

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

Rector, Politecnico di Milano, Prof. Donatella Sciuto

Councilor for the Environment and Green of Milan City Council, Ms. Elena Grandi

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) – Visit the Work in Progress Posters in Exhibition Hall

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 Chairs: Z. Serinyel H. Wang	Fire Chairs: D. Morrisset S. Suzuki	Flame Dynamics & Transport Processes Chairs: C. Callu V.N. Kurdyumov	Turbulent Flames Chairs: Z. Ren	Propulsion Chairs: C. Mounaïm-Rousselle N. Noiray	Numerical Combustion Chairs: S. Deng E. Mastorakos	Detonation Initiation and Transmission Chairs: C.E. Frouzakis	Low-Carbon Technologies Chairs: Z. Liu	Emission Mitigation Chairs: K.P. Geigle X. You	Topical Review Chairs: M.U. Alzueta P. Medwell
11:00	1A01: Theoretical and kinetic study of the thermal decomposition mechanism of long chain aldehydes <i>M. Di Teodoro, M. Pelucchi, C. Cavallotti</i>	1B01: 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: 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: 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: 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: Augmenting filtered flame front displacement models for LES using machine learning with a <i>posteriori</i> simulations <i>J.Z. Ho, M. Talei, D. Brouzet, W.T. Chung, P. Sharma, M. Ihme</i>	1G01: 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: 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: 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 Joannon

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	Gas-Phase Reaction Kinetics <i>Chairs:</i> Z. Serinyel H. Wang	Fire <i>Chairs:</i> D. Morrisset S. Suzuki	Flame Dynamics & Transport Processes <i>Chairs:</i> C. Callu V.N. Kurdyumov	Turbulent Flames <i>Chairs:</i> Z. Ren	Propulsion <i>Chairs:</i> C. Mounaïm-Rousselle N. Noiray	Numerical Combustion <i>Chairs:</i> S. Deng E. Mastorakos	Detonation Initiation and Transmission <i>Chairs:</i> C.E. Frouzakis	Low-Carbon Technologies <i>Chairs:</i> Z. Liu	Emission Mitigation <i>Chairs:</i> K.P. Geigle X. You	Topical Review <i>Chairs:</i> M.U. Alzueta P. Medwell
11:20	1A02: 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: 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: Pathway dynamics to double-cell premixed flames in lean hydrogen-air mixtures <i>A. Domínguez-González, M.P. Encinar, D. Martínez-Ruiz</i>	1D02: 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: 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: 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: Effect of temperature disturbance on end-gas autoignition and detonation development <i>L. Yang, Y. Wang, P. Dai, Z. Chen</i>	1H02: 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: 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 Mara de Joannon
11:40	1A03: 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: 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: Three-dimensional phenomenology of freely-propagating thermo-diffusively-unstable lean premixed hydrogen flames <i>A.J. Aspden, T.L. Howarth, E.F. Hunt</i>	1D03: 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: 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: 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: Numerical study on detonation initiation by multiple hot spots <i>J. Sun, P. Yang, Y. Wang, Z. Chen</i>	1H03: 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: 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: 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: 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: 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: 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: 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. Baillot</i>	1F04: 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: Transition to detonation in hydrogen-air mixtures due to shock focusing in a 3-wall 90-deg corner <i>W. Rudy</i>	1H04: 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: 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>	
	<p>Visit the Work in Progress Posters in Exhibition Hall</p> <p>Make sure to visit the Exhibitors and thank our Sponsors in Exhibition Hall</p> <p>Lunch options are available for purchase at the cash bar daily in the Exhibition Area on Level 1</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>									

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12:20	1A05: 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: 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: 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. Creta</i>	1D05: Experimental study of the influence of Lewis number, laminar flame thickness, temperature, and pressure on turbulent flame speed <i>H.-Y. Hsieh, S.M. Mousavi, A.N. Lipatnikov, S. Shy</i>	1E05: 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: 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: Detonation initiation by normal shock reflection from an obstacle <i>V.Y.A. Mozhdzhe, G. Ciccarelli</i>	1H05: 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: Light absorption dynamics of brown carbon particles during wood combustion and pyrolysis <i>C. Moularas, P. Demokritou, G.A. Kelesidis</i>	
12:40	1A06: Acetylene addition to the fulvenallenyl moiety in aromatic hydrocarbons <i>H. Jin, A.M. Mebel, A. Farooq</i>	1B06: Flame spread over thin circular ducts <i>V. Kumar, K. Naresh, A. Kumar</i>	1C06: Three-dimensional diffusive-thermal instability of flames propagating in a plane Poiseuille flow <i>A. Kelly, P. Rajamanickam, J. Daou, J. Landel</i>	1D06: Macroscopic flame and flow structures in hydrogen and methane multi-regime combustion <i>T. Li, M. Doğrudil, A. Dreizler</i>	1E06: 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: 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: 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: Topology characteristics of liquid ammonia swirl spray flame <i>R. Wang, M. Zhang, Z. An, J. Liu, J. Wang, Z. Huang</i>	1J06: 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 Visit the Work in Progress Posters in Exhibition Hall									

PPP Poster Session (60 Minutes) – Around the Silver Room

14:20

Diagnostics

Chairs: A. Farooq and C. Schulz

M01: Rotational-vibrational O₂-CO₂ coherent anti-Stokes Raman spectroscopy for determination of thermochemical states in oxy-fuel biomass combustion

H. Schneider, J. Hebel, B. Böhm, R. Kneer, A. Dreizler

M02: Development of fully fiber-coupled phosphor thermometry imaging for combustion applications

P. Nau, H. Scheffold, N. Petry, Z. Yin

M03: Multi-speciation in shock tube kinetics using deep neural networks and cavity-enhanced absorption spectroscopy

M. Mhanna, M. Sy, A. Elkhazraji, A. Farooq

M04: Compact, real-time exhaust gas recirculation rate sensor for use in natural gas combustion engine control

C.S. Callahan, E. Gatica, S.C. Coburn, G.J. Hampson, G.B. Rieker

M05: Rayleigh-Brillouin scattering from H₂/N₂ and H₂/CH₄ mixtures at elevated pressures

K. Teav, A.M. Steinberg

M06: Group evaporation of small- and large-scale droplet clusters in a fuel spray-laden homogenous and isotropic turbulent airflow

N. Pandurangan, S. Sahu

Numerical Combustion

Chairs: A. Attili and M.J. Cleary

M07: Machine learning-driven screening of fuel additives for increased spark-ignition engine efficiency

S.S. Nagaraja, S.M. Sarathy, B. Mohan, J. Chang

M08: A combined PCA-CSP solver for dimensionality and stiffness reduction in reacting flow simulations

M.R. Malik, R. Malpica Galassi, M. Valorani, H.G. Im

M09: Scalar mass conservation in LES of soot formation using mixture fraction-based combustion models

M. Davidovic, H. Pitsch

M10: Direct numerical simulation of igniting non-premixed hydrogen combustion for the Argon Power Cycle

D.A. Quan Reyes, D. Roekaerts, J. van Oijen

Numerical Combustion

Chairs: A. Attili and M.J. Cleary

M11: A novel model for solid fuel combustion with particle migration

J. Zhang, C. Schulze-Netzer, T. Li, T. Løvås

M12: Effect of parametric uncertainty in numerical simulations of a hydrogen-fueled flameless combustion furnace using dimensionality reduction and non-linear regression

R. Amaduzzi, A. Procacci, A. Piscopo, R. Malpica Galassi, A. Parente

M13: Physics-informed recurrent super-resolution generative reconstruction in rotating detonation combustor

X. Wang, H. Wen, Q. Wen, B. Wang

Emission Mitigation from Flames

Chairs: T. Kasper

M14: 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: 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. Coussment, A. Parente

M16: Modelling collision frequencies and predicting bi-variate agglomerate size distributions for bi-disperse primary particle systems

A. Pandey, M. Karsch, A. Kronenburg

M17: Modeling reversible soot nucleation with a reduced kinetic mechanism including coronene

M. Geuking, P.P. Duvvuri, A. Jocher

M18: Understanding soot production in a Jet A-1 laminar coflow non-premixed flame

M. Littin, F. Escudero, J.J. Cruz, I. Verdugo, D. Chen, A. Fuentes, R. Demarco

M19: 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: Black carbon emissions from turbulent buoyant non-premixed flames representative of flares in the upstream oil and gas sector

A.D. Tanner, P. Mehr, M. Mohammadi, M.R. Johnson

Low-Carbon Technologies

Chairs: M. Ditaranto and A. Hayakawa

M21: 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: 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: Spectral analysis of soot dynamics in an aero-engine model combustor

