

40th INTERNATIONAL SYMPOSIUM – EMPHASIZING ENERGY TRANSITION
Milan, Italy
Monday, 22 July 2024

(Silver Plenary Room)
WELCOME – 8:30

The Combustion Institute President Philippe Dagaut
Chair, Local Host Team: Tiziano Faravelli

Program Co-Chairs: Bassam Dally and José L. Torero

HOTTEL LECTURE – 9:30

The Transition to Sustainable Combustion: Hydrogen- and Carbon-Based Future Fuels and Methods for Dealing with Their Challenges

Heinz Pitsch

Chairs: B. Dally and J.L. Torero

10:30 BREAK (30 minutes)

Room	Red 1	Red 2	Blue 1	Blue 2	Yellow 1	Yellow 2	Yellow 3	White 1	White 2	Silver Plenary
	Gas-Phase Reaction Kinetics	Fire Research	Flame Dynamics & Transport Processes	Turbulent Flames	Propulsion	Numerical Combustion	Propulsion II	Low-Carbon Technologies	Emission Mitigation	Topical Review
11:00	1A01: PROCI-D-23-00935 Theoretical and kinetic study of the thermal decomposition mechanism of long chain aldehydes <i>M. Di Teodoro, M. Pelucchi, C. Cavallotti</i>	1B01: PROCI-D-23-00450 Extinction of solid diffusion flame: Details of quenching and blowoff processes <i>C. Li, J.S. T'ien, P.V. Ferkul, S.L. Olson, M.C. Johnston</i>	1C01: PROCI-D-23-01068 The role of thermo-diffusion and dimensionality in the formation of cellular instabilities in hydrogen flames <i>T. Zirwes, F. Zhang, T.L. Kaiser, K. Oberleithner, O.T. Stein, H. Bockhorn, A. Kronenburg</i>	1D01: PROCI-D-23-00699 Investigation of burning velocity of lean and rich premixed NH ₃ /H ₂ turbulent flames using multi-scalar imaging <i>X. Li, Z. Wang, T. Li, A. Dreizler, A.N. Lipatnikov, X. Liu, X. Gan, B. Zhou</i>	1E01: PROCI-D-23-00064 Mutual synchronization and flame dynamics in an axially fuel-staged lean-premixed combustion system <i>Y. Guan, Y. Choi, P. Liu, K.T. Kim</i>	1F01: PROCI-D-23-01347 Augmenting filtered flame front displacement models for LES using machine learning with <i>a posteriori</i> simulations <i>J.Z. Ho, M. Talei, D. Brouzet, W.T. Chung, P. Sharma, M. Ihme</i>	1G01: PROCI-D-23-00230 Detonation development in H ₂ , CH ₄ , and PRF-air mixtures under engine-relevant conditions: From a chemical perspective <i>H.C. Lee, P. Dai, X. Gan, Z. Chen</i>	1H01: PROCI-D-23-00199 Effects of radiative heat loss on extinction limits of counterflow premixed ammonia-air flames <i>R. Fang, P. Papas, C.-J. Sung, J.F. Stevens, L.L. Smith</i>	1J01: PROCI-D-23-00755 Flare carbon conversion efficiency quantification using a long wave infrared Fourier transform spectrometer <i>P. Lapeyre, N.S. Narayanan, M. Larivière-Bastien, K.J. Daun</i>	TOPICAL REVIEW MILD Combustion Beyond the Energy Transition Mara de Joannona, Giancarlo Sorrentino, Pino Sabia, Raffaele Ragucci

Room	Red 1	Red 2	Blue 1	Blue 2	Yellow 1	Yellow 2	Yellow 3	Whilte 1	Whilte 2	Silver Plenary
	Gas-Phase Reaction Kinetics	Fire Research	Flame Dynamics & Transport Processes	Turbulent Flames	Propulsion	Numerical Combustion	Propulsion II	Low-Carbon Technologies	Emission Mitigation	Topical Review
11:20	1A02: PROCI-D-23-00591 A weight growth route from 2-naphthyl-methyl radical to tricyclic aromatics <i>M. Wu, Z. Liu, Z. Chu, C. Wang, X. Wu, J. Huang, L. Zhao, J. Yang, B. Yang, F. Zhang</i>	1B02: PROCI-D-23-01198 Downward flame spread over thin electrical wires in quiescent normal- and hypergravity environments: Effects of gravity level, applied current and wire configuration <i>Z. Guo, Y. Ma, Q. Wang, Z. Li, Y. Chen, O. Fujita, L. Hu</i>	1C02: PROCI-D-23-00722 Pathway dynamics to double-cell premixed flames in lean hydrogen-air mixtures <i>A. Domínguez-González, M.P. Encinar, D. Martínez-Ruiz</i>	1D02: PROCI-D-23-00753 Local statistics of turbulent spherical expanding flames for NH ₃ /CH ₄ /H ₂ /air measured by 10 kHz PIV <i>S. Wang, A.M. Elbaz, S. Hochgreb, W.L. Roberts</i>	1E02: PROCI-D-23-00124 Experimental and theoretical estimation of acoustic energy source terms and instability growth rates in an annular combustor <i>V. Latour, D. Durox, A. Renaud, S. Candel</i>	1F02: PROCI-D-23-01005 Machine learning assisted characterization and prediction of droplet distributions in a liquid jet in cross-flow <i>G. Tretola, P. McGinn, D. Fredrich, K. Vogiatzaki</i>	1G02: PROCI-D-23-00285 Effect of temperature disturbance on end-gas autoignition and detonation development <i>L. Yang, Y. Wang, P. Dai, Z. Chen</i>	1H02: PROCI-D-23-01098 Exploring the influence of swirl intensity on stability, emissions, and flame structure in non-premixed NH ₃ /CH ₄ swirling flames <i>A.M. Elbaz, Z.O. Hassan, W.L. Roberts</i>	1J02: PROCI-D-23-00145 Emission mitigation from flames on the formation of pyridine, the first nitrogen heterocyclic ring in NPAHs <i>B. Chen, H. Lyu, P. Liu, V.G. Samaras, X. Lu, X. Gao, W.L. Roberts, H. Pitsch</i>	TOPICAL REVIEW MILD Combustion Beyond the Energy Transition <i>Mara de Joannona, Giancarlo Sorrentino, Pino Sabia, Raffaele Ragucci</i>
11:40	1A03: PROCI-D-23-01417 Mechanism development for larger alkanes by autogeneration and rate rule optimization: The case study of pentane isomers <i>P. Wang, S. Brunialti, M. Papp, S.M. Sarathy, T. Turányi, H.J. Curran, T. Nagy</i>	1B03: PROCI-D-23-01137 Far-field signature of fire in low gravity: Influence of ambient oxygen content and pressure on size distribution of smoke particles <i>Y. Li, A. Guibaud, J.-M. Citerne, J.-B. Renard, G. Legros</i>	1C03: PROCI-D-23-00982 Three-dimensional pheno-menology of freely-propagating thermo-diffusively-unstable lean premixed hydrogen flames <i>A.J. Aspden, T.L. Howarth, E.F. Hunt</i>	1D03: PROCI-D-23-00045 On local displacement speeds, their correlations with flame-front quantities, and their temporal evolution measured in turbulent premixed flames <i>A.W. Skiba, C.D. Carter, S.D. Hammack, J.F. Driscoll</i>	1E03: PROCI-D-23-01059 Identification of entropy waves in a partially premixed combustor <i>A.J. Eder, B. Dharmaputra, A.M. Garcia, C.F. Silva, W. Polifke</i>	1F03: PROCI-D-23-00654 An integrated framework for accelerating reactive flow simulation using GPU and machine learning models <i>R. Mao, Y. Wang, M. Zhang, H. Li, J. Xu, X. Dong, Y. Zhang, Z.X. Chen</i>	1G03: PROCI-D-23-00279 Numerical study on detonation initiation by multiple hot spots <i>J. Sun, P. Yang, Y. Wang, Z. Chen</i>	1H03: PROCI-D-23-00478 Investigation of the near-field structure and stability of non-premixed NH ₃ /H ₂ /N ₂ jet flames at various pressure and co-flow conditions <i>A.M. Albalawi, A.M. Elbaz, M.M.M. Ahmed, Z.O. Hassan, W.L. Roberts</i>	1J03: PROCI-D-23-01099 Toward resolving flame-formed carbon nanoparticle structure through conductive atomic force microscopy <i>N. Montes, E.S. Genter, N. Kateris, A.S. Jayaraman, H. Wang</i>	

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12:00	1A04: PROCI-D-23-01710 Probing O ₂ -dependence of cyclopentyl reactions via isomer-resolved speciation <i>A.W. Hill, D.A. Moore, N.S. Dewey, S.W. Hartness, B. Rotavera</i>	1B04: PROCI-D-23-00836 Cyclic pattern along the downward flame spread over cylindrical samples in partial gravity <i>Y. Li, A. Guibaud, J.-M. Citerne, T. Seon, J.-L. Consalvi, G. Legros</i>	1C04: PROCI-D-23-01483 Numerical analysis and flamelet modeling of NO _x formation in a thermo-diffusively unstable premixed hydrogen flame at elevated-pressure conditions <i>X. Wen, L. Berger, A. Scholtissek, A. Parente, C. Hasse, H. Pitsch</i>	1D04: PROCI-D-23-01166 Insights into the flow and scalar structures when shifting from methane to hydrogen turbulent flames using simultaneous PIV – OH PLIF and spontaneous Raman scattering <i>K. Rajamanickam, A.M. Mahuthannan, C. Lacour, S. Idlahcen, A. Cessou, D. Honoré, B. Lecordier</i>	1E04: PROCI-D-23-00742 Comparison of pressure-based flame describing functions measured in an annular combustor under self-sustained oscillations and an externally modulated linear combustor <i>A. Alhaffar, V. Latour, C. Patat, D. Durox, A. Renaud, J.-B. Blaisot, S. Candel, F. Baillet</i>	1F04: PROCI-D-23-01532 Predictions of instantaneous temperature fields in jet-in-hot-coflow flames using a multi-scale U-Net model <i>J.A.C. Kildare, W.T. Chung, M.J. Evans, Z. Tian, P.R. Medwell, M. Ihme</i>	1G04: PROCI-D-23-00394 Transition to detonation in hydrogen-air mixtures due to shock focusing in a 3-wall 90-deg corner <i>W. Rudy</i>	1H04: PROCI-D-23-01636 Impact of carbon-free fuels addition on self-excited combustion oscillations in partially premixed CH ₄ /air swirl flames <i>X. Shi, T. Lian, Z. Liu, X. Yang, W. Li, Y. Li</i>	1J04: PROCI-D-23-00195 Simultaneous LII, PAH-LIF, OH-LIF, and Mie scattering measurements in solid fuel particle combustion <i>H. Chen, M. Abdallah, A. Dreizler, B. Böhm, T. Li</i>	
12:20	1A05: PROCI-D-23-00875 H ₂ S-driven sensitization and inhibition of CH ₄ oxidation: An experimental and wide-range kinetic-modeling study <i>A. Stagni, S. Arunthanayothin, O. Herbinet, F. Battin-Leclerc, T. Faravelli</i>	1B05: PROCI-D-23-00081 Downward flame spread and extinction over electric wires placed in a ground-based centrifuge <i>Y. Konno, S. Ishikawa, N. Hashimoto, O. Fujita</i>	1C05: PROCI-D-23-01088 Data-driven modeling of resolved and filtered thermo-diffusively unstable hydrogen-air flames <i>A. Remiddi, P.E. Lapenna, D. Cavalieri, D. Schintu, G. Indelicato, A. Attili, L. Berger, H. Pitsch, F. Cresta</i>	1D05: PROCI-D-23-00357 Experimental study of the influence of Lewis number, laminar flame thickness, temperature, and pressure on turbulent flame speed <i>H.-Y. Hsieh, S.M. Mausavi, A.N. Lipatnikov, S. Shy</i>	1E05: PROCI-D-23-01479 Non-periodic shear layer instabilities driving local extinction in premixed ramjet cavity flames <i>D.M. Smerina, A.J. Morales, M.R. Thornton, K.A. Ahmed</i>	1F05: PROCI-D-23-01366 Predicting soot fields in acoustically forced laminar sooting flames using physics-informed machine learning models <i>S. Liu, H. Wang, Z. Sun, K.K. Foo, G.J. Nathan, X. Dong, M.J. Evans, B.B. Dally, K. Luo, J. Fan</i>	1G05: PROCI-D-23-01055 Detonation initiation by normal shock reflection from an obstacle <i>V.Y.A. Mozdehe, G. Ciccarelli</i>	1H05: PROCI-D-23-01441 Emission characteristics of confined non-premixed ammonia–oxygen–nitrogen turbulent jet flames under oxygen-enriched conditions <i>Y. Xia, Y. Shen, K. Sakai, D. Matsumoto, S. Colson, T. Kudo, A. Hayakawa, H. Kobayashi</i>	1J05: PROCI-D-23-01748 Light absorption dynamics of brown carbon particles during wood combustion and pyrolysis <i>C. Moularas, P. Demokritou, G.A. Kelesidis</i>	

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	Gas-Phase Reaction Kinetics	Fire Research	Flame Dynamics & Transport Processes	Turbulent Flames	Propulsion	Numerical Combustion	Propulsion II	Low-Carbon Technologies	Emission Mitigation	Topical Review
12:40	1A06: PROCI-D-23-00148 Acetylene addition to the fulvenallenyl moiety in aromatic hydrocarbons <i>H. Jin, A.M. Mebel, A. Farooq</i>	1B06: PROCI-D-23-00562 Flame spread over thin circular ducts <i>V. Kumar, K. Naresh, A. Kumar</i>	1C06: PROCI-D-23-00854 Three-dimensional diffusive-thermal instability of flames propagating in a plane Poiseuille flow <i>A. Kelly, P. Rajamanickam, J. Daou, J. Landel</i>	1D06: PROCI-D-23-00183 Macroscopic flame and flow structures in hydrogen and methane multi-regime combustion <i>T. Li, M. Dođrudil, A. Dreizler</i>	1E06: PROCI-D-23-00293 Experimental and numerical study of nonlinear growth process of self-excited combustion instability in a model rocket combustor <i>Y. Ren, K. Guo, S. Feng, W. Lin, Y. Tong, Y. Liu, W. Nie</i>	1F06: PROCI-D-23-01025 Ensemble predictions of laser ignition with a hybrid stochastic physics-embedded deep-learning framework <i>W.T. Chung, C. Laurent, D. Passiatore, M. Ihme</i>	1G06: PROCI-D-23-00524 Accelerated ignition-shock coupling and deflagration to detonation transition by ozone kinetic enhancement of dimethyl ether mixture <i>A. Thawko, Y. Cao, Z. Shi, M. Vorenkamp, Z. Wang, B. Mei, X. Mao, Y. Ju</i>	1H06: PROCI-D-23-01426 Topology characteristics of liquid ammonia swirl spray flame <i>R. Wang, M. Zhang, Z. An, J. Liu, J. Wang, Z. Huang</i>	1J06: PROCI-D-23-01333 High-temperature potassium capture by ilmenite ore residue <i>Z. Xu, C. Zhu, Y. Zhang, L. Li, Z. Sun, H. Tang, L. Duan</i>	
13:00	LUNCH (80 Minutes) – On Your Own									
	POSTER SESSION (60 Minutes)									
14:20	Diagnosics M01: PROCI-D-23-00087 Rotational-vibrational O ₂ –CO ₂ coherent anti-Stokes Raman spectroscopy for determination of thermochemical states in oxy-fuel biomass combustion <i>H. Schneider, J. Hebel, B. Böhm, R. Kneer, A. Dreizler</i> M02: PROCI-D-23-00119 Development of fully fiber-coupled phosphor thermometry imaging for combustion applications <i>P. Nau, H. Scheffold, N. Petry, Z. Yin</i> M03: PROCI-D-23-01128 Multi-speciation in shock tube kinetics using deep neural networks and cavity-enhanced absorption spectroscopy <i>M. Mhanna, M. Sy, A. Elkhazraji, A. Farooq</i> M04: PROCI-D-23-01558 Compact, real-time exhaust gas recirculation rate sensor for use in natural gas combustion engine control <i>C.S. Callahan, E. Gatica, S.C. Coburn, G.J. Hampson, G.B. Rieker</i>			Diagnosics M05: PROCI-D-23-01754 Rayleigh-Brillouin scattering from H ₂ /N ₂ and H ₂ /CH ₄ mixtures at elevated pressures <i>K. Teav, A.M. Steinberg</i> M06: PROCI-D-23-01755 Group evaporation of small- and large-scale droplet clusters in a fuel spray-laden homogenous and isotropic turbulent airflow <i>N. Pandurangan, S. Sahu</i> Numerical Combustion M07: PROCI-D-23-00156 Machine learning-driven screening of fuel additives for increased spark-ignition engine efficiency <i>S.S. Nagaraja, S.M. Sarathy, B. Mohan, J. Chang</i> M08: PROCI-D-23-00392 A combined PCA-CSP solver for dimensionality and stiffness reduction in reacting flow simulations <i>M.R. Malik, R. Malpica Galassi, M. Valorani, H.G. Im</i> M09: PROCI-D-23-00951 Scalar mass conservation in LES of soot formation using mixture fraction-based combustion models <i>M. Davidovic, H. Pitsch</i>			Numerical Combustion M10: PROCI-D-23-00988 Direct numerical simulation of igniting non-premixed hydrogen combustion for the Argon Power Cycle <i>D.A. Quan Reyes, D. Roekaerts, J. van Oijen</i> M11: PROCI-D-23-01014 A novel model for solid fuel combustion with particle migration <i>J. Zhang, C. Schulze-Netzer, T. Li, T. Løvås</i> M12: PROCI-D-23-01086 Effect of parametric uncertainty in numerical simulations of a hydrogen-fueled flameless combustion furnace using dimensionality reduction and non-linear regression <i>R. Amaduzzi, A. Procacci, A. Piscopo, R. Malpica Galassi, A. Parente</i> M13: PROCI-D-23-01329 Physics-informed recurrent super-resolution generative reconstruction in rotating detonation combustor <i>X. Wang, H. Wen, Q. Wen, B. Wang</i>			

POSTER SESSION (60 Minutes)

14:20

Emission Mitigation from Flames

M14: PROCI-D-23-00354 Effect of simultaneous H₂ and NH₃ addition on soot formation in co-flow diffusion CH₄ flame
Y. Yang, S. Zheng, M. Xu, B. Liu, S. Zhu, R. Sui, Q. Lu

M15: PROCI-D-23-00899 Continuously-staged NH₃ oxidation in a stagnation-point reverse-flow combustor for low NO_x emissions
L. Giuntini, C. Novelli, M.M. Kamal, M. Cafiero, C. Galletti, A. Coussement, A. Parente

M16: PROCI-D-23-00928 Modelling collision frequencies and predicting bi-variate agglomerate size distributions for bi-disperse primary particle systems
A. Pandey, M. Karsch, A. Kronenburg

M17: PROCI-D-23-00943 Modeling reversible soot nucleation with a reduced kinetic mechanism including coronene
M. Geuking, P.P. Duvvuri, A. Jocher

M18: PROCI-D-23-00950 Understanding soot production in a Jet A-1 laminar coflow non-premixed flame
M. Litterin, F. Escudero, J.J. Cruz, I. Verdugo, D. Chen, A. Fuentes, R. Demarco

M19: PROCI-D-23-01027 A kinetic study on the blending behavior of sustainable and conventional aviation fuels: Soot formation processes
A. Nobili, M. Veltri, M. D'Andria, M. Pelucchi, T. Faravelli, M. Mehl

M20: PROCI-D-23-01168 Black carbon emissions from turbulent buoyant non-premixed flames representative of flames in the upstream oil and gas sector
A.D. Tanner, P. Mehr, M. Mohammadi, M.R. Johnson

