

Schedule of Events - Weekend

Combustion Early Career Investigator Workshop

Saturday 08:00 to 17:00 and Sunday 08:00 to 12:00

This workshop will bring together junior faculty doing research in combustion, fire, and related fields, to discuss cultural issues facing the community. This workshop follows from the 2017 NSF-funded workshop titled “Sustaining the combustion research community: ensuring the field doesn’t burn out,” held in April 2017 ahead of the U.S. National Meeting in College Park MD, as well as the 2019 NSF-funded workshop titled “Support for Workshop and Mentoring of Junior Researchers at the U.S. National Combustion Meeting,” held in March 2019 ahead of the U.S. National Meeting in Pasadena, CA. The goals of these workshops included learning about and discussing future challenges in the field of combustion from the perspectives of early career researchers.

Chemistry Modeling with CONVERGE Workshop

Sunday 09:00 to 12:00 and 13:00 to 16:00

CONVERGE is an innovative, multi-purpose computational fluid dynamics (CFD) software that can provide insight into many systems, including internal combustion engines, fuel injectors, sprays, aftertreatment systems, gas turbines, and electric vehicle components. The morning session of this workshop will cover how to set up these tools in CONVERGE Studio (the pre-processor for CONVERGE). The afternoon session will focus on strategies to effectively use these chemistry tools in CFD combustion simulations for various applications, including H₂ combustion.

Schedule of Events – Week

Welcome Reception

Sunday 18:00 to 20:00

Career Development and Mentoring Mixer

Monday 18:30 to 20:00

Open to US members from all career levels, this new event is intended to form a matrix of potential mentors and mentees based on their mentoring needs/expertise. The goal is to provide support for members at any point in their career, from students wishing to explore industry options and hone their resumes, to associate professors looking for advice to expand their research program in new directions.

Women in Combustion Luncheon

Tuesday 12:20 - 13:50

This event is a networking luncheon for female-identifying participants. Founded in 2007 with the goal to promote and advance women in the field of combustion, the Women in Combustion (WiC) group is made up of industry professionals, students, professors, and government workers. This event will involve exchanges among female participants from academia, government, and industry on topics determined from a participant survey. Discussions will be facilitated through different break-out rooms and individual conversations. The ultimate goal is to learn from each other and create a sense of community where everyone can share their thoughts and ideas freely.

13th U.S. National Combustion Meeting, Texas A&M University

Monday, 20 March 2023

Welcome and Opening Comments 7:45 – 8:00 (Century Ballroom)

Dr. John E. Hurtado, Interim Vice Chancellor of Engineering and Interim Dean of the College of Engineering, Texas A&M University
Central States Section Host Committee, 13th U.S. National Combustion Meeting

Monday Plenary 8:00 - 9:10 (Century Ballroom)

Combustion: Clearing the Air on this (Not So) Dirty Word

Kelly Senecal, Convergent Science

Session Chair: Kalyan Srinivasan

Transfer

9:10 – 9:15

Room #	Hullabaloo	Traditions	Reveille 1	Reveille 2	Corp 1	Corp 2	Ross 1	Ross 2
	Reaction Kinetics I Session Chair: S.S. Goldsborough C. McEnally	Fire I Session Chair: R. Falkenstein-Smith S. Wessies	Alternative Fuels & Emissions I Session Chair: K. Cung H.A. Maldonado Colman	Laminar Flames I Session Chair: A. Saha O. Samimi Abianeh	Diagnostics I Session Chair: A. Ferris	Detonations I Session Chair: S.S. Dammati J. Zhang	Multiphase I Session Chair: S. Dasappa S. Jackson	Turbulent I Session Chair: S. Nadakkal B. Perry
09:15 – 09:35	1A01: The effect of 2,5-norbornadiene on the ignition of hydrogen and methane behind reflected shock waves M.G. Sandberg, C.M. Grégoire, D.J. Mohr, E.L. Petersen	1B01: A machine learning model to estimate material properties for fire modeling K. Prasad	1C01: Effects of sustainable fuels on the acoustics of a next generation N+3 combustor D. Brouzet, D. McCormick, A. Reimann, J. Mendoza, M. Ihme	1D01: Understanding the impacts of the operating conditions on the stability limits of premixed methane-air combustion in micro-channels A. Kutkut, M. Ayoobi, V. Akkerman, M.E. Baumgardner	1E01: OH* chemiluminescence and OH-PLIF imaging studies of ignition phenomena of niacin dust clouds C. Schweizer, P. Parajuli, C.V. Mashuga, W.D. Kulatilaka	1F01: An investigation into the sensitivity of deflagration-to-detonation transition to ignition propensity and flame wrinkling N. Dexter-Brown, J. Jayachandran	1G01: Influence of spontaneous surface oxide decomposition on high temperature carbon oxidation rates C.R. Shaddix, B.S. Haynes	1H01: Fractal characteristics of premixed ammonia/hydrogen/nitrogen-air flames in shear-driven turbulence M. Rieth, A. Gruber, J.H. Chen
09:35 – 09:55	1A02: Adaptive global pathway selection using artificial neural networks: A-priori study R. Mishra, A. Nelson, D. Jarrahbashi	1B02: A machine learning approach to predict the critical heat flux of solid fuels J. Rivera, D. San Martin, M. Gollner, C. Fernandez-Pello	1C02: Evaluation of minimum NO _x emission from ammonia combustion S. Gubbi, R. Cole, B. Emerson, D. Noble, R. Steele, W. Sun, T. Lieuwen	1D02: Cool diffusion flames above a heptane pool K.A. Waddell, H. Ju Lee, V. Nayagam, R.L. Axelbaum, P.B. Sunderland	1E02: Krypton-based femtosecond two-photon-LIF thermometry in high-pressure flames P. Parajuli, M. Hay, V.R. Katta, W.D. Kulatilaka	1F02: High order wave mode phenomena in a radial rotating detonation engine with integrated aerospike D. Langner, A. Gupta, A.K. Agrawal	1G02: Transition metal catalysts for boron ignition and combustion K.-I. A. Chintersingh, M. Schoenitz, E.L. Dreizin	1H02: Numerical simulations of turbulent non-premixed cool flames at supercritical/high pressures: Real-gas and pressure effects S. Ramachandran, N. Srinivasan, H. Zhang, T.S. Taneja, S. Yang