G. Arumapperuma, Y. Tang, A. Attili, W. Han

M24: Sparse-Lagrangian MMC modelling of the Sandia ethylene sooting flame

W. Liu, A. Kronenburg, J.W. Gärtner, J. Kirchmann, T. Zirwes

M25: 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: 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: 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: 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

M29: 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: 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: 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

PPP Poster Session (60 Minutes) – Around the Silver Room

<p>Low-Carbon Technologies <i>Chairs: M. Ditaranto and A. Hayakawa</i></p> <p>M32: Design a novel Ca-Mn perovskite oxygen carrier with balanced performance in chemical looping combustion <i>X. Wu, X. Liu, G. Zou, J. Ma, H. Zhao</i></p>	<p>Low-Carbon Technologies <i>Chairs: M. Ditaranto and A. Hayakawa</i></p> <p>M33: Stabilization of methane-hydrogen flames inside a divergent porous media reactor <i>C. Munoz-Herrera, O. Skurtys, P. Nikrityuk, R.E. Hayes, M. Toledo</i></p> <p>M34: Laminar burning velocity and Markstein length of ammonia/air flames up to the initial mixture pressure of 2.0 MPa <i>A. Hayakawa, T. Nagaoka, H. Kosada, H. Takeishi, T. Kudo, H. Nakamura</i></p>	<p>Low-Carbon Technologies <i>Chairs: M. Ditaranto and A. Hayakawa</i></p> <p>M35: Exploring flow reactor pyrolysis of branched OMEs: Insight into multi-sidechain effects on pyrolysis chemistry of CH₃OCH₃-n(OCH₃)_n (n = 1-3) <i>Q. Fang, J. Fang, Y. Zhang, J. Zhang, T. Lian, W. Li, Y. Li</i></p>
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15:20	<p>1A07: 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></p>	<p>1B07: 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></p>	<p>1C07: Control of intrinsic thermo-acoustic instabilities for methane and hydrogen air flames: DNS and network analysis <i>A. Dupuy, Q. Douasbin, T. Poinsot</i></p>	<p>1D07: 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></p>	<p>1E07: 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></p>	<p>1F07: Learning transient evolution of multidimensional reacting flows by multiscale Fourier neural operators <i>H. Zhang, Z. Zhao, Y. Weng, D. Zhou</i></p>	<p>1G07: Grid resolution considerations for simulating non-ideal cellular detonations <i>P.A. Meagher, X. Zhao</i></p>	<p>1H07: Distinct structure-activity relationship and reaction mechanism over CuO/CeO₂ catalysts for NH₃ self-sustained combustion <i>R. Kang, C. Zhang, Z. Zhang, F. Bin, X. Yi, J. Huang, X. Wei</i></p>	<p>1J07: 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></p>	

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	Gas-Phase Reaction Kinetics <i>Chairs:</i> T. Nagy C.-W. Zhou	Fire <i>Chairs:</i> P.B. Sunderland	Flame Dynamics and Transport Processes <i>Chairs:</i> C. Reuter	Turbulent Flames <i>Chairs:</i> A. Skiba	Explosion Hazards, Detonation Applications, and Supersonic Combustion <i>Chairs:</i> O. Dounia	Numerical Combustion <i>Chairs:</i> S. Iavarone R. Mercier	Detonation <i>Chairs:</i> E.S. Oran M. Short	Low-Carbon Technologies <i>Chairs:</i> J. Guo	Diagnostics <i>Chairs:</i> M. Dunn S. Will	
15:40	1A08: The discovery of non-equilibrium kinetic sequences important to ammonia/co-fuel and propellant flames <i>R.E. Cornell, M.P. Burke</i>	1B08: 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: Mitigating thermoacoustic instabilities in premixed hydrogen flames using axial staging <i>A. Ánestad, E. Aesøy, J.R. Dawson, N.A. Worth</i>	1D08: 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: 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: 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: 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: Utilizing selective hydrogen combustion catalyst for efficient and highly-selective ethane dehydrogenation <i>Y. Li, C. Zheng, H. Zhao</i>	1J08: 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>	
16:00	1A09: 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: 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. Diévar, L. Catoire, E.L. Petersen, O. Mathieu</i>	1C09: High-frequency thermo-acoustic instability in a dual swirl H ₂ burner <i>H. Paniez, S. Marragou, H. Magnes, T. Schuller</i>	1D09: 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: 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: 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: 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: 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: 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>	

BREAK (30 minutes) - Visit the Work in Progress Posters in Exhibition Hall										
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 <i>Chairs:</i> A.A. Konnov A. Tomlin	Fire <i>Chairs:</i> M.A. Delichatsios	Flame Dynamics and Transport Processes <i>Chairs:</i> K. Maruta W.L. Roberts	Turbulent Flames <i>Chairs:</i> W. Northrop	Propulsion <i>Chairs:</i> B. Böhm P. Glarborg	Numerical Combustion <i>Chairs:</i> A. Giusti A. Kempf	Heterogeneous Combustion <i>Chairs:</i> J. van Oijen	Low-Carbon Technologies <i>Chairs:</i> V.M. Reddy	Diagnostics <i>Chairs:</i> S. Kheirkhah	
16:50	1A10: 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: High resolution numerical simulations of methane pool fires using adaptive mesh refinement <i>M.A. Meehan, J.C. Hewson, P.E. Hamlington</i>	1C10: 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: Modelling differential diffusion using a Sparse-Lagrangian particle approach <i>S. Gutiérrez, A. Kronenburg, T. Zirwes</i>	1E10: 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: 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: 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: 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: 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: 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: A cost-effective CFD model for large-scale liquid fuel spill fires <i>N. Ren, G. Agarwal, A. Krisman, Y. Wang</i>	1C11: A new class of Galerkin expansion models for the study of thermoacoustic instabilities <i>C.F. Silva, W. Polifke</i>	1D11: Synergistic interplay of thermodiffusive instability and turbulence in premixed flames <i>P.E. Lapenna, G. Troiani, F. D'Alessio, F. Creta</i>	1E11: Analysis of residence time distribution in a cavity-stabilized scramjet combustor <i>M. Bonanni, A. Norris, M. Ihme</i>	1F11: Robust mechanism discovery with atom conserving chemical reaction neural networks <i>F.A. Döppel, M. Votsmeier</i>	1G11: An improved semi-global intrinsic kinetics model for high temperature carbon oxidation <i>C.R. Shaddix</i>	1H11: Experimental demonstration of a two-stage porous media ammonia combustion <i>G. Vignat, T. Zirwes, E. Boigné, M. Ihme</i>	1J11: 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>	

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17:30	1A12: 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: Two-zone subgrid combustion model for large eddy simulations of buoyant diffusion flames <i>A. Snegirev, G. Maragkos, Y. Moorthamers, J.A. Thabari, B. Merci</i>	1C12: The role of hydrodynamic shear in the thermoacoustic response of slit flames <i>P. Brokof, C.M. Douglas, W. Polifke</i>	1D12: 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. Poinot</i>	1E12: Regulating scramjet combustor mode transition using fuel distribution control <i>M. Kanapathipillai, K.H. Yu</i>	1F12: 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: 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: Speed-up drivers for H ₂ -enriched flames in porous media burners <i>E. Flores-Montoya, P.-A. Masset, T. Schuller, L. Selle</i>	1J12: 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>	
	<p>SESSIONS END AT 17:50</p> <p>CI Committee Meeting: 18:00-19:00 Yellow 3</p> <p>Early Career Researcher Mixer: 19:00-23:00 Politecnico, Via Bonardi 9 (next to Piazza Leonardo da Vinci)</p>									

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

Chair: T. Løvås and A. Parente

9:30	BREAK (10 minutes) - Visit the Work in Progress Posters in Exhibition Hall									
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 <i>Chairs:</i> G. Dayma S.J. Klippenstein	Fire <i>Chairs:</i> A. Guibaud B. Merci	Flame Dynamics and Transport Processes <i>Chairs:</i> P. Medwell D. Thévenin	Turbulent Flames <i>Chairs:</i> L. Berger J. Chen	Propulsion <i>Chairs:</i> C.D. Carter A. Steinberg	Numerical Combustion <i>Chairs:</i>	Spray Combustion Applications <i>Chairs:</i>	Low-Carbon Technologies <i>Chairs:</i> P. Papas	Emission Mitigation <i>Chairs:</i> F. Bisetti F. Ferraro	
9:40	2A01: 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: Formation and movement of multiple fire whirls <i>Z. Liu, J. Lei, N. Liu</i>	2C01: 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: Filtered tabulated chemistry for multi-regime combustion <i>S. Dillon, R. Mercier, B. Fiorina</i>	2E01: 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: Feature-based adaptive mesh refinement for multi-regime reactive flows <i>A. Stock, V. Moureau</i>	2G01: 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: 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: 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>	