Emission Mitigation from Flames

M21: PROCI-D-23-01392 Co-oxidation of pyridine and pyrrole as a dual component model compound of fuel nitrogen in coal
L.-N. Wu, W.-J. Wang, D. Wang, Q.-P. Wang, Z.-H. Zheng, K.-R. Jin, J.-J. Kuang, C.-Y. Ye, B.-Z. Liu, C. Xie, Q. Xu, Z.-D. Wang, Z.-Y. Tian

M22: PROCI-D-23-01625 Achieving high flame stability with low NO and zero N₂O and NH₃ emissions during liquid ammonia spray combustion with gas turbine combustors
E.C. Okafor, O. Kurata, H. Yamashita, N. Iki, T. Inoue, H. Jo, M. Shimura, T. Tsujimura, A. Hayakawa, H. Kobayashi

M23: PROCI-D-23-01675 Spectral analysis of soot dynamics in an aero-engine model combustor
G. Arumapperuma, Y. Tang, A. Attili, W. Han

M24: PROCI-D-23-01716 Sparse-Lagrangian MMC modelling of the Sandia ethylene sooting flame
W. Liu, A. Kronenburg, J.W. Gärtner, J. Kirchmann, T. Zirwes

Low-Carbon Technologies

M25: PROCI-D-23-00143 Comprehensive analysis of the characteristics of biomass in-situ and cooling char
B. Qian, Q. Song, X. Wang, W. Zhang, Y. Ye, X. Wang

M26: PROCI-D-23-00473 Effects of reactants stratification and pre-heating on the stabilization and emissions of partially cracked ammonia swirl flames
D.V. de Campos, T.F. Guiberti, E. Es-sebbar, D.A. Lacoste

M27: PROCI-D-23-00762 Ammonia blends for gas-turbines: Preliminary test and CFD-CRN modelling
C. Romano, M. Cerutti, G. Babazzi, L. Miris, R. Lamioni, C. Galletti, L. Mazzotta, D. Borello

M28: PROCI-D-23-00866 Fluidized bed chemical looping for CO₂ capture and catalytic methanation using dual function materials
F. Massa, E.M. Cepollaro, S. Cimino, A. Coppola, F. Scala

Low-Carbon Technologies

M29: PROCI-D-23-01047 The behaviour of NH₃/H₂/N₂, CH₄ and C₃H₈ turbulent premixed bluff-body stabilized flames near lean blow-off
T. Su, B. Xu, R.J.M. Bastiaans, N.A. Worth

M30: PROCI-D-23-01240 Effects of the secondary air on the combustion characteristics of turbulent premixed CH₄/NH₃/air flames in a two-stage swirl combustor
J. Kim, H. Lee, J.M. Lee, J. Park, S.H. Chung, C.S. Yoo

M31: PROCI-D-23-01323 MILD combustion of partially catalyzed NH₃ and NH₃/N₂ in a novel burner
T. Jiang, Y. Sun, L. Dai, W. Zeng, Y. Yang, C. Zou

M32: PROCI-D-23-01378 Design a novel Ca-Mn perovskite oxygen carrier with balanced performance in chemical looping combustion
X. Wu, X. Liu, G. Zou, J. Ma, H. Zhao

M33: PROCI-D-23-01576 Stabilization of methane-hydrogen flames inside a divergent porous media reactor
C. Munoz-Herrera, O. Skurtys, P. Nikrityuk, R.E. Hayes, M. Toledo

M34: PROCI-D-23-01686 Laminar burning velocity and Markstein length of ammonia/air flames up to the initial mixture pressure of 2.0 MPa
A. Hayakawa, T. Nagaoka, H. Kosada, H. Takeishi, T. Kudo, H. Nakamura

M35: PROCI-D-23-01797 Exploring flow reactor pyrolysis of branched OMEs: Insight into multi-sidechain effects on pyrolysis chemistry of CH₃OCH₃-n(OCH₃)_n (n = 1-3)
Q. Fang, J. Fang, Y. Zhang, J. Zhang, T. Lian, W. Li, Y. Li

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	Gas-Phase Reaction Kinetics	Fire Research	Flame Dynamics and Transport Processes	Turbulent Flames	Explosion Hazards, Detonation Applications, and Supersonic Combustion	Numerical Combustion	Detonation	Low-Carbon Technologies	Diagnostics	
15:20	1A07: PROCI-D-23-00421 High pressure ammonia/methanol oxidation up to 100 atm <i>Z. Wang, B. Mei, N. Liu, A. Thawko, X. Mao, P. Glarborg, S.J. Klippenstein, Y. Ju</i>	1B07: PROCI-D-23-00704 Uncertain lithium-ion cathode kinetic decomposition modelling via Bayesian chemical reaction neural networks <i>B.C. Koenig, H. Chen, Q. Li, P. Zhao, S. Deng</i>	1C07: PROCI-D-23-00264 Control of intrinsic thermo-acoustic instabilities for methane and hydrogen air flames: DNS and network analysis <i>A. Dupuy, Q. Douasbin, T. Poinso</i>	1D07: PROCI-D-23-01231 Reduction of NO _x emissions in ammonia combustion using a double-flame premixed co-combustion concept <i>L. Xu, A.M. Elbaz, E. Cenker, J. Sim, X.-S. Bai, W.L. Roberts</i>	1E07: PROCI-D-23-01313 Flameholding characteristics of a circular scramjet combustor with an asymmetric supersonic inflow <i>B. Yan, M. Sun, T. Tang, Y. Li, L. Wang, X. Yang, Q. Li, Y. Tian, S. Chen, J. Zhu</i>	1F07: PROCI-D-23-01108 Learning transient evolution of multidimensional reacting flows by multiscale Fourier neural operators <i>H. Zhang, Z. Zhao, Y. Weng, D. Zhou</i>	1G07: PROCI-D-23-01535 Grid resolution considerations for simulating non-ideal cellular detonations <i>P.A. Meagher, X. Zhao</i>	1H07: PROCI-D-23-00589 Distinct structure-activity relationship and reaction mechanism over CuO/CeO ₂ catalysts for NH ₃ self-sustained combustion <i>R. Kang, C. Zhang, Z. Zhang, F. Bin, X. Yi, J. Huang, X. Wei</i>	1J07: PROCI-D-23-01622 High-speed 1-D and 2-D Raman scattering measurement for quantitative characterization of transient hydrogen jets <i>B. Wu, H. Wu, M. Ben Houidi, P. Sharma, E. Cenker, A.S. AlRamadan, W.L. Roberts, G. Magnotti</i>	
15:40	1A08: PROCI-D-23-00897 The discovery of non-equilibrium kinetic sequences important to ammonia/co-fuel and propellant flames <i>R.E. Cornell, M.P. Burke</i>	1B08: PROCI-D-23-01388 Modeling initiation and propagation of thermal runaway in pouch Li-ion battery cells: Effects of heating rate and state-of-charge <i>D. Zeng, D. Mohaddes, L. Gagnon, Y. Wang</i>	1C08: PROCI-D-23-01380 Mitigating thermoacoustic instabilities in premixed hydrogen flames using axial staging <i>A. Ånestad, E. Æsøy, J.R. Dawson, N.A. Worth</i>	1D08: PROCI-D-23-00152 Experimental investigation of internal structures of NH ₃ /H ₂ /O ₂ /N ₂ premixed jet flames using multi-scalar imaging <i>Z. Wang, X. Li, T. Li, A. Dreizler, A.N. Lipatnikov, X. Liu, X. Gan, B. Zhou</i>	1E08: PROCI-D-23-01165 Strut-assisted injection of liquid fuel in a supersonic combustor <i>J. van der Lee, S. Nath, R. Kaner, J. Lefkowitz, D. Michaels</i>	1F08: PROCI-D-23-00594 Artificial neural network-based Hamiltonian Monte Carlo for high-dimensional Bayesian inference of reaction kinetics models <i>C. Liu, Y. Wang, C. Tao, C.K. Law, B. Yang</i>	1G08: PROCI-D-23-00986 Statistics of detonation confinement: 1D, 2D and 3D simulations in hydrogen-oxygen <i>R. Paknahad, J.T. Lipkowitz, N. Gaffran, I. Wlokas, A.M. Kempf, J. Crane</i>	1H08: PROCI-D-23-01375 Utilizing selective hydrogen combustion catalyst for efficient and highly-selective ethane dehydrogenation <i>Y. Li, C. Zheng, H. Zhao</i>	1J08: PROCI-D-23-00803 Towards non-intrusive, quantitative N ₂ O Raman measurements in ammonia flames <i>J. Lill, M. Stark, R. Schultheis, A. Weinmann, A. Dreizler, D. Geyer</i>	

Room	Red 1	Red 2	Blue 1	Blue 2	Yellow 1	Yellow 2	Yellow 3	White 1	White 2	Silver Plenary
	Gas-Phase Reaction Kinetics	Fire Research	Flame Dynamics and Transport Processes	Turbulent Flames	Explosion Hazards, Detonation Applications, and Supersonic Combustion	Numerical Combustion	Detonation	Low-Carbon Technologies	Diagnostics	
16:00	1A09: PROCI-D-23-00453 Probing the synergistic effect of NH ₃ and N ₂ O oxidation using an RCM coupled with time-resolved molecular beam mass spectrometry <i>W. Liao, Z. Chu, B. Yang</i>	1B09: PROCI-D-23-00819 Enhancing lithium-ion battery safety: Investigating the flame-retardant efficacy of bis(2,2,2-trifluoroethyl) carbonate during ethyl methyl carbonate combustion <i>C.M. Grégoire, Y.M. Almarzooq, M. Khan-Ghauri, P. Diévert, L. Catoire, E.L. Petersen, O. Mathieu</i>	1C09: PROCI-D-23-01030 High-frequency thermo-acoustic instability in a dual swirl H ₂ burner <i>H. Paniez, S. Marragou, H. Magnes, T. Schuller</i>	1D09: PROCI-D-23-01400 Effects of ammonia in-situ partial cracking on the structure of bluff-body non-premixed flames <i>A. Alfazazi, E.-t. Es-sebbar, S. Kumar, S. Abdelwahid, A.H. Asiri, W. Zhao, H.G. Im, B. Dally</i>	1E09: PROCI-D-23-00418 Enhancement of chemical heat release in a generic scramjet combustor using plasma injection modules <i>E.L. Braun, S.D. Hammack, T.M. Ombrello, P. Lax, S.B. Leonov</i>	1F09: PROCI-D-23-01054 A Hessian-based transfer learning approach for artificial neural networks based chemical kinetics with a sparse dataset <i>K.S. Jung, B.S. Soriano, J.H. Chen, M. Khalil</i>	1G09: PROCI-D-23-01596 A DNS study of detonation in H ₂ =O ₂ mixture with variable-intensity turbulences <i>S. Suzuki, K. Iwata, R. Kai, R. Kurose</i>	1H09: PROCI-D-23-00153 Experimental and numerical investigation of highpressure methane catalytic synthesis from H ₂ and CO ₂ <i>V.K. Arumugam, J. Mantzaras, A. Gantenbein, U. Doll, T. Schildhauer</i>	1J09: PROCI-D-23-00494 Theoretical and experimental characterization of CO ₂ CPP fs CARS for high-temperature and high-pressure diagnostics <i>M. Gu, Z. Chang, A. Satija, S. Yin, S. Wang, F. Qi, R.P. Lucht</i>	
16:20	<p style="text-align: center;">BREAK (30 minutes)</p> <p style="text-align: center;">The 40th International Symposium – Emphasizing Energy Transition would like to thank our Diamond Sponsor:</p> <p style="text-align: center;">Esa Pyronics</p> <p style="text-align: center;">The Combustion Institute is on the lookout for outstanding presentations. If you have seen a presentation that stood out, please send your recommendation to: office@combustioninstitute.org</p>									

Room	Red 1	Red 2	Blue 1	Blue 2	Yellow 1	Yellow 2	Yellow 3	White 1	White 2	Silver Plenary
	Gas-Phase Reaction Kinetics	Fire Research	Flame Dynamics and Transport Processes	Turbulent Flames	Propulsion	Numerical Combustion	Heterogeneous Combustion	Low-Carbon Technologies	Diagnostics	
16:50	1A10: PROCI-D-23-00610 An <i>ab initio</i> kinetic study on H-abstraction reactions of gasoline surrogates by NO ₂ <i>Z. Ren, Y. Duan, Z. Huang, D. Han</i>	1B10: PROCI-D-23-01145 High resolution numerical simulations of methane pool fires using adaptive mesh refinement <i>M.A. Meehan, J.C. Hewson, P.E. Hamlington</i>	1C10: PROCI-D-23-01478 Determination method of Markstein number based on wavenumber measurement of cellular flames at the onset of parametric instability of downward propagating flames <i>J.R. Delfin, F. Guo, N. Hashimo, O. Fujita</i>	1D10: PROCI-D-23-00309 Modelling differential diffusion using a Sparse-Lagrangian particle approach <i>S. Gutiérrez, A. Kronenburg, T. Zirwes</i>	1E10: PROCI-D-23-01261 Combustion instability analysis in an ethylene-fueled scramjet combustor under various fuel penetration height conditions using an image-based nonlinear dimensionality reduction method <i>S. Yasunaga, S. Nakaya, M. Tsue</i>	1F10: PROCI-D-23-00720 A sparse sensing and chemical reactor network based framework for the development of physics-based digital twins of combustion devices <i>M. Savarese, A. Procacci, S. Iavarone, L. Giuntini, W. De Paepe, A. Parente</i>	1G10: PROCI-D-23-01250 New Insights into the heterogeneous reduction of NO on coal char based on molecular configuration evolution <i>X. Yang, J. Liu, Z. Zhou, J. Liu, X. Jiang</i>	1H10: PROCI-D-23-00412 Dynamic stability of porous media burners and sensitivity to oscillating inlet conditions <i>N. DiReda, J. Ringsby, G. D'Orazio, A. Saha, S. Sobhani</i>	1J10: PROCI-D-23-00436 Molecular-level monitoring of jet fuel precursors during the thermal degradation of poplar wood via flowthrough reactor coupling online high-resolution mass spectrometry <i>L. Zhu, J. Zhang, X. Xiao, X. Kuang, C. Cui, H. Liu, Z. Zhou, F. Qi</i>	
17:10	1A11: PROCI-D-23-00569 New insights into the NH ₃ /N ₂ O/Ar system: Key steps in N ₂ O evolution <i>Q. Wang, H. Wang, H. Chen, W. Liao, Z. Liu, Z. Hu, R. Sui, Z. Wang, B. Yang</i>	1B11: PROCI-D-23-01290 A cost-effective CFD model for large-scale liquid fuel spill fires <i>N. Ren, G. Agarwal, A. Krisman, Y. Wang</i>	1C11: PROCI-D-23-00685 A new class of Galerkin expansion models for the study of thermoacoustic instabilities <i>C.F. Silva, W. Polifke</i>	1D11: PROCI-D-23-00953 Synergistic interplay of thermodiffusive instability and turbulence in premixed flames <i>P.E. Lapenna, G. Troiani, F. D'Alessio, F. Creta</i>	1E11: PROCI-D-23-01144 Analysis of residence time distribution in a cavity-stabilized scramjet combustor <i>M. Bonanni, A. Norris, M. Ihme</i>	1F11: PROCI-D-23-01690 Robust mechanism discovery with atom conserving chemical reaction neural networks <i>F.A. Döppel, M. Votsmeier</i>	1G11: PROCI-D-23-01612 An improved semi-global intrinsic kinetics model for high temperature carbon oxidation <i>C.R. Shaddix</i>	1H11: PROCI-D-23-01753 Experimental demonstration of a two-stage porous media burner for low-emission ammonia combustion <i>G. Vignat, T. Zirwes, E. Boigné, M. Ihme</i>	1J11: PROCI-D-23-00419 Combining mass spectrometry, i ² PEPICO, and FTIR spectroscopy: Comprehensive speciation in DMM/NO oxidation <i>S. Schmitt, N. Gaiser, H. Zhang, A. Stagni, J. Bachmann, P. Oßwald, K. Kohse-Höinghaus, M. Köhler</i>	

Room	Red 1	Red 2	Blue 1	Blue 2	Yellow 1	Yellow 2	Yellow 3	White 1	White 2	Silver Plenary
	Gas-Phase Reaction Kinetics	Fire Research	Flame Dynamics and Transport Processes	Turbulent Flames	Propulsion	Numerical Combustion	Heterogeneous Combustion	Low-Carbon Technologies	Diagnostics	
17:30	1A12: PROCI-D-23-00947 CH ₄ -NH ₃ -NO oxidation: The interplaying role of NO sensitizing effect and DeNO _x chemistry <i>M.V. Manna, P. Sabia, R. Ragucci, M. de Joannon</i>	1B12: PROCI-D-23-00561 Two-zone subgrid combustion model for large eddy simulations of buoyant diffusion flames <i>A. Snegirev, G. Maragos, Y. Moorthamers, J.A. Thabari, B. Merci</i>	1C12: PROCI-D-23-00393 The role of hydrodynamic shear in the thermoacoustic response of slit flames <i>P. Brokof, C.M. Douglas, W. Polifke</i>	1D12: PROCI-D-23-00068 A subgrid-scale model to account for thermo-diffusive effects in artificially thickened lean LES models for turbulent premixed ammonia/hydrogen flames. <i>J. Gaucherand, C. Schulze-Netzer, D. Laera, T. Poinso</i>	1E12: PROCI-D-23-01564 Regulating scramjet combustor mode transition using fuel distribution control <i>M. Kanapathipillai, K.H. Yu</i>	1F12: PROCI-D-23-01100 A multi-fidelity framework for developing digital twins of combustion systems from heterogeneous data: Application to ammonia combustion <i>A. Özden, M. Savarese, L. Giuntini, A. Procacci, R.M. Galassi, A. Coussement, F. Contino, A. Parente</i>	1G12: PROCI-D-23-01536 Comprehensive effect of coal rank and particle size on ammonia/coal stream ignition <i>P. Ma, Q. Huang, Z. Wu, T. Si, Z. Lv, S. Li</i>	1H12: PROCI-D-23-00246 Speed-up drivers for H ₂ -enriched flames in porous media burners <i>E. Flores-Montoya, P.-A. Masset, T. Schuller, L. Selle</i>		
SESSIONS END AT 17:50										
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Tuesday, 23 July 2024

(Silver Plenary Room)
PLENARY LECTURE – 8:30 am

Artificial Intelligence as a Catalyst for Combustion Science and Engineering
Matthias Ihme, Wai Tong Chung

9:30

BREAK (10 minutes)

Room	Red 1	Red 2	Blue 1	Blue 2	Yellow 1	Yellow 2	Yellow 3	Whilte 1	Whilte 2	Silver Plenary
	Gas-Phase Reaction Kinetics	Fire Research	Flame Dynamics and Transport Processes (Microgravity)	Turbulent Flames	Propulsion	Numerical Combustion	Exp Haz, Det App, & Supersonic Combustion	Low-Carbon Technologies	Emission Mitigation	
9:40	2A01: PROCI-D-23-00464 Experimental and kinetic modeling of soot formation in counterflow non-premixed flames of surrogate fuel components: N-dodecane and iso-dodecane <i>T. Chatterjee, C. Saggese, X. Xue, G. Kukkadapu, W.J. Pitz, S.W. Wagnon, C.-J. Sung</i>	2B01: PROCI-D-23-01572 Formation and movement of multiple fire whirls <i>Z. Liu, J. Lei, N. Liu</i>	2C01: PROCI-D-23-01627 Exploring nonlinear flame speed inhibition effects in mixtures of R1234yf and R32 under microgravity conditions <i>R. Hesse, R. Glaznev, R. Langer, C. Schwenzler, V. Babushok, G. Linteris, H. Pitsch, J. Beeckmann</i>	2D01: PROCI-D-23-01249 Filtered tabulated chemistry for multi-regime combustion <i>S. Dillon, R. Mercier, B. Fiorina</i>	2E01: PROCI-D-23-01093 Effect of two-component liquid fuel mixtures on the dynamics of a swirl-stabilized spray flames array subjected to a forced transverse acoustic mode <i>A. Alhaffar, C. Patat, J.-B. Blaisot, É. Domingues, F. Baillot</i>	2F01: PROCI-D-23-01090 Feature-based adaptive mesh refinement for multi-regime reactive flows <i>A. Stock, V. Moureau</i>	2G01: PROCI-D-23-01611 Deformation and aerobreakup of RP-2 droplets from hypersonic shock waves <i>S. Schroeder, S. Salauddin, A. Morales, M. Moran, R. Hytovick, E. Rigney, K. Ahmed</i>	2H01: PROCI-D-23-00398 First principle based rate equation (1pRE) for reduction kinetics of Fe ₂ O ₃ with syngas in chemical looping <i>J. Li, Z. Li</i>	2J01: PROCI-D-23-01351 Shock tube and modeling study on the ignition delay times of ammonia/ethylene mixtures at high temperatures <i>C. Peng, C. Zou, J. Liu, L. Dai, W. Xia</i>	