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	Reaction Kinetics I <i>Session Chair:</i> S.S. Goldsborough C. McEnally	Fire I <i>Session Chair:</i> R. Falkenstein-Smith S. Wessies	Alternative Fuels & Emissions I <i>Session Chair:</i> K. Cung H.A. Maldonado Colman	Laminar Flames I <i>Session Chair:</i> A. Saha O. Samimi Abianeh	Diagnostics I <i>Session Chair:</i> A. Ferris	Detonations I <i>Session Chair:</i> S.S. Dammati J. Zhang	Multiphase I <i>Session Chair:</i> S. Dasappa S. Jackson	Turbulent I <i>Session Chair:</i> S. Nadakkal B. Perry
09:55 – 10:15	1A03: Chemical mechanisms of incineration for perfluorooctanoic acid <i>P.R. Westmoreland, C.C. Murphy, H. Ram, T.P. Sadej</i>	1B03: The self-heating ignition of lithium-ion batteries: A comparative study of COMSOL and GPYRO models with finite volume toolbox <i>S. Khan, M. Hasnain, A. Liaqat, V. Akkerman, H. Ahmed, S.P. Kozhumal, H. Sezer</i>	1C03: Investigation of global combustion characteristics of glycerol and ethanol blend in a lab-scale swirl-stabilized combustor using a novel Swirl Burst (SB) injector <i>S.M. Rafiul Islam, D. Williams, I. Patel, L. Jiang</i>	1D03: Radiation effects in hydrofluorocarbon/air flames: Analysis and development of a spherical flame radiation model <i>J. Tavares, V. Gururajan, J. Jayachandran</i>	1E03: Laminar flame speed and emission spectra of ammonia spherical flames for an oxygenated mixture <i>Y.M. Almarzooq, M. Hay, M.A. Turner, W.D. Kulatilaka, E.L. Petersen</i>	1F03: Microscopic fluid jetting as the origin of detonation cell <i>P.A. Meagher, X. Shi, A.S. Jayaraman, N. Kateris, X. Zhao, H. Wang</i>	1G03: Reactive Ni-Al composite powders with tunable morphology <i>J. Mcnanna, N. Levkulich, K.K. Miller, M. Gonzales, M. Schoenitz, E.L. Dreizin</i>	1H03: Turbulent combustion closure via physics-informed neural networks and multiscale measurements <i>A. Taassob, R. Ranade, T. Echekki</i>
10:15 – 10:35	1A04: Shock-tube CO measurements during ethyl methyl carbonate combustion, a battery electrolyte <i>C.M. Grégoire, E.L. Petersen, O. Mathieu</i>	1B04: Flame retardancy behaviors of Zeolitic Imidazolate Frameworks (ZIFs) based polypropylene composites: A fire testing and diagnostics study <i>Y. Quan, R. Shen, C. Schweizer, P. Parajuli, Z. Zhang, W. Kulatilaka, Q. Wang</i>	1C04: An experimental investigation on the effects of reultrasonication on the stability of stored nanofuels <i>R. Mollick, N. Nagarkar, A. Ratner</i>	1D04: Recent progress on numerical modeling for microgravity electric field flames <i>M. Donzeau, L. Esclapez, M.S. Day, Y.-C. Chien</i>	1E04: Laser absorption measurements of temperature and CO profiles in opposed-flow diffusion flames of solid propellants <i>A.J. McDonald, M.J. Baier, S.F. Son, M.J. McQuaid, C.-C. Chen, J.D. Veals, C.P. Stone, C.S. Goldenstein</i>	1F04: A numerical investigation of the Deflagration to Detonation Transition (DDT) in micro-channels: Effects of vitiation and wall boundary conditions <i>S. Ramachandran, N. Srinivasan, Z. Wang, A. Behkish, S. Yang</i>	1G04: High-Resolution Differential Mobility Analysis (HR-DMA) of naturally charged platinum nanoparticles synthesized in two reactive spray deposition technology flames <i>F. Khosravi, E.K. Stefanidis, Z. Zeng, S. Bliznakov, L.J. Bonville, R. Maric, F. Carbone</i>	1H04: A data-based hybrid chemistry acceleration framework for complex fuels oxidation at low temperatures <i>S. Alqahtani, K.M. Gitushi, T. Echekki</i>

Break
10:35 – 11:00

Make sure to visit the Work in Progress Posters outside the Century Ballroom

Room #	Hullabaloo	Traditions	Reveille 1	Reveille 2	Corp 1	Corp 2	Ross 1	Ross 2
	Reaction Kinetics II <i>Session Chair:</i> <i>J. Cho</i> <i>R. Mishra</i>	Fire II <i>Session Chair:</i> <i>X. Ju</i> <i>B. Shotorban</i>	Alternative Fuels & Emissions II <i>Session Chair:</i> <i>D. Dasgupta</i> <i>R. Rahman</i>	Laminar Flames II <i>Session Chair:</i> <i>M. Ayoobi</i> <i>F. Carbone</i>	Diagnostics II <i>Session Chair:</i> <i>Y.C. Mazumdar</i> <i>C. Schweizer</i>	Detonations II <i>Session Chair:</i> <i>P. Meagher</i> <i>S. Yang</i>	Multiphase II <i>Session Chair:</i> <i>T. Hafner</i> <i>C. Saggese</i>	Turbulent II <i>Session Chair:</i> <i>J. Chen</i> <i>W.T. Chung</i>
11:00 – 11:20	1A05: Automated generation of a chemical kinetic reaction mechanism for large alkane combustion <i>V. Amiri,</i> <i>R. Asatryan,</i> <i>M.T. Swihart</i>	1B05: Ratio pyrometry of emulated firebrand streaks <i>J.H. Baldwin,</i> <i>P.B. Sunderland</i>	1C05: A numerical study on combustion and emissions of renewable diesel surrogate under engine-like conditions <i>P. Jha, K. Cung,</i> <i>E. Smith, T. Briggs,</i> <i>D.C. Bitsis Jr.,</i> <i>Z. Abidin</i>	1D05: Low-light image denoising for acoustically coupled combustion <i>A. Hayrapetyan,</i> <i>A. Vargas,</i> <i>A.R. Karagozian</i>	1E05: Analysis of a time-resolved gas chromatography sampling diagnostic for species measurements in extended test-time shock tube experiments <i>A.M. Ferris,</i> <i>R.K. Hanson</i>	1F05: Simulating detonations with tabulated chemistry <i>A. Baumgart,</i> <i>M.X. Yao,</i> <i>G. Blanquart</i>	1G05: Mixing dynamics of liquid jets in supersonic crossflow <i>G. Holum, S. Biswas</i>	1H05: Partially non-equilibrium manifolds for turbulent combustion modeling with arbitrary chemical time scales <i>H. Maldonado Colmán,</i> <i>J.C. Armstrong,</i> <i>M.E. Mueller</i>
11:20 – 11:40	1A06: Shock-tube study of various lubricating oil ignition delay times <i>M. Abulail,</i> <i>S.P. Cooper,</i> <i>M.G. Sandberg,</i> <i>E.L. Petersen</i>	1B06: Ignition and burning behavior of individual and groups of live Douglas-fir needles <i>N. Gardner,</i> <i>D.L. Blunck</i>	1C06: Rapid compression machine autoignition of diisopropoxy-methane for gasoline additive use <i>S. Lucas, B. Windom</i>	1D06: Observation of different cool flame regimes in a diffusion counterflow burner <i>A. Thawko, Z. Wang,</i> <i>R. Sakamoto, N. Liu,</i> <i>Y. Ju</i>	1E06: In-situ x-ray diagnostics for mixing and temperature in coflow nonpremixed flames <i>C.S. McEnally,</i> <i>C. Banyon,</i> <i>A.L. Kastengren,</i> <i>H. Kwon,</i> <i>M.J. Montgomery,</i> <i>L.D. Pfefferle,</i> <i>T. Sikes,</i> <i>R.S. Tranter,</i> <i>Y. Xuan</i>	1F06: Lagrangian tracer particle analysis of the ethylene/air detonations <i>S.S. Dammati,</i> <i>C. Colby,</i> <i>A. Poludnenko</i>	1G06: Characterization of nascent soot particles from acetylene pyrolysis: A molecular modeling perspective <i>K.M. Mukut,</i> <i>A. Ganguly,</i> <i>E. Goudeli,</i> <i>G. Kelesidis, S. Roy</i>	1H06: Characterization of a multi-regime burner configuration by Lagrangian particle tracking <i>L. Angelilli,</i> <i>P.P. Ciottoli, F.E. Hernandez-Perez,</i> <i>M. Valorani,</i> <i>H.G. Im</i>
11:40 – 12:00	1A07: Reaction mechanisms of alkyloxiranes for combustion modeling <i>N.S. Dewey,</i> <i>B. Rotavera</i>	1B07: Avoiding cascading failure in battery packs through thermal analysis <i>A. Kurzawski,</i> <i>J. Hewson</i>	1C07: A numerical study of soot and NO _x emissions in ammonia blended ethylene counterflow diffusion flames with oxygen-enrichment <i>R. Suresh,</i> <i>K.C. Kalvakala,</i> <i>S.K. Aggarwal</i>	1D07: Polyhedral Bunsen flames: Regimes and morphologies <i>Y. Weng, A. Potmis,</i> <i>A. Saha</i>	1E07: Thermometry and velocity in a ramjet using dual comb spectroscopy measurements of the O ₂ a-band <i>D. Yun, W. Sabin,</i> <i>S. Coburn,</i> <i>N. Hoghooghi,</i> <i>J. France,</i> <i>M. Hagenmaier,</i> <i>K. Rice, J. Donbar,</i> <i>G. Rieker</i>	1F07: Effects of thermal diffusion and turbulence on detonation development of hydrogen/air mixtures under engine-relevant conditions <i>J. Zhang,</i> <i>M.B. Luong,</i> <i>H.G. Im</i>	1G07: Plasma-assisted chemical-looping combustion: Low-temperature ethylene oxidation with CuO and NiO <i>C. Burger, A. Zhang,</i> <i>N. Hansen, Y. Ju</i>	1H07: Simulation of a jet flame with inhomogeneous inlets using tabulated and neural network manifold models <i>B.A. Perry, K. Eiden,</i> <i>M.T.H. de Frahan,</i> <i>S. Yellapantula,</i> <i>L. Esclapez,</i> <i>M.E. Mueller,</i> <i>M.S. Day</i>