Room	Red 1	Red 2	Blue 1	Blue 2	Yellow 1	Yellow 2	Yellow 3	White 1	White 2	Silver Plenary
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10:00	2A02: 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: 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: 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: Effects of Karlovitz number variations on the thermodynamic instabilities in lean turbulent hydrogen jet flames <i>L. Berger, A. Attili, M. Gauding, H. Pitsch</i>	2E02: Flame transfer function analysis of hydrogen diffusion swirl flames <i>G. Wang, A. Faure Beaulieu, B. Schuermans, N. Noiray</i>	2F02: 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: Analysis and flamelet modeling of preferential evaporation in SAF/Jet A spray flames <i>J. Xing, Z. An, R. Kurose</i>	2H02: 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: 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: 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: 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: 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: 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: 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: Quantum computing of reacting flows via Hamiltonian simulation <i>Z. Lu, Y. Yang</i>	2G03: 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: 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: 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>	

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10:40	2A04: Stereoisomer-dependent rate coefficients and reaction mechanisms of 2-ethyl-oxetanylperoxy radicals <i>A.C. Doner, J. Zádor, B. Rotavera</i>	2B04: Effect of imposed circulation on the transition between blue whirls and fire whirls <i>Z. Chen, H. Xiao</i>	2C04: 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: 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: 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: Low-cost Jacobian-free mapping for dynamic cell clustering in multi-regime reactive flows <i>A. Stock, V. Moureau, J. Leparoux, R. Mercier</i>	2G04: 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: 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: 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) - Visit the Work in Progress Posters in Exhibition Hall									
	<p>Visit the Work in Progress Posters in Exhibition Hall</p> <p>Take a look at our photo backdrops and don't forget to use #40thISOC, #TheCombustionInstitute, #combustion when posting your selfies</p> <p>Lunch options are available for purchase at the cash bar daily in the Exhibition Area on Level 1</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> <p>The Combustion Institute would like to thank all our sponsors and exhibitors, without whom the Symposium would not be possible</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 <i>Chairs:</i> S.W. Wagnon	Fire <i>Chairs:</i> V. Gupta	Flame Dynamics and Transport Processes <i>Chairs:</i> M.S. Cha C. Jiménez	Turbulent Flames <i>Chairs:</i> R. Barlow H. Pitsch	Propulsion <i>Chairs:</i> J.R. Dawson	Turbulent Flames II <i>Chairs:</i> J. Guo A.R. Masri	Detonation <i>Chairs:</i>	Low-Carbon Technologies <i>Chairs:</i>	Emission Mitigation <i>Chairs:</i> B. Franzelli Ö.L. Gülder	TOPICAL REVIEW <i>Chair:</i> L. Cai M. Mehl
11:30	2A05: 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: 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: 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: Three-dimensional geometrical effects on the near-wall quenching of turbulent premixed flame <i>Y. Wang, M. Tanahashi</i>	2E05: 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: 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: 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: 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: 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 S. Mani Sarathy, <i>Basem A. Eraqi</i>
11:50	2A06: Experimental and kinetic modeling study on the low-temperature decomposition and autoignition of 2- azido-dimethylethana mine: 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: Transition from smoldering 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: 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: Reynolds number scaling and self-similarity of the flame surface density function for turbulent premixed flames in shear-driven turbulence up to Re _λ = 140 <i>A. Vinod, T. Kulkarni, F. Bisetti</i>	2E06: 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: Controlling the resolved flame thickness of non-premixed flames in LES with filtered tabulated chemistry <i>S. Dillon, R. Mercier, B. Fiorina</i>	2G06: 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: Propagation characteristics of lean turbulent premixed ammonia-hydrogen flames <i>R. Khamedov, M. Rafi Malik, F.E. Hernández-Pérez, H.G. Im</i>	2J06: 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>	

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 <i>Chairs:</i> S.W. Wagnon	Fire <i>Chairs:</i> V. Gupta	Flame Dynamics and Transport Processes <i>Chairs:</i> M.S. Cha C. Jiménez	Turbulent Flames <i>Chairs:</i> R. Barlow H. Pitsch	Propulsion <i>Chairs:</i> J.R. Dawson	Turbulent Flames II <i>Chairs:</i> J. Guo A.R. Masri	Detonation <i>Chairs:</i>	Low-Carbon Technologies <i>Chairs:</i>	Emission Mitigation <i>Chairs:</i> B. Franzelli Ö.L. Gülder	TOPICAL REVIEW <i>Chair:</i>
12:10	2A07: Auto-ignition characteristics of oxygenated aromatic compounds: benzyl alcohol, benzaldehyde, and phenol <i>K.A. Heufer, R.D. Büttgen, L. Pratali Maffei, M. Pelucchi</i>	2B07: 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: Effect of a shear flow on the Darrieus–Landau instability in a Hele-Shaw channel <i>P. Rajamanickam, J. Daou</i>	2D07: Direct numerical simulation of low-emission ammonia rich-quench-lean combustion <i>M. Rieth, A. Gruber, E.R. Hawkes, J.H. Chen</i>	2E07: 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: Flamelet generated manifolds for lean premixed turbulent hydrogen flames <i>G. Sanchez Bahoque, J. van Oijen</i>	2G07: 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: Mitigating CO ₂ emission from methane based thermal power with a self-decarbonizing combustor <i>K.S. Akojwar, S.A. Pawar, S. Chaudhuri</i>	2J07: A PAH growth mechanism for nitrogen-containing aromatics in ammonia-doped hydrocarbon flames <i>Q. Wang, T. Wang, S.M. Sarathy</i>	
12:30	2A08: 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: 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: 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: DNS of ignition and flame stabilization in a simplified gas turbine premixer <i>M. Vabre, Z. Li, S. Jella, P. Versailles, G. Bourque, M. Day, B. Savard</i>	2E08: 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: 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: 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: 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: Formation of five-membered ring structures via reactions of <i>o</i> -benzyne <i>N. Hansen, T. Bierkanndt, N. Gaiser, P. Oßwald, M. Köhler, P. Hemberger</i>	
12:50	<p>LUNCH (70 Minutes) – On Your Own Visit the Work in Progress Posters in Exhibition Hall</p> <p>13:00 Women in Combustion Luncheon MiCo Congress Center, 2nd floor</p>									

<p>14:00</p>	<p><u>Gas-Phase Reaction Kinetics</u> Chairs: A. Frassoldati and B. Rotavera</p> <p>T01: 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: 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: 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: 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: 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: Ozone-assisted low-temperature oxidation of acetone <i>L. Zhu, S. Chen, B. Liu, Q. Zhu, Q. Xu, Z. Wang</i></p> <p>T07: Shock-tube study of the oxidation of ammonia by N₂O <i>O. Mathieu, C.M. Grégoire, E.L. Petersen</i></p> <p>T08: 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: A detailed high-pressure oxidation study of n-pentanal <i>Z. Serinyel, G. Dayma, P. Dagaut</i></p> <p>T10: 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><u>Gas-Phase Reaction Kinetics</u> Chairs: A. Frassoldati and B. Rotavera</p> <p>T11: 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: Heptanone isomers as a biofuel: Reactivity with OH radicals <i>D. Liu, F. Khaled, A. Farooq</i></p> <p><u>Flame Dynamics and Transport Processes</u> Chairs: A.A. Konnov and D. Lacoste</p> <p>T13: 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: 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: 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: Effect of quenching on flashback of hydrogen-enriched laminar premixed flames <i>H. Pers, T. Poinsot, T. Schuller</i></p> <p>T17: 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: 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: 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>T20: Displacement speed of wall quenching laminar premixed flames in a stagnation flow <i>T. Tomidokoro, H.G. Im</i></p>	<p><u>Flame Dynamics and Transport Processes</u> Chairs: A.A. Konnov and D.A. Lacoste</p> <p>T21: Revisiting performance of reactivity stratification with hydrogen addition for ammonia combustion <i>W. Guan, C. Chi, W. Liang, D. Thévenin</i></p> <p>T22: 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: 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: 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: 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: 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: 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: Single ammonia droplet combustion in a high-pressure environment in microgravity <i>Y. Matsuura, A. Banno, M. Mikami</i></p> <p>T29: Background vapor effect on droplet evaporation in a turbulent flow at elevated pressure <i>A. Arabkhalaj, C. Verwey, M. Birouk</i></p> <p>T30: Theoretical analysis on the forced ignition of a quiescent mixture by composite ignition source <i>D. Yu, L. Yue, Z. Chen</i></p> <p>T31: 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></p> <p>T32: Numerical investigations on flame pattern formations for premixed methane/air combustion in a radial microchannel <i>J. Chang, X. Kang</i></p>
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PPP Poster Session (60 Minutes) – Around the Silver Room