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Room	Red 1	Red 2	Blue 1	Blue 2	Yellow 1	Yellow 2	Yellow 3	White 1	White 2	Silver Plenary
	Gas-Phase Reaction Kinetics	Fire Research	Flame Dynamics and Transport Processes (Microgravity)	Turbulent Flames	Propulsion	Numerical Combustion	Exp Haz, Det App, & Supersonic Combustion	Low-Carbon Technologies	Emission Mitigation	
10:00	2A02: PROCI-D-23-00568 Ozone-assisted low temperature oxidation of indene: An experimental and computational study <i>Y. Deng, Z. Xiong, J. Guo, B. Liu, M. Zeng, Z. Wang, Z. Zhou, W. Yuan, F. Qi</i>	2B02: PROCI-D-23-00497 The chemical structure of triple flames in laminar blue whirls <i>S.B. Hariharan, P.M. Anderson, Y. Wang, W.D. Kulatilaka, M.J. Gollner, E.S. Oran</i>	2C02: PROCI-D-23-01242 The effects of elevated pressure on the kinetics of gaseous spherical diffusion flames <i>K.A. Waddell, G. Yablonsky, D. Constaes, P.B. Sunderland, R.L. Axelbaum</i>	2D02: PROCI-D-23-00274 Effects of Karlovitz number variations on thermodiffusive instabilities in lean turbulent hydrogen jet flames <i>L. Berger, A. Attili, M. Gauding, H. Pitsch</i>	2E02: PROCI-D-23-01431 Flame transfer function analysis of hydrogen diffusion swirl flames <i>G. Wang, A. Faure Beaulieu, B. Schuermans, N. Noiray</i>	2F02: PROCI-D-23-01074 Non-conforming Schwarz-spectral element method for low Mach number reacting flows <i>I. Kavroulakis, D. Papageorgiou, C.E. Frouzakis, P. Fischer, A. Tomboulides</i>	2G02: PROCI-D-23-00620 Analysis and flamelet modeling of preferential evaporation in SAF/Jet A spray flames <i>J. Xing, Z. An, R. Kurose</i>	2H02: PROCI-D-23-01414 Preferential oxidation of CO in H ₂ -rich gas via chemical looping combustion with Ce-doped CuO oxygen carriers <i>Z. Zhang, Z. Xu, F. Xie, H. Zhao</i>	2J02: PROCI-D-23-00085 Effects of ammonia addition on soot and precursors formation in 1-butene pyrolysis-Part 1: View from gas-phase species <i>C. Chen, K. Yang, D. Qi, R. Yu, M. Chen, Y. Ying, D. Liu</i>	
10:20	2A03: PROCI-D-23-00606 A comprehensive experimental and kinetic modeling study of methyl tert-butyl ether combustion <i>J.-T. Chen, A. Abd El-Sabor Mohamed, P. Wang, Y. Zhai, S.S. Nagaraja, J.E. Jacobs, E.L. Petersen, C.-W. Zhou, H.J. Curran</i>	2B03: PROCI-D-23-01739 How does blue ring form in a blue whirl: An experimental study <i>Y. Yang, H. Zhang, L. Li, M. Gu, X. Xia, F. Qi</i>	2C03: PROCI-D-23-01628 Extinction of microgravity partially premixed flame aboard the Chinese Space Station <i>Y. Wen, L. Li, X. Li, L. Luo, T. Chen, W. Zhang, H. Zhou, S. Chen, Y. Sun, J. Shi, X. Huang, R. Mével, S. Wang, H. Zheng, X. Yang, X. Zhang, Y. He, C. Du, J. Cao, Y.C. Liu</i>	2D03: PROCI-D-23-00967 Effect of differential diffusion on head-on quenching of premixed NH ₃ /H ₂ /air flames within turbulent boundary layers <i>C. Chi, C. Yu, B. Cuenot, U. Maas, D. Thévenin</i>	2E03: PROCI-D-23-00913 Effect of air preheating temperature on the dynamic behavior of a swirled spray flame <i>M. Truffot, A. Renaud, F. Richecoeur, L. Zimmer, Y. Méry</i>	2F03: PROCI-D-23-01317 Quantum computing of reacting flows via Hamiltonian simulation <i>Z. Lu, Y. Yang</i>	2G03: PROCI-D-23-01216 Impact of spray interaction on ammonia/diesel dual-fuel combustion and emission under engine relevant conditions <i>L. Xu, P. Dong, Z. Zhang, J. Bu, J. Tian, W. Long, H. Liu, X.-S. Bai</i>	2H03: PROCI-D-23-01286 Quantitative evaluation of four oxygen carriers for natural gas chemical looping combustion <i>X. Liu, Z. Li, L. Shen, J. Ma, H. Zhao</i>	2J03: PROCI-D-23-01067 Effect of ammonia addition on nanostructure of soot in laminar coflow diffusion flames of ethylene diluted with nitrogen <i>J. Zheng, L. Hu, S.H. Chung</i>	

Room	Red 1	Red 2	Blue 1	Blue 2	Yellow 1	Yellow 2	Yellow 3	White 1	White 2	Silver Plenary
	Gas-Phase Reaction Kinetics	Fire Research	Flame Dynamics and Transport Processes (Microgravity)	Turbulent Flames	Propulsion	Numerical Combustion	Exp Haz, Det App, & Supersonic Combustion	Low-Carbon Technologies	Emission Mitigation	
10:40	2A04: PROCI-D-23-00920 Stereoisomer-dependent rate coefficients and reaction mechanisms of 2-ethyloxetanylperoxy radicals <i>A.C. Doner, J. Zádor, B. Rotavera</i>	2B04: PROCI-D-23-00448 Effect of imposed circulation on the transition between blue whirls and fire whirls <i>Z. Chen, H. Xiao</i>	2C04: PROCI-D-23-00539 DMD analysis on sporadic flame behaviors in low-Lewis-number counterflow under microgravity <i>T. Akiba, A. Tsunoda, T. Tezuka, Y. Morii, H. Nakamura, K. Maruta</i>	2D04: PROCI-D-23-00949 LES of turbulent partially-premixed flames using reaction-diffusion manifold-reduced chemistry with a consistent gradient estimate determined “on the fly” <i>P. Shrotriya, R. Schießl, V. Bykov, U. Maas</i>	2E04: PROCI-D-23-01401 Dynamical state and driving region of combustion instability in a swirl-stabilized turbulent combustor <i>S. Amano, T. Kawada, S. Fukuda, Y. Nabae, H. Gotoda</i>	2F04: PROCI-D-23-01097 Low-cost Jacobian-free mapping for dynamic cell clustering in multi-regime reactive flows <i>A. Stock, V. Moureaux, J. Leparoux, R. Mercier</i>	2G04: PROCI-D-23-00106 Large eddy simulations of n-heptane and n-dodecane binary blends in swirling multi-component spray flames <i>N. Sekularac, T. Lesaffre, D. Laera, L. Gicquel</i>	2H04: PROCI-D-23-00307 Enhanced combustion performance and reduced NOx emissions during chemical looping ammonia combustion with Cu-Fe oxygen carrier <i>L. Zou, Y. Wu, L. Zhu, K. Yang, K. Qian, Y. Cui, M. Fan, D. Liu</i>	2J04: PROCI-D-23-00039 Coupling effects of elevated pressure and preheating temperature on sooting tendency in laminar co-flow diffusion flame of n-heptane <i>Z. Zhang, Y. Wu, X. He, L. Zhou</i>	
11:00	BREAK (30 minutes)									
Room	Red 1	Red 2	Blue 1	Blue 2	Yellow 1	Yellow 2	Yellow 3	White 1	White 2	Silver Plenary
	Gas-Phase Reaction Kinetics	Fire Research	Flame Dynamics and Transport Processes	Turbulent Flames	Propulsion	Turbulent Flames II	Detonation	Low-Carbon Technologies	Emission Mitigation	TOPICAL REVIEW
11:30	2A05: PROCI-D-23-00319 Predicting the autoignition behaviour of tailorable advanced biofuel blends using automatically generated mechanisms <i>C. Michelbach, K. Hakimov, A. Farooq, A.S. Tomlin</i>	2B05: PROCI-D-23-00518 Flaming vs. smoldering emissions of pine needles under limited oxygen and fuel moisture conditions <i>S. Wang, B.L. Bathras, W. Cui, P. Garg, S. Lin, M.J. Gollner</i>	2C05: PROCI-D-23-01384 Effect of confinement on the propagation patterns of lean hydrogen-air flames <i>A. Dejoan, Z. Zhou, D. Fernández-Galisteo, P.D. Ronney, V.N. Kurdyumov</i>	2D05: PROCI-D-23-00186 Three-dimensional geometrical effects on the near-wall quenching of turbulent premixed flame <i>Y. Wang, M. Tanahashi</i>	2E05: PROCI-D-23-01229 Understanding the ignition process and flame structure of conventional and oxygenated fuels under engine relevant conditions – An optical study <i>R. Rajasegar, A. Srna</i>	2F05: PROCI-D-23-00073 Stabilization regimes and flame structure at the flame base of a swirled lean premixed hydrogen-air injector with a pure hydrogen pilot injection <i>J. Bertsch, T. Poinso, N. Bertier, J.L. Ruan</i>	2G05: PROCI-D-23-01531 Regularity of detonation cellular structures in high activation energy hydrocarbon mixtures <i>E.S. Genter, J.B. Kennedy, C. Sipper, A.S. Jayaraman, N. Montes, H. Wang</i>	2H05: PROCI-D-23-00302 Effects of air-staging and heat losses on NO emissions of NH ₃ /CH ₄ /air swirling flames <i>S. Wang, A.M. Elbaz, Z. Wang, W.L. Roberts</i>	2J05: PROCI-D-23-00550 Effect of ferric chloride addition on soot formation during ethylene pyrolysis in a laminar flow reactor <i>Q. He, Y. Zhou, X. You</i>	TOPICAL REVIEW Artificial Intelligence for Novel Fuel Design <i>S. Mani Sarathy, Basem A. Eraqi</i>

Room	Red 1	Red 2	Blue 1	Blue 2	Yellow 1	Yellow 2	Yellow 3	Whilte 1	Whilte 2	Silver Plenary
	Gas-Phase Reaction Kinetics	Fire Research	Flame Dynamics and Transport Processes	Turbulent Flames	Propulsion	Turbulent Flames II	Detonation	Low-Carbon Technologies	Emission Mitigation	TOPICAL REVIEW
11:50	2A06: PROCI-D-23-00144 Experimental and kinetic modeling study on the low-temperature decomposition and autoignition of 2-azido-dimethylethanamine: A promising green mono- and bi-propellant <i>Y. Wu, X. Kong, Y. Ao, Y. Hou, J. Wang, G. Yin, W. Sun, Y. Zhang, C. Tang, Z. Huang</i>	2B06: PROCI-D-23-01668 Transition from smouldering to flaming combustion of pine needle fuel beds under natural convection <i>Y. Qiao, H. Zhang, J. Yang, H. Chen, N. Liu, M. Xu, L. Zhang</i>	2C06: PROCI-D-23-01773 Comparisons of the dynamic responses of diffusion flames subjected to acoustic disturbances in the fuel and air lines <i>Y. Zhang, X. Liang, Z. Wang, L. Yang, J. Li</i>	2D06: PROCI-D-23-01665 Reynolds number scaling and self-similarity of the flame surface density function for turbulent premixed flames in shear-driven turbulence up to $Re_\lambda = 140$ <i>A. Vinod, T. Kulkarni, F. Bisetti</i>	2E06: PROCI-D-23-01661 Experimental investigations on the DC ignition characteristics of HAN-based ionic liquid propellant <i>X. Chen, Y. Tang, Z. Yao, J. Zhuo, Q. Yao, S. Li</i>	2F06: PROCI-D-23-01193 Controlling the resolved flame thickness of non-premixed flames in LES with filtered tabulated chemistry <i>S. Dillon, R. Mercier, B. Fiorina</i>	2G06: PROCI-D-23-01489 3D effects of detonation re-initiation after diffraction at a back-facing step <i>Y. Poroshyna, J. Loiseau, S.S.-M. Lau-Chapdelaine, G. Ciccarelli</i>	2H06: PROCI-D-23-00981 Propagation characteristics of lean turbulent ammonia-hydrogen flames <i>R. Khamedov, M. Rafi Malik, F.E. Hernández-Pérez, H.G. Im</i>	2J06: PROCI-D-23-01768 A tractable methodology for assessing the pressure scaling of sooting processes in a counterflow diffusion flame at 1 to 6 bar <i>R. Sawanni, Ö.L. Gülder</i>	TOPICAL REVIEW Artificial Intelligence for Novel Fuel Design S. Mani Sarathy, <i>Basem A. Eraqi</i>
12:10	2A07: PROCI-D-23-00786 Auto-ignition characteristics of oxygenated aromatic compounds: benzyl alcohol, benzaldehyde, and phenol <i>K.A. Heufer, R.D. Büttgen, L.P. Maffei, M. Pelucchi</i>	2B07: PROCI-D-23-01705 Experimental study of smouldering combustion and transient emissions from forest duff with dual layers <i>J. Yang, H. Wang, R. Wang, Z. Fu, Y. Hu</i>	2C07: PROCI-D-23-01012 Effect of a shear flow on the Darrieus–Landau instability in a Hele-Shaw channel <i>P. Rajamanickam, J. Daou</i>	2D07: PROCI-D-23-01640 Direct numerical simulation of low-emission ammonia rich-quench-lean combustion <i>M. Rieth, A. Gruber, E.R. Hawkes, J.H. Chen</i>	2E07: PROCI-D-23-00269 Effects of pilot injection on ignition performance for F-24/gasoline fuel blends <i>J. Kim, E. Mayhew, V. Coburn, J. Temme, C.-B. Kweon</i>	2F07: PROCI-D-23-00714 Flamelet generated manifolds for lean premixed turbulent hydrogen flames <i>G. Sanchez Bahoque, J. van Oijen</i>	2G07: PROCI-D-23-01436 Experimental investigation of high explosive detonation structure and dynamics near the failure diameter <i>E.K. Anderson, M. Short, S.J. Voelkel, C. Chiquete, R.I. Chicas, J.R. Gibson</i>	2H07: PROCI-D-23-00968 Mitigating CO ₂ emission from methane based thermal power with a self-decarbonizing combustor <i>K.S. Ajojwar, S.A. Pawar, S. Chaudhuri</i>	2J07: PROCI-D-23-00427 A PAH growth mechanism for nitrogen-containing aromatics in ammonia-doped hydrocarbon flames <i>Q. Wang, T. Wang, S.M. Sarathy</i>	

Room	Red 1	Red 2	Blue 1	Blue 2	Yellow 1	Yellow 2	Yellow 3	Whilte 1	Whilte 2	Silver Plenary
	Gas-Phase Reaction Kinetics	Fire Research	Flame Dynamics and Transport Processes	Turbulent Flames	Propulsion	Turbulent Flames II	Detonation	Low-Carbon Technologies	Emission Mitigation	
12:30	2A08: PROCI-D-23-01476 The role of C ₃ and C ₄ species in forming naphthalene in counterflow diffusion flames <i>M. Hellmuth, R. Langer, A. Meraviglia, J. Beeckmann, H. Pitsch</i>	2B08: PROCI-D-23-00958 Characterizing the wave of discrete glowing smolder spots generated at the base of a concurrent microgravity flame spreading over a cotton-fiberglass fabric <i>S.L. Olson</i>	2C08: PROCI-D-23-01707 Open-loop control of thermoacoustic instabilities by the external acoustic forcing at different frequencies <i>P. Wang, Y. Tian, L. Yang, S. Luo, J. Li, T. Liu</i>	2D08: PROCI-D-23-01673 DNS of ignition and flame stabilization in a simplified gas turbine pre-mixer <i>M. Vabre, Z. Li, S. Jella, P. Versailles, G. Bourque, M. Day, B. Savard</i>	2E08: PROCI-D-23-01641 Numerical and experimental investigation of single and multi-injection ignition of F-24/ATJ blends <i>M. Rieth, J. Kim, E. Mayhew, J. Temme, C.-B. Kweon, P. Wiersema, T. Lee, J.H. Chen</i>	2F08: PROCI-D-23-00281 Analysis of spontaneous ignition of hydrogen-enriched methane in a rectangular tube <i>S. Zhou, J. Xiao, Z. Luo, M. Kuznetsov, Z. Chen, T. Jordan, D.T. Banuti</i>	2G08: PROCI-D-23-01752 500-KHz OH PLIF and OH* chemiluminescence imaging of deflagration and rotating detonation in CH ₄ -O ₂ and H ₂ -air mixtures <i>R.B. Wang, A.M. Webb, V. Athmanathan, M.N. Slipchenko, S.P. Kearney, S. Roy, C.A. Fugger, T.R. Meyer</i>	2H08: PROCI-D-23-00205 Plasma-assisted combustion of hydrogen swirling flames: Extension of lean blowout limit and NO _x emissions <i>J.-B. Perrin-Terrin, N. Vaysse, D. Durox, R. Vicquelin, S. Candel, C.O. Laux, A. Renaud</i>	2J08: PROCI-D-23-00298 Formation of five-membered ring structures via reactions of <i>o</i> -benzynes <i>N. Hansen, T. Bierkanndt, N. Gaiser, P. Oßwald, M. Köhler, P. Hemberger</i>	
12:50	<p style="text-align: center;">LUNCH (70 Minutes) – On Your Own</p> <p style="text-align: center;">The 40th International Symposium – Emphasizing Energy Transition would like to thank our Bronze Sponsors:</p> <p style="text-align: center;"> Andor Andritz Baker Hughes Casale Convergent Dantec Dynamics FM Global Lumibird More Rolls Royce Wood Zeeco </p>									

POSTER SESSION (60 Minutes)