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	Reaction Kinetics II <i>Session Chair:</i> J. Cho R. Mishra	Fire II <i>Session Chair:</i> X. Ju B. Shotorban	Alternative Fuels & Emissions II <i>Session Chair:</i> D. Dasgupta R. Rahman	Laminar Flames II <i>Session Chair:</i> M. Ayoobi F. Carbone	Diagnostics II <i>Session Chair:</i> Y.C. Mazumdar C. Schweizer	Detonations II <i>Session Chair:</i> P. Meagher S. Yang	Multiphase II <i>Session Chair:</i> T. Hafner C. Saggese	Turbulent II <i>Session Chair:</i> J. Chen W.T. Chung
12:00 – 12:20	1A08: A shock-tube laser-schlieren study of iso-propanol pyrolysis <i>J.H. Kim, C. Banyon, K. Kim, M.S. Wooldridge, R.S. Tranter</i>	1B08: Modeling of flame spread along wire utilizing an artificial neural network and a genetic algorithm <i>C.A. Scudiere, L.B. Gagnon, V.P. Carey, A.C. Fernandez-Pello</i>	1C08: An extended-wavelength FTIR spectra-based prescreening approach for the prediction of physical and chemical properties of alternative jet fuels <i>V. Boddapati, A.M. Ferris, R.K. Hanson</i>	1D08: Characteristics of H ₂ -O ₂ -N ₂ flame in quasi-2D channels: Propagation rates and scaling parameters <i>Z. Zhou, S. Shen, J. Weiss, P. Ronney</i>	1E08: High-speed velocity measurements with mid-infrared electro-optic modulator dual comb spectroscopy <i>C. Mathurin, D.A. Long, G.C. Mathews, M.J. Cich, A.T. Heiniger, T. Souders, A. Frymire, P.E. Hamlington, G.B. Rieker</i>	1F08: Spectral characterization of overdriven irregular detonations <i>S. Ramachandran, N. Srinivasan, S. Yang</i>	1G08: Empirical trends in the sooting tendencies of non-cyclic alkanes and their basis in chemical kinetics <i>D.A. Curtis, S. Kim, C.S. McEnally, S. Mohammed, L.D. Pfefferle, J. Zhu</i>	1H08: Using tabulated chemistry to capture non-unity Lewis number effects in turbulent premixed flames <i>M.X. Yao, G. Blanquart</i>
Lunch Break ESSCI, CSSCI, WSSCI Board Meetings Boxed Lunches provided by the Sections 12:20 - 13:50								
Transfer 13:50 – 14:00 We would like to thank our sponsors: FM Global Texas A&M University Engineering J. Mike Walker '66 Department of Mechanical Engineering TEES Turbomachinery Laboratory								

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	Reaction Kinetics III <i>Session Chair:</i> R. Choudhary R. Schwind	Fire III <i>Session Chair:</i> K. Prasad G. Xiong	Alternative Fuels & Emissions III <i>Session Chair:</i> F. Haas H.A. Maldonado Colman	Laminar Flames III <i>Session Chair:</i> J. Jayachandran C. Reuter	Diagnostics III <i>Session Chair:</i> D. Pineda S. Reggeti	Detonations III <i>Session Chair:</i> S. Ramachandran X. Shi	Multiphase III <i>Session Chair:</i> M. Cooper	Turbulent III <i>Session Chair:</i> A. Novoselov A. Steinberg
14:00 – 14:20	1A09: Jet-stirred reactor experiments as corroboration for the HNNO pathway to NO _x formation <i>J. Lee, M.C. Barbet, Q. Meng, R.E. Cornell, M.P. Burke</i>	1B09: Developing adaptive mesh refinement capabilities for FireFOAM: Application in simulating compartment and façade fires <i>X. Lu, N. Ren, Y. Wang</i>	1C09: The effects of ammonia substitution in the fuel stream and EGR on extinction limits of non-premixed methane- and ethylene-air counterflow flames <i>C. Chu, P. Liu, R.A. Serrano Bayona, F. Aydin, T. Guiberti, W.L. Roberts</i>	1D09: Novel method for measuring laminar flame speed of lubrication oil mist in air <i>J.E. Jacobs, M.A. Turner, E.L. Petersen</i>	1E09: Ignition phenomena of CO ₂ -diluted syngas at elevated pressures in a shock tube <i>D.J. Mohr, S.P. Cooper, M.K. Hay, W.D. Kulatilaka, E.L. Petersen</i>	1F09: Numerical study of fuel droplet combustion under heterogeneous detonation conditions <i>B.J. Musick, M. Paudel, J.A. McFarland</i>	1G09: Viability assessments of biodiesel surrogate and ethane for hydrogen and carbon black production via thermal plasma <i>R. Lawson, S. Dasappa, E. Wyse, E. Dames</i>	1H09: Data assimilation for reacting flows: Deep learning PDE models to augment turbulent combustion simulations <i>P.R. Kakka, J.F. MacArt</i>
14:20 – 14:40	1A10: High-temperature thermal breakdown of gas turbine lubricating oils <i>R. Juarez, N. Gutierrez, E.L. Petersen</i>	1B10: Modeling water mist suppression of enclosure fires <i>N. Ren, H.-Z. Yu, Y. Wang, S. Dorofeev</i>	1C10: Reactor network analysis with various reaction mechanisms to investigate hydrogen vs. methane fuel at varying flame temperatures with experimental data <i>B. Tran, V. McDonell</i>	1D10: Numerical and experimental study of autoignition-assisted premixed <i>n</i> -heptane flames using RCM-Flame apparatus <i>T. Goyal, J. Klein, O. Samimi-Abianeh</i>	1E10: Design characteristics of a fast-acting driver valve for a diaphragm-free shock tube <i>M. Tomar, M. Burch, J.P. Chethalan, J. Komperda, P. Lynch</i>	1F10: The interaction of a bow shock and a detonation: A focus on vorticity generation <i>A.S. Venkataraman, E.S. Oran</i>	1G10: Nanostructure of carbon nanoparticles formed in high-temperature premixed flames <i>S. Dasappa, J. Camacho</i>	1H10: The influence of scalar dissipation rate fluctuations on turbulent premixed flames at varying Karlovitz number <i>K. VanderKam, M.E. Mueller</i>
14:40 – 15:00	1A11: An experimental and kinetic modeling study of 2,2,3-, 2,2,4- and 2,3,4-trimethylpentane <i>Y. Heng, G. Kenny, P. Wang, S. Dong, M.K. Ghosh, G. Li, J. Liang, H.J. Curran</i>	1B11: Experimental studies on the heat flux of individual firebrands <i>A.E. Mensch, S.S. Wessies, A. Hamins, J.C. Yang</i>	1C11: Image characterization of reactions generated by an aeroengine micromixing injector for lean direct injection of hydrogen and hydrogen/natural gas blends <i>I. Gomez Escudero, V. McDonell</i>	1D11: Effect of products of catalytic oxidative coupling on the laminar burning velocity of methane <i>M.N. Nasim, B. Nawaz, S.K. Das, J.H. Mack</i>	1E11: Heat transfer corrections of thermocouple measurements using synchrotron x-ray fluorescence <i>K. Kim, T. Sikes, C. Banyon, A.L. Kastengren, M.J. Montgomery, C.S. McEnally, L.D. Pfefferle, R.S. Tranter</i>	1F11: Scaling and attenuation of shocks transmitted from detonation tubes <i>J.C. Thomas, F.A. Rodriguez, E.T. Balci, G.N. Gaddis, S.I. Jackson, E.L. Petersen, E.S. Oran</i>	1G11: Analysis of thermal radiation of a gas-particulate-cloud in a pressurized oxy-coal combustor <i>L. Li, V. Akkerman, D. Magalhaes, Z. Yang, R.L. Axelbaum</i>	1H11: Analysis of cross-scale turbulent kinetic energy transfer in swirl flames up to Karlovitz number 100 by deconvolution of tomographic PIV data <i>A. Kazbekov, A. Bhagat, A. Steinberg</i>