PPP Poster Session (60 Minutes) – Around the Silver Room											
	Flame Dynamics and Transport Processes Chairs: A.A. Konnov and D.A. Lacoste T33: Ultra-slow ammonia flame speeds - A microgravity study on radiation <i>R. Glaznev, C. Schwenzer, R. Hesse, S. Girhe, F. Halter, C. Chauveau, H. Pitsch, J. Beeckmann</i>			Flame Dynamics and Transport Processes Chairs: A.A. Konnov and D.A. Lacoste T34: Laminar flame speed correlation of ammonia-based fuels with functional group contribution method <i>J. Chen, X. Gou</i> T35: 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>			Flame Dynamics and Transport Processes Chairs: A.A. Konnov and D.A. Lacoste T36: 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>				
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 Chairs: L. Cai C. Michelbach	Fire Chairs: A. Snegirev	Flame Dynamics and Transport Processes Chairs: D.A. Lacoste	Turbulent Flames Chairs: F. Dinkelacker L. Gicquel	Detonation Chairs: S. Jackson W. Rudy	Numerical Combustion Chairs : A. Gruber	Heterogeneous Combustion Chairs: P. Glarborg	Low-Carbon Technologies Chairs: H. Zhao			
15:00	2A09: Spatially resolved NH* and OH* profiles in ammonia-hydrogen-air counterflow diffusion flames <i>G. Issayev, X. Zhu, G. Capriolo, T.F. Guiberti</i>	2B09: Experiment and modeling of stochastic ignition and combustion of fuel droplets impacting a hot surface <i>N. Ly, Y. Ma, N. Vignat, N. Hashimoto, M. Ihme</i>	2C09: 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: 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: Dynamics of mono-size aerosolized liquid fuel detonations <i>T. Brown, R. Hytovick, J. Berson, R. Burke, S. Salauddin, K. Ahmed</i>	2F09: FGM modeling of ammonia/n-heptane combustion under RCCI engine conditions <i>Y. Zhou, S. Xu, L. Xu, X.-S. Bai</i>	2G09: Thermal interaction of inert additives in energetic materials <i>G. Tsai, S. Kim, S. Deng</i>	2H09: Dimethoxymethane 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>			
15:20	2A10: 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: 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: 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: An experimental marker of thermo-diffusive instability in hydrogen-enriched flames <i>O. Chaib, S. Hochgreb, I. Boxx</i>	2E10: Pathological detonations in mono-disperse spray media <i>R. Hernández-Sánchez, C. Huete, D. Martínez-Ruiz</i>	2F10: 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: 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: 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	BREAK (20 minutes) Visit the Work in Progress Posters in Exhibition Hall
16:00	Special Session I – Panel Discussion: Combustion Research and Impact - Past, Present and Future Silver Plenary Room
	SESSIONS END AT 18:00 Members Meeting: 18:15-19:15 Yellow 3

Wednesday, 24 July 2024

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

Fuel Blend Combustion for Decarbonization

Zuohua Huang

Chairs: H. Kobayashi and K. Kohse-Höinghaus

9:30	BREAK (10 minutes)									
Room	Red 1	Red 2	Blue 1	Blue 2	Yellow 1	Yellow 2	Yellow 3		White 1	White 2
	Gas-Phase Reaction Kinetics Chairs: B. Rotavera F. Zhang	Fire Chairs: R.M. Hadden L. Hu	Flame Dynamics and Transport Processes Chairs: F. Halter Y. Suzuki	Turbulent Flames Chairs: A.M. Elbaz	Propulsion Chairs: X.-S. Bai	Detonation Chairs: A. Chinnayya J. Crane	Heterogeneous Combustion Chairs: N. Hashimoto	Industry Session Times 30 minutes	Industry Room Chairs: M. Colket S. Dorofeev	Industry Room Chairs: R. Eggels U. Riedel
9:40	3A01: 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: 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: 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: 3D flame surface curvature analysis from reconstructed scanning across spherical expanding flames <i>Y. Zheng, P. Ahmed, S. Hochgreb</i>	3E01: 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: 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: 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	Industry Session Mitigating Social and Economic Impacts of Wildfires Louis A. Gritzso	Industry Session A Perspective on the Decarbonization of the Metals Industry Alessandra Della Rocca
	<p>Take a look at our photo backdrops and don't forget to use #40thISOC, #TheCombustionInstitute, #Combustion when posting your selfies</p> <p>Lunch options are available for purchase at the cash bar daily in the Exhibition Area on Level 1</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> <p>The Combustion Institute would like to thank all our sponsors and exhibitors, without whom the Symposium would not be possible</p>									

Room	Red 1	Red 2	Blue 1	Blue 2	Yellow 1	Yellow 2	Yellow 3		White 1	White 2
	Gas-Phase Reaction Kinetics <i>Chairs:</i> B. Rotavera F. Zhang	Fire <i>Chairs:</i> R.M. Hadden L. Hu	Flame Dynamics and Transport Processes <i>Chairs:</i> F. Halter Y. Suzuki	Turbulent Flames <i>Chairs:</i> A.M. Elbaz	Propulsion <i>Chairs:</i> X.-S. Bai	Detonation <i>Chairs:</i> A. Chinnayya J. Crane	Heterogeneous Combustion <i>Chairs:</i> N. Hashimoto	Industry Session Times <i>30 minutes</i>	Industry Room <i>Chairs:</i> M. Colket S. Dorofeev	Industry Room <i>Chairs:</i> R. Eggels U. Riedel
10:00	3A02: 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: 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: 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: 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: 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: Curvature effect on stabilization of cellular detonations in channel, circular arc and spherical shell geometries <i>C. Chiquete, M. Short</i>	3G02: 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	Industry Session Meeting the Challenge of Mitigating Li-ion Battery Fires for Aviation Paul Papas	Industry Session Future Technological Directions for Hydrogen Internal Combustion Engines in Transport Applications James Turner
10:20	3A03: Theoretical and kinetic analysis of anisole and cresol primary reactivity in pyrolysis and combustion <i>L. Pratali Maffei, A. Della Libera, T. Faravelli, C. Cavallotti</i>	3B03: 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: 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: Propagation and topology in turbulent premixed flames <i>H.F. Ahmed, R.S. Cant</i>	3E03: 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: Probing vibrational nonequilibrium in detonations with ozone <i>X. Shi, A.S. Jayaraman, H. Wang</i>	3G03: Near-limit discrete flames of iron particle suspensions in sounding rocket microgravity experiments <i>H. Heng, J. Palečka, S. Goroshin, J. Berghorson</i>	10:40	Industry Session Industry R&D Needs in Hydrogen Safety Harri Kytömaa	Industry Session Future R&D Needs in Aerospace Propulsion Venke Sankaran

Room	Red 1	Red 2	Blue 1	Blue 2	Yellow 1	Yellow 2	Yellow 3		White 1	White 2
	Gas-Phase Reaction Kinetics <i>Chairs:</i> B. Rotavera F. Zhang	Fire <i>Chairs:</i> R.M. Hadden L. Hu	Flame Dynamics and Transport Processes <i>Chairs:</i> F. Halter Y. Suzuki	Turbulent Flames <i>Chairs:</i> A.M. Elbaz	Propulsion <i>Chairs:</i> X.-S. Bai	Detonation <i>Chairs:</i> A. Chinnayya J. Crane	Heterogeneous Combustion <i>Chairs:</i> N. Hashimoto	Industry Session Times <i>30 minutes</i>	Industry Room <i>Chairs:</i> M. Colket S. Dorofeev	Industry Room <i>Chairs:</i> R. Eggels U. Riedel
10:40	3A04: 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: 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: 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: Effects of cryogenic temperature on turbulent premixed hydrogen/air flames <i>C. Chen, C. Chi, D. Thévenin, W. Han, L. Yang</i>	3E04: The LEAF concept operated with hydrogen: Flame topology and NO _x formation <i>Q. Malé, K. Pandey, N. Noiray.</i>	3F04: 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: 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	Industry Session Pyrolysis and Beyond: Advancing Sustainable Plastic Waste Valorization Saumitra Saxena	Industry Session Perspectives on Oxy-Fuel Combustion for Supercritical CO ₂ Direct-Fired Power Cycle Francesco Di Sabatino
11:00	3A05: Competing radical and molecular channels in the unimolecular dissociation of methylformate <i>J. Cho, N.J. Labbe, L.B. Harding, S.J. Klippenstein, R. Sivarama-krishnan</i>	3B05: 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: Droplet combustion in a turbulent, elevated-pressure environment <i>C. Verwey, A. Arabkhalaj, M. Birouk</i>	3D05 The interaction between soot, thermal gradients, and dissipation rate in turbulent non-premixed jet flames <i>J. Pu, J.A. Sutton</i>	3E05: 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: The critical conditions for the re-ignition and detonation formation from Mach reflections of curved decaying shocks <i>F. Zangene, M. Radulescu</i>	3G05: 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 <i>Chairs:</i> B. Rotavera F. Zhang	Fire <i>Chairs:</i> R.M. Hadden L. Hu	Flame Dynamics and Transport Processes <i>Chairs:</i> F. Halter Y. Suzuki	Turbulent Flames <i>Chairs:</i> A.M. Elbaz	Propulsion <i>Chairs:</i> X.-S. Bai	Detonation <i>Chairs:</i> A. Chinnayya J. Crane	Heterogeneous Combustion <i>Chairs:</i> N. Hashimoto	Industry Session Times <i>30 minutes</i>	Industry Room <i>Chairs:</i>	Industry Room <i>Chairs:</i>
11:20	3A06: 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: Extinction of buoyant turbulent non-premixed flames under reduced oxygen concentrations <i>G. Xiong, R. Barlow, D. Zeng, Y. Wang</i>	3C06: Interactions between liquid sprays and shock waves in underexpanded flows <i>C.B. Reuter, S.G. Tuttle</i>	3D06: Stabilisation limits of turbulent premixed flames by nanosecond repetitively pulsed discharges <i>R.S. Pathania, P.R. Soundararajan, E. Mastorakos</i>	3E06: Modeling Hydrogen-Diesel Dual Direct Injection Combustion with FGM and Transported PDF <i>T. Lucchini, A. Schirru, M. Meh, G. D'Errico, P. Rorimpandey, Q.N. Chan, S. Kook, E.R. Hawkes</i>	3F06: 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: 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>BREAK (30 minutes)</p> <p>Take a look at our photo backdrops and don't forget to use #40thISOC, #TheCombustionInstitute, #combustion when posting your selfies</p> <p>Lunch options are available for purchase at the cash bar daily in the Exhibition Area on Level 1</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> <p>The Combustion Institute would like to thank all our sponsors and exhibitors, without whom the Symposium would not be possible. Please take some time to visit them in Exhibition Hall.</p>									

Room	Red 1	Red 2	Blue 1	Blue 2	Yellow 1	Yellow 2	Yellow 3		White 1	White 2
	Gas-Phase Reaction Kinetics <i>Chairs:</i> N. Hansen H. Nakamura	Gas-Phase Reaction Kinetics II <i>Chairs:</i> T.F. Guibert W. Yuan	Flame Dynamics and Transport Processes <i>Chairs:</i> A. Dejoan J. Park	Turbulent Flames <i>Chairs:</i> A.M. Elbaz E.R. Hawkes	Propulsion <i>Chairs:</i> K.H. Yu	Numerical Combustion <i>Chairs:</i> M. Kuznetsov	Explosion Hazards, Detonation Applications, and Supersonic Combustion <i>Chairs:</i> T.M. Ombrello L. Selle	Industry Session Times <i>30 minutes</i>	Industry Room <i>Chairs:</i> T. Fujimori	
12:10	3A07: 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: 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. Szóri</i>	3C07: 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: A novel projection strategy for manifold-based chemistry reduction models <i>H. Bao, J. van Oijen</i>	3E07: 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: 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: 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	Industry Session Gasification Technology for Realizing Decarbonized Society Keigo Matsumoto	
12:30	3A08: Experimental and modelling study of phenol combustion and oxidation <i>N. Delort, I. Meziene, O. Herbinet, H.H. Carstensen, F. Battin-Leclerc</i>	3B08: The cool-flame chemistry of tetrahydropyran: 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: Measurements of the laminar burning velocities of 1,2 utadiene: A comparative study <i>A.A. Konnov, J. Chen, M.L. Lavadera</i>	3D08: A numerically-stable method for enforcing numerical conservation in transported probability density function models: Application to MMC-IEM with one reference variable <i>A.P. Wandel</i>	3E08: 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: Efficient combustion kinetic parameter optimization via variational inference <i>Y. Wang, C. Liu, C. Tao, C.K. Law, B. Yang</i>	3G08: End-wall pressure evolution from head-on reflection of high-speed deflagrations <i>H. Yang, W. Rakotoarison, A. Sow, M. Radulescu</i>	12:40	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 <i>Chairs:</i> N. Hansen H. Nakamura	Gas-Phase Reaction Kinetics II <i>Chairs:</i> T.F. Guibert W. Yuan	Flame Dynamics and Transport Processes <i>Chairs:</i> A. Dejoan J. Park	Turbulent Flames <i>Chairs:</i> A.M. Elbaz E.R. Hawkes	Propulsion <i>Chairs:</i> K.H. Yu	Numerical Combustion <i>Chairs:</i> M. Kuznetsov	Explosion Hazards, Detonation Applications, and Supersonic Combustion <i>Chairs:</i> T.M. Ombrello L. Selle			
12:50	3A09: Unveiling the oxygen addition kinetics of 1-hydroxy-2-hexyl and 2-hydroxy-1-hexyl at low temperature <i>Y. Chen, L. Ye, Z. Zhang</i>	3B09: Quantitative investigation of the formation of oxygenated aromatics in an anisole-doped flame <i>K. Sood, S. Gosselin, A. El Bakali, A. Faccinnetto, P. Desgroux, K.M. Van Geem, L. Gasnot, L.-S. Tran</i>	3C09: 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: Prediction of non-premixed combustion regimes in direct injection compression ignition engines <i>K. Niemietz, D. Denker, M. Gauding, H. Pitsch</i>	3E09: 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: Tabulation-based sample-partitioning adaptive reduced chemistry and cell agglomeration <i>A. Cuoci, A. Nobili, A. Parente, T. Grenga, H. Pitsch</i>	3G09: Transfer functions of lean fully- and technically-premixed jetstabilized turbulent hydrogen flames <i>K. Moon, R. Martin, B. Schuermans, N. Noiray</i>			
13:10	Session Ends									
13:20	Special Industry Roundtable - Hydrogen as an energy vector for heat and power Silver Plenary Room (60 Minutes)									
	Excursion to Villa Erba, Cernobbio (Lake Como) Buses depart from the MiCo									

Thursday, 25 July 2024

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

Roles for Combustion in a Net-Zero CO₂ Society
Timothy Lieuwen, Benjamin Emerson, Vishal Acharya, Ishan Gupta

Chair: S. Hochgreb and W.L. Roberts

9:30 BREAK (10 minutes) - Visit the Work in Progress Posters in Exhibition Hall

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 <i>Chairs:</i> M. Alzueta L. Pratali Maffei	Fire <i>Chairs:</i> R. Demarco N. Liu	Flame Dynamics and Transport Processes <i>Chairs:</i> R. Mevel T. Yokomori	Diagnostics <i>Chairs:</i> S. Kumar	Propulsion <i>Chairs:</i> S. Kook	Heterogenous Combustion <i>Chairs:</i> F. Sewerin	Diagnostics II <i>Chairs:</i> Z. Sun B. Wu	Emission Mitigation <i>Chairs:</i> F. Carbone Z. Ren	Low-Carbon Technologies <i>Chairs:</i> E. Boigne	
9:40	4A01: 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: The role of chemistry in the retardant effect of dimethyl methylphosphonate in flame-wall interaction <i>F. Ferraro, A. Stagni, A. Scholtissek</i>	4C01: Effects of syngas and methanol fuel substitution on ammonia counterflow diffusion flames <i>J. Li, A. Alfazazi, B. Dally</i>	4D01: 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: 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: 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: Tomographic single-shot time-resolved laser-induced incandescence for soot characterization in turbulent flames <i>M.N. Müller, Q. Wang, W. Cai, F.J.T. Huber, S. Will</i>	4H01: 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: 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>	

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10:00	4A02: 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: 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: 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: Rotational absorption spectroscopy of the hydroxyl radical at high temperatures using a THz quantum cascade laser <i>N.M. Kuening, N.Q. Minesi, B.A. Honaker, R.M. Spearrin</i>	4E02: 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: 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: 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: 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: 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: 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: 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: 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: 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: 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: 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: Experimental study on the soot formation characteristics during pyrolysis of metal particle-mixed nanofluid fuel <i>L. Wei, R. Yu, G. Liu, D. Liu</i>	4H03: 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: 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>	

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10:40	4A04: 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: Role of bromine doping in freely-propagating hydrogen-oxygen flames <i>H. Li, J. Li, W. Liang, C.K. Law</i>	4C04: 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: 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: 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: 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: Structure-property relationships in fluorescence of carbon dots from premixed ethylene flames <i>C. Shen, Y. Zhou, S. Shao, X. You</i>	4H04: 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: 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;">Visit the Work in Progress Posters in Exhibition Hall</p> <p style="text-align: center;">Take a look at our photo backdrops and don't forget to use #40thISOC, #TheCombustionInstitute, #combustion when posting your selfies</p> <p style="text-align: center;">Lunch options are available for purchase at the cash bar daily in the Exhibition Area on Level 1</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> <p style="text-align: center;">The Combustion Institute would like to thank all our sponsors and exhibitors, without whom the Symposium would not be possible. Please take some time to visit them in Exhibition Hall.</p>									

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	Gas-Phase Reaction Kinetics <i>Chairs:</i> F. Battin-Leclerc	Fire <i>Chairs:</i> J.-L. Consalvi	Flame Dynamics and Transport Processes <i>Chairs:</i> K. Seshadri D.M. Valiev	Diagnostics <i>Chairs:</i> Z. Li T.R. Meyer	Propulsion <i>Chairs:</i> Y. Daimon	Heterogenous Combustion <i>Chairs:</i> C. Hasse	Heterogenous Combustion II <i>Chairs:</i>	Emission Mitigation <i>Chairs:</i> M. Sirignano	Low-Carbon Technologies <i>Chairs:</i> T.F. Guibert A. Mardani	TOPICAL REVIEW <i>Chair:</i> A. Boehman J. Mantzaras
11:30	4A05: 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: 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: 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: 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: 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: 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: 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: 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: 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: Question-answering system for combustion kinetics <i>L. Pascazio, D. Tran, S. Rihm, J. Bai, S. Mosbach, J. Akroyd, M. Kraft</i>	4B06: Eruptive flame spread over concave surface <i>R. Bu, Y. Zhou, Z. Wang, C. Fan</i>	4C06: Non-monotonic liftoff height behaviors in laminar nonpremixed coflow jet flames of DME with ambient temperature variation <i>D.J. Kim, S.Y. O, C.S. Yoo, J. Park, S.H. Chung</i>	4D06: 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: Modeling of effusion cooling air-flame interaction using thermochemical manifolds <i>M. Schneider, M. Steinhausen, H. Nicolai, C. Hasse</i>	4F06: 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: Downward water mobility in applied smoldering <i>J. Wang, M.A.B. Zannoni, T.L. Rashwan, J.L. Torero, J.I. Gerhard</i>	4H06: 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: A mid-infrared laser diagnostic for simultaneous detection of furan and nitric oxide <i>A. Elkhazraji, M. Sy, M.K. Shakfa, A. Farooq</i>	

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	Gas-Phase Reaction Kinetics <i>Chairs:</i> F. Battin-Leclerc	Fire <i>Chairs:</i> J.-L. Consalvi	Flame Dynamics and Transport Processes <i>Chairs:</i> K. Seshadri D.M. Valiev	Diagnostics <i>Chairs:</i> Z. Li T.R. Meyer	Propulsion <i>Chairs:</i> Y. Daimon	Heterogenous Combustion <i>Chairs:</i> C. Hasse	Heterogenous Combustion II <i>Chairs:</i>	Emission Mitigation <i>Chairs:</i> M. Sirignano	Low-Carbon Technologies <i>Chairs:</i> T.F. Guiberti A. Mardani	
12:10	4A07: 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: 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: On the stabilisation mechanisms of a diffusion edge flame in a cross-flow configuration <i>P.-A. Baranger, T. Poinso</i>	4D07: 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: 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: 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: 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: Effect of H ₂ O dilution on NO _x emissions from the oxidation of NH ₃ /H ₂ fuel mixture <i>G. Shi, P. Li, Z. Liu, B. Dally</i>	4J07: 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: Revising the kinetics of the $n\text{-C}_3\text{H}_7 + \text{O}_2$ reaction: A combined experimental and computational study <i>A.J. Eskola, T.T. Pekkanen, P.S. Salomaa, G. Lendvay, R.S. Timonen</i>	4B08: 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: Intrinsic characteristics of asymmetric edge flames: Effects of stoichiometry on edge speed and temperature <i>Z. Lu, M. Matalon</i>	4D08: 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: 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: Particle-resolved numerical simulations of char particle combustion in isotropic turbulence <i>K. Wang, H. Wang, J. Zheng, K. Luo, J. Fan</i>	4G08: Enhancing flame stability in porous media burners via topological tuning <i>A. Saha, N. DiReda, S. Sobhani</i>	4H08: 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: 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	<p>LUNCH (70 Minutes) – On Your Own and Visit the Work in Progress Posters in Exhibition Hall</p> <p>Special Industry Roundtable – Clean Hydrogen production between energy efficiency, cost and sustainability</p> <p>Silver Plenary Room</p>									

PPP Poster Session (60 Minutes) – Around the Silver Room

14:00	<p><u>Heterogeneous Combustion</u> Chairs: C.R. Shaddix and H. Wu</p> <p>H01: Gas-solid oxygen and thermal nonequilibria of reverse smoldering combustion wave <i>Z. Song, H. Zhang, B. Dang, C. Zhao, Y. Xiao, S. Ren</i></p> <p>H02: Iron particle ignition in different hot coflow temperatures <i>M. Abdallah, Y. Shoshin, G. Finotello, L.P.H. de Goey</i></p> <p>H03: 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: Turbulent flame propagation limits in polymethylmethacrylate particle cloud combustion <i>Y. Xia, N. Hashimoto, O. Fujita</i></p> <p>H05: Numerical studies on the propagation of iron dust flames in confinement <i>A. Fujinawa, X. Mi</i></p> <p>H06: Pulverized coal combustion 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: 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: 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. Frohnapfel</i></p> <p><u>Detonation</u> Chairs: A. Matsuo and E. Petersen</p> <p>H09: Experimental observations of gaseous cellular detonation reflection <i>Z. Yang, B. Zhang, H.D. Ng</i></p> <p>H10: Understanding detonation wave dynamics in annular channels with geometric and pressure variations <i>K. Tang, Z. Pan, G. Dong</i></p>	<p><u>Detonation</u> Chairs: A. Matsuo and E. Petersen</p> <p>H11: Numerical investigation of detonation propagation through fuel-stratified layers <i>J.I. Ryu, X. Shi, J.-Y. Chen</i></p> <p><u>Propulsion</u> Chairs: A. Dreizler</p> <p>H12: 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: Models for Large-Eddy Simulation (LES) of reheat combustion <i>B. Vincze, C. Mocquard, J. Dombard, L. Gicquel, T. Poinot</i></p> <p>H14: Combustion mode transition and oscillation suppression in supersonic flow using hydrogen microjet <i>T. Wang, M. Sun, Z. Wang</i></p> <p>H15: Thickened flame LES methodology for turbulent propagating flames in non-homogeneous mixtures: Application to a constant volume chamber <i>N. Detomaso, D. Laera, O. Dounia, C. Mocquard, F. Duchaine, T. Poinot</i></p> <p>H16: Analysis of soot formation in a lab-scale rich-quench-lean combustor using LES with tabulated chemistry <i>L. Pachano, A. Kalbhor, D. Mira, J. van Oijen</i></p> <p>H17: 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: 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: 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: 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><u>Propulsion</u> Chairs: A. Dreizler</p> <p>H21: 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: 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: From abstraction to design: Interpretable tree-based machine learning for stable thermoacoustic system layout <i>M. Kuznetsova, A. Ghani</i></p> <p><u>Combustion Technology</u> Chairs: A. Chinnici and P. Sabia</p> <p>H24: 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: 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. Betrancourt</i></p> <p>H26: 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: 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: 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: 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: Nanosecond pulsed plasma-assisted MILD combustion of ammonia <i>G. Rekkas-Ventiris, P. Sabia, G. Sorrentino, A. Bellemans</i></p>
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PPP Poster Session (60 Minutes) – Around the Silver Room

	PPP Poster Session (60 Minutes) – Around the Silver Room									
	Combustion Technology Chairs: A. Chinnici and P. Sabia H31: 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: Effect of electrostatic fields on the combustion of hydrogen with iron nanoparticles <i>E. Saridede, E.M. Kritikos, A. Giusti</i>			Combustion Technology Chairs: A. Chinnici and P. Sabia H33: 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: 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 Chairs: A. Chinnici and P. Sabia H35: 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 Chairs: E.L. Petersen	Fire Chairs: A. Snegirev J.L. Urban	Flame Dynamics and Transport Processes Chairs: A.J. Aspden Y. Morii	Diagnostics Chairs: D. Geyer W.D. Kulatilaka	Propulsion Chairs: W. Polifke	Heterogenous Combustion Chairs: O. Fujita	Heterogenous Combustion II Chairs: M.A.B. Zanoni	Emission Mitigation Chairs: A.M. Mebel X. Mercier	Combustion Technology Chairs: M. Commodo O. Deutschmann	
15:00	4A09: Interaction chemistry of ammonia and formaldehyde: Multispecies measurements and kinetic modeling <i>J. Zou, M. Adil, A. Elkhazraji, A. Farooq</i>	4B09: 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: Intrinsic combustion instabilities in ammonia-hydrogen/methane non-premixed flames <i>E. Antar, E. Robert</i>	4D09: 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: 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: Preferential vaporization effects on the ignition of multi-component droplets <i>W. Wang, F.N. Egofoopoulos</i>	4G09: 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: 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: 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>	

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 <i>Chairs:</i> E.L. Petersen	Fire <i>Chairs:</i> A. Snegirev J.L. Urban	Flame Dynamics and Transport Processes <i>Chairs:</i> A.J. Aspden Y. Morii	Diagnostics <i>Chairs:</i> D. Geyer W.D. Kulatilaka	Propulsion <i>Chairs:</i> W. Polifke	Heterogenous Combustion <i>Chairs:</i> O. Fujita	Heterogenous Combustion II <i>Chairs:</i> M.A.B. Zanoni	Emission Mitigation <i>Chairs:</i> A.M. Mebel X. Mercier	Combustion Technology <i>Chairs:</i> M. Commodo O. Deutschmann	
15:20	4A10: 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: 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: Intrinsically unstable hydrogen-enriched premixed ammonia flames: analysis and modeling of NO formation <i>F. D'Alessio, P.E. Lapenna, S. Bottari, F. Creta</i>	4D10: 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: 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: 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: 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: An insight into premixed diethoxymethane 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: 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) Visit the Work in Progress Posters in Exhibition Hall									
16:00	Special Session II – Panel Discussion: Future of Combustion Research Silver Plenary Room									
	Sessions End at 18:00 Banquet at the Alfa Romeo Museo, Arese Buses depart from the MiCo									

Friday, 26 July 2024

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

Meeting the Moment: Reducing Methane Emissions and the Need for Better Diagnostics
Margaret Wooldridge, Jenna Stolzman

Chair: A. Farooq and G. Nathan

9:30	BREAK (10 minutes) - Visit the Work in Progress Posters in Exhibition Hall									
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 <i>Chairs:</i> M. Sarathy	Fire <i>Chairs:</i> B. Peterson	Flame Dynamics and Transport Processes <i>Chairs:</i> T. Zirwes	Combustion Technology <i>Chairs:</i> P. Li G. Sorrentino	Propulsion <i>Chairs:</i> A. Andreini M. Bellenoue	Explosion Hazards, Detonation Applications, and Supersonic Combustion <i>Chairs:</i> S.B. Dorofeev	Heterogenous Combustion <i>Chairs:</i> T. Rashwan	Diagnostics <i>Chairs:</i> C. Brackmann		
9:40	5A01: 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. Pratali Maffei, C. Cavallotti</i>	5B01: A novel treatment for radiative absorption in flamelet modelling <i>J. Lin, H. Zhou, E.R. Hawkes, M.-C. Ma</i>	5C01: 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: Plasma assisted thermos-acoustic stabilization of a transiently operated combustor at high pressure <i>B. Dharmaputra, S. Shcherbanev, N. Noiray</i>	5E01: The role of preferential diffusion on the ignition dynamics of lean premixed hydrogen flames <i>T. Yahou, N. Detomaso, L. Selle, T. Poinsot, J.R. Dawson, T. Schuller, D. Laera</i>	5F01: 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: AP/HTPB heterogeneous combustion with revised kinetics <i>P. Bernigaud, D. Davidenko, L. Catoire</i>	5H01: 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>		

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 <i>Chairs:</i> M. Sarathy	Fire <i>Chairs:</i> B. Peterson	Flame Dynamics and Transport Processes <i>Chairs:</i> T. Zirwes	Combustion Technology <i>Chairs:</i> P. Li G. Sorrentino	Propulsion <i>Chairs:</i> A. Andreini M. Bellenoue	Explosion Hazards, Detonation Applications, and Supersonic Combustion <i>Chairs:</i> S.B. Dorofeev	Heterogenous Combustion <i>Chairs:</i> T. Rashwan	Diagnostics <i>Chairs:</i> C. Brackmann		
10:00	5A02: Addition and elimination reactions on the $C_4H_9^+$ 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: 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: 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: 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: Introduction of auto-ignition in the thickened flame model for large eddy simulations of reheat systems <i>C. Macquard, D. Laera, J. Dombard, T. Poinso</i>	5F02: 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: Phosphoric acid catalytic mechanism in lignin pyrolysis: Phosphoric-acid-assisted hydrogen transfer for the decomposition of β -O-4 linkage <i>W.-I. Xie, B. Hu, X. Yang, J. Liu, Z.-m. Fang, K. Li, Y.-w. Wu, B. Zhang, Q. Lu</i>	5H02: 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: 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: Experimental research on radiation blockage of the fuel vapor and flame in pool fires <i>F. Ge, A. Hamins, J. Ji</i>	5C03: 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: Numerical modeling of plasma assisted deflagration to detonation transition in a microscale channel <i>Z. Shi, X. Mao, A. Thawko, Y. Ju</i>	5E03: 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: Lagrangian-conditioned statistics of detonation propagation in a realistic rotating detonation engine <i>C. Van Beck, V. Raman</i>	5G03: The synergistic effect mechanism of H_2 generation during coal/ammonia co-pyrolysis <i>D. Hong, Y. Guo, C. Wang, T. Xu</i>	5H03: 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 <i>Chairs:</i> M. Sarathy	Fire <i>Chairs:</i> B. Peterson	Flame Dynamics and Transport Processes <i>Chairs:</i> T. Zirwes	Combustion Technology <i>Chairs:</i> P. Li G. Sorrentino	Propulsion <i>Chairs:</i> A. Andreini M. Bellenoue	Explosion Hazards, Detonation Applications, and Supersonic Combustion <i>Chairs:</i> S.B. Dorofeev	Heterogenous Combustion <i>Chairs:</i> T. Rashwan	Diagnostics <i>Chairs:</i> C. Brackmann		
10:40	5A04: Resolving discrepancies between theory and experiment for the NCN + H reaction <i>R. Sivaramakrishnan, S.J. Klippenstein</i>	5B04: Surrogate modeling for radiative heat transfer using physics informed deep neural operator networks <i>X. Lu, Y. Wang</i>	5C04: Mitigation of preferential diffusion effects by intensive strain in lean premixed hydrogen flamelets <i>A. Porcarelli, I. Langella</i>	5D04: 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>	5E04: Acoustic scattering of a sequential combustor controlled with non-equilibrium plasma: A numerical study <i>M. Impagnatiello, Q. Malé, N. Noiray</i>	5F04: 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: A comprehensive <i>in-situ</i> analysis of lignin softening and pyrolysis mechanism <i>Z. Dong, H. Yang, R. Laine, S. Leclerc, L. Chen, D. Hua, H. Chen</i>	5H04: 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) Visit the Work in Progress Posters in Exhibition Hall</p> <p style="text-align: center;">Take a look at our photo backdrops and don't forget to use #40thISOC, #TheCombustionInstitute, #combustion when posting your selfies</p> <p style="text-align: center;">Lunch options are available for purchase at the cash bar daily in the Exhibition Area on Level 1</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> <p style="text-align: center;">The Combustion Institute would like to thank all our sponsors and exhibitors, without whom the Symposium would not be possible. Please take some time to visit them in Exhibition Hall.</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 <i>Chairs:</i> N. Lamoureux R. Sivaramakrishnan	Fire <i>Chairs:</i> Y.-C. Chien G. Xiong	Flame Dynamics and Transport Processes <i>Chairs:</i> H. Nicolai	Low-Carbon Technologies <i>Chairs:</i> S. Cheng	Propulsion <i>Chairs:</i> K. Brezinsky	Explosion Hazards, Detonation Applications, and Supersonic Combustion <i>Chairs:</i> D.R. Guildenbecher A. Thawko	Combustion Technology <i>Chairs:</i> D. Liu Z. Yue	Emission Mitigation <i>Chairs:</i> F. Mauss		
11:30	5A05: Low-temperature ignition and oxidation mechanisms of tetrahydropyran <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: 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: Numerical study on flames with repetitive extinction and ignition interacting with cool and blue (warm) flames <i>K. Akita, Y. Morii, H. Nakamura, K. Maruta</i>	5D05: 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: 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: 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: 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: Effect of hydrogen addition on soot maturity and volume fraction of ethylene non-premixed flames under different oxygen indices <i>A. Garcia, I. Verdugo, J.J. Cruz, F. Escudero, V. Yap, J. Gallardo, R. Demarco, J. Yon, A. Fuentes</i>		
11:50	5A06: 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: Flame attachment state and control mechanism in inclined trench condition <i>M. Li, N. Liu, X. Xie, W. Gao</i>	5C06: 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: 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: 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: On the Z-shaped explosion limits of acetylene-oxygen mixtures <i>J. Li, W. Liang, W. Han, C.K. Law</i>	5G06: 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: 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>		

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 <i>Chairs:</i> N. Lamoureux R. Sivaramakrishnan	Fire <i>Chairs:</i> Y.-C. Chien G. Xiong	Flame Dynamics and Transport Processes <i>Chairs:</i> H. Nicolai	Low-Carbon Technologies <i>Chairs:</i> S. Cheng	Propulsion <i>Chairs:</i> K. Brezinsky	Explosion Hazards, Detonation Applications, and Supersonic Combustion <i>Chairs:</i> D.R. Guildenbecher A. Thawko	Combustion Technology <i>Chairs:</i> D. Liu Z. Yue	Emission Mitigation <i>Chairs:</i> F. Mauss		
12:10	5A07: 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: 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: 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: An unsteady PBE-CFD analysis of the asymmetric smoke-laden flame around a burning aluminum particle <i>J. Finke, F. Sewerin</i>	5E07: Understanding the interplay between pilot-fuel mixing and auto-ignition chemistry in hydrogen-enriched environment <i>T. Lee, R. Rajasegar, A. Srna</i>	5F07: Visualization of post-detonation fireball flowfields and comparison to LES modeling <i>J.W. Hargis, A. Egel, R. Houim, D.R. Guildenbecher</i>	5G07: 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: 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>		
12:30	5A08: 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 <i>n</i> -dodecane/met hane/NO ₂ mixtures <i>Z. Mai, Y. Wu, C. Tang, Z. Huang</i>	5B08: 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: 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: Surface kinetics and pressure dependence of propane oxidation over platinum <i>F. Zhang, D. Han, J. Mantzaras, C.K. Law, R. Sui</i>	5E08: 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: Computational investigation of chemical and non-equilibrium effects on the Richtmyer–Meshkov instability <i>C.-H. Chou, K.-L. Pan</i>	5G08: 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: 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 and Visit the Work in Progress Posters in Exhibition Hall									

PPP Poster Session (60 Minutes) – Around the Silver Room

<p>14:00</p>	<p>Turbulent Flames Chairs: R. Barlow and T. Schuller</p> <p>F01: 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. Khamedov, H.G. Im, N. Chakraborty</i></p> <p>F02: A consistent MMC-LES approach for turbulent premixed flames <i>N. Iaroslavtceva, A. Kronenburg, J.W. Gärtner</i></p> <p>F03: 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></p> <p>F04: 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></p> <p>F05: Local extinction in piloted turbulent partially premixed ammonia/hydrogen/nitrogen-air jet flames <i>H. Tang, R. Barlow, G. Magnotti</i></p> <p>F06: Effect of swirler spin on flame shape and combustion dynamics <i>J. Bae, Y.N. Ardebili, P. Vena, S. Chaudhuri</i></p> <p>F07: 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></p> <p>F08: Characteristics of liftoff, blowout and instability in nonpremixed jet flames with NH₃/CH₄ mixture fuels <i>J. Zheng, L. Hu, S.H. Chung</i></p> <p>F09: 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></p> <p>F10: 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: Capturing differential diffusion effects in large eddy simulation of turbulent premixed flames <i>M.X. Yao, G. Blanquart</i></p>	<p>Fire Chairs: J. Ji</p> <p>F12: 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: 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: 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: 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: 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: 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>F18: 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: 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: 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: 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: 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>Fire Chairs: J. Ji</p> <p>F23: 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: 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>F25: 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: Comparison of two flow measurement devices for use in fire experiments <i>G. Di Cristina, R.A. Bryant</i></p> <p>F27: 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 Chairs: J. Yoh</p> <p>F28: A detonation run-up distance database: Data-driven existing models improvement and new model development <i>C. Mejia-Botero, F. Viro, L.F. Figueira da Silva, J. Melguizo-Gavilanes</i></p> <p>F29: 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: 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: 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: 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 <i>Chairs:</i> M. Mehl	Fire <i>Chairs:</i> P. Reszka A. Simeoni	Flame Dynamics and Transport Processes <i>Chairs:</i> G. Legros	Low-Carbon Technologies <i>Chairs:</i> M. Pelucchi R. Sui	Flame Dynamics and Transport Processes II <i>Chairs:</i> A.N. Lipantikov	Explosion Hazards, Detonation Applications, and Supersonic Combustion <i>Chairs:</i> C.R. Bauwens D. Michaels	Combustion Technology <i>Chairs:</i> R. Ragucci W. Sun	Diagnostics <i>Chairs:</i> A. Ehn		
15:00	5A09: 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: Analyzing the ignition capabilities of glowing firebrand accumulations <i>L. Zhu, J.L. Urban</i>	5C09: Unifying definition of the local equivalence ratio for complex mixtures and the concept of bonding fraction <i>Q. Cazères</i>	5D09: Cellulose pyrolysis kinetic model: Detailed description of volatile species <i>P. Debiagi, V. Piazza, M. Papagni, A. Beretta, A. Frassoldati, T. Faravelli</i>	5E09: CH ₄ /O ₂ supercritical flame structure and simulation <i>F. Monnier, G. Ribert, L. Duhem-Duvilla</i>	5F09: Color and multi-band imaging of a cavity-based flameholder in supersonic flow <i>S.-Y. Lee, T.M. Ombrello</i>	5G09: 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. Commodo, P. Minutolo, A. D'Anna</i>	5H09: 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: Pyrolysis and kinetic modeling study of tetramethylethylenediamine: A potential green propellant <i>Q. Zhu, B. Liu, Z. Hu, S. Chen, Q. Xu, Z. Wang</i>	5B10: 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: A generalized mixture fraction formulation for nonpremixed ammonia-hydrogen flames <i>L. Angelilli, V. Raman, H.G. Im</i>	5D10: 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: 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: Interaction of chemical reactions and turbulence in a jet in supersonic crossflow <i>S. Sharma, J. Singh, L. Angelilli, V. Raman</i>	5G10: 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: 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) - Visit the Work in Progress Posters in Exhibition Hall									
Room	Red 1	Red 2	Blue 1	Blue 2	Yellow 1	Yellow 2	Yellow 3	White 1	White 2	Silver Plenary
		Fire Chairs: P. Reszka A. Simeoni	Flame Dynamics and Transport Processes Chairs: G. Legros	Low-Carbon Technologies Chairs: M. Pelucchi R. Sui	Detonation Chairs: C. Chiquete K. Iwata	Detonation II Chairs: R. Mével	Combustion Technology Chairs: W. Sun B. Yang	Combustion Technology II Chairs: W. Boyette P. Liu		
16:00		5B11: 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: 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: Numerical predictions of flashback limits of H ₂ -enriched methane/air premixed laminar flames <i>A. Cuoci, A. Frassoldati, F. Cozzi</i>	5E11: 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: Dynamics of detonation cellular structure in linear and nonlinear instability regimes <i>Z. Weng, R. Mével</i>	5G11: 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: 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		5B12: 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: Combustion of <i>n</i> -propylbenzene : Experiments and numerical modeling <i>S. Guo, Y. Xu, A. Scabro, R. Rasul, Y. Wang, A. Reeves, A. Cuoci, A. Frassoldati, M. Hicks, C. Thomas Avedisian</i>	5D12: 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: Early-stage flame acceleration in stratified hydrogen-air mixtures: Theory and simulation <i>S. Missey, O. Dounia, L. Selle</i>	5F12: Reactive processes following transverse wave interaction <i>M.D. Frederick, R.M. Geji, J.E. Shepherd, C.D. Slabaugh</i>	5G12: 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: 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 – Farewell Reception to follow in Silver Plenary Room

Bernard Lewis Fellowship Recipients:

Anna Doner: 2A04

Jackson Crane: 1G08

Luna Pratali Maffei: 2A07, 3A03, 5A01

Shaorun Lin: 2B05

Tao Li: 1D01, 1D06, 1D08, 2D09, 3G02, 4H03

Wei Li: M35, 3C09, 4C04, 4H10