14:00	<p>Gas-Phase Reaction Kinetics</p> <p>T01: PROCI-D-23-00054 Oxidation of methylamine (CH₃NH₂)/CH₄/NO mixtures in an atmospheric-pressure flow reactor <i>M.U. Alzueta, T. Pérez, L. Marrodán</i></p> <p>T02: PROCI-D-23-00065 Chemical mechanism reduction and derivation for C₇–C₁₆ n-alkylbenzenes using integrated global sensitivity analysis and reaction rate rules <i>S. Huang, Y. Chang, H. Zhang, M. Jia</i></p> <p>T03: PROCI-D-23-00113 Towards characterizing the effect of sustainable gasoline additives on the low-T reactivity of n-heptane using CO speciation in a shock tube <i>P. Biswas, V. Boddapati, R.K. Hanson</i></p> <p>T04: PROCI-D-23-00407 Experimental and modeling study on the autoignition behavior of H₂-O₂ mixtures under atmospheric pressure for argon power cycle engines <i>S. Jin, S. Agarwal, D. Zhu, R. Fernandes, L. Li, B. Shu</i></p> <p>T05: PROCI-D-23-00441 Low-pressure pyrolysis study of N-methylethylamine with SVUV-time of flight mass spectrometry <i>Z.-H. Zheng, D. Wang, C.-Y. Zhao, J.-M. Lei, Z.-Q. Zhu, W. Li, J.-H. Lu, C.-Y. Wang, C. Huang, L. Zhao, J.-Z. Yang, Z.-Y. Tian</i></p> <p>T06: PROCI-D-23-00482 Ozone-assisted low-temperature oxidation of acetone <i>L. Zhu, S. Chen, B. Liu, Q. Zhu, Q. Xu, Z. Wang</i></p> <p>T07: PROCI-D-23-00745 Shock-tube study of the oxidation of ammonia by N₂O <i>O. Mathieu, C.M. Grégoire, E.L. Petersen</i></p> <p>T08: PROCI-D-23-00768 Evaluation of high-pressure syngas ignition under high-CO₂ Dilution in shock tubes <i>M. Abulail, M. Intardonato, M. Hay, S.P. Cooper, O. Mathieu, W.D. Kulatilaka, E.L. Petersen</i></p> <p>T09: PROCI-D-23-00800 A detailed high-pressure oxidation study of n-pentanal <i>Z. Serinyel, G. Dayma, P. Dagaut</i></p> <p>T10: PROCI-D-23-01007 Effect of NO₂ addition on the oxidation kinetics of n-pentane and natural gas blends with C₁–C₅ n-Alkanes <i>V. Pathak, A.A. El-Sabor Mohamed, S. Panigrahy, G. Bourque, H.J. Curran</i></p>	<p>Gas-Phase Reaction Kinetics</p> <p>T11: PROCI-D-23-01176 Experimental and numerical ignition delay times comparison for ammonia mechanisms at high pressure <i>F. Hurault, Y. Fenard, P. Brequigny, B. Moreau, Y. Haidous, F. Foucher, C. Mounaïm-Rousselle</i></p> <p>T12: PROCI-D-23-01321 Heptanone isomers as a biofuel: Reactivity with OH radicals <i>D. Liu, F. Khaled, A. Farooq</i></p> <p>Flame Dynamics and Transport Processes</p> <p>T13: PROCI-D-23-00980 Experimental and modeling investigation of the laminar flame speeds for ammonia with various oxygen and diluent mixtures <i>A. Hamadi, N. Obrecht, C. Callu, A. Stagni, T. Faravelli, A. Comandini, N. Chaumeix</i></p> <p>T14: PROCI-D-23-01039 A study on the laminar flame speed of ammonia- Acetylene with enhanced oxygen content: Experimental and modeling investigation <i>A. Hamadi, N. Obrecht, C. Callu, A. Comandini, N. Chaumeix</i></p> <p>T15: PROCI-D-23-00127 Flame stabilization by a highly conductive cylinder: Multiple steady-state solutions and dynamics <i>A. Dejoan, C. Jiménez, V.N. Kurdyumov</i></p> <p>T16: PROCI-D-23-00197 Effect of quenching on flashback of hydrogen-enriched laminar premixed flames <i>H. Pers, T. Poinot, T. Schuller</i></p> <p>T17: PROCI-D-23-00475 Laminar burning velocities of rich NH₃+N₂+O₂ flames: Comparing the effects of elevated temperatures and oxygen ratios on mechanism validation <i>X. Han, F. Lin, D. Yuan, H. Feng, R. Lin</i></p> <p>T18: PROCI-D-23-00532 Real gas effects on the dynamics of a reactive diffusion layer: Application to the study of spontaneous ignition limit of pressurized hydrogen jet <i>Z. Weng, Y. Tan, B.M. Maxwell, R. Mével</i></p> <p>T19: PROCI-D-23-00743 Flow modification due to parallel electric fields increases displacement speed of a lifted edge-flame <i>J. Son, S.H. Park, M.S. Cha</i></p>	<p>Flame Dynamics and Transport Processes</p> <p>T20: PROCI-D-23-00781 Displacement speed of wall quenching laminar premixed flames in a stagnation flow <i>T. Tomidokoro, H.G. Im</i></p> <p>T21: PROCI-D-23-00806 Revisiting performance of reactivity stratification with hydrogen addition for ammonia combustion <i>W. Guan, C. Chi, W. Liang, D. Thévenin</i></p> <p>T22: PROCI-D-23-00835 Experimental investigation and modeling of boundary layer flashback for non-swirling premixed prevaporized n-propanol/air and /iso-propanol/air flames <i>J. Bajrami, P. Zimmermann, F. Dinkelacker</i></p> <p>T23: PROCI-D-23-00909 Thermal diffusion, exhaust gas recirculation and blending effects on lean premixed hydrogen flames <i>T. L. Howarth, M.S. Day, H. Pitsch, A.J. Aspden</i></p> <p>T24: PROCI-D-23-00921 Dependence of Zel'dovich number on pressure and temperature in lean hydrogen-air mixtures <i>S.M. Mousavia, A.N. Lipatnikov</i></p> <p>T25: PROCI-D-23-00963 An extension of the artificially thickened flame approach for premixed hydrogen flames with intrinsic instabilities <i>V. Schuh, C. Hasse, H. Nicolai</i></p> <p>T26: PROCI-D-23-01121 Buoyancy effect on extinction limits in low strain rate counterflow diffusion flames of methane <i>S. Tao, J. Fang, L. Hu, Y. Chen, Y. Yang, J. Wang, S.H. Chung</i></p> <p>T27: PROCI-D-23-01123 The role of suction, initial shear layer thickness, and co-flow temperature on hydrogen flame lift-off in countercurrent nozzles <i>A. Wawrzak, A. Boguslawski, A. Tyliczszak</i></p> <p>T28: PROCI-D-23-01203 Single ammonia droplet combustion in a high-pressure environment in microgravity <i>Y. Matsuura, A. Banno, M. Mikami</i></p> <p>T29: PROCI-D-23-01206 Background vapor effect on droplet evaporation in a turbulent flow at elevated pressure <i>A. Arabkhalaja, C. Verwey, M. Birouka</i></p>
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POSTER SESSION (60 Minutes)

14:00	Flame Dynamics and Transport Processes T30: PROCI-D-23-01299 Theoretical analysis on the forced ignition of a quiescent mixture by composite ignition source <i>D. Yu, L. Yue, Z. Chen</i> T31: PROCI-D-23-01543 On the role of hydrodynamic instability and flame symmetry in flame-acoustic coupling in narrow channels <i>C. Miao, L. Benteux, D.M. Valiev</i>			Flame Dynamics and Transport Processes T32: PROCI-D-23-01550 Numerical investigations on flame pattern formations for premixed methane/air combustion in a radial microchannel <i>J. Chang, X. Kang</i> T33: PROCI-D-23-01563 Ultra-slow ammonia flame speeds - A microgravity study on radiation <i>R. Glaznev, C. Schwenzer, R. Hesse, S. Girhe, H. Pitsch, J. Beeckmann</i> T34: PROCI-D-23-01623 Laminar flame speed correlation of ammonia-based fuels with functional group contribution method <i>J. Chen, X. Gou</i>			Flame Dynamics and Transport Processes T35: PROCI-D-23-01760 Digital holography for the study of non-aerated liquid jets in supersonic crossflow <i>J.A. Johnson, A.W. Marsh, E.J. Douglas, B.A. Ochs, S.D. Hammack, S. Menon, Y.C. Mazumdar</i> T36: PROCI-D-23-01764 Effects of reaction progress on the laminar flame speed of gasoline/air mixtures under engine-relevant conditions <i>H. Tajima, T. Tomidokoro, T. Yokomori</i>		
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Room	Red 1	Red 2	Blue 1	Blue 2	Yellow 1	Yellow 2	Yellow 3	White 1	White 2	Silver Plenary
	Gas-Phase Reaction Kinetics	Fire Research	Flame Dynamics and Transport Processes	Turbulent Flames	Detonation	Numerical Combustion	Heterogeneous Combustion	Low-Carbon Technologies		
15:00	2A09: PROCI-D-23-00559 Spatially resolved NH* and OH* profiles in ammonia-hydrogen-air counterflow diffusion flames <i>G. Issayev, X. Zhu, G. Capriolo, T.F. Guibert</i>	2B09: PROCI-D-23-01473 Experiment and modeling of stochastic ignition and combustion of fuel droplets impacting a hot surface <i>N. Ly, Y. Ma, G. Vignat, N. Hashimoto, M. Ihme</i>	2C09: PROCI-D-23-01509 Flame surface area enhancement resulting from the head-on interaction with an expansion wave <i>K. Cheevers, H. Yang, A. Pekalski, M. Radulescu</i>	2D09: PROCI-D-23-00420 Internal flame structures of thermo-diffusive lean premixed H ₂ /air flames with increasing turbulence <i>S. Shi, R. Schultheis, R.S. Barlow, D. Geyer, A. Dreizler, T. Li</i>	2E09: PROCI-D-23-01589 Dynamics of mono-size aerosolized liquid fuel detonations <i>T. Brown, R. Hytovick, J. Berson, R. Burke, S. Salauddin, K. Ahmed</i>	2F09: PROCI-D-23-01191 FGM modeling of ammonia/n-heptane combustion under RCCI engine conditions <i>Y. Zhou, S. Xu, L. Xu, X.-S. Bai</i>	2G09: PROCI-D-23-01311 Thermal interaction of inert additives in energetic materials <i>G. Tsai, S. Kim, S. Deng</i>	2H09: PROCI-D-23-01024 Dimethoxy-methane low- and intermediate-temperature oxidation up to 100 atm <i>B. Mei, Z. Wang, A. Thawko, N. Liu, L. Thompson, J. Attinger, Y. Ju</i>		

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Room	Red 1	Red 2	Blue 1	Blue 2	Yellow 1	Yellow 2	Yellow 3	White 1	White 2	Silver Plenary
	Gas-Phase Reaction Kinetics	Fire Research	Flame Dynamics and Transport Processes	Turbulent Flames	Detonation	Numerical Combustion	Heterogeneous Combustion	Low-Carbon Technologies		
15:20	2A10: PROCI-D-23-01077 Simultaneous OH and OH* measurements during NH ₃ oxidation in a shock tube <i>S. Clees, T.M. Rault, L.T. Zaczek, R.K. Hanson</i>	2B10: PROCI-D-23-01087 Behaviors and trajectory of horizontal spray flame induced by transformer insulating oil <i>K. Li, H. Hu, Z. Ye, Y. Zou, L. Yi</i>	2C10: PROCI-D-23-00221 Understanding the coupling between nanosecond repetitively pulsed discharges and a self-excited unstable swirl flame at 2 bar <i>B. Aravind, L. Yu, D.A. Lacoste</i>	2D10: PROCI-D-23-00362 An experimental marker of thermo-diffusive instability in hydrogen-enriched flames <i>O. Chaib, S. Hochgreb, I. Boxx</i>	2E10: PROCI-D-23-00171 Pathological detonations in mono-disperse spray media <i>R. Hernández-Sánchez, C. Huete, D. Martínez-Ruiz</i>	2F10: PROCI-D-23-01350 Flame stabilisation in a highly-lifted premixed jet flame in a hot cross flow <i>H. Tummalapalli, E.R. Hawkes, B. Savard, J.-W. Park, T. Lu</i>	2G10: PROCI-D-23-00256 General surface activation function model for intrinsic reaction kinetics of char conversion <i>Y. Liu, Z. Shi, Z. Chen, J. Tao, S. Xu, B. Yu, X. Wang, Y. Chen, P. Zhao, P. Fu, H. Zhou</i>	2H10: PROCI-D-23-01724 Impact of C ₃ H ₆ on fuel reactivity and formation of unconventional pollutants in NH ₃ oxidation <i>S. Li, G. Lu, Y. Song, Y. He, Q. Zhu, B. Dong, Z. Wang, K. Wang</i>		
15:40	<p style="text-align: center;">BREAK (20 minutes)</p> <p style="text-align: center;">The 40th International Symposium – Emphasizing Energy Transition would also like to thank our Silver Sponsor:</p> <p style="text-align: center;">ELSEVIER IHI KAUST Maire</p>									
16:00	Special Session I – Silver Plenary Room									
	<p style="text-align: center;">SESSIONS END AT 18:00</p> <p style="text-align: center;">The 40th International Symposium – Emphasizing Energy Transition would like to thank our Diamond Sponsor:</p> <p style="text-align: center;">Esa Pyronics</p> <p style="text-align: center;">The Combustion Institute is on the lookout for outstanding presentations. If you have seen a presentation that stood out, please send your recommendation to: office@combustioninstitute.org</p>									

Wednesday, 24 July 2024

(Silver Plenary Room)
PLENARY LECTURE – 8:30 am

Wednesday Plenary Lecture
Ellen B. Stechel

9:30 BREAK (10 minutes)

Room	Red 1	Red 2	Blue 1	Blue 2	Yellow 1	Yellow 2	Yellow 3	Industry Session Times 30 minutes	White 1 Industry Room	White 2 Industry Room
	Gas-Phase Reaction Kinetics	Fire Research	Flame Dynamics and Transport Processes	Turbulent Flames	Propulsion	Detonation	Heterogeneous Combustion			
9:40	3A01: PROCI-D-23-00501 Revealing the initial pyrolysis behavior of decalin in an experimental study coupled with neural network assisted molecular dynamics <i>H. Xiao, Z. Chu, C. Wang, J. Lu, L. Zhao, B. Yang</i>	3B01: PROCI-D-23-00580 Flame morphology of pool fire in cross airflows: A theoretical analysis and generalized relations for comprehensive data of fire sizes, fuels and flow speeds <i>X. Zhang, Y. Lin, X. Fang, J. Lv, Y. Chen, L. Hu</i>	3C01: PROCI-D-23-00038 Effect of non-ideal mixture on flame-spray interaction in counterflow <i>n</i> -heptane/ethanol flames <i>Y. Hu, E. Gutheil, Y. Jiang, R. Kurose</i>	3D01: PROCI-D-23-00388 3D flame surface curvature analysis from reconstructed scanning across spherical expanding flames <i>Y. Zheng, S. Hochgreb</i>	3E01: PROCI-D-23-01196 Phase-averaged, 3D OH-LIF reconstruction for multi-injector, micromixed hydrogen combustion <i>A. Durocher, L. Fan, M. Füric, G. Bourque, J.M. Bergthorson, S. Yun, P. Vena</i>	3F01: PROCI-D-23-00998 A minimal model for the role of the reaction rate on the initiation and self-sustenance of curved detonations <i>M. Rădulescu, A. Sow</i>	3G01: PROCI-D-23-01134 Modelling preferential concentration and its effects on the combustion of burning iron particles in a mixing layer <i>S. Hemamalini, B. Cuenot, J. van Oijen, X. Mi</i>	9:40		

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Room	Red 1	Red 2	Blue 1	Blue 2	Yellow 1	Yellow 2	Yellow 3	Industry Session Times 30 minutes	Whilte 1 Industry Room	Whilte 2 Industry Room
	Gas-Phase Reaction Kinetics	Fire Research	Flame Dynamics and Transport Processes	Turbulent Flames	Propulsion	Detonation	Heterogeneous Combustion			
10:00	3A02: PROCI-D-23-00114 Understanding the impact of molecular structure on the formation of stable intermediates during the pyrolysis of monoalkylated cyclohexanes in a shock tube <i>V. Boddapati, P. Biswas, A. Panda, A.R. Klingberg, R.K. Hanson</i>	3B02: PROCI-D-23-00599 Oscillation frequency of rectangular-source fires at different separation distances from a facade wall <i>P. Hu, M. Delichatsios, L. Deng, F. Tang</i>	3C02: PROCI-D-23-00443 Molecular dynamics study on phase change characteristics of liquid ammonia in hydrogen-rich environments <i>F. Chen, Y. Zhang, P. Yi, M. Jia, H. Duan</i>	3D02: PROCI-D-23-00585 Opposite effects of flame-generated potential and solenoidal velocity fluctuations on flame surface area in moderately intense turbulence <i>A.N. Lipatnikov, V. A. Sabelnikov, N.V. Nikitin</i>	3E02: PROCI-D-23-01518 An experimental investigation on hydrogen jet ignition of ammonia: Emphasis on reactivity stratification <i>J. Li, L. Wang, J. Pan, H. Wei, G. Shu</i>	3F02: PROCI-D-23-01201 Curvature effect on stabilization of cellular detonations in channel, circular arc and spherical shell geometries <i>C. Chiquete, M. Short</i>	3G02: PROCI-D-23-00185 Modeling the oxidation of iron microparticles during the reactive cooling phase <i>J. Mich, A. Kwiatkowski da Silva, D. Ning, T. Li, D. Raabe, B. Böhm, A. Dreizler, C. Hasse, A. Scholtissek</i>	10:10		
10:20	3A03: PROCI-D-23-00940 Theoretical and kinetic analysis of anisole and cresol primary reactivity in pyrolysis and combustion <i>L.P. Maffei, A. Della Libera, T. Faravelli, C. Cavallotti</i>	3B03: PROCI-D-23-01450 Frequency jump of a flickering buoyant jet diffusion flame influenced by ambient coflow <i>H. Zhang, Y. Yang, L. Li, Y. Peng, X. Xia, F. Qi</i>	3C03: PROCI-D-23-01215 Investigating the impact of dispersion gas composition on the flame structure in the SpraySyn burner using DNS <i>A. Abdelsamie, W. Guan, M. Nanjaiah, I. Wlokas, H. Wiggers, D. Thévenin</i>	3D03: PROCI-D-23-00247 Propagation and topology in turbulent premixed flames <i>H.F. Ahmed, R.S. Cant</i>	3E03: PROCI-D-23-01060 An experimental investigation of lean hydrogen flame instabilities in spark-ignition engines <i>C. Welch, J. Erhard, H. Shi, A. Dreizler, B. Böhm</i>	3F03: PROCI-D-23-00881 Probing vibrational nonequilibrium in detonations with ozone <i>X. Shi, AS. Jayaraman, H. Wang</i>	3G03: PROCI-D-23-00208 Near-limit discrete flames of iron particle suspensions in sounding rocket microgravity experiments <i>H. Heng, J. Palečka, S. Goroshin, J. Bergthorson</i>	10:40		

Room	Red 1	Red 2	Blue 1	Blue 2	Yellow 1	Yellow 2	Yellow 3		White 1	White 2
	Gas-Phase Reaction Kinetics	Fire Research	Flame Dynamics and Transport Processes	Turbulent Flames	Propulsion	Detonation	Heterogeneous Combustion	Industry Session Times 30 minutes	Industry Room	Industry Room
10:40	3A04: PROCI-D-23-00052 Theoretical insight into key reactions in DME/NH ₃ co-firing: A detailed kinetic study and implications for rational combustion modelling <i>J. Xie, J. Song, A. A. Konnov, Z. Li, Y. He</i>	3B04: PROCI-D-23-01626 Experimental investigation of flame outward radiation characteristics and development of a calculation model for multiple pool fires <i>F. Ge, T. Qiu, J. Ji</i>	3C04: PROCI-D-23-01143 Repetitive autoignition and extinction instability of nonpremixed <i>n</i> -dodecane spray cool flames using digital inline holography <i>W. Xu, Z. Wang, B. Mei, M.A. Erinin, M.S. Kumar, Y. Xu, J. Hong, L. Deike, Y. Ju</i>	3D04: PROCI-D-23-01458 Effects of cryogenic temperature on turbulent premixed hydrogen/air flames <i>C. Chen, C. Chi, D. Thévenin, W. Han, L. Yang</i>	3E04: PROCI-D-23-00973 The LEAF concept operated with hydrogen: Flame topology and NO _x formation <i>Q Malé, K. Pandey, N. Noiray.</i>	3F04: PROCI-D-23-01194 Collision enhancement in shocks and its implication on gasphase detonations: A molecular dynamics and gas-kinetic theory study <i>A.S. Jayaraman, E.S. Genter, W. Dong, H. Wang</i>	3G04: PROCI-D-23-00173 Nitrogen oxide formation mechanism in iron dust flames <i>A. Ravi, T. Hazenberg, L.C. Thijs, J.A. van Oijen, L.P.H. de Goey</i>	11:10		
11:00	3A05: PROCI-D-23-01237 Competing radical and molecular channels in the unimolecular dissociation of methylformate <i>J. Cho, N.J. Labbeb, L.B. Harding, S.J. Klippenstein, R. Sivaramakrishnan</i>	3B05: PROCI-D-23-00565 Experimental study of heat loss and heat feedback of pool fire of millimeter to centimeter fuel thickness <i>C. Wang, J. Ji, A. Simeoni, J. Xu, H. Zhang</i>	3C05: PROCI-D-23-00276 Droplet combustion in a turbulent, elevated-pressure environment <i>C. Verwey, A. Arabkhalaj, M. Birouk</i>	3D05 PROCI-D-23-01523 The interaction between soot, thermal gradients, and dissipation rate in turbulent non-premixed jet flames <i>J. Pu, J.A. Sutton</i>	3E05: PROCI-D-23-00882 Early flame development characterization of ultra-lean hydrogen air flames in an optical spark-ignition engine <i>C. Ramalho Leite, P. Brequigny, J. Borée, F. Foucher</i>	3F05: PROCI-D-23-01355 The critical conditions for the re-ignition and detonation formation from Mach reflections of curved decaying shocks <i>F. Zangene, M. Radulescu</i>	3G05: PROCI-D-23-01300 In-situ light extinction nano-oxide volume fraction measurements during single iron particle combustion <i>L. Cen, Z. Lyu, Y. Qian, Z. Li, X. Lu</i>	11:40	Session Ends	

Room	Red 1	Red 2	Blue 1	Blue 2	Yellow 1	Yellow 2	Yellow 3		White 1	White 2
	Gas-Phase Reaction Kinetics	Fire Research	Flame Dynamics and Transport Processes	Turbulent Flames	Propulsion	Detonation	Heterogeneous Combustion	Industry Session Times 30 minutes	Industry Room	Industry Room
11:20	3A06: PROCI-D-23-01565 Dual oxidant and reactant interactions in NEPE pyrolysis: Experimental and kinetic modelling insights <i>H. Zhan, G. Yin, J. Jiao, S. Shen, R. Ge, E. Hu, C. Tang, Z. Huang, X. Fu</i>	3B06: PROCI-D-23-01315 Extinction of buoyant turbulent non-premixed flames under reduced oxygen concentrations <i>G. Xiong, R. Barlow, D. Zeng, Y. Wang</i>	3C06: PROCI-D-23-00711 Interactions between liquid sprays and shock waves in underexpanded flows <i>C.B. Reuter, S.G. Tuttle</i>	3D06: PROCI-D-23-01015 Stabilisation limits of turbulent premixed flames by nanosecond repetitively pulsed discharges <i>R.S. Pathania, P.R. Soundararajan, E. Mastorakos</i>	3E06: PROCI-D-23-00237 Modeling hydrogen-diesel dual direct injection combustion with FGM and transported PDF <i>T. Lucchini, A. Schirru, M. Mehl, G. D'Errico, P. Rorimpandey, Q.N. Chan, S. Kook, E.R. Hawkes</i>	3F06: PROCI-D-23-00259 Calibration of the chemical-diffusive model and its effects on C ₂ H ₄ -air detonation dynamics <i>A.S. Venkataraman, E.T. Balci, H. Farah, E.S. Oran</i>	3G06: PROCI-D-23-00180 Micron-sized iron particles as energy carrier: Cycling experiments in a fixed-bed reactor <i>C. Kuhn, M. Kirn, S. Tischer, O. Deutschmann</i>			
11:40	<p style="text-align: center;">BREAK (30 minutes)</p> <p style="text-align: center;">The 40th International Symposium – Emphasizing Energy Transition would like to thank our Bronze Sponsors:</p> <p style="text-align: center;"> Andor Andritz Baker Hughes Casale Convergent Dantec Dynamics FM Global Lumibird More Rolls Royce Wood Zeeco </p>									

Room	Red 1	Red 2	Blue 1	Blue 2	Yellow 1	Yellow 2	Yellow 3	Industry Session Times 30 minutes	Whilte 1 Industry Room	Whilte 2 Industry Room
	Gas-Phase Reaction Kinetics	Gas-Phase Reaction Kinetics II	Flame Dynamics and Transport Processes	Turbulent Flames	Propulsion	Numerical Combustion	Exp Haz, Det App, & Supersonic Combustion			
12:10	3A07: PROCI-D-23-00495 Exploring the low-temperature oxidation characteristics of butanol isomers in a jet-stirred reactor <i>B. Liu, B. Dong, Q. Zhu, L. Zhu, Z. Wang</i>	3B07: PROCI-D-23-00431 An ab initio based OH initiated oxidation kinetics of glycerol carbonate: A promising biofuel component <i>B.R Giri, M. Monge Palacios, R. Thangaraj, K.P. Shrestha, B. Viskolcz, F. Mauss, M. Szőri</i>	3C07: PROCI-D-23-00037 Measurements and a new correlation of methanol laminar flame speeds at temperatures up to 916 K and elevated pressures behind reflected shock waves <i>L. Zheng, M. Figueroa-Labastida, J. Streicher, R.K. Hanson</i>	3D07: PROCI-D-23-00810 A novel projection strategy for manifold-based chemistry reduction models <i>H. Bao, J. van Oijen</i>	3E07: PROCI-D-23-01561 3D distribution of hot spots affected by flow and spray in a centrally staged combustor <i>C. Tao, C. Zhang, Q. An, X. Xue, J. Gao, X. Fan</i>	3F07: PROCI-D-23-00572 Data-driven identification of precursors of flashback in a lean hydrogen reheat combustor <i>M. Floris, T.S. Sai, D. Nayak, I. Langella, K. Aditya, N.A.K. Doan</i>	3G07: PROCI-D-23-01422 On the stabilization mechanism of high-speed deflagrations in narrow channels with heat loss <i>C. Chen, D. Valiev, C. Miao, C.K. Law</i>	12:10		
12:30	3A08: PROCI-D-23-00727 Experimental and modelling study of phenol combustion and oxidation <i>N. Delort, I. Meziane, O. Herbinet, H.H. Carstensen, F. Battin-Leclerc</i>	3B08: PROCI-D-23-00601 The cool-flame chemistry of tetrahydro-pyran: An insight into the oxygenated heterocycle ring <i>J. Zou, C.S. Lewin, W. Chen, C. Xie, Z. Wang, J. Bourgalais, O. Herbinet, F. Battin-Leclerc, A. Farooq</i>	3C08: PROCI-D-23-00042 Measurements of the laminar burning velocities of 1,2 utadiene: A comparative study <i>A.A. Konnov, J. Chen, M.L. Lavadera</i>	3D08: PROCI-D-23-01173 A technique for numerical conservation of MMC-IEM with one reference variable for varying particle weights <i>A.P. Wandel</i>	3E08: PROCI-D-23-00211 Hydrogen concentration measurements using spark induced breakdown spectroscopy in a real engine <i>D. Kim, Q. Wan, Q.N. Chan, Y. Kobashi, N. Kawahara, S. Kook</i>	3F08: PROCI-D-23-00625 Efficient combustion kinetic parameter optimization via variational inference <i>Y. Wang, C. Liu, C. Tao, C.K. Law, B. Yang</i>	3G08: PROCI-D-23-01390 End-wall pressure evolution from head-on reflection of high-speed deflagrations <i>H. Yang, W. Rakotoarison, A. Sow, M. Radulescu</i>	12:40		

Room	Red 1	Red 2	Blue 1	Blue 2	Yellow 1	Yellow 2	Yellow 3	Industry Session Times 30 minutes	Whilte 1 Industry Room	Whilte 2 Industry Room
	Gas-Phase Reaction Kinetics	Gas-Phase Reaction Kinetics II	Flame Dynamics and Transport Processes	Turbulent Flames	Propulsion	Numerical Combustion	Exp Haz, Det App, & Supersonic Combustion			
12:50	3A09: PROCI-D-23-01723 Unveiling the oxygen addition kinetics of hydroxyphenyl at the low temperatures <i>Y. Chen, L. Ye, Z. Zhang</i>	3B09: PROCI-D-23-01164 Quantitative investigation of the formation of oxygenated aromatics in an anisole-doped flame <i>K. Sood, S. Gosselin, A. El Bakali, A. Faccinetta, P. Desgroux, K.M. Van Geem, L. Gasnot, L.-S. Tran</i>	3C09: PROCI-D-23-01151 Chemical insights into the ethyl acetate flames from experiment and kinetic modeling: Laminar burning velocity, speciation and NO _x emission <i>S. Eckart, K.P. Shrestha, B.R. Giri, Q. Fang, C. Chen, W. Li, H. Krause, F. Mauss, D. Liu, Y. Li</i>	3D09: PROCI-D-23-01772 Prediction of non-premixed combustion regimes in direct injection compression ignition engines <i>K. Niemietz, D. Denker, M. Gauding, H. Pitsch</i>	3E09: PROCI-D-23-00812 Coupling experimental and modeling approaches for understanding diethoxymethane low-temperature oxidation at high pressure <i>S. Ruan, W. Chen, Q. Zhu, B. Liu, Z. Wang, L. Zhang</i>	3F09: PROCI-D-23-00966 Tabulation-based sample-partitioning adaptive reduced chemistry and cell agglomeration <i>A. Cuoci, A. Nobili, A. Parente, T. Grenga, H. Pitsch</i>	3G09: PROCI-D-23-00839 Transfer functions of lean fully- and technically-premixed jetstabilized turbulent hydrogen flames <i>K. Moon, R. Martin, B. Schuermans, N. Noiray</i>	13:10		
13:10	Session Ends									
13:20	Special Industry Roundtable – Silver Plenary Room (60 Minutes)									
	<p>The 40th International Symposium – Emphasizing Energy Transition would like to thank our Diamond and Gold Sponsors:</p> <p style="text-align: center;">Esa Pyronics</p> <p style="text-align: center;">LaVision</p>									

Thursday, 25 July 2024

(Silver Plenary Room)
PLENARY LECTURE – 8:30 am

Roles for Combustion and Combustion R&D in a Decarbonized World
Timothy Lieuwen, Benjamin Emerson, Vishal Acharya, Ishan Gupta

9:30	BREAK (10 minutes)									
Room	Red 1	Red 2	Blue 1	Blue 2	Yellow 1	Yellow 2	Yellow 3	Whilte 1	Whilte 2	Silver Plenary
	Gas-Phase Reaction Kinetics	Fire Research	Flame Dynamics and Transport Processes	Diagnostics	Propulsion	Heterogenous Combustion	Diagnostics	Emission Mitigation	Low-Carbon Technologies	TOPICAL REVIEW
9:40	4A01: PROCI-D-23-01044 Systematic exploration of the thermochemistry for a set of peroxy hydroperoxy-alkyl radicals <i>S.N. Elliott, C.R. Mulvihill, M.K. Ghosh, H.J. Curran, S.J. Klippenstein</i>	4B01: PROCI-D-23-00885 The role of chemistry in the retardant effect of dimethyl methylphosphonate in flame-wall interaction <i>F. Ferraro, A. Stagni, A. Scholtissek</i>	4C01: PROCI-D-23-00931 Effects of syngas and methanol fuel substitution on ammonia counterflow diffusion flames <i>J. Li, A. Alfazazi, B. Dally</i>	4D01: PROCI-D-23-01492 Measuring methane destruction efficiency in gas flares with dual comb spectroscopy <i>S.C. Coburn, N. Harris, E.A. Miller, S. Droste, K. Knabe, G.B. Rieker</i>	4E01: PROCI-D-23-00716 Flame development in prechamber assisted engine: High-speed PLIF <i>P. Sharma, M.E. Marquez, X. Luo, E. Cenker, J.W.G. Turner, G. Magnotti</i>	4F01: PROCI-D-23-00776 Soot formation during rapid pyrolysis of bio-oil and its fractions in a drop-tube furnace at high temperatures <i>C. Deng, Y. Yu, H. Wu</i>	4G01: PROCI-D-23-00888 Tomographic single-shot laser-induced incandescence for soot characterization on in turbulent flames <i>M.N. Müller, Q. Wang, W. Cai, F.J.T. Huber, S. Will</i>	4H01: PROCI-D-23-01034 Effects of Reynolds number and ammonia fraction on combustion characteristics of premixed ammonia-hydrogen-air swirling flames <i>D. Sato, J. Davies, L. Mazzotta, S. Mashruk, A. Valera-Medina, R. Kurose</i>	4J01: PROCI-D-23-00459 Surface-gas chemistry coupling and stability limits of hydrogen/air combustion in catalytic microchannels <i>L. Qin, Q. Cheng, J. Mantzaras, C.K. Law, R. Sui</i>	
	The 40th International Symposium – Emphasizing Energy Transition would like to thank our Diamond Sponsor: Esa Pyronics									

Room	Red 1	Red 2	Blue 1	Blue 2	Yellow 1	Yellow 2	Yellow 3	Whilte 1	Whilte 2	Silver Plenary
	Gas-Phase Reaction Kinetics	Fire Research	Flame Dynamics and Transport Processes	Diagnostics	Propulsion	Heterogenous Combustion	Diagnostics	Emission Mitigation	Low-Carbon Technologies	TOPICAL REVIEW
10:00	4A02: PROCI-D-23-01456 Aspects of fundamental reaction kinetics and legacy combustion properties in data-assimilated combustion reaction model development <i>W. Dong, Y. Zhang, G.P. Smith, H. Wang</i>	4B02: PROCI-D-23-00099 Inerting and dilution -- Nitrogen foam suppressions of air mixing effect and flame intensification <i>K. Li, W. Zhou, L. Jiang, Y. Yang, J. Zhang, Y. Guo</i>	4C02: PROCI-D-23-01419 Heat release surrogates for NH ₃ /H ₂ /N ₂ -air premixed flames <i>A.P. Hardaya, W. Kulatilaka, B.S. Soriano, J. Chen</i>	4D02: PROCI-D-23-00901 Rotational absorption spectroscopy of the hydroxyl radical at high temperatures using a THz quantum cascade laser <i>N.M. Kuenning, N.Q. Minesi, B.A. Honaker, R.M. Spearrin</i>	4E02: PROCI-D-23-01218 An experimental investigation on MMH/NTO impinging jets flame characteristics at high chamber pressure <i>L. Fei, F. Zhang, C. Tang, T. Xu, A. Yang, B. Yang, Z. Huang</i>	4F02: PROCI-D-23-01241 Insight into the enhancement mechanism of levoglucosan production from biomass pyrolysis by deep eutectic solvent fractionation <i>M. Xu, Z. Zhou, X. Zhu, C. Duan, Q. Shen, Y. Huang, A. Xia, X. Zhu, H. Yao, Q. Liao</i>	4G02: PROCI-D-23-00146 Flame front visualization in turbulent premixed ethylene/air flames by laser-induced photofragmentation fluorescence <i>L. Han, Z. Liu, Q. Gao, Z. Li, B. Li</i>	4H02: PROCI-D-23-00516 Flame structure and reaction diagnostics for ammonia diffusion flame with hydrogen flame stabilizer <i>Y. Okumura, T. Tsubota, N. Matsuda, T. Hori, F. Akamatsu</i>	4J02: PROCI-D-23-01325 Investigation of longitudinal self-excited combustion instability in a micromix hydrogen combustor <i>H. Qi, X. Tian, Z. Feng, Y. Yang, D. Liu, Q. Wang, G. Wang, L. Xu, X. Xi</i>	
10:20	4A03: PROCI-D-23-00748 On the prediction of pressure effects for the combination kinetics of two alkyl radicals with the geometric mean rule <i>F. Citrangolo Destro, R. Fournet, B. Sirjean, S.J. Klippenstein</i>	4B03: PROCI-D-23-01234 Towards fire safe and flame-retardant-free upholstered furniture <i>G. Di Cristina, R. Falkenstein-Smith, I. Kim, S. Wessies, M. Bundy, M. Zammarano</i>	4C03: PROCI-D-23-00900 Laminar burning velocity of NH ₃ /NO/N ₂ mixtures: An experimental and numerical study <i>N. Monnier, N. Lamoureux, S. Zitouni, P. Brequigny, C. Mounaïm-Rousselle</i>	4D03: PROCI-D-23-00112 Laser-based speciation of isoprene thermal decomposition behind reflective shock waves <i>M. Sy, J. Zou, M. Adil, A. Elkhazraji, M. Mhanna, A. Farooq</i>	4E03: PROCI-D-23-01342 Asynchronicity in opposed-piston RCMs: Does it matter? <i>S.S. Goldsborough, S. Cheng, D. Kang, J.P. Molnar, Y.M. Wright, C.E. Frouzakis</i>	4F03: PROCI-D-23-00777 Experimental exploration of potassium compounds in the vicinity of a burning biomass pellet: From near-surface to downstream <i>S. Liu, W. Weng, Y. He, M. Aldén, Z. Wang, Z. Li</i>	4G03: PROCI-D-23-00648 Experimental study on the soot formation characteristic s during pyrolysis of metal particle-mixed nanofluid fuel <i>L. Wei, R. Yu, G. Liu, D. Liu</i>	4H03: PROCI-D-23-00997 Quantitative measurements of thermochemical states in turbulent lean and rich premixed NH ₃ /H ₂ /N ₂ -air jet flames <i>R. Schultheis, T. Li, S. Shi, R.S. Barlow, B. Zhou, D. Geyer, A. Dreizler</i>	4J03: PROCI-D-23-00961 Cellulose pyrolysis kinetic model: Detailed description of volatile species <i>P. Debiagi, V. Piazza, M. Papagni, A. Beretta, A. Frassoldati, T. Faravelli</i>	

Room	Red 1	Red 2	Blue 1	Blue 2	Yellow 1	Yellow 2	Yellow 3	White 1	White 2	Silver Plenary
	Gas-Phase Reaction Kinetics	Fire Research	Flame Dynamics and Transport Processes	Diagnostics	Propulsion	Heterogeneous Combustion	Diagnostics	Emission Mitigation	Low-Carbon Technologies	TOPICAL REVIEW
10:40	4A04: PROCI-D-23-00905 A data-driven, lumped kinetic modeling of OME ₂₋₅ pyrolysis and oxidation <i>T. Dinelli, A. Pegurri, A. Bertolino, A. Parente, T. Faravelli, M. Mehl, A. Stagni</i>	4B04: PROCI-D-23-00850 Role of bromine doping in freely-propagating hydrogen-oxygen flames <i>H. Li, J. Li, W. Liang, C.K. Law</i>	4C04: PROCI-D-23-01788 Co-firing ammonia and hydrogen with butane under methane-equivalent calorific value and Wobbe index: Insights into transition in flame propagation and swirl flame characteristics <i>W. Li, J. Fang, Y. Zhang, Z. Xi, J. Zhang, S. Liu, Q. Zhang, T. Lian, Y. Li</i>	4D04: PROCI-D-23-01425 Cavity-enhanced dual-comb spectroscopy for sensitive OH detection in a laminar premixed flame <i>H. Sun, D. Wen, K.-P. Cheong, L. Ma, K. Ni, W. Ren</i>	4E04: PROCI-D-23-00941 Experimental investigation of mixing phenomena for ducted fuel injection <i>C.W. Godbold, I. Gupta, E. Kurtz, C. Mueller, C. Genzale, A. Steinberg</i>	4F04: PROCI-D-23-01320 Carrier-phase direct numerical simulation and flamelet modeling of alkali metal emissions from pulverized biomass flames <i>A. Shamooni, X. Wen, P. Debiagi, A. Stagni, J.W. Gärtner, T. Zirwes, O.T. Stein, C. Hasse, A. Kronenburg</i>	4G04: PROCI-D-23-00639 Structure-property relationships in fluorescence of carbon dots from premixed ethylene flames <i>C. Shen, Y. Zhou, S. Shao, X. You</i>	4H04: PROCI-D-23-00361 Effects of secondary air injection on the emissions and stability of two-stage NH ₃ -CH ₄ -air swirl flames <i>C.D. Avila Jimenez, A. Macfarlane, M. Younes, A. Jamal, M. Dunn, T.F. Guiberti, A.R. Masri, W.L. Roberts</i>	4J04: PROCI-D-23-01089 Sooting tendency of substituted aromatic oxygenates: The role of functional groups and positional isomerism in vanillin Isomers <i>H. Jung, J. Cho, Y. Kim, Z. Xiang, S. Kumara, P. Barnard, C.S. McEnally, L.D. Pfefferle, S. Kim</i>	
11:00	<p style="text-align: center;">BREAK (30 minutes)</p> <p style="text-align: center;">The 40th International Symposium – Emphasizing Energy Transition would also like to thank our Silver Sponsor:</p> <p style="text-align: center;">ELSEVIER IHI KAUST Maire</p>									

Room	Red 1	Red 2	Blue 1	Blue 2	Yellow 1	Yellow 2	Yellow 3	White 1	White 2	Silver Plenary
	Gas-Phase Reaction Kinetics	Fire Research	Flame Dynamics and Transport Processes	Diagnostics	Propulsion	Heterogeneous Combustion	Heterogeneous Combustion II	Emission Mitigation	Low-Carbon Technologies	TOPICAL REVIEW
11:30	4A05: PROCI-D-23-01285 Analysis of constraining a chemical kinetic mechanism using hybrid response surface networks <i>P. Wiersema, J.-H. Oh, K. Kim, A. Godsell, T. Lee</i>	4B05: PROCI-D-23-01264 Piloted ignition at square corners of 2D rectangular and 3D cuboid solids: Asymptotic and approximate solutions <i>J. Gong, X. Sun, M.A. Delichatsios</i>	4C05: PROCI-D-23-00678 An experimental investigation of the thermal flame structure during side-wall quenching of a laminar premixed flame <i>J. Collins, A. Padhiary, A.O. Ojo, D. Escofet-Martin, A. Dreizler, B. Peterson</i>	4D05: PROCI-D-23-00490 Exploring the oxidation chemistry of diethyl carbonate in lithium-ion battery thermal runaway using SVUV-PIMS <i>B. Dong, L. Wang, L. Hu, J. Fang, Z. Wang</i>	4E05: PROCI-D-23-01519 Characteristics of the transient heat transfer of impinging flames and correlation analysis using a new characteristic velocity under CI engine-like conditions <i>J. Cao, X. Zhou, R. Chen, S. Li, S. Kook, T. Li</i>	4F05: PROCI-D-23-00871 Influence mechanism of chlorine on arsenic release and transformation during municipal solid waste incineration <i>S. Li, H. Hu, C. Zou, L. Dong, Y. Huang, H. Liu, I. Naruse, H. Yao</i>	4G05: PROCI-D-23-00820 Formation of primary volatiles during fast pyrolysis of waste tyre in a wire mesh reactor <i>M.M. Rahman, Y. Yu, H. Wu</i>	4H05: PROCI-D-23-00249 Characterization of CH ₄ -CO ₂ -O ₂ diffusion flames near autothermal reforming condition <i>P. Liu, Y. Zhang, J. Guo, A. Alfazazi, C. Chu, R. Serrano-Bayona, F. Aydin, E.-t. Es-sebbar, H.G. Im, B. Dally, X. Gao, W.L. Roberts</i>	4J05: PROCI-D-23-00122 Mixing measurement on hydrogen jet by LIBS under various injection strategies <i>Y. Ki, J.J. Kim, S.-Y. Lee, J. Hwang, C. Bae</i>	TOPICAL REVIEW Sooting Tendencies: Combustion Science for Designing Sustainable Fuels with Improved Properties <i>Lisa D. Pfefferle, Seonah Kim, Sabari Kumar, Charles S. McEnally, Raul Perez-Soto, Zhanhong Xiang, Yuan Xuan</i>
11:50	4A06: PROCI-D-23-00702 Question-answering system for combustion kinetics <i>L. Pascazio, D. Tran, S. Rihm, J. Bai, S. Mosbach, J. Akroyd, M. Kraft</i>	4B06: PROCI-D-23-00209 Eruptive flame spread over concave surface <i>R. Bu, Y. Zhou, Z. Wang, C. Fan</i>	4C06: PROCI-D-23-00214 Non-monotonic liftoff height behaviors in laminar nonpremixed coflow jet flames of DME with ambient temperature variation <i>D.J. Kim, S.Y. Oh, C.S. Yoo, J. Park, S.H. Chung</i>	4D06: PROCI-D-23-00487 Fiber-coupled optical probe for laser absorption diagnostics in shock tube experiments with high concentration of non-monatomic species <i>C. Wei, J.C. Knubben, C.L. Strand, R.K. Hanson</i>	4E06: PROCI-D-23-00815 Modeling of effusion cooling air-flame interaction using thermo-chemical manifolds <i>M. Schneider, M. Steinhausen, H. Nicolai, C. Hasse</i>	4F06: PROCI-D-23-00972 Mechanism study of arsenic migration and transformation during pulverized coal combustion <i>Y. Huang, A. Li, H. Hu, S. Li, C. Zou, R. Zou, X. Wu, I. Naruse, H. Yao</i>	4G06: PROCI-D-23-00556 Downward water mobility in applied smoldering <i>J. Wang, M.A.B. Zaroni, T.L. Rashwan, J.L. Torero, J.I. Gerhard</i>	4H06: PROCI-D-23-00296 Chemical suppressive effect of ammonia addition on soot formation in laminar diffusion flames <i>J. Guo, C. Chu, Q. Wang, P. Liu, F.Y. Aydin, E. Quadarella, S.M. Sarathy, W.L. Roberts, H.G. Im</i>	4J06: PROCI-D-23-00055 A mid-infrared laser diagnostic for simultaneous detection of furan and nitric oxide <i>A. Elkhazraji, M. Sy, M.K. Shakfa, A. Farooq</i>	

Room	Red 1	Red 2	Blue 1	Blue 2	Yellow 1	Yellow 2	Yellow 3	White 1	White 2	Silver Plenary
	Gas-Phase Reaction Kinetics	Fire Research	Flame Dynamics and Transport Processes	Diagnostics	Propulsion	Hetero-genous Combustion	Hetero-genous Combustion II	Emission Mitigation	Low-Carbon Technologies	TOPICAL REVIEW
12:10	4A07: PROCI-D-23-00667 Mechanism optimization with a novel objective function: Surface matching with joint dependence on physical condition parameters <i>Y. Zhao, F. vom Lehn, H. Pitsch, M. Pelucchi, L. Cai</i>	4B07: PROCI-D-23-00411 Dependence of the LOC of combustible solids on the oxygen mole fraction <i>C. Liveretou, C. Scudiere, J. Rivera, L. Etzenbach, C. Fernandez-Pello, M. Gollner, S. Olson, P. Ferkul</i>	4C07: PROCI-D-23-00898 On the stabilisation mechanisms of a diffusion edge flame in a cross-flow configuration <i>P.-A. Baranger, T. Poinsot</i>	4D07: PROCI-D-23-00563 Phase-averaged three-dimensional reconstruction of self-excited multi-element partially-premixed hydrogen flames <i>Y. Zhou, C. Xu, W. Liu, R. Xue, W. Zhang, H. Su, L. Zhang</i>	4E07: PROCI-D-23-00865 Deep convolutional autoencoders for the time-space reconstruction of liquid rocket engine flames <i>J.F. Zapata Usandivaras, M. Bauerheim, B. Cuenot, A. Urbano</i>	4F07: PROCI-D-23-01651 A multi-stream flamelet model for large-eddy simulation of piloted pulverized coal/ammonia co-combustion <i>X. Wen, A. Shamooni, O.T. Stein, K. Tainaka, D. Meller, A. Kronenburg, A.M. Kempf, C. Hasse</i>	4G07: PROCI-D-23-01429 A comparative study on species distribution, bioavailability and leaching characteristics of phosphorus from smoldering, incineration, and pyrolysis products of sewage sludge <i>A. Zhang, X. Luo, C. Feng, J. Liu, Y. Yang, Y. Qiao</i>	4H07: PROCI-D-23-01387 Effect of H ₂ O dilution on NO _x emissions from the oxidation of NH ₃ /H ₂ fuel mixture <i>G. Shia, P. Li, Z. Liu, B. Dally</i>	4J07: PROCI-D-23-01459 Experimental study of combustion characteristics and ash-related issues of ammonia co-firing with high alkali pulverized coal in a 4MW boiler <i>Y. Pu, Z. Jia, Z. Wang, B. Yao, C. Lou, Y. Li</i>	
12:30	4A08: PROCI-D-23-00709 Revising the kinetics of the <i>n</i> -C ₃ H ₇ + O ₂ reaction: A combined experimental and computational study <i>A.J. Eskola, T.T. Pekkanen, P.S. Salomaa, G. Lendvay, R.S. Timonen</i>	4B08: PROCI-D-23-00821 The relative position of pyrolysis onset and flame front location for downward flame spread <i>D. Morrisset, J. Burnford, A.O. Ojo, B. Peterson, A. Law, R.M. Hadden</i>	4C08: PROCI-D-23-00527 Intrinsic characteristics of asymmetric edge flames: Effects of stoichiometry on edge speed and temperature <i>Z. Lu, M. Matalon</i>	4D08: PROCI-D-23-00426 Hexamethyldisiloxane pyrolysis: Probing H-atom initiation by femtosecond two-photon LIF <i>K. Kim, M. Hay, Q. Meng, M.S. Wooldridge, W.D. Kulatilaka, R.S. Tranter</i>	4E08: PROCI-D-23-01354 A universal Karlovitz number to predict the lean blowoff limits of stabilized premixed flames <i>A.J. Morales, M.K. Fortin, K.A. Ahmed</i>	4F08: PROCI-D-23-01368 Particle-resolved numerical simulations of char particle combustion in isotropic turbulence <i>K. Wang, H. Wang, J. Zheng, K. Luo, J. Fan</i>	4G08: PROCI-D-23-00399 Enhancing flame stability in porous media burners via topological tuning <i>A. Saha, N. DiReda, S. Sobhani</i>	4H08: PROCI-D-23-00817 OH and NO profiles in premixed NH ₃ /O ₂ /N ₂ low-pressure flames measured by calibrated-LIF: Comparison with modeling <i>N. El Baba, P. Desgroux, N. Lamoureux</i>	4J08: PROCI-D-23-00502 DFT-based rate equation for thermochemical redox kinetics in a bubbling-fluidized bed reactor and its application to a manganese oxygen carrier in chemical looping <i>L. Liu, K. Li, H. Liu, Z. Sun</i>	
12:50	LUNCH (70 Minutes) – On Your Own									

POSTER SESSION (60 Minutes)

<p>14:00</p>	<p>Heterogeneous Combustion</p> <p>H01: PROCI-D-23-00048 Gas-solid oxygen and thermal nonequilibrium of reverse filtration combustion wave <i>Z. Song, H. Zhang, B. Dang, C. Zhao, Y. Xiao, S. Ren</i></p> <p>H02: PROCI-D-23-00884 Iron particle ignition in different hot coflow temperatures <i>M. Abdallah, Y. Shoshin, G. Finotello, L.P.H. de Goey</i></p> <p>H03: PROCI-D-23-01224 Carrier-phase DNS study of particle size distribution effects on iron particle ignition in a turbulent mixing layer <i>T. D. Luu, A. Shamooni, A. Kronenburg, D. Braig, J. Mich, B.-D. Nguyen, A. Scholtissek, C. Hasse, G. Thäter, M. Carbone, B. Frohnapfel, O.T. Stein</i></p> <p>H04: PROCI-D-23-01293 Turbulent flame propagation limits in polymethylmethacrylate particle cloud combustion <i>Y. Xia, N. Hashimoto, O. Fujita</i></p> <p>H05: PROCI-D-23-01356 Numerical studies on the propagation of iron dust flames in confinement <i>A. Fujinawa, X. Mi</i></p> <p>H06: PROCI-D-23-01363 Oxy-fuel combustion of pulverized coal particles in boundary layer turbulence using direct numerical simulation <i>G. Chen, H. Wang, Z. Zhu, S. Zheng, K. Luo, J. Fan</i></p> <p>H07: PROCI-D-23-01595 Insight into the initial decomposition mechanism of RDX based on probing key intermediates with online photoionization mass spectrometry <i>H. Ren, X. Xiao, Y. Shen, C. Wang, W. Li, L. Ye, S. Niu, W. Qu, L. Zhao, Z. Zhou, F. Qi</i></p> <p>H08: PROCI-D-23-01722 The influence of clustering in homogeneous isotropic turbulence on the ignition behavior of iron particles <i>G. Thäter, M. Carbone, T.-D. Luu, O.T. Stein, B. Frohnapfe</i></p> <p>Detonation</p> <p>H09: PROCI-D-23-00449 Experimental observations of gaseous cellular detonation reflection <i>Z. Yang, B. Zhang, H.D. Ng</i></p> <p>H10: PROCI-D-23-00519 Understanding detonation wave dynamics in annular channels with geometric and pressure variations <i>K. Tang, Z. Pan, G. Dong</i></p> <p>H11: PROCI-D-23-00613 Numerical investigation of detonation propagation through fuel-stratified layers <i>J.I. Ryu, X. Shi, J.-Y. Chen</i></p>	<p>Propulsion</p> <p>H12: PROCI-D-23-00245 Optical diagnostics and chemical kinetic analysis on partially premixed combustion characteristics fueled with methanol and various cetane improvers <i>H. Liu, Y. Cui, M. Wen, Z. Ming, C. Jin, L. Feng, R. Tang, S. Cheng</i></p> <p>H13: PROCI-D-23-00251 Models for Large-Eddy Simulation (LES) of reheat combustion <i>B. Vincze, C. Mocquard, J. Dombard, L. Gicquel, T. Poinso</i></p> <p>H14: PROCI-D-23-00384 Combustion mode transition and oscillation suppression in supersonic flow using hydrogen microjet <i>T. Wang, M. Sun, Z. Wang</i></p> <p>H15: PROCI-D-23-00581 Thickened flame LES methodology for turbulent propagating flames in non-homogeneous mixtures: Application to a constant volume chamber <i>N. Detomasi, D. Laera, O. Dounia, C. Mocquard, F. Duchaine, T. Poinso</i></p> <p>H16: PROCI-D-23-00662 Analysis of soot formation in a lab-scale rich-quench-lean combustor using LES with tabulated chemistry <i>L. Pachano, A. Kalbhar, D. Mira, J. van Oijen</i></p> <p>H17: PROCI-D-23-00731 Lean blowoff dynamics in bluff body stabilized flames: Unsupervised classification and balance analysis <i>T. Lesaffre, J. Wirtz, E. Riber, B. Cuenot, Q. Douasbin</i></p> <p>H18: PROCI-D-23-00734 On the adequacy of OH* as heat release marker for hydrogen-air flames <i>F.G. Schiavone, A. Aniello, E. Riber, T. Schuller, D. Laera</i></p> <p>H19: PROCI-D-23-00785 Investigating hydrogen direct injection technology: A comparative analysis of nozzle geometries for enhanced mixing in internal combustion engines <i>M. Ben Houidi, K. Moreno-Cabezas, A. Zaihi, B. Aljohani, H. Wu, A. AlRamadan, E. Cenker, H.G. Im, W.L. Roberts</i></p> <p>H20: PROCI-D-23-01031 On the inclusion of preferential diffusion effects for PAH tabulation in turbulent non-premixed ethylene/air sooting flames <i>A. Coudray, E. Riber, B. Cuenot</i></p>	<p>Propulsion</p> <p>H21: PROCI-D-23-01385 Fundamental study on lean operation limit of super lean-burn SI engines –MIE transition and limit prediction– <i>T. Kakizawa, Y. Hirano, T. Mukoyama, A. Hashimoto, H. Okada, K. Akita, T. Tezuka, Y. Morii, H. Nakamura, K. Maruta</i></p> <p>H22: PROCI-D-23-01650 Analysis of potential soot breakthrough during oxidation by effusion cooling in aero-engine combustors <i>P. Koob, H. Nicolai, R. Schmitz, C. Hasse</i></p> <p>H23: PROCI-D-23-01749 From abstraction to design: Interpretable tree-based machine learning for stable thermoacoustic system layout <i>M. Kuznetsova, A. Ghani</i></p> <p>Combustion Technology</p> <p>H24: PROCI-D-23-00130 A numerical study of emission control strategies in an iron powder burner <i>L.C. Thijs, T. Hazenberg, J.A. van Oijen, P. de Goey</i></p> <p>H25: PROCI-D-23-00178 Numerical simulations of TiO₂ production in a laminar coflow H₂/Ar/TTIP diffusion flame: Comparison with experiments and parametric sensitivity study <i>B. Franzelli, J. Bonnetty, J. Yi, Y. Ogata, A. Cuoci, C. Betancourt</i></p> <p>H26: PROCI-D-23-00294 Gas heating by nanosecond repetitively pulsed glow discharges applied to a methane-air flame <i>A.M. Alkhalifa, D.A. Lacoste</i></p> <p>H27: PROCI-D-23-00535 Understanding the dynamics of Nanosecond-Pulsed High-Frequency Discharge (NPHFD) ignition: A study on discharge regimes and ignition efficacy <i>S. Shen, E. Rempe, W. Tybora, J.K. Lefkowitz</i></p> <p>H28: PROCI-D-23-00737 Dynamics of atomic oxygen production in an NH₃/air flames assisted by a nanosecond pulsed plasma discharge <i>J. Sun, J. Ravelid, Y. Bao, S. Nilsson, A.A. Konnov, A. Ehn</i></p> <p>H29: PROCI-D-23-00828 Three-stage hybrid NSD/DC plasma assisted n-C₅H₁₂/O₂/N₂ ignition: Improved energy efficiency and low NO_x/N₂O emissions <i>N. Liu, Q. Chen, X. Jiang, J. Chen, L. Zhang, X. Mao</i></p> <p>H30: PROCI-D-23-00933 Nanosecond pulsed plasma-assisted MILD combustion of ammonia <i>G. Rekkas-Ventiris, P. Sabia, G. Sorrentino, A. Bellemans</i></p>
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POSTER SESSION (60 Minutes)											
14:00	Combustion Technology H31: PROCI-D-23-00946 Experimental and numerical study of pollutant emissions from a domestic condensing boiler fed with natural gas enriched with H ₂ <i>A. Cuoci, G. Bucci, M. Sutti, T. Faravelli, A. Frassoldati</i> H32: PROCI-D-23-01268 Effect of electrostatic fields on the combustion of hydrogen with iron nanoparticles <i>E. Saridede, E.M. Kritikos, A. Giusti</i>			Combustion Technology H33: PROCI-D-23-01421 Influence of substrate, precursor, flow field, and hydrogen etching on the flame synthesis of monolayer graphene films <i>H. Hong, S.D. Tse</i> H34: PROCI-D-23-01454 Smoldering ignition of wet combustible materials <i>J. Wang, M.A.B. Zanoni, T.L. Rashwan, J.L. Torero, J.I. Gerhard</i>			Combustion Technology H35: PROCI-D-23-01593 Enhancing pure NH ₃ combustion: Impacts of O ₂ enrichment under MILD conditions in a 20-kW semi-industrial scale furnace <i>M. Cafiero, S. Sharma, M. Mustafa Kamal, M. Lubrano Lavadera, S. Iavarone, A. Coussement, A. Parente</i>				
	Room	Red 1	Red 2	Blue 1	Blue 2	Yellow 1	Yellow 2	Yellow 3	White 1	White 2	Silver Plenary
	Gas-Phase Reaction Kinetics	Fire Research	Flame Dynamics and Transport Processes	Diagnostics	Propulsion	Heterogenous Combustion	Heterogenous Combustion II	Emission Mitigation	Low-Carbon Technologies	TOPICAL REVIEW	
15:00	4A09: PROCI-D-23-00109 Interaction chemistry of ammonia and formaldehyde: Multispecies measurements and kinetic modeling <i>J. Zou, M. Adil, A. Elkhazraji, A. Farooq</i>	4B09: PROCI-D-23-01118 Polytetrafluorethylene (PTFE) burn characteristics and toxicant formation in an oxidizer cross-flow via laser absorption tomography <i>I.C. Sanders, K.A. Oberlander, R.M. Spearrin</i>	4C09: PROCI-D-23-00115 Intrinsic combustion instabilities in ammonia-hydrogen/methane non-premixed flames <i>E. Antar, E. Robert</i>	4D09: PROCI-D-23-00321 Resolving biomass-turbulence interactions at the particle scale using ultra-high-speed wavelet-based optical flow velocimetry (wOFV) <i>C. Geschwindner, A. Nicolas, K. Westrup, A. Dreizler, B. Peterson, B. Böhm</i>	4E09: PROCI-D-23-01033 Soot formation as a function of flow, flame and mixing field above evaporating fuel films in an optically accessible engine <i>M. Schmidt, J. Erhard, L. Illmann, C. Welch, A. Dreizler, B. Böhm</i>	4F09: PROCI-D-23-01058 Preferential vaporization effects on the ignition of multi-component droplets <i>W. Wang, F.N. Egolfopoulos</i>	4G09: PROCI-D-23-00544 Exploration of KCl deposition dynamics for the formation of coarse and fine layer deposits <i>J. Meister, P. Glarborg, W. Wang, H. Wu</i>	4H09: PROCI-D-23-00725 Deepening the knowledge of carbon particulate matter features in the BSS flame configuration <i>C. Russo, A. Ciajolo, M.M. Oliano, B. Apicella, M. Sirignano</i>	4J09: PROCI-D-23-00867 Combustion enhancement in a model scramjet by a simple pin-to-pin AC arc plasma <i>Y. Tian, J. Zhu, M. Sun, M. Wan, Y. Sun, B. Yan, T. Luo, Z. He, H. Wang</i>		
The 40th International Symposium – Emphasizing Energy Transition would like to thank our Diamond Sponsor: Esa Pyronics											

Room	Red 1	Red 2	Blue 1	Blue 2	Yellow 1	Yellow 2	Yellow 3	White 1	White 2	Silver Plenary
	Gas-Phase Reaction Kinetics	Fire Research	Flame Dynamics and Transport Processes	Diagnostics	Propulsion	Heterogenous Combustion	Heterogenous Combustion II	Emission Mitigation	Low-Carbon Technologies	TOPICAL REVIEW
15:20	4A10: PROCI-D-23-00729 An experimental and modeling study on homogeneous oxidative coupling of methane utilizing N ₂ O as oxidant <i>Z. Xiong, J. Gao, Y. Deng, J. Guo, B. Liu, M. Zeng, Z. Wang, Z. Zhou, W. Yuan, F. Qi</i>	4B10: PROCI-D-23-01533 Joint Mie-LIF-OH imaging of enhanced water mist suppression of buoyant fires <i>T. Xiao, V. Gupta, M.J. Dunn, A.R. Masri</i>	4C10: PROCI-D-23-00802 Intrinsically unstable hydrogen-enriched premixed ammonia flames: analysis and modeling of NO formation <i>F. D'Alessio, P.E. Lapenna, S. Bottaria, F. Creta</i>	4D10: PROCI-D-23-00076 Astigmatic interferometric particle imaging of reacting Jet A-1 sprays: Joint droplet and cluster characteristics <i>A. Rostami, S. Mohammadnejad, R. Li, S. Kheirkhah</i>	4E10: PROCI-D-23-00926 Catalytically promoted green fuel with hydrogen peroxide: Effect of hypergolic combustion on atomization and flow characteristics using impinging jets <i>G. Silva Dias, F.A. da Silva Mota, L. Fei, M. Liu, C. Tang, F. de Souza Costa</i>	4F10: PROCI-D-23-00766 Combustion behavior of heavy fuel oil with varying asphaltene contents <i>S. Liu, L. Jiang, P. Guida, S. Saxena, M. Altunkaya, S. Hu, J. Xiang, W.L. Roberts</i>	4G10: PROCI-D-23-01720 Insight into the competitive reaction mechanism of Polyethylene terephthalate (PET) pyrolysis by ReaxFF-based reactive molecular dynamics simulation <i>S. Feng, H. Zhang, Z. Zhen, X. Xu, J. Xua, Q. Huang, Z. Zhou, X. Li</i>	4H10: PROCI-D-23-01170 An insight into premixed diethoxy-methane flames: Laminar burning velocities, temperatures, and emissions behaviour <i>S. Eckart, K.P. Shrestha, B.R. Giri, Q. Fang, W. Li, F. Mauss, H. Krause, Y. Li</i>	4J10: PROCI-D-23-01314 Synergistic effect of low-voltage nanosecond-pulsed discharges for scramjet cavity ignition <i>K.C. Opacich, J.S. Heyne, C.J. Weir, E.L. Braun, T.M. Ombrello</i>	
15:40	BREAK (20 minutes)									
16:00	Special Session II – Silver Plenary Room									
	<p>Sessions End at 18:00</p> <p>The 40th International Symposium – Emphasizing Energy Transition would like to thank our Bronze Sponsors:</p> <p style="text-align: center;"> Andor Andritz Baker Hughes Casale Convergent Dantec Dynamics FM Global Lumibird More Rolls Royce Wood Zeeco </p>									

Friday, 26 July 2024

(Silver Plenary Room)
PLENARY LECTURE – 8:30 am

Fuel Blend Combustion for Decarbonization
Zuohua Huang

9:30	BREAK (10 minutes)									
Room	Red 1	Red 2	Blue 1	Blue 2	Yellow 1	Yellow 2	Yellow 3	White 1	White 2	Silver Plenary
	Gas-Phase Reaction Kinetics	Fire Research	Flame Dynamics and Transport Processes	Combustion Technology	Propulsion	Explosion Hazards, Detonation Applications, and Supersonic Combustion	Heterogeneous Combustion	Diagnostics		
9:40	5A01: PROCI-D-23-00587 Mechanism and kinetics of the oxidation of propargyl radical by atomic oxygen <i>J.F. Alarcon, A.N. Morozov, A.M. Mebel, A. Della Libera, L.P. Maffei, C. Cavallotti</i>	5B01: PROCI-D-23-01438 A novel treatment for radiative absorption in flamelet modelling <i>J. Lin, H. Zhou, E.R. Hawkes, M.-C. Ma</i>	5C01: PROCI-D-23-01500 Effects of Soret and differential diffusion on boundary layer flashback of H ₂ /CH ₄ swirling flames <i>X. Zhang, X. Wang, H. Zhou, Z. Ren</i>	5D01: PROCI-D-23-01353 Chemical insights into plasma-assisted methane dry reforming in a nanosecond discharge <i>H. Chen, Z. Liu, Z. Li, R. Zhang, J. Yang, N. Hansen, B. Yang</i>	5E01: PROCI-D-23-00590 The role of preferential diffusion on the ignition dynamics of lean premixed hydrogen flames <i>T. Yahou, N. Detomaso, L. Selle, T. Poinot, J.R. Dawson, T. Schuller, D. Laera</i>	5F01: PROCI-D-23-00674 Wave-converging pressure increase in curved cylindrical rotating detonation combustors <i>Y. Oda, S. Sawada, N. Itouyama, K. Matsuoka, J. Kasahara, A. Kawasaki, A. Matsuo, I. Funaki</i>	5G01: PROCI-D-23-01182 AP/HTPB heterogeneous combustion with revised kinetics <i>P. Bernigaud, D. Davidenko, L. Catoire</i>	5H01: PROCI-D-23-00718 Measurements of 3D temperature field in turbulent flames based on tomographic cesium fluorescence <i>X. Li, Q. Lei, T. Su, W. Xu, W. Fan</i>		
	<p>The 40th International Symposium – Emphasizing Energy Transition would also like to thank our Silver Sponsor:</p> <p>ELSEVIER IHI KAUST Maire</p>									

Room	Red 1	Red 2	Blue 1	Blue 2	Yellow 1	Yellow 2	Yellow 3	White 1	White 2	Silver Plenary
	Gas-Phase Reaction Kinetics	Fire Research	Flame Dynamics and Transport Processes	Combustion Technology	Propulsion	Explosion Hazards, Detonation Applications, and Supersonic Combustion	Heterogeneous Combustion	Diagnostics		
10:00	5A02: PROCI-D-23-00916 Addition and elimination reactions on the C ₄ H ₉ [*] potential-energy surface: Experiments and master-equation analysis of literature data <i>T.T. Pekkanen, E.A. Ramu, R.S. Timonen, A.J. Eskola, G. Lendvay</i>	5B02: PROCI-D-23-01178 Feasibility of Monte Carlo ray tracing with line-by-line spectral database for radiation modeling in fire <i>N. Tricard, G.C. Fraga, X. Zhao</i>	5C02: PROCI-D-23-01542 Structure and dynamics of hexagonal cells in H ₂ /CO ₂ flames <i>T. Zirwes, S. Eckart, F. Zhang, T.L. Kaiser, K. Oberleithner, O.T. Stein, H. Bockhorn, A. Kronenburg</i>	5D02: PROCI-D-23-01514 Kinetics of low temperature plasma assisted NH ₃ /H ₂ oxidation in a nanosecond-pulsed discharge <i>N. Liu, B. Mei, X. Mao, Z. Wang, Z. Sun, Y. Xu, Z. Shi, Y. Ju</i>	5E02: PROCI-D-23-00598 Introduction of auto-ignition in the thickened flame model for large eddy simulations of reheat systems <i>C. Mocquard, D. Laera, J. Dombard, T. Poinso</i>	5F02: PROCI-D-23-01252 Visualization and thrust measurement of rotating detonation engine with various channel expansion angles <i>K. Nakajima, T. Sawada, K. Matsuoka, N. Itouyama, J. Kasahara, A. Kawasaki, A. Matsuo</i>	5G02: PROCI-D-23-00360 Phosphoric acid catalytic mechanism in lignin pyrolysis: Phosphoric-acid-assisted hydrogen transfer for the decomposition of β-O-4 linkage <i>W.-l. Xie, B. Hu, X. Yang, J. Liu, Z.-m. Fang, K. Li, Y.-w. Wu, B. Zhang, Q. Lu</i>	5H02: PROCI-D-23-00521 Temperature imaging of elevated pressure flames using planar laser induced fluorescence <i>S. Kumara, W. Zhao, Z.T. Alwahabi, T.F. Guiberti, B.B. Dally</i>		
10:20	5A03: PROCI-D-23-01740 Implementation of new mixture rules and substantial impact on combustion behavior of H ₂ and NH ₃ <i>P. Singal, J. Lee, L. Lei, R.L. Speth, M.P. Burke</i>	5B03: PROCI-D-23-01637 Experimental research on radiation blockage of the fuel vapor and flame in pool fires <i>F. Ge, A. Hamins, J. Ji</i>	5C03: PROCI-D-23-00576 The importance of Soret effect, preferential diffusion, and conjugate heat transfer for flashback limits of hydrogen-fueled perforated burners <i>F. Fruzza, H. Chub, R. Lamioni, T. Grenga, C. Galletti, H. Pitsch</i>	5D03: PROCI-D-23-00429 Numerical modeling of plasma assisted deflagration to detonation transition in a microscale channel <i>Z. Shi, X. Mao, A. Thawko, Y. Ju</i>	5E03: PROCI-D-23-00878 LES of pilot n-heptane ignition and its interaction with the lean premixed methane-air mixture in a dual-fuel combustion engine <i>J.C. Ong, K.M. Pang, R. Rajasegar, A. Srna, X.-S. Bai, J.H. Walther</i>	5F03: PROCI-D-23-00938 Lagrangian-conditioned statistics of detonation propagation in a realistic rotating detonation engine <i>C. Van Beck, V. Raman</i>	5G03: PROCI-D-23-00523 The synergistic effect mechanism of H ₂ generation during coal/ammonia co-pyrolysis <i>D. Hong, Y. Guo, C. Wang, T. Xu</i>	5H03: PROCI-D-23-01790 Simultaneous measurement of 2D distributions of temperature and absorption coefficient in large-scale pulverized coal-fired boilers by flame images processing <i>K. Li, H. Guo, H. Yang, C. Chen, Y. Xiao, J. Jin, W. Yan, C. Liu, L. Cheng, Y. Sun, G. Zhang, Y. Ding, H. Li, J. Zhu, H. Zhou</i>		

Room	Red 1	Red 2	Blue 1	Blue 2	Yellow 1	Yellow 2	Yellow 3	White 1	White 2	Silver Plenary
	Gas-Phase Reaction Kinetics	Fire Research	Flame Dynamics and Transport Processes	Combustion Technology	Propulsion	Explosion Hazards, Detonation Applications, and Supersonic Combustion	Heterogeneous Combustion	Diagnostics		
10:40	5A04: PROCI-D-23-01339 Resolving discrepancies between theory and experiment for the NCN + H reaction <i>R. Sivaramakrishnan, S.J. Klippenstein</i>	5B04: PROCI-D-23-01019 Surrogate modeling for radiative heat transfer using physics informed deep neural operator networks <i>X. Lu, Y. Wang</i>	5C04: PROCI-D-23-00191 Mitigation of preferential diffusion effects by intensive strain in lean premixed hydrogen flamelets <i>A. Porcarelli, I. Langella</i>	5D04: PROCI-D-23-01114 Plasma assisted thermoacoustic stabilization of a transiently operated sequential combustor at high pressure <i>B. Dharmaputra, S. Shcherbanev, N. Noiray</i>	5E04: PROCI-D-23-01018 Acoustic scattering of a sequential combustor controlled with non-equilibrium plasma: A numerical study <i>M. Impagnatiello, Q. Malé, N. Noiray</i>	5F04: PROCI-D-23-00780 The circumferential force on a cylindrical rotating detonation engine <i>S. Sawada, K. Ishihara, N. Itouyama, H. Watanabe, A. Kawasaki, K. Matsuoka, J. Kasahara, A. Matsuo, I. Funaki</i>	5G04: PROCI-D-23-00603 A comprehensive in-situ analysis of lignin softening and pyrolysis mechanism <i>Z. Dong, H. Yang, R. Laine, S. Leclerc, L. Chen, D. Hua, H. Chen</i>	5H04: PROCI-D-23-00376 Experimental study on the two-dimensional temperature distribution by fs OH TALF thermometry in triple-injector H ₂ /O ₂ /N ₂ impinging jet flames <i>S. Huang, K. Hayashi, M. Tanahashi</i>		
11:00	<p style="text-align: center;">BREAK (30 minutes)</p> <p style="text-align: center;">The 40th International Symposium – Emphasizing Energy Transition would like to thank our Gold Sponsor: LaVision</p> <p style="text-align: center;">The Combustion Institute is on the lookout for outstanding presentations. If you have seen a presentation that stood out, please send your recommendation to: office@combustioninstitute.org</p>									

Room	Red 1	Red 2	Blue 1	Blue 2	Yellow 1	Yellow 2	Yellow 3	White 1	White 2	Silver Plenary
	Gas-Phase Reaction Kinetics	Fire Research	Flame Dynamics and Transport Processes	Low-Carbon Technologies	Propulsion	Explosion Hazards, Detonation Applications, and Supersonic Combustion	Combustion Technology	Emission Mitigation		TOPICAL REVIEW <i>Chair:</i>
11:30	5A05: PROCI-D-23-00939 Low-temperature ignition and oxidation mechanisms of tetrahydro-pyran <i>S.W. Hartness, M. Saab, M. Preußker, R. Mazzotta, N.S. Dewey, A.W. Hill, G. Vanhove, Y. Fenard, K.A. Heufer, B. Rotavera</i>	5B05: PROCI-D-23-01499 Characterizing the flame geometries and radiation of axisymmetric turbulent buoyant diffusion flames based on 3D reconstruction <i>P. Huang, J. Lei, Z. Liu, N. Liu, L. Zhang</i>	5C05: PROCI-D-23-00484 Numerical study on flames with repetitive extinction and ignition interacting with cool and blue (warm) flames <i>K. Akita, Y. Morii, N. Hisashi, K. Maruta</i>	5D05: PROCI-D-23-00176 Experimental investigations of hydrogen pre-ignition phenomenon induced by two different lubricating oils in a rapid compression expansion machine <i>M. Yeganeh, K. Rönn, S. Karimkashi, Q. Cheng, V. Vuorinen, O. Kaario, M. Larmi, P. Hlaing, J. Hyvönen</i>	5E05: PROCI-D-23-01505 Investigation on flame propagation and end-gas autoignition of ammonia/hydrogen in a full-field-visualized rapid compression machine <i>R. Zhang, Q. Zhang, Y. Qi, B. Yang, Z. Wang</i>	5F05: PROCI-D-23-00985 Characterizing the reactivity of large-scale dust explosions with a dimensionless two-parameter model <i>C.R. L. Bauwens, L.R. Boeck, S.B. Dorofeev</i>	5G05: PROCI-D-23-00657 Quantitative determination of the ignition modes of single coal particle under MILD oxy-coal combustion environments based on the chemiluminescence sequences <i>A. Peng, Y. Zhou, T. Zhang, C. Yang, L. Li</i>	5H05: PROCI-D-23-01022 Effect of hydrogen addition on soot maturity and volume fraction of ethylene non-premixed flames under different oxygen indices <i>A. García, I. Verdugo, J.J. Cruz, F. Escudero, V. Yap, J. Gallardo, R. Demarco, J. Yan, A. Fuentes</i>		TOPICAL REVIEW Meeting the Moment: Reducing Methane Emissions and the Need for Better Diagnostics Margaret Wooldridge, <i>Jenna Stolzman</i>
<p>The 40th International Symposium – Emphasizing Energy Transition would like to thank our Diamond Sponsor:</p> <p style="text-align: center;">Esa Pyronics</p> <p>The Combustion Institute is on the lookout for outstanding presentations. If you have seen a presentation that stood out, please send your recommendation to: office@combustioninstitute.org</p>										

Room	Red 1	Red 2	Blue 1	Blue 2	Yellow 1	Yellow 2	Yellow 3	White 1	White 2	Silver Plenary
	Gas-Phase Reaction Kinetics	Fire Research	Flame Dynamics and Transport Processes	Low-Carbon Technologies	Propulsion	Explosion Hazards, Detonation Applications, and Supersonic Combustion	Combustion Technology	Emission Mitigation		TOPICAL REVIEW <i>Chair:</i>
11:50	5A06: PROCI-D-23-00794 Effect of oxygenates on fuel-rich oxidation of CH ₄ in the context of polygeneration : Shock-tube analysis with extinction, CO-concentration, and temperature measurements <i>D. Nativel, J. Herzler, M. Fikri, C. Schulz</i>	5B06: PROCI-D-23-01678 Flame attachment state and control mechanism in inclined trench condition <i>M. Li, N. Liu, X. Xie, W. Gao</i>	5C06: PROCI-D-23-00324 Forced ignition of cool, warm and hot flames in a laminar non-premixed counterflow of DME versus air <i>Y. Wang, Y. Wang, X. Chen, S. Xie, H. Böttler, A. Scholtissek, C. Hasse, Z. Chen</i>	5D06: PROCI-D-23-01367 Effects of jetting motion induced by NRPD on initial flame kernel development in quiescent mixtures <i>Y. Akiyama, S. Agrawal, K. Takenaka, J. Hayashi, Y. Morii, H. Nakamura, K. Maruta, H. Kawanabe</i>	5E06: PROCI-D-23-01689 Validation of a large-molecular weight five-component diesel surrogate: Emphasizing on NTC behavior <i>L. Yu, Z. Wang, Y. Liang, X. Lu</i>	5F06: PROCI-D-23-01245 On the Z-shaped explosion limits of acetylene-oxygen mixtures <i>J. Li, W. Liang, W. Han, C.K. Law</i>	5G06: PROCI-D-23-01487 Burning of aluminum particles assisted by selective energy coupling with a microwave plasma torch <i>Y. Tang, C. Li, B. Huang, B. Shi, N. Wang</i>	5H06: PROCI-D-23-01174 An easy but quantitative assessment of C ₂ H ₄ soot production rate and its dependence on temperature and pressure <i>K. Gleason, F. Carbone, A. Gomez</i>		TOPICAL REVIEW Meeting the Moment: Reducing Methane Emissions and the Need for Better Diagnostics Margaret Wooldridge, <i>Jenna Stolzman</i>
12:10	5A07: PROCI-D-23-00877 Quantifying the effect of difluoromethane on ignition delay times of propane <i>E.H. Guzman, N. Khalil, R.A. Schwind, R.H. West, C.F. Goldsmith</i>	5B07: PROCI-D-23-00955 Experimental study on the ceiling jet characteristics caused by carriage fire in an inclined tunnel: Temperature distribution and flame extension <i>T. Xu, F. Tang, J. Zhang</i>	5C07: PROCI-D-23-00275 Experimental and computational investigation of the influence of ethanol on auto-ignition of <i>n</i> -heptane in non-premixed flows <i>L. Ji, K. Seshadri, F.A. Williams</i>	5D07: PROCI-D-23-00179 An unsteady PBE-CFD analysis of the asymmetric smoke-laden flame around a burning aluminum particle <i>J. Finke, F. Sewerin</i>	5E07: PROCI-D-23-01784 Understanding the interplay between pilot-fuel mixing and auto-ignition chemistry in hydrogen-enriched environment <i>T. Lee, R. Rajasegar, A. Srna</i>	5F07: PROCI-D-23-00461 Visualization of post-detonation fireball flowfields and comparison to LES modeling <i>J.W. Hargis, A. Egel, R. Houim, D.R. Guildenbecher</i>	5G07: PROCI-D-23-00993 Detailed numerical simulation and experiments of a steadily burning micron-sized aluminum droplet in hot steam <i>Y. Qiu, S. Feng, S. Xu, Z. Wu, C. Ruan, X.-S. Bai, E.J.K. Nilsson, M. Aldén, Z. Li</i>	5H07: PROCI-D-23-00468 Experimental and numerical investigation on soot formation characteristics in <i>n</i> -decane diffusion flames at elevated pressures <i>Z. Lyu, T. Yan, Y. Qian, L. Cen, D. Zhou, X. Lu</i>		

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	Gas-Phase Reaction Kinetics	Fire Research	Flame Dynamics and Transport Processes	Low-Carbon Technologies	Propulsion	Explosion Hazards, Detonation Applications, and Supersonic Combustion	Combustion Technology	Emission Mitigation		
12:30	5A08: PROCI-D-23-01262 Understanding the reverse effects of NO ₂ addition on the auto-ignition behavior of dual-fuel strategy from low to intermediate temperature: A case study of n-dodecane/methane/NO ₂ mixtures <i>Z. Mai, Y. Wu, C. Tang, Z. Huang</i>	5B08: PROCI-D-23-01598 Limiting oxygen concentration in opposed-flow flame spread over carbon fiber reinforced plastic sheets: A comparison between experiment and theory <i>Y. Kobayashi, K. Okamura, K. Hanamoto, S. Takahashi</i>	5C08: PROCI-D-23-00959 Experimental and numerical investigation of the induced ignition process in ammonia/air and ammonia/hydrogen/air mixtures <i>C. Wu, Y.-R. Chen, M. Van Tinh, R. Schießl, S. Shy, C. Yu, U. Maas</i>	5D08: PROCI-D-23-00455 Surface kinetics and pressure dependence of propane oxidation over platinum <i>F. Zhang, D. Han, J. Mantzaras, C.K. Law, R. Sui</i>	5E08: PROCI-D-23-01411 Examining diesel-spray assisted ignition of ammonia under reactivity-controlled conditions using large-eddy simulations <i>P. Sharma, D. Brouzet, W.T. Chung, M. Ihme</i>	5F08: PROCI-D-23-01579 Computational investigation of chemical and non-equilibrium effects on the Richtmyer–Meshkov instability <i>C.-H. Chou, K.-L. Pan</i>	5G08: PROCI-D-23-01076 Ignition, stabilization and particle-particle collision in lifted aluminum particle cloud flames <i>C. Ruan, Z. Wu, J. Sun, N. Jüngst, E. Berrocal, M. Aldén, Z. Li</i>	5H08: PROCI-D-23-01029 Characterization of the impact of ethanol on the formation of soot particles in gasoline turbulent diffusion flames <i>H.-Q. Do, E. Therssen, K. Sood, L. Giarracca-Mehl, B. Lefort, L.-S. Tran, X. Mercier</i>		
12:50	LUNCH (70 Minutes) – On Your Own									
	POSTER SESSION (60 Minutes)									
14:00	Turbulent Flames F01: PROCI-D-23-00163 Performance of flame surface density and scalar dissipation rate based mean reaction rate closures for fuel-rich ammonia-air turbulent premixed flames <i>V. Mohan, R. Khaledov, H.G. Im, N. Chakraborty</i> F02: PROCI-D-23-00422 A consistent MMC-LES approach for turbulent premixed flames <i>N. Iaroslavtceva, A. Kronenburg, J.W. Gärtner</i> F03: PROCI-D-23-00471 Spray and combustion characterization under an ultrahigh-density condition -- Multi-fuel comparison <i>H. Wu, J. Du, M. Ben Houidi, B. Aljohani, E. Cenker, A.S. AlRamadan, W.L. Roberts</i>			Turbulent Flames F04: PROCI-D-23-00557 Area increase and stretch factor in lean hydrogen-air turbulent flames <i>H.C. Lee, B. Wu, P. Dai, M. Wan, A.N. Lipatnikov</i> F05: PROCI-D-23-00906 Local extinction in piloted turbulent partially premixed ammonia/hydrogen/nitrogen-air jet flames <i>H. Tang, R. Barlow, G. Magnotti</i> F06: PROCI-D-23-00914 Effect of swirler spin on flame shape and combustion dynamics <i>J. Bae, Y.N. Ardebili, P. Vena, S. Chaudhuri</i>			Turbulent Flames F07: PROCI-D-23-01020 Numerical investigation on ignition characterization of high-pressure oxymethylene ether and n-dodecane sprays <i>H. Bao, Z. Sun, N. Maes, B. Somers, J. van Oijen</i> F08: PROCI-D-23-01065 Characteristics of liftoff, blowout and instability in nonpremixed jet flames with NH ₃ /CH ₄ mixture fuels <i>J. Zheng, L. Hu, S.H. Chung</i> F09: PROCI-D-23-01222 Modelling a turbulent premixed flame series using an MMC-LES model with a flow-adapted flame wrinkling closure <i>Y. Shoraka, S. Galindo-Lopez, M.J. Cleary, A.R. Masri, A.Y. Klimenko</i>			

POSTER SESSION (60 Minutes)

14:00	<p>Turbulent Flames</p> <p>F10: PROCI-D-23-01362 Effects of turbulence intensity on forced ignition of ammonia/air mixing layers <i>Z. Chang, H. Wang, E.R. Hawkes, K. Luo, J. Fan</i></p> <p>F11: PROCI-D-23-01639 Capturing differential diffusion effects in large eddy simulation of turbulent premixed flames <i>M.X. Yao, G. Blanquart</i></p> <p>Fire Research</p> <p>F12: PROCI-D-23-01379 Experimental study on burning behavior of thin-layer fuel without the boundary considering substrate heat loss <i>C. Wang, J. Ji, C. Li, W. Tong, J. Wu</i></p> <p>F13: PROCI-D-23-00061 Detailed modeling of gas/soot radiation in large eddy simulation of lab-scale heptane pool fire <i>J.-L. Consalvi, F. Nmira</i></p> <p>F14: PROCI-D-23-00103 Quantitative prediction of the flammability limits of filter paper in microgravity conditions <i>S. Takahashi, H. Torikai, Y. Kobayashi, M. Kikuchi, O. Fujita</i></p> <p>F15: PROCI-D-23-00139 Effect of oxygen concentration, pressure, and opposed flow velocity on the flame spread along thin PMMA sheets <i>H.-C. Ries, C. Eigenbrod, F. Meyer</i></p> <p>F16: PROCI-D-23-00220 Numerical study of the wall effect on the mass burning rate of small-scale methanol pool fires <i>C. Cheng, C. Shan, B. Xu, J.X. Wen</i></p> <p>F17: PROCI-D-23-00400 Large eddy simulation of lithium-ion battery vent gases flame ignition and anchoring <i>A. Cellier, F. Duchaine, T. Poinso, E. Brodu, B. Boust, M. Bellenoue, G. Okyay, M. Leyko, M. Pallud</i></p>	<p>Fire Research</p> <p>F18: PROCI-D-23-00529 Downward flame spread over electrical wires in quiescent low pressures: Similarity analysis and comparison with partial-gravity experiments <i>Y. Ma, Z. Guo, Y. Gu, L. Hu</i></p> <p>F19: PROCI-D-23-00579 Assessment of the EDC / finite rate chemistry approach towards predicting extinction in a turbulent buoyant diffusion flame <i>J. At Thabari, B. Kruljevic, G. Maragkos, A. Snegirev, B. Merci</i></p> <p>F20: PROCI-D-23-00960 Effect of moisture content on the spotting ignition of live wildland fuels <i>M. Reveco, C. Álvarez, J. Gallardo, F. Valenzuela, G. Severino, A. Fuentes, P. Reszka, R. Demarco</i></p> <p>F21: PROCI-D-23-01036 The burning rate of wood cribs under forced flow and variable oxygen concentration: A B-number approach <i>J. Zimak, J. Cuevas, A. Simeoni</i></p> <p>F22: PROCI-D-23-01095 An experimental study of the liquid fire evolution inside the compartment under the facing wind condition <i>X. Sun, Y. Han, F. Ren, X. Zhang, F. Tang, L. Hu</i></p> <p>F23: PROCI-D-23-01132 Countercurrent flame propagation in a packed bed of spherical PMMA particles: Effect of void structure on flamelets quenching <i>S. Zhou, J. Gao, D. Zhang</i></p> <p>F24: PROCI-D-23-01207 Experimental study on offshore fires in cross air flow above water induced by the underwater released gas <i>X. Peng, F. Tang, M.A. Delichatsios, Q. Wang</i></p>	<p>Fire Research</p> <p>F25: PROCI-D-23-01319 Experimental study on effect of inert gas dilution for flammability of NH₃/O₂ mixtures <i>T. Imamura, Y. Nakamura, K.-i. Hayashi, D. Hosaka, J.-i. Suematsu</i></p> <p>F26: PROCI-D-23-01336 Comparison of two flow measurement devices for use in fire experiments <i>G. Di Cristina, R.A. Bryant</i></p> <p>F27: PROCI-D-23-01695 Experimental investigation of flame morphology and instabilities in turbulent wind-driven fires <i>A. Srivastava, B.V. Sandeep, A.V. Singh</i></p> <p>Explosion Hazards, Detonation Applications, and Supersonic Combustion</p> <p>F28: PROCI-D-23-00036 A detonation run-up distance database: Data-driven existing models improvement and new model development <i>C. Mejía-Botero, F. Vivot, L.F. Figueira da Silva, J. Melguizo-Gavilanes</i></p> <p>F29: PROCI-D-23-00056 Experimental study on the extinction of premixed flames between multiple parallel plates for mixtures with different Lewis and Zeldovich numbers <i>M.A. Kiony Nzinga, M. Dall Agnol, C.H. Lauermann, M.E. Pereira Pintos, F.R. Centeno, A.Z. Mendiburu</i></p> <p>F30: PROCI-D-23-00891 Modeling of LES of hydrogen/air flames interacting with nitrogen jets in cross-flow <i>L. De Nardia, H.J. Vargas Ruiz, Q. Douasbin, O. Dounia, T. Poinso</i></p> <p>F31: PROCI-D-23-01136 Coupling of detonation structure and upstream inhomogeneities in a rotating detonation engine <i>M. Bonanni, D. Brouzet, G. Vignat, M. Ihme</i></p> <p>F32: PROCI-D-23-01277 Characteristic velocity analysis of the total pressure gain of rotating detonation combustors <i>Z. Jiao, K. Wang, Q. Xiao, Y. Zhang, W. Fan</i></p>
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Room	Red 1	Red 2	Blue 1	Blue 2	Yellow 1	Yellow 2	Yellow 3	White 1	White 2	Silver Plenary
	Gas-Phase Reaction Kinetics	Fire Research	Flame Dynamics and Transport Processes	Low-Carbon Technologies	Flame Dynamics and Transport Processes	Explosion Hazards, Detonation Applications, and Supersonic Combustion	Combustion Technology	Diagnostics		
15:00	5A09: PROCI-D-23-01082 Styrene thermal decomposition and its reaction with acetylene under shock tube pyrolysis conditions: An experimental and kinetic modeling study <i>A. Hamadi, R. Sivaramakrishnan, F.E. Cano Ardila, R.S. Tranter, S. Abid, N. Chaumeix, A. Comandini</i>	5B09: PROCI-D-23-01056 Analyzing the ignition capabilities of glowing firebrand accumulations <i>L. Zhu, J.L. Urban</i>	5C09: PROCI-D-23-00728 Unifying definition of the local equivalence ratio for complex mixtures and the concept of bonding fraction <i>Q. Cazères</i>	5D09: PROCI-D-23-01616 Effects of wall temperature and water vapor on the nitriding of stainless steel induced by ammonia flames <i>D. Wang, Y. Xing, M. Lee, Y. Suzuki</i>	5E09: PROCI-D-23-00402 CH ₄ /O ₂ supercritical flame structure and simulation <i>F. Monnier, G. Ribert, L. Duhem-Duvilla</i>	5F09: PROCI-D-23-00919 Color and multi-band imaging of a cavity-based flameholder in supersonic flow <i>S.-Y. Lee, T.M. Ombrello</i>	5G09: PROCI-D-23-00758 Flame synthesis of soot/TiO ₂ nanoparticle composite films with improved electrical properties characterized by Scanning Probe Microscopy <i>G. De Falco, L. Basta, M. Commodò, P. Minutolo, A. D'Anna</i>	5H09: PROCI-D-23-00344 Simultaneous determination of 2D temperature distribution and radiation parameters in large-scale pulverized coal-fired boilers by flame image processing <i>T. Li, Z. Hu, W. Yan, C. Lou, D. Liu</i>		
15:20	5A10: PROCI-D-23-00489 Pyrolysis and kinetic modeling study of tetramethylethylene-diamine: A potential green propellant <i>Q. Zhu, B. Liu, Z. Hu, S. Chen, Q. Xu, Z. Wang</i>	5B10: PROCI-D-23-01680 Effect of cross-wind on firebrand flame: An experimental study and scaling analysis <i>W. Yan, N. Liu, H. Zhu, H. Chen, L. Zhang</i>	5C10: PROCI-D-23-00945 A generalized mixture fraction formulation for nonpremixed ammonia-hydrogen flames <i>L. Angelilli, V. Raman, H.G. Im</i>	5D10: PROCI-D-23-00668 Pure ammonia flames with high thermal intensities through fuel and air staging under extreme rich-to-lean conditions <i>M. Srinivasarao, G. Sorrentino, M. de Joannon, V.M. Reddy</i>	5E10: PROCI-D-23-00401 N ₂ O oxidized combustion of ethylene: Detailed laminar flame structure and the significance of oxidizer decomposition kinetics for modeling <i>M. Hoener, T. Bierkandt, S. Shaqiri, T. Kasper</i>	5F10: PROCI-D-23-01205 Interaction of chemical reactions and turbulence in a jet in supersonic crossflow <i>S. Sharma, J. Singh, L. Angelilli, V. Raman</i>	5G10: PROCI-D-23-01703 Spray flame synthesis of the NASICON-structure Na ₃ Zr ₂ Si ₂ PO ₁₂ solid electrolyte nanoparticles for solid-state Na ⁺ batteries <i>T. Wu, Y. Zhang, Z. Fang, S. Lei, X. Jin, S. Li</i>	5H10: PROCI-D-23-01070 Robust automatic retrieval of soot volume fraction, temperature and radiation for axisymmetric flames <i>F. Escudero, V. Chernov, J.J. Cruz, E. Magaña, B. Herrmann, A. Fuentes</i>		

15:40	BREAK (20 minutes)									
Room	Red 1	Red 2	Blue 1	Blue 2	Yellow 1	Yellow 2	Yellow 3	White 1	White 2	Silver Plenary
	Gas-Phase Reaction Kinetics	Fire Research	Flame Dynamics and Transport Processes	Low-Carbon Technologies	Detonation	Detonation II	Combustion Technology	Combustion Technology II		
16:00	5A11: PROCI-D-23-00826 Ion chemistry in ammonia-hydrogen-oxygen flames <i>A.V. Cherepanov, V.G. Kiselev, A.M. Dmitriev, K.N. Osipova, A.G. Shmakov, D.A. Knyazkov</i>	5B11: PROCI-D-23-00540 Quantification of firebrand generation from WUI fuels for model development: Firebrand generation rate, surface temperature and heat release rate <i>X. Ju, M. Lisano, M. Hajilou, P.B. Sunderland, S.I. Stolarov, L. Yang, M.J. Gollner</i>	5C11: PROCI-D-23-00525 Experimental investigation of the competitive relationship between soot formation and chemiluminescence in laminar ammonia-ethylene inverse diffusion flames <i>Z. Li, C. Lou, S. Liu, L. Long, Y. Li, J. Zhou</i>	5D11: PROCI-D-23-01112 Numerical predictions of flashback limits of H ₂ -enriched methane/air premixed laminar flames <i>A. Cuoci, A. Frassoldati, F. Cozzi</i>	5E11: PROCI-D-23-01258 The criticality of detonation transmission across hydrogen interfaces with non-uniform dilution <i>K.C. Tang-Yuk, J.H.S. Lee, H.D. Ng, X. Mi, R. Deiterding</i>	5F11: PROCI-D-23-00530 Dynamics of detonation cellular structure in linear and nonlinear instability regimes <i>Z. Weng, R. Mével</i>	5G11: PROCI-D-23-01756 A two-step strategy for synthesis of spherical non-aggregated multi-component particles by suspension-fed spray flame <i>S. Lei, Y. Zhang, Z. Fang, T. Wu, X. Jin, S. Li</i>	5H11: PROCI-D-23-01046 Integrating data assimilation and sparse sensing for updating Digital Twins of combustion systems: Application to a hydrogen-fueled furnace <i>L. Donato, M.M. Kamal, A. Procacci, M. Cafiero, S. Sharma, C. Galletti, A. Coussement, A. Parente</i>		
16:20	5A12: PROCI-D-23-00128 High-pressure study of the conversion of NH ₃ /H ₂ mixtures in a flow reactor <i>P. García-Ruiz, D. Castejón, M. Abengochea, R. Bilbao, M.U. Alzueta</i>	5B12: PROCI-D-23-00417 Reconstructing modes of destruction in wildland-urban interface fires using a semi-physical level-set model <i>D.M.J. Purnomo, Y. Qin, M. Theodori, M. Zamanialaei, C. Lautenberger, A. Trouvé, M. Gollner</i>	5C12: PROCI-D-23-01782 Combustion of <i>n</i> -propylbenzene: Experiments and numerical modeling <i>S. Guo, Y. Xu, A. Scaboro, R. Rasul, Y. Wang, A. Reeves, A. Cuoci, A. Frassoldati, M. Hicks, C.T. Avedisian</i>	5D12: PROCI-D-23-00970 Stabilization of a thermo-acoustically unstable sequential combustor using non-equilibrium plasma: Large eddy simulation and experiments <i>Q. Malé, S. Shcherbanev, M. Impagnatiello, N. Noiray</i>	5E12: PROCI-D-23-00976 Early-stage flame acceleration in stratified hydrogen-air mixtures: Theory and simulation <i>S. Missey, O. Dounia, L. Selle</i>	5F12: PROCI-D-23-01008 Reactive processes following transverse wave interaction <i>M.D. Frederick, R.M. Gejji, J.E. Shepherd, C.D. Slabaugh</i>	5G12: PROCI-D-23-00283 Synthesis and evolution of ultrafine Ca ₂ Fe ₂ O ₅ nanoparticles via liquid-fed aerosol flame <i>W. Chen, T. Xu, R. Yu, D. Liu</i>	5H12: PROCI-D-23-00397 Controlling thermo-acoustic instabilities with offline deep reinforcement learning and neural autoregressive models <i>J.C. Giraldo Delgado, K. Alhazmi, I. Gorbatenko, D.A. Lacoste, S.M. Sarathy</i>		

SESSIONS END AT 16:40

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