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15:00 – 15:20	1A12: NTC behavior of tetrahydropyran and conjugate alkene isomers 3,4-dihydro-2H-pyran and 3,6-dihydro-2H-pyran <i>S. Hartness, M. Preußker, A. Heufer, B. Rotavera</i>	1B12: 3D mathematical model for heat and mass transfer mechanisms in gypsum board exposed to fire <i>M. Hasnain, R. Paye, J. Casa, T. Borth, G.E. Gorbett, S.P. Kozhumal, H. Sezer</i>	1C12: Development of a NOx formation test facility for lean premixed methane-hydrogen-air flames <i>C. Godbold, B. Breer, H.P. Rajagopalan, J. Miller, R. Bond, B. Emerson, D. Wu, V. Acharya, D. Noble, T. Lieuwen</i>	1D12: High-temperature ammonia flame speed measurements behind reflected shock waves <i>M. Figueroa-Labastida, L. Zheng, A.M. Ferris, R.K. Hanson</i>	1E12: Simultaneous detection of NO, O, OH, CH, and O ₂ using a single broadband femtosecond laser system in atmospheric-pressure methane-air flames <i>M. Hay, P. Parajuli, W. Kulatilaka</i>	1F12: Explorations on reduced order models for 2D detonation wave <i>R. Camacho, C. Huang</i>	1G12: Solution combustion synthesis of iron-based alumina catalysts for dehydrogenation of fossil fuels <i>Z. Chanoi, V. Reyes, E. Shafirovich</i>	1H12: Flame stabilization of sustainable aviation fuels at gas turbine relevant conditions <i>B.S. Soriano, L. Owen, J. Chen</i>
15:20 – 15:40	1A13: A shock tube study of fuel concentration and NO addition effects on high-pressure autoignition delay of ammonia <i>Y. Peng, W. Sun</i>	1B13: A numerical study on the effects of pressure, oxygen, and normoxic conditions on the burning behavior of large thin solid samples in microgravity <i>W. Cui, Y.-T. Liao</i>		1D13: Dynamics of acoustically excited coaxial laminar jet diffusion flames <i>A. Vargas, A. Hayrapetyan, A. Karagozian</i>	1E13: A Raman spectroscopy based chemometric approach to predict the derived cetane number of hydrocarbon jet fuels <i>D. Ambre, M. Sheyyab, P. Lynch, E.K. Mayhew, K. Brezinsky</i>	1F13: The research and motor octane numbers of Liquefied Petroleum Gas (LPG) and Dimethyl Ether (rDME) blends <i>R. Churchill, G. Vishwanathan, D. Olsen, B. Windom</i>	1G13: Spectral emissivity of burning iron particles <i>Y. Yao, A. Panahi, Y.A. Levendis</i>	1H13: Effects of turbulence and mean pressure gradients on the recirculation region of a bluff body stabilized flame <i>T.J. Souders, S.H.R. Whitman, M.A. Meehan, P.E. Hamlington</i>

Break
15:40 – 16:10

Make sure to visit the Work in Progress Posters outside the Century Ballroom

And please visit our exhibitors outside the Century Ballroom:

Southwest Research Institute (SWRI)

Telops

Room #	Hullabaloo	Traditions	Reveille 1	Reveille 2	Corp 1	Corp 2	Ross 1	Ross 2
	Reaction Kinetics IV <i>Session Chair:</i> C. Gregoire O. Mathieu	Fire IV <i>Session Chair:</i> P. DesJardin Y. Kim	Alternative Fuels & Emissions IV <i>Session Chair:</i> P. Lynch Z. Zhou	Laminar Flames IV <i>Session Chair:</i> Y.-C. Chien Z. Wang	Diagnostics IV <i>Session Chair:</i> M. Hay N. Liu	Energetic Materials I <i>Session Chair:</i> J.C. Thomas	IC Engines I <i>Session Chair:</i> K. Bopaiah S.-C. Kong	Turbulent IV <i>Session Chair:</i> M. Mueller S. Trivedi
16:10 – 16:30	1A14: Soot formation of iso-dodecane and normal-dodecane in counterflow non-premixed flames <i>T. Chatterjee, C. Saggese, X. Xue, G. Kukkadapu, W.J. Pitz, S.W. Wagnon, C.-J. Sung</i>	1B14: Experimental and modeling study of thermal runaway propagation of 18650 form factor lithium-ion battery array <i>D. Zeng, L. Gagnon, Y. Wang</i>	1C14: Performance enhancement of a hydrogen spark-ignition engine with ammonia blending <i>H. Ge, A.H. Bakir, P. Zhao</i>	1D14: The structure of an incipiently sooting Planar Mixing Layer (PML) diffusion flame <i>M. Ashour, F. Carbone</i>	1E14: Measurements of combustion intermediates in sooting environments using quantum-cascade-laser dual-comb spectroscopy in a shock tube <i>R.K. Rahman, F. Arafin, R. Horvath, M. Geiser, S. Vasu</i>	1F14: Effects of reactivity and thermal transport on burning propagation of nanothermites <i>S. Kim, A. Wang, J.Z. Wen, S. Deng</i>	1G14: Physics-integrated Segmented Gaussian Process (SegGP) learning for cost-efficient training of diesel engine control system with low cetane numbers <i>S.R. Narayanan, Z. Sun, S. Yang, Y. Ji, S. Mak, H.D. Sapra, S. Kokjohn, K.S. Kim, C.-B.M. Kweon</i>	1H14: A physics-informed deep learning approach to predict spatiotemporal fluid flow dynamics <i>P. Sharma, W.T. Chung, M. Ihme</i>
16:30 – 16:50	1A15: Probing O ₂ -dependence of cyclopentyl reactions via isomer-resolved speciation <i>A.R. Webb, S.W. Hartness, N.S. Dewey, M.G. Christianson, A.C. Doner, A.L. Koritzke, B. Rotavera</i>	1B15: SootLib: A library for modeling soot formation in combustion systems <i>D.O. Lignell, V.B. Stephens, J. Bedwell, A.J. Josephson, K. Oldham</i>	1C15: Compositional effect of multi-component gasoline on the ϕ -sensitivity of ignition delay time <i>J. Cho, S. Cheng, S.S. Goldsborough, S. Kim</i>	1D15: Vortex breakdown in non-premixed swirling jet flames <i>B.W. Keeton, K.K. Nomura, A.L. Sánchez, F.A. Williams</i>	1E15: Quantitative assessment of phosphor thermometry intrusiveness for metal surface temperature measurements in reciprocating engines <i>D. Witkowski, E.R. Amezcua, D.A. Rothamer</i>	1F15: Laser ignition of solid fuels in an oxygenated environment <i>F.A. Rodriguez, C.A. Landry, J.C. Thomas, E.L. Petersen</i>	1G15: Combustion dynamics of single- vs multi-flame burners in a Rijke tube <i>P. Finn, Y. Weng, A. Saha</i>	1H15: Computational and experimental evaluation of a new jet-stirred reactor for chemical kinetics studies <i>J.-Y. Wang, P.D. Ronney</i>
	<p>We would like to thank our sponsors:</p> <p>FM Global Texas A&M University Engineering J. Mike Walker '66 Department of Mechanical Engineering TEES Turbomachinery Laboratory</p>							

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	Reaction Kinetics IV <i>Session Chair:</i> C. Gregoire O. Mathieu	Fire IV <i>Session Chair:</i> P. DesJardin Y. Kim	Alternative Fuels & Emissions IV <i>Session Chair:</i> P. Lynch Z. Zhou	Laminar Flames IV <i>Session Chair:</i> Y.-C. Chien Z. Wang	Diagnostics IV <i>Session Chair:</i> M. Hay N. Liu	Energetic Materials I <i>Session Chair:</i> J.C. Thomas	IC Engines I <i>Session Chair:</i> K. Bopaiah S.-C. Kong	Turbulent IV <i>Session Chair:</i> M. Mueller S. Trivedi
16:50 – 17:10	1A16: A shock tube and laser absorption study of NH ₃ oxidation <i>S. Clees, T.M. Rault, M. Figueroa-Labastida, S.C. Barnes, A.M. Ferris, R.K. Hanson</i>	1B16: Cell-level thermal runaway behavior of large-format li-ion pouch cells <i>L. Gagnon, D. Zeng, Y. Wang</i>	1C16: Experimental investigation of thermal resilience and relight behavior of ammonia/hydrogen /air flames in a novel porous media burner <i>G. Vignat, E.R. Toro, T. Zirwes, E. Boigné, D. Trimis, M. Ihme</i>	1D16: Experimental study of undiluted oxy-methane laminar flame speeds <i>M.A. Turner, E.L. Petersen</i>	1E16: In-situ laser diagnostics of Iridium nanoparticles during their synthesis in a turbulent diffusion flame of the reactive spray deposition technology <i>E.K. Stefanidis, Z. Zeng, T.A. Ebaugh, S. Bliznakov, L.J. Bonville, R. Maric, F. Carbone</i>	1F16: Combustion of lithium and magnesium powders for generation of heat and electricity in space missions <i>S. Cordova, K. Estala-Rodriguez, E. Shafirovich</i>	1G16: Practical pre-ignition introduction of radical species using a radical-generating pre-combustion chamber for main chamber seeding <i>K. Beurlot, T.J. Jacobs, G. Vieira, D. Olsen, M. Patterson</i>	1H16: Deep learning model for the instantaneous dissipation rate profiles in multi-modal turbulent combustion <i>C.E. Lacey, M. Rieth, J.H. Chen, M.E. Mueller</i>
17:10 – 17:30	1A17: Uncertainty minimization for an Alcohol-To-Jet (ATJ) combustion reaction model <i>Y. Zhang, W. Dong, G. Smith, H. Wang</i>	1B17: Extinction of buoyant turbulent diffusion flames under reduced oxygen concentrations <i>G. Xiong, R. Barlow, D. Zeng, Y. Wang</i>	1C17: Investigation of the combustion process and modes of energy-assisted compression-ignition for low cetane number sustainable aviation fuels <i>E.R. Amezcua, K. Kim, C.-B.M. Kweon, D.A. Rothamer</i>	1D17: Laminar flame speed measurements of p-cymene at elevated temperature and pressure <i>N. Lindblade, E.L. Petersen</i>	1E17: High-speed laser absorption measurements of carbon oxides in linear detonation channels <i>K.L. Fetter, B.R. Steavenson, B.M. Ng, A. Andrade, C.S. Combs, D.I. Pineda, J.W. Bennewitz, J.R. Burr, B.R. Bigler</i>	1F17: Experimental investigation of ignition temperatures of aluminum particles <i>F. Halter, V. Glasziou, H. Keck, G. Legros, C. Chauveau</i>	1G17: Performance and emissions of ammonia spark-assisted compression ignition in a single-cylinder engine <i>S.A. Reggeti, S. Kane, W. Northrop</i>	1H17: Extinction behavior of partially premixed flames and nonpremixed flames in turbulent counterflow <i>F.M. Pereira, F. Carbone, J.H. Frank, B. Coriton, P. Wang, A. Gomez</i>
Career Development and Mentoring Mixer								
18:30 – 20:00								
End of Day								

Tuesday, 21 March 2023

Announcements (Century Ballroom)

Eric Petersen, Local Host, 13th U.S. National Combustion Meeting

Tuesday Plenary 8:00 - 9:10 (Century Ballroom)

Understanding Dynamics of Fire Growth: Challenges and Opportunities

Stanislav Stoliarov, University of Maryland

Session Chair: Eric Petersen

Transfer - 9:10 – 9:15

Room #	Hullabaloo	Traditions	Reveille 1	Reveille 2	Corp 1	Corp 2	Ross 1	Ross 2
	Reaction Kinetics V <i>Session Chair: S. Roy, R. Sivaramakrishnan</i>	Fire V <i>Session Chair: J. C. Thomas</i>	Alternative Fuels & Emissions V <i>Session Chair: W. Kulatilaka, R. K. Rahman</i>	Laminar Flames V <i>Session Chair: E. Antar, M. Turner</i>	Diagnostics V <i>Session Chair: O. Samimi-Abiane, K. Waddell</i>	Energetic Materials II <i>Session Chair: K.L. Chintersingh, A. Demko</i>	IC Engines II <i>Session Chair: F. Chuahy, J.-W.Park</i>	Turbulent V <i>Session Chair: E. Oran, H. Zhang</i>
09:15 – 09:35	2A01: Improvements to non-adiabatic statistical theories: Application to N ₂ O decomposition <i>C.R. Mulvihill, Y. Georgievskii, S.J. Klippenstein</i>	2B01: Accommodating physical reaction schemes in DSC cathode thermal stability analysis using chemical reaction neural networks <i>B.C. Koenig, P. Zhao, S. Deng</i>	2C01: Large eddy simulation of turbulent nonpremixed sooting flames: Evolution of the soot size distribution using the bivariate multi-moment sectional method <i>H. Maldonado Colmán, M.E. Mueller</i>	2D01: Extinction of counterflow diffusion flames with diluted ammonia-hydrogen fuel <i>D.E. Thomas, J.C. Jarosz, P.L.L. Walls</i>	2E01: Visualization of compression ignition of dimethyl ether in an optical rapid compression and expansion machine <i>A. Dhotre, S. Biswas</i>	2F01: Dynamic measurement of internal strain on composite solid propellant constituents during laser induced combustion <i>A.R. Demko, A. Jimenez-Thomas, M. Karimi</i>	2G01: Prediction of derived cetane number using only UNIFAC group compositions of hydrocarbon mixtures and jet fuels with machine learning <i>M. Sheyyab, P.T. Lynch, E.K. Mayhew, K. Brezinsky</i>	2H01: On modern lean direct injection mixer's data and turbulence chemistry interaction simulations <i>K. Twarog, C.J. Sung, H.C. Mongia</i>
09:35 – 09:55	2A02: A study on the initial decomposition of difluoromethane (CH ₂ F ₂) using laser absorption spectroscopy in a miniature shock tube <i>R.A. Shaik, A.W. Jasper, R. Sivaramakrishnan, R.S. Tranter, P.T. Lynch</i>	2B02: Enabling exposure comparison for firebrand showers generated during wildland-urban interface (WUI) fires <i>N. Bouvet, E.D. Link, S.S. Wessies, S.A. Fink</i>	2C02: Systematically derived reduced kinetics for high-pressure H ₂ -NH ₃ combustion <i>B. Li, D. Fernández-Galisteo, A.L. Sánchez, F.A. Williams</i>	2D02: Structures, extinction limits, and reactivities of n-dodecane diffusion cool flames at high pressures <i>Z. Wang, A. Thawko, B. Mei, C.K. Law, Y. Ju</i>	2E02: Experimental n-pentane autoignition investigation using corrected filtered natural emission of species (C-FNES) <i>M. Molana, O. Samimi-Abiane</i>	2F02: Improving performance of ammonium nitrate as an oxidizer for boron <i>P. Mehulkumar Gandhi, M. Schoenitz, E.L. Dreizin</i>	2G02: Examination of a methane/diesel RCCI engine using Pele <i>N.T. Wimer, L. Esclapez, M.H. de Frahan, M. Rahimi, M. Hassanaly, B. Perry, J. Rood, S. Yellapantula, H. Sitaraman, M. Martin, O. Doronina, S. Nadakkal Appukuttan, M. Reith, M. Day</i>	2H02: Learning combustion closure models from an open-source DNS database <i>W. Tong Chung, M. Ihme</i>

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	Reaction Kinetics V <i>Session Chair:</i> S. Roy R. Sivaramakrishnan	Fire V <i>Session Chair:</i> J. C. Thomas	Alternative Fuels & Emissions V <i>Session Chair:</i> W. Kulatilaka R. K. Rahman	Laminar Flames V <i>Session Chair:</i> E. Antar M. Turner	Diagnostics V <i>Session Chair:</i> O. Samimi-Abianeh K. Waddell	Energetic Materials II <i>Session Chair:</i> K.L. Chintersingh A. Demko	IC Engines II <i>Session Chair:</i> F. Chuahy J.-W.Park	Turbulent V <i>Session Chair:</i> E. Oran H. Zhang
09:55 – 10:15	2A03: Probing O ₂ -dependence of 1-hydroxybutyl reactions via isomer-resolved speciation <i>M. Christianson, A. Koritzke, A. Doner, N. Dewey, S. Hartness, A. Webb, B. Rotavera</i>	2B03: Classification of airborne firebrand combustion state using a convolutional neural network <i>S.S. Wessies, N. Bouwet, E.D. Link</i>	2C03: CFD evaluation of sustainable aviation fuel blends for commercial supersonics technology <i>K. Ajmani, J.P. Moder</i>	2D03: Diffusive-thermal instabilities in unstrained H ₂ -CH ₄ -CO diffusion flames diluted with H ₂ O and CO ₂ <i>E. Antar, E. Robert</i>	2E03: Single-camera time-resolved laser-induced incandescence measurements in a RQL aeroengine combustor <i>R. McGrath, E.M. Bugay, J. Juergensmeyer, A.X. Zheng, D. Wu, A. Steinberg, W. Sun, Y.C. Mazumdar</i>	2F03: The effect of porosity on flexoelectricity in fluoropolymer/ aluminum films <i>T.A. Hafner, M. Örnek, D.N. Collard, D.K. Messer, C.T. Nunes, M.W. Paral, S.F. Son</i>	2G03: Combustion phasing and emission characteristics of HCCI fueled by ammonia/ hydrogen <i>A. Hadi Bakir, H. Ge, P. Zhao</i>	2H03: Computational cost improvements for in-situ adaptive manifolds for turbulent combustion modeling <i>I.J. Bonilla, C.E. Lacey, M.E. Mueller</i>
10:15 – 10:35	2A04: Updating rate rules to describe the low temperature oxidation of <i>n</i> -butane, <i>iso</i> -butane, <i>n</i> -pentane and <i>iso</i> -pentane <i>P. Wang, Y. Heng, S. Dong, H.J. Curran</i>	2B04: Can “Fire Safe” Cigarettes (FSCs) start wildfires? <i>S. McAllister, S. Williams, I. Grob</i>	2C04: Shock-wave reforming for clean H ₂ production: a theoretical analysis of reaction kinetics and gas dynamic <i>A.M. Ferris, R.K. Hanson</i>	2D04: Determining the species profiles and flame characteristics for CH ₄ -CO ₂ -O ₂ laminar jet flame near methane autothermal reforming condition <i>P. Liu, R. Serrano-Bayona, E.-t. Es-sebbar, W.L. Roberts</i>	2E04: X-ray fluorescence measurements of methane flames with trimethylsilanol and hexamethyldisiloxane dopants in a multi-element diffusion burner <i>Q. Meng, C. Banyon, K. Kim, J. Kim, A.L. Kastengren, M.S. Wooldridge, R.S. Tranter</i>	2F04: Experimental investigation of liquid propellant vaporization temperatures and rates at elevated pressures <i>R.A. Schwind, C.F. Goldsmith</i>	2G04: Estimation of chemical functional group compositions in jet fuels from IR Spectra using ML models <i>A. Dalmiya, J.M. Mehta, M. Sheyyab, E.K. Mayhew, K. Brezinsky, P.T. Lynch</i>	
Break 10:35 – 11:00 Make sure to visit the Work in Progress Posters outside the Century Ballroom								

Room #	Hullabaloo	Traditions	Reveille 1	Reveille 2	Corp 1	Corp 2	Ross 1	Ross 2
	Reaction Kinetics VI <i>Session Chair:</i> P. N. Johnson P. Westmoreland	Fire VI <i>Session Chair:</i> A. Mensch P. Sunderland	Alternative Fuels & Emissions VI <i>Session Chair:</i> A. Strzelec	Laminar Flames VI <i>Session Chair:</i> T. Goyel Z. Zhou	Droplets & Sprays I <i>Session Chair:</i> D. Jarrahbashi N. Srinivasan	Theory & Modeling I <i>Session Chair:</i> V. Acharya F. Guzman	IC Engines III <i>Session Chair:</i> S.R. Narayanan A. Saha	Novel I <i>Session Chair:</i> T.S. Taneja
11:00 – 11:20	2A05: Experimental and modeling study of the autoignition behavior of a saturated heterocycle: pyrrolidine <i>S.S. Goldsborough, M. Jespersen, J. Santner, R. Sivaramakrishnan, Q. Do, B. Lefort, Z. Serinyel, G. Dayma, L.P. Maffei, M. Mehl, M. Pelucchi, W.J. Pitz</i>	2B05: Evaluation of angular resolution requirements in the solution of the radiative transfer equation <i>Y.J. Kim, A. Trouvé</i>	2C05: Liftoff heights and blowoff limits of coflow nonpremixed ammonia/methane flames <i>Z. Xiang, D. Curtis, C.S. McEnally, L.D. Pfefferle, V.C. Whoriskey</i>	2D05: A simple method for the quantitative assessment of soot production rate <i>K. Gleason, A. Gomez</i>	2E05: Vapor-Liquid Equilibrium (VLE)-based CFD simulation and investigation of transcritical mixing and shock-droplet interaction <i>H. Zhang, S. Yang</i>	2F05: Three-dimensional rotational flamelet with detailed chemistry and transport models <i>W. Hellwig, X. Shi, W.A. Sirignano</i>	2G05: Evaluation of a rotary engine adapted for power generation as operated on hydrogen/natural gas mixtures <i>W. Villatoro, M. Venaas, V. McDonell</i>	2H05: Analysis of spray atomization effects on the performance of porous media as disruptors of thermoacoustic instability <i>M. Johnson, A. James, A.K. Agrawal</i>
11:20 – 11:40	2A06: Theoretical kinetics predictions for reactions on the NH ₂ O potential energy surface <i>S. J. Klippenstein, C. Mulvihill, P. Glarborg</i>	2B06: Modeling of firebrand transport and ignition in regional-scale fire spread simulations <i>Y. Qin, A. Trouvé</i>	2C06: Computational fluid dynamics modeling of flame behavior for sustainable aviation fuels in gas turbine combustors <i>D. Dasgupta, C. Bhattacharya, S. Som</i>	2D06: Competition and synergy between reaction progress and unequal-diffusion effects on stretch flame propagation under elevated thermodynamics conditions <i>K. Akita, H. Ge, P. Zhao</i>	2E06: VLE-based CFD simulation of a high-pressure turbulent reacting mixing layer <i>N. Srinivasan, H. Zhang, S. Yang</i>	2F06: A framework for combustion chemistry acceleration with DeepONets <i>A. Kumar, T. Echehki</i>	2G06: Study of NO _x formation at lean conditions in a prechamber-ignited two-stroke natural gas engine <i>J. Nowlin, M. Patterson, T.J. Jacobs</i>	2H06: Low-temperature ammonia oxidation kinetics in a nanosecond repetitively pulsed discharge <i>H. Zhong, X. Mao, N. Liu, Z. Wang, Y. Ju</i>
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	Reaction Kinetics VI <i>Session Chair:</i> P. N. Johnson P. Westmoreland	Fire VI <i>Session Chair:</i> A. Mensch P. Sunderland	Alternative Fuels & Emissions VI <i>Session Chair:</i> A. Strzelec	Laminar Flames VI <i>Session Chair:</i> T. Goyel Z. Zhou	Droplets & Sprays I <i>Session Chair:</i> D. Jarrahbashi N. Srinivasan	Theory & Modeling I <i>Session Chair:</i> V. Acharya F. Guzman	IC Engines III <i>Session Chair:</i> S.R. Narayanan A. Saha	Novel I <i>Session Chair:</i> T.S. Taneja
11:40 – 12:00	2A07: Analyzing the homogeneity of propane/air ignition in shock tubes: High-speed imaging and ignition delay time measurements <i>M.M. Ahmed, A. Trouvé, J.M. Forthofer, M.A. Finney</i>	2B07: Simulation of fire spread over discrete and loosely packed cardboard fuel beds <i>M.M. Ahmed, A. Trouvé, J.M. Forthofer, M.A. Finney</i>	2C07: Simulations of fuel-air mixing in a 7 element Lean Direct Injection (LDI) aviation combustor <i>S.N. Appukuttan, B. Perry, S. Yellapantula, L. Esclapez, H. Sitaraman, M. Day</i>	2D07: Optical characterization of cellular instabilities in spherically expanding ammonia-hydrogen flames <i>B. Nawaz, M.N. Nasim, S.K. Das, D. Assanis, J.P. Trelles, N. Van Dam, J.H. Mack</i>	2E07: Quantitative measurements of soot volume fraction from digital images of burning hydrocarbon fuel droplets <i>Y. Xu, Y. Shen, C.T. Avedisian, M.C. Hicks, M.Y. Choi</i>	2F07: Convective disturbance effects on entropy generation dynamics <i>M. Wise, T. John, V. Acharya</i>	2G07: Cycle-by-cycle modeling of integral compressor engines for real-time emissions control <i>K. Wallace, T. Jacobs</i>	2H07: A numerical investigation of peripheral injection in a constant volume combustion chamber <i>E.F. Bogdanowicz, A. Loper, Z. Harris, J. Bittle, A.K. Agrawal</i>
12:00 – 12:20	2A08: Experimental and modeling study of the high-temperature thermal decomposition of acetonitrile <i>R.A. Schwind, C.A. Almodovar, C.F. Goldsmith</i>	2B08: Pyrolyzates of live vegetative fuel <i>M. Andersen, D. Blunck, C. Hagen</i>	2C08: Preliminary emissions and stability data from a turbulent ammonia-hydrogen swirl burner <i>C.F.W. Goertemiller, D.E. Thomas, S. Kane, W.F. Northrop</i>	2D08: Analysis of uncertainties in the measurement of Markstein number and laminar flame speed of H ₂ /O ₂ /He mixtures at unity Lewis number in spherically expanding laminar flames <i>R. Ramesh, A. Vinod, F. Bisetti, M. Gamba</i>	2E08: Repetitive autoignition and extinction of near-limit non-premixed n-dodecane spray cool flames <i>W. Xu, Z. Wang, B. Mei, J. Hong, Y. Ju</i>	2F08: Generalized preconditioning for accelerating the integration of reactors with coupled gas-surface chemistry <i>A.S. Walker, R.L. Speth, K.E. Niemeyer</i>	2G08: Simulations of dual-fuel natural gas/diesel operation in large-bore locomotive engines <i>S.J. Kazmouz, A. Klingbeil, T. Lavertu, V. Jayakar, P. Sheth, S. Wijeyakulasurya, M. Ameen</i>	
Lunch Break (Lunch on your own) 12:20 - 14:10 USSCI Board Meeting Century Ballroom Women in Combustion Luncheon								
2023 USNCM Undergraduate Research Competition Presentations (Century Ballroom) 14:10 – 15:00 <i>Awards Committee Chair: Omid Samimi-Abianeh</i> <u>Awardees:</u> Dominic Curtis, Yale University Jacob Klein, Wayne State University James Ringsby, Cornell University								

Transfer
15:00 – 15:05

Room #	Hullabaloo	Traditions	Reveille 1	Reveille 2	Corp 1	Corp 2	Ross 1	Ross 2
	Reaction Kinetics VII <i>Session Chair:</i> J. Kim R. West	Fire VII <i>Session Chair:</i> B. Shotorban S. Wessies	Alternative Fuels & Emissions VII <i>Session Chair:</i> P. Liu H. Mack		Droplets & Sprays II <i>Session Chair:</i> T. Fang S. Singer	Theory & Modeling II <i>Session Chair:</i> V. Akkerman S. Whitman	IC Engines IV <i>Session Chair:</i> P.R. Jha S.-C. Kong	Novel II <i>Session Chair:</i> S. Deng J. Zhang
15:05 – 15:25	2A09: Competing radical and molecular channels in the unimolecular dissociation of methylformate <i>R. Sivaramakrishnan, N.J. Labbe, L.B. Harding, S.J. Klippenstein</i>	2B09: Extinction of the stagnation point diffusion flame: Effect of conductive heat loss into solid interior <i>C. Li, J. T'ien, M. Johnston</i>	2C09: Compression ignition engine performance of butyl- and propyl-terminated oxymethylene ethers <i>A. Zdanowicz, S. Lucas, B. Windom</i>		2E09: Characterization of a hot-surface ignition experiment for liquid fuels and propellants <i>D.S. Teitge, J.C. Thomas, T.E. Sammet, E.L. Petersen</i>	2F09: A hybrid unsupervised cluster-wise regression approach for representing the flamelet tables <i>R. Mishra, S. Mayilvahanan, D. Jarrahbashi</i>	2G09: Pre-combustion chamber nozzle design effect on unburned methane emissions of a large bore two-stroke lean- burn natural gas engine <i>G. Vieira, K. Beurlot, N. Xie, M. Patterson, D. Olsen</i>	2H09: OpenFOAM solver for volume-averaged modeling of porous media burners <i>A. Saha, S. Sobhani</i>
15:25 – 15:45	2A10: Nonthermal effects in the dissociation of HOCO and other carbonyl-centered free radicals <i>J. Cho, A.W. Jasper, S.J. Klippenstein, R. Sivaramakrishnan</i>	2B10: Modeling firebrand deposition between two blocks representing adjacent structures in wildland-urban interface fires <i>A. Mankame, P. Damiani, B. Shotorban</i>	2C10: Characterization of crankcase ventilation gas on stationary natural gas engines <i>A.Q. Castillo, A. Zdanowicz, B. Windom, D. Olsen</i>		2E10: Experimental characterization of transcritical spray with varying fuel temperature and injection pressure <i>K.N. Vinod, R. Kempin, T. Fang</i>	2F10: Computational fluid dynamics modeling of jet-stirred reactors <i>J.F. DeJongh, B. Rotavera</i>	2G10: Experimental investigation of unburned hydrocarbon production in dual-fuel heavy-duty RCCI engine running high COV operating point at low load <i>G. Silvagni, A. Narayanan, K.K. Srinivasan, S.R. Krishnan, V. Ravaglioli</i>	2H10: Dynamics of inter-pulse coupling in nanosecond pulsed plasma assisted ignition <i>T.S. Taneja, T. Ombrello, J. Lefkowitz, S. Yang</i>

Room #	Hullabaloo	Traditions	Reveille 1	Reveille 2	Corp 1	Corp 2	Ross 1	Ross 2
	Reaction Kinetics VII <i>Session Chair:</i> J. Kim R. West	Fire VII <i>Session Chair:</i> B. Shotorban S. Wessies	Alternative Fuels & Emissions VII <i>Session Chair:</i> P. Liu H. Mack		Droplets & Sprays II <i>Session Chair:</i> T. Fang S. Singer	Theory & Modeling II <i>Session Chair:</i> V. Akkerman S. Whitman	IC Engines IV <i>Session Chair:</i> P.R. Jha S.-C. Kong	Novel II <i>Session Chair:</i> S. Deng J. Zhang
15:45 – 16:05	2A11: Plasma-assisted reforming of hydrocarbon gas flare mixtures for emission control <i>P.N. Johnson, T.S. Taneja, S. Yang</i>	2B11: Transient gas and particulate emissions from Douglas-fir and lodgepole pine at two different moisture contents <i>P. Garg, S. Wang, M.J. Gollner</i>	2C11: Hydrogen-natural gas fuel blending in a Caterpillar CG137-8 “rich burn” engine with 3-way catalyst <i>N. Katsampes, D. Montgomery, G. Arney, D.B. Olsen</i>		2E11: Water film behavior on the surface of an airfoil in a high-speed flow <i>Safiullah, B. Esquivias, B. Hickey, V. McDonell</i>	2F11: Reduced-order modeling of reacting flows with a regression-aware autoencoder <i>K. Zdybal, A. Parente, J.C. Sutherland</i>	2G11: Reduced ethanol skeleton mechanism for multi-dimensional engine simulation <i>S. Roy, R. Mishra, O. Askari, D. Jarrahbashi</i>	2H11: Quantitative femtosecond two-photon absorption laser induced fluorescence measurements of atomic hydrogen and nitrogen in low temperature plasmas <i>N. Liu, X. Mao, C. Kondratowicz, Z. Shi, T.Y. Chen, H. Zhong, Y. Ju</i>
16:05 – 16:25	2A12: Unimolecular reactions and R + O ₂ Reactions of 2,4-dimethyloxetanyl radicals <i>A.C. Doner, J. Zádor, B. Rotavera</i>	2B12: Quantification of firebrand generation from typical WUI fuels for model development <i>X. Ju, M. Conkling, M. Hajilou, B. Hu, M.J. Gollner</i>	2C12: Reduction of methane emissions with hydrogen substitution on a lean burn four stroke natural gas engine <i>J. Bayer, B. Windom, D. Montgomery, 0181D. Olsen, A. Zdanowicz</i>		2E12: Comparison of droplets combustion characteristics for single component and multicomponent diesel surrogates with commercial petroleum-based diesel fuel <i>A.S.M. Sazzad Parveg, A. Ratner</i>	2F12: A parallel <i>in situ</i> adaptive tabulation using MPI shared memory for combustion simulation <i>H. Zhang, S. Yang</i>	2G12: Numerical investigation of differential evaporation of multi-component gasoline surrogate fuels <i>J.-W. Park, R. Mandhapati, A. Zhang, L. Zhao, Y. Pei, A. Mittal, T. Malewicki, M. Hajiw</i>	2H12: Ignition enhancement by non-equilibrium plasma discharge in a NH ₃ /air mixture <i>X. Mao, H. Zhong, N. Liu, Z. Wang, Y. Ju</i>

Break
16:25 – 16:55

Make sure to visit the Work in Progress Posters outside the Century Ballroom
And please visit our exhibitors outside the Century Ballroom:
Southwest Research Institute (SWRI)
Telops

Room #	Hullabaloo	Traditions	Reveille 1	Reveille 2	Corp 1	Corp 2	Ross 1	Ross 2
	Reaction Kinetics VIII <i>Session Chair:</i> R. Choudhary S.R. Narayanan	Fire VIII <i>Session Chair:</i> L. Gagnon A. Trouvé	Alternative Fuels & Emissions VIII <i>Session Chair:</i> J. Mack P. Papas		Droplets & Sprays III <i>Session Chair:</i> F. Safiullah	Theory & Modeling III <i>Session Chair:</i> H.A. Maldonado Colman D. Pineda	Industrial and Applied I <i>Session Chair:</i> T. Robertson C. Xu	Novel III <i>Session Chair:</i> X. Mao W. Sun
16:55 – 17:15	2A13: The kinetics and warm flame chemistry associated with radiative extinction of spherical diffusion flames K.A. Waddell, G. Yablonsky, D. Constaes, P.B. Sunderland, R.L. Axelbaum	2B13: Effects of oxygen availability and ventilation flow rate on fuel crib burning S. McAllister, E. Belmont	2C13: Combustion, performance, and emissions comparison of a liquefied petroleum gas heavy-duty engine with direct and port-fuel injection T. Fosudo, T. Kar, R. Duffens, B. Windom, D. Olsen		2E13: Experimental observation of sphere symmetric isolated single droplet combustion in a converging channel M. Williams, C. Dixon, N. DeMaio, S.J. Lim, F.L. Dryer, S.H. Won	2F13: Local and global sensitivity analysis of gypsum board calcination R.C. Paye, R.P. Hancock, S. Khan, S. Kozhumal, H. Sezer	2G13: Retrofitting a forced draft water heater for low emission operation on 100% hydrogen B. Hickey, S. Srivastava, V. Smirnov, G. Zijlstra, V. McDonell	2H13: Transient plasma-enhanced combustion of carbon-free fuels for reduced greenhouse gas emissions B. Zhang, M. Rubio, O. Hernandez, Y. Chen, F. Egolfopoulos, S.B. Cronin
17:15 – 17:35	2A14: Optimization of NO _x chemistry against the natural gas oxidation experiment in the plug flow reactor M.K. Yoon, A.V. Kock, F.L. Dryer, S.H. Won	2B14: Examining the effectiveness of water suppression for mitigating backdrafts R. