone-based model for commodity classification using a representative fuel <i>D. Han, Y. Xin</i>	5K15: Experimental and modeling study of H ₂ S formation and evolution in air staged combustion of pulverized coal <i>Z. Li, H. Chen, Z. Zhang</i>	
SESSIONS END AT 17:10					
See you in Vancouver, Canada, 2022					

Work-in-Progress Posters**Gas-Phase Reaction**

- GPR-01: Reaction kinetics of C1-C4 linear dialkylethers with hydroxyl radicals
M. Belmekki, R.G. Binod, D. Liu, A. Farooq
- GPR-02: Quantification of intermediates in dimethyl ether oxidation
D. Couch, L. Sheps
- GPR-03: Automatic validation and analysis of kinetic models
A. Cuoci, M. Pelucchi, A. Stagni, T. Faravelli
- GPR-04: First and second O₂ addition in low-temperature cyclopentane oxidation
A. Dewyer, M. Demireva, L. Sheps, J. Zador
- GPR-05: Experimental and kinetic modeling study of the low-temperature oxidation of 2,5-dimethyltetrahydrofuran
M. Ding, Y. Zou, Q. Wang, J. Wang, J. Yang, Q. Liang
- GPR-08: Chemical modeling of ozone-assisted low-temperature oxidation of methyl crotonate
X. He, K. Moshhammer, N. Hansen
- GPR-09: Reactivity of pesticides under fires conditions: Carbamate derivatives
J. Honorien, R. Fournet, P.-A. Glaude, B. Sirjean
- GPR-10: Automatic PES mapping from Reaxff simulations with ChemTraYzer
C. Huang, F. Schmalz, W. Kopp, L. Krep, L. Kröger, M. Döntgen, K. Leonhard
- GPR-11: Effect of hydrogen blending on the high temperature auto-ignition of ammonia at elevated pressure
X. Jiang, J. Chen, R. Zhang, Z. Huang
- GPR-12: The ignition delay times of H₂ under the O₂/Ar/N₂ atmospheres
S. Jin, B. Shu, X. He, R. Fernandes, L. Li
- GPR-13: Oxidation of dimethyl carbonate and diethyl carbonate in a micro flow reactor with a controlled temperature profile
K. Kanayama, S. Takahashi, S. Morikura, H. Nakamura, T. Tezuka, K. Maruta
- GPR-14: Toward machine learned highly reduced kinetic models for natural gas combustion
M. Kelly, S. Dooley
- GPR-15: Autoignition of furan-blended gasoline in a rapid compression machine
S. Kiuchi, T. Funabashi, M. Naruke, S. Sakaida, K. Tanaka, M. Konno
- GPR-16: Systematic testing of highly reduced mechanisms for high-temperature ignition
W.A. Kopp, O. Niessen, H. Minwegen, J. Beeckmann, H. Pitsch, K.A. Heufer, K. Leonhard
- GPR-17: Determination of relevant parameters related to quenching distance
C.H. Laueremann, T.C. Hayashi, A.Z. Mendiburu
- GPR-18: Numerical simulation study of a new shock wave reactor for hydrocarbon cracking
J. Liu, B. Xiao, S. Yang, C. Zhou, G. Wang

- GPR-19: Empirical evaluation of the efficiency of Genetic and Particle Swarm algorithms for kinetic mechanism optimization
P. Sambou, E. El Rassy, A. Matynia
- GPR-20: Understanding how chemical structure affects ignition-delay-time ϕ -sensitivity
R. Messerly, J. Luecke, P. St. John, Y. Kim, B. Etz, B. Zigler, R. McCormick, S. Kim
- GPR-21: First-principles based kinetic modeling of nitroplasticizer degradation
R. Messerly, J. Jung, D. Yang, J. Kress, T. Holland
- GPR-22: Modeling dissociative recombination reactions with surface hopping ab initio molecular dynamics
R. Messerly, T. Holland
- GPR-23: Applicability of progress variable including acetylene for predicting PAHs formation in ethylene/air counter-flow diffusion flame
H. Miyamoto, S. Akaotsu, Y. Matsukawa, Y. Matsushita, H. Aoki, W. Malalasekera
- GPR-24: Experimental and theoretical sooting tendencies of alkyl amines
H. Kwon, M.J. Montgomery, B.D. Etz, R. Messerly, S. Shabnam, S. Vyas, A. C.T. van Duin, L.D. Pfefferle, S. Kim, Y. Xuan, C.S. McEnally
- GPR-25: Experimental and modeling studies on the correlation between auto-ignition delays and the methane number of liquefied natural gas (LNG)
J. Zheng, S. Nadiri, X. He, S. Agarwal, R. Fernandes, B. Shu
- GPR-26: An experimental and kinetic modelling study of alpha-methylnaphtalene combustion
A. Nobili, N. Chaumeix, A. Frassoldati, M. Mehl, M. Pelucchi, A. Comandini
- GPR-27: Autoignition dynamics of methanol/air mixture: A case of rich autoignition
S. Rabbani, D. Manias, D. Kyritsis, D. Goussis
- GPR-28: Formation and growth of soot clusters by reactive molecular dynamics
A. Sharma, K.M. Mukut, S.P. Roy, E. Goudeli
- GPR-29: Formation of oxygenated polycyclic hydrocarbons in the oxidation of hydrocarbons using a flow reactor
S. Suzuki, S. Kiuchi, K Kinoshita, Y. Takeda, K. Tanaka, M. Oguma
- GPR-30: Experimental and modeling study of benzaldehyde oxidation with synchrotron photoionization and molecular beam mass spectrometry
J.T. Chen, Z.Y. Tian, W. Li
- GPR-31: Experimental investigation of the laminar premixed n-propylamine flame
W. Li, J.-T. Chen, J.-Z. Yang, Z.Y. Tian
- GPR-32: An experimental and modeling investigation of furfural oxidation
Z.-H. Jin, Y. Dan, Y.-X. Liu, Z.-Y. Tian, S. Richter, M. Braun-Unkhoff, N. Clemens, J.-Z. Yang
- GPR-33: Investigation of pyrolysis effects on ammonia micro flames
Z. Wang, M. Lee, Y. Fan, Y. Suzuki
- GPR-34: Effect of HBr on CO and NO emission during CO/NH₃ or C₅H₅N combustion in an entrained flow reactor
J. Zhao, Y. Wang, Y. Zhang, X. Wei
- GPR-35: JSR oxidatio experiment of C₂H₂ under high pressure
D.-X. Tian, J.-T. Chen, W. Li, Z.-H. Jin, L.-J. Du, Z.-Y. Tian

Soot/Nanomaterials/Large Molecules

- SNLM-01: Numerical simulation of soot particle synthesis with its fractal nanostructure evolution incorporated by CQMOM
T. Ando, T. Tomidokoro, T. Yokomori
- SNLM-02: Self-assembly of curved aromatic molecules in soot nanoparticles
J. Martin, K. Bowal, M. Kraft
- SNLM-03: Hydrogen abstraction/addition reactions in soot surface growth
Q. Chu, B. Shi, H. Wang, D. Chen, L. Liao
- SNLM-04: Investigating the nanostructure of soot-based pigments using Raman spectroscopy
J. Giaccai, J.H. Miller
- SNLM-05: Large eddy simulation of turbulent diffusion methane sooting flames with conditioning moment closure approach
Z. Huang, H. Zhang
- SNLM-06: The effect of altering stoichiometric mixture fraction on soot formation and thermal radiation for an aromatic compound relative to aliphatics
R. Axelbaum, P. Irace
- SNLM-07: New identifications of methyl-substituted isomers of four-ring C₁₈H₁₂ PAH products from the supercritical pyrolysis of n-decane
A.R. Mali, K. Vutukuru, S.V. Kalpathy, N.B. Poddar, M.J. Wornat
- SNLM-08: Influence of potassium chloride on PAH concentration during soot formation; A laser-induced fluorescence study using excitation at 266 nm and 532 nm
M. Mannazhi, S. Bergqvist, P.-E. Bengtsson
- SNLM-09: Review of carbonaceous nanoparticle formation in flames
M. Salamanca, J.W. Martin, L. Pascazio, A. Menon, K. Bowal, G. Leon, J. Akroyd, M. Kraft
- SNLM-10: Chemical analysis of particulates: Bridging the gap between gas-phase and condensed-phase analysis
T. Mitra, A. Faccinnetto, A. Naseri, M.J. Thomson
- SNLM-12: Jet fuel deposit growth process: Trace metals nanocrystals catalyzed growth of nanospheres, solid and hollow carbon spheres in thermally stressed Jet A-1 in the autoxidation regime
P. Sharma
- SNLM-13: Mass spectrometric analysis of oxygenated species In thermally stressed Jet A-1 in the autoxidation regime
P. Sharma
- SNLM-14: Experimental investigation on soot formation in unsteady premixed laminar stagnation flames
H. Shino, T. Tomidokoro, T. Yokomori

Diagnostics

- DI-01: On the robustness of space-time CARS imaging thermometry at the study of quasi-laminar premixed flame fronts
L. Castellanos, D. Kliukin, A. Bohlin
- DI-02: Low-cost techniques for monitoring sooting emissions from diffusion flames using artificial neural networks
J. Portilla, R. Demarco, F. Escudero, G. Carvajal, A. Fuentes, A. Rodriguez, J.J. Cruz, C. Barrera
- DI-03: Development of measuring method for the extinction distance of fuel gases up to 573 K
S. Eckart, S. Anger, P. Schmidt, H. Krause

- DI-04: GC fast-sampling in long test-time shock tube experiments
A. Ferris, D. Davidson, R. Hanson
- DI-05: United States Air Force Academy combustion shock tube
M. Hageman, M. Knadler, T. McLaughlin, T. Hanson
- DI-06: Effects of excitation wavelength on derived temperature of oxygen enriched CH₄/O₂/N₂ premixed flame at high pressure using LITGS
A. Hayakawa, K. Kohama, Y. Higuchi, T. Kudo
- DI-07: A quantitative measurement of OH and flame temperature for a calibration burner operated at high-pressure and high-temperature
Y. Higuchi, Y. Nunome, S. Tomioka, T. Tomita, T. Kudo, A. Hayakawa, H. Kobayashi
- DI-08: In-situ temperature measurements in sooting methane/air co-flow flames using synchrotron x-ray fluorescence of seeded krypton atoms
M.J. Montgomery, H. Kwon, A.L. Kastengren, L.D. Pfefferle, T. Sikes, R.S. Tranter, Y. Xuan, C.S. McEnally
- DI-09: Development of ultra-broadband O₂/CO₂ CARS spectroscopy and multimodal thermometry for the investigation of flameless combustion
F. Mazza, N. Griffioen, D. Kliukin, A. Bohlin
- DI-10: Development of femtosecond laser-induced thermal grating spectroscopy (fs-LITGS) technique
M. Ruchkina, D. Hot, P. Ding, A.-L. Sahlberg, A. Hosseinnia, P.-E. Bengtsson, Z. Li, J. Bood
- DI-11: High-speed narrow-band and multispectral infrared imaging as a diagnostic tool for internal combustion engines
L. Seguino, E. Mancaruso, B. Saute, M. Lariviere-Bastien
- DI-12: Raman scattering thermometry during first stage of ignition in an RCM
C. Schulz, R. Dewor, R.D. Böttgen, K.-A. Heufer, G. Grünefeld, H.-J. Koß
- DI-13: Time-resolved mid-infrared measurements of hydrogen peroxide in the low-temperature oxidation of iso-octane in a rapid compression machine
K. Tanaka, S. Sugano, N. Yokota, H. Saito, S. Sakaida, M. Konno, H. Nakamura
- DI-14: Gas-phase detection of iridium by laser-induced breakdown spectroscopy
G. Vaghjiani, M. Burnette, S. Chambreau
- DI-15: Mid-infrared CO₂ sensor with blended absorption features for non-uniform combustion temperature and concentration of laminar premixed flame
Z. Wang, W. Wang, L. Ma, P. Fu, W. Ren, X. Chao
- DI-16: Impacts of ruthenium acetylacetonate on soot particles investigated by in-situ small angle X-ray scattering
F. Zhang, C. Wang, J. Wang, S. Seifert, R.E. Winans
- DI-17: LIF diagnostics for PAH measurement in laminar premixed flames based on a spectral-resolved analytic and calibration model
Y. Zhang, Y. Li, H. Lin

Laminar Flames

- LF-01: Computational flame regime of flame ball, counterflow and planar flames in fuel lean/ rich mixtures at low Lewis numbers
A. Tsunoda, T. Akiba, H. Nakamura, T. Tezuka, K. Maruta
- LF-02: Investigation of the combustion kinetics at the flammability limits of methane – DME – air mixtures
G.U. A. Alquati, A.A. M. Zevallos
- LF-03: Transient pressure effects in the propagation of the premixed cool flames
A.A. M. Oliveira, R.B. Meier

- LF-04: Non-linear response of a pulsating triple flame to the harmonic velocity perturbations
D. Bhatt
- LF-05: Dynamics of premixed methane-air flames in mesoscale diameter tubes
M.L. Castela, A. Garcidueñas, D.A. Lacoste
- LF-06: Using machine learning techniques to calculate the laminar burning velocity of hydrogen-methane mixtures
S. Eckart, H. Krause, R. Prieler, C. Hochenauer
- LF-07: Laminar burning velocities and emissions behavior of premixed polyoxymethylene dimethyl ether flames
S. Eckart, L. Cai, C. Fritsche, F. vom Lehn, H. Pitsch, H. Krause
- LF-08: Numerical simulation of triple flames with various diluent gas
N. Hayashi
- LF-09: Experimental and computational study on the structure of partially premixed laminar diffusion methane flames
R. Khare, P. Vlavakis, A. Loukou, D. Trimis
- LF-10: Product gas analysis of laminar premixed ammonia-methane flames in stagnation flows
M. Kovaleva, A. Hayakawa, T. Kudo, H. Kobayashi
- LF-11: Wall chemical effects on ignition characteristics of premixed DME/oxygen cool flames
M. Lee, T. Mizuno, Y. Suzuki
- LF-12: Poly(oxyethylene) ethers: Potential diesel fuels with low sooting tendencies
J. Zhu, F.L. Chan, T.D. Foust, S. Lucas, M.J. Montgomery, L.D. Pfefferle, K.F. Reardon, B.C. Windom, C.S. McEnally
- LF-13: Flame structures of rich ethylene premixed flames doped by butanol and pentanol isomers
R. Jalain, J. Bonnetty, G. Legros, A. Matynia
- LF-14: Study on ignition and extinction characteristics of n-alkane wall-stabilized cool flames
T. Mizuno, M. Lee, Y. Suzuki
- LF-15: Flame stability and flow visualization of impinging premixed flames with various heating values
H.T. Nam, Y. Jeon, S. Lee
- LF-16: Investigation of pressure effects on wall-stabilized cool flames using TDLAS
S. Sakamoto, M. Lee, Y. Suzuki
- LF-17: Recent progress characterizing high-temperature flames in a shock tube
A. Susa, A. Ferris, R. Hanson
- LF-18: Combustion of ammonia-hydrogen fuel in diffusion flames
D. Thomas, W. Northrop
- LF-19: The impact of ammonia addition on soot formation in ethylene laminar diffusion flames
M. Zaher, M. Thomson
- LF-20: OH-PLIF measurements in co-flow laminar diffusion flames of n-heptane blended with oxygenated aromatic biofuels
L. Zhou, Y. Huang, D. Shi, W. Wang, Z. Zhang, Y. Cai

Turbulent Flames

- TF-01: Combustion characteristics and NO formation of ammonia-air turbulent flame in SiC porous medium burner
D. Chen, J. Li, L. Deng, Z. He, Y. Chen, H. Huang
- TF-02: Turbulence enhancements by fractal grid in CH₄/air premixed low swirl flames
Y. Kang, J.H. Ahn, G.M. Kim, K.M. Lee
- TF-03: Analysis of turbulent flame characteristics with a various fractal grid in CH₄/Air premixed v-shape flames
J. Kim, K. Lee, S. Cho, H. Lee
- TF-04: Hydrogen-air-steam mixture combustion analysis within the framework of nuclear power plant safety substantiation
V. Kotov
- TF-05: A turbulent methane jet flame in hot coflow: Its autoignition and stability
J. Mi, G. Wang, X. Liu
- TF-06: Ignition and instability of a turbulent jet flame in hot coflow: Effects of coflow temperature and oxygen level
G. Wang, X. Liu, J. Mi
- TF-07: Numerical analysis of pre-mixed turbulent NH₃/H₂ and NH₃/CH₄ flames
N. Mukundakumar, R. Bastiaans
- TF-08: Machine-learned manifold-based models for large eddy simulation of turbulent combustion
B.A. Perry, S. Yellapantula, M.T. Henry de Frahan
- TF-09: Evolution equations for the decomposed parts of the displacement speed in a reactive scalar field
R. Yu, T. Nilsson, A. Lipatnikov
- TF-10: Study of instability and dynamic behavior of NH₃-H₂ premixed flame
S. Tabejamaat, S. Kadowaki, A. Hayakawa, H. Kobayashi, K.D.K. Somarathne

Spray/Droplet/Supercritical Combustion

- SDS-01: Effects of nanoparticle concentration on the ferrofluid droplet heating and vaporization
R. Zorzo, F. Fachini, C. Cristaldo
- SDS-02: Modelling dilute acetone spray flames using the eddy dissipation concept
J. Kildare, A. Lymn, P. Medwell, M. Evans
- SDS-03: Laser-based imaging of ethanol and n-heptane spray flames in the transition to mild combustion
D. Proud, M. Evans, P. Medwell
- SDS-04: The influence of flash-boiling effect on droplet size distribution for low pressure injectors
R. Rogóż, K. Górka, A. Teodorczyk, L.J. Kapusta
- SDS-05: Effects of the injection timing on the dual-fuel spray flame: A large-eddy simulation
S. Xu, S. Zhong, A. Hadapour, Y. Zhang, K.M. Pang, J. Mehdi, X.-S. Bai

Detonations/Explosions/Supersonic Combustion

- DES-01: Assessment of detailed reaction models to predict single- and double-cellular structure in nitromethane-oxygen detonations
D.J. Chi, K.P. Chatelain, D.A. Lacoste
- DES-02: Effects of Equivalence ratio on kerosene air rotating detonation
Y. Hao, M. Cheng, Y.-L. Chen, J.-P. Wang
- DES-03: Experimental investigation on the lower explosion point of flammable mixtures under non-atmospheric conditions
A. Lucassen, O. Abimbola, L. Ruwe
- DES-04: Detonation onset in RDE – 3D simulation of turbulent reacting flows
V. Betelin, V. Nikitin, E. Mikhilchenko
- DES-05: OH laser induced fluorescence of hydrogen detonations
C.S. Rojas, K.P. Chatelain, T.F. Guiberti, D.A. Lacoste
- DES-06: Experimental investigation on the performance of the standardized testing method for detonation flame arresters
L. Ruwe, T. Heidermann, M. Kreißig, H. Kant, D. Schmidt, F. Gutte, D. Bartsch, P. Bosse, A. Lucassen
- DES-07: Numerical analysis of rotating detonation engine using AMR
T. Sano, Y. Yoshida, E. Dzieminska, X.-M. Tang, A.K. Hayashi
- DES-08: Effect of changing structure of separate injector in wave number of rotating detonation engine
J. Wang, Z. Sheng, M. Cheng
- DES-10: Jet fuels for practical applications in rotating detonation engines
A.V. Singh, D.S. Kumar, K. Ivin
- DES-11: Numerical modeling of combustion onset processes in hybrid solid fuel engine
V. Betelin, L. Stamov, V. Tyurenkova, N. Smirnov
- DES-12: The stability analysis of ZND detonation for Majda's model
Y. Sun
- DES-13: Understanding flame propagation mechanism during dust explosions in microgravity
W. Kim, R. Saeki, R. Dobashi, T. Endo, K. Kuwana, T. Mogi, M. Lee, M. Mikami, T. Ishikawa, Y. Nakamura
- DES-14: Experimental research on rotating detonation engine with cooling system
Y. Yoshida, T. Sano, E. Dzieminska, T. Nagao, K. Hayashi

Solid Fuels

- SF-01: NO_x reduction based on N₂ dilution in a swirled-stabilized magnesium flame
A. Andrieu, O. Allgaier, G. Leyssens, J.-F. Brilhac
- SF-02: CFD modeling of biomass ash tube deposition and comparison with entrained flow reactor data
M. Dotti, P.A. Jensen, M. Nakhaei, W. Hao, S. Clausen, T. Norman, B.M. Ryge
- SF-03: Direct observations of pyrolysis and gasification of pulverized biomass at elevated temperatures
T. Li, E. Hecht, T. Løvås, C. Shaddix

- SF-04: An experimental study on thermal effect of steam on coal char combustion
S. Liu, Y. Niu, L. Wen, Y. Lei, S. Hui, Y. Lv, D. Wang
- SF-05: Experimental and kinetic study on quantitative acquisition method for ash fusion temperature
Y. Lv, S. Liu, Y. Niu
- SF-06: Numerical analysis of nitrogen oxide formation in municipal solid waste incineration
C. Netzer, T. Li, T. Løvås
- SF-07: Study on explosion propagation characteristics and micro-morphology changes of lignite coal dust
J. Gong, Y. Fan, L. Zhang, B. Nie
- SF-08: PERWAVES project: Discrete flame propagation through quiescent suspensions of iron particles in oxygen/xenon gas mixtures
J. Palečka, S. Goroshin, J.M. Bergthorson
- SF-09: CFD-DEM modeling of biomass pyrolysis in a fixed bed reactor
B. Wang, J. Zhang, T. Løvås, T. Li

Fire Research

- FI-01: Methods to measure the burning mass loss rate in the microgravity space environment
H. Fan, C. Xiong, X. Huang
- FI-02: Concurrent flame spread over LDPE insulated copper wires in reduced ambient pressures
L. Gagnon, J. Urban, C. Fernandez-Pello, V. Carey, Y. Konno, O. Fujita
- FI-03: A comparison of emissions from liquid-fueled pool fires and fire whirls at different length scales
S.B. Hariharan, H.F. Farahani, A.S. Rangwala, J. Dowling, E.S. Oran, M.J. Gollner
- FI-04: TDLAS measurement of CO₂ above a pool fire to understand extinction process of firefighting foams
K. Hinnant, S. Giles, A. Snow, A. Ramagopal, J.H. Miller
- FI-05: Modelling of premixed turbulent combustion of cornflour dust-air cloud using OpenFOAM
C. Huang, A. Lipatnikov
- FI-06: An experimental study on combustion characteristics of fiber optical cables for nuclear power plants
M.H. Kim, S.H. Lee, M.C. Lee, S.K. Lee, J.E. Lee
- FI-07: Study on smoke emission of fire initiation of wire insulations by overload under microgravity
H. Zhuang, W. Kong
- FI-08: Theoretical study on extinction limits of opposed flame spread over polyethylene insulated wire
Y. Konno, N. Hashimoto, O. Fujita
- FI-09: Novel process to extinguish metal fires using cellulose flakes
M. Lackner, J. Hagauer, U. Matlschweiger, C. Toppelreither
- FI-10: A comparison between FDS and OpenFoam in case of under-ventilated compartment fire
R. Mehaddi, B. Lafdal, P. Boulet, E.M. Koutaiba
- FI-11: Extinction of wood fuels: A near-limit blue flame sustained above the hot smoldering surface
S. Lin, X. Huang

- FI-12: Smoldering ignition of thin paper by concentrated sunlight
S. Wang, S. Lin, X. Huang
- FI-13: Can self-ignition theory explain the mysterious fire in Li-ion battery pile?
Y. Liu, P. Sun, S. Lin, H. Niu, X. Huang
- FI-14: Experimental and numerical study of the fire behavior of a composite material impacted by an air / kerosene diffusion flame
B. Manescau, K. Chetehouna, N. Gascoin
- FI-15: Numerical investigation on the influence of gravity-induced buoyancy on the limiting oxygen concentration of downward flame spread over polyethylene insulated NiCr wire
B. Pelletier, H. Asahina, H. Aita, N. Hashimoto, O. Fujita
- FI-16: Understanding the influence of slope on fire dynamics and thermal structures
X. Ren, E. Sluder, M. Heck, T. Grumstrup, S. McAllister, M. Finney, M. Gollner
- FI-17: Suppressing hydrogen-oxygen/air gaseous detonations using CF_3I , H_2O , and CO_2
D.S. Kumar, K. Ivin, A.V. Singh
- FI-18: Effect of buoyancy and momentum on local burning behavior of wind-driven turbulent flames
A. Singh, A.V. Singh
- FI-19: Dripping ignition of porous materials: The effect of soaking
P. Sun, Y. Jia, X. Zhang, X. Huang
- FI-20: Quantifying the influence of smoldering particle size and radiant heat flux on ignition of fuel beds
S. Suzuki, S.L. Manzello
- FI-21: Global equivalence ratio based hot surface ignition regimes in internal crossflows
M. Ulcay, L. Dillard, J. Gore
- FI-22: Spotting ignition and fire point of EPS foam by a hot hollow particle
Y. Zhang, S. Wang, X. Huang
- FI-23: Why low-frequency sound is efficient in fire suppression
C. Xiong, Y. Liu, H. Fan, X. Huang
- FI-24: A bonfire test for compressed hydrogen cylinder simulated with OpenFOAM
E. Yamada, Y. Tamura
- FI-25: Effect of convection on the fire spread over fuel bed conformed by fine-sized cylinders
S. Zarate, A. Osorio, J. Hidalgo, L. Ramadhan, J. Carrascal
- FI-26: Prediction of flashover in compartment fire via computer vision and AI
Z. Wang, T. Zhang, X. Huang, F. Xiao

Stationary Systems/GHG Control

- Stationary-01: Insights into the mechanism of spinel CoFe_2O_4 reduction in CO atmosphere during chemical-looping combustion: Experiment and DFT calculations
F. Liu, J. Liu, R. Fang, Y. Li, Y. Yang
- Stationary-02: Experimental study on the liquid ethanol combustion sustained by a dual swirl
Q. Cao, X. Chen, D. Xie, B. Shi, N. Wang

Internal Combustion Engines

- ICE-01: Assessment of microwave-assisted plasma ignition system for lean-burn spark-ignition engines
J. Hwang, W. Kim, C. Bae
- ICE-02: Study on the ion current formatting process under engine knocking conditions
G. Dong, Q. Du, L. Li, Z. Wu, X. Ni
- ICE-03: Effects of pre-injection on ignition and emissions of spray combustion in engine-like condition
A. Hadadpour, X. Shijie, X.-S. Bai, K.M. Pang, M. Jangi
- ICE-04: Initial results on natural gas pre-chamber spark ignition as a pathway for high-efficiency heavy-duty engines
C. Lerin, S. Curran
- ICE-05: Polyoxymethylene ethers as low-sooting compression ignition fuels
F.L. Chan, S. Lucas, B. Windom, K. Reardon, C. McEnally, L. Pfefferle, J. Zhu, T. Foust
- ICE-06: 2D DNS for laboratory-scale knocking experiment at engine-like condition using reliable n-heptane chemical kinetic mechanism
Y. Morii, A.K. Dubey, H. Nakamura, K. Maruta
- ICE-07: Fundamental study on the relationship between the minimum ignition energy transition and fuel properties toward super-lean burn engine applications
T. Mukoyama, Y. Hirano, T. Tezuka, Y. Morii, H. Nakamura, K. Maruta
- ICE-08: Effect of ignition characteristics of fuel on the knock under super lean burn conditions in a spark ignition engine
M. Naruke, K. Morie, R. Kouda, S. Sakaida, K. Tanaka, M. Konno
- ICE-09: Towards the development of a conceptual model for pre-chamber spark-ignition high efficiency natural gas engines
R. Rajasegar, Y. Niki, J.M. Garcia Oliver, Z. Li, M.P.B. Musculus
- ICE-10: Kinetic modeling of dry methane reforming in a piston engine for chemical energy storage and carbon dioxide utilization
C. Rudolph, B. Atakan
- ICE-11: Engine efficiency enhancement and operation range extension by argon power cycle under SI, HCCI, and SACI using natural gas
S. Shi, Y. Tomomatsu, B. Chaturvedi, M. Sierra Aznar, J.-Y. Chen
- ICE-12: Fundamental investigation of the argon power cycle
Y. Tomomatsu, S. Shi, B. Chaturvedi, M. Sierra Aznar, J.-Y. Chen
- ICE-13: Large-eddy simulation of fuel-air mixture formation at ultra-high injection pressures in Gasoline Direct injection (GDI) engine
S. Wadekar
- ICE-14: Ash formation during oxidation of calcium-based lubricant oil additives in a flow reactor
Y. Yokobayashi, Y. Ishii, S. Sakaida, K. Tanaka, M. Konno, Y. Sakai

Gas Turbine/Rocket Combustion

- GT/RC-01: Suppression of combustion noise using inert porous media inside a can combustor
K. Gopalkrishnan, D. Bhatt
- GT/RC-02: Gas turbine operability observations towards the approval of novel sustainable aviation fuels; Key findings of the NJFCP
J. Heyne, M. Colket, A. Oldani, T. Edwards, J. Moder, M. Gupta, M. Roquemore

- GT/RC-03: Experimental study of ammonia addition in premixed methane flames stabilised in a swirl burner
M. Kovaleva, S. Mashruk, A. Valera-Medina
- GT/RC-04: Study of NO and N₂O emissions from the combustion of liquid ammonia spray in swirl combustors
E.C. Okafor, H. Yamashita, A. Hayakawa, T. Tsujimura, T. Kudo, M. Uchida, S. Ito, H. Kobayashi
- GT/RC-05: Effect of burner inclination on combustion characteristics for gas turbine applications
M. Shamma, S. Galeotti, S.R. Harth, N. Zarzalis, D. Trimis
- GT/RC-06: Multipoint temporal correlations between heat release distributions and velocity fields for a lean-premixed hydrogen low-swirl flame under combustion instability
T. Suzuki, T. Shoji, Y. Nakazumi, S. Tachibana, T. Yokomori

Other Concepts

- Other-01: Thermal structure of aluminum dust explosion with additional inert gas
P.-J. Chang, T. Mogi, R. Dobashi
- Other-02: Ionic chemistry in temperature-dependent NSD plasma assisted CH₄ oxidation
J. Sun, Q. Chen, C. Guo, J. Liu, M. Zhang
- Other-03: Conception of a pilot plant scaled optically accessible combustion chamber for determining the combustion properties of process, mixed and natural gases under the influence of external recirculation and changing wall conditions
S. Eckart, C. Fritsche, M. Hefele, A. Pestel, R. Behrend, E. Drubetskoi, H. Krause
- Other-04: Alkali metal-resistant mechanism for selective catalytic reduction of nitric oxide over the V₂O₅/HWO catalysts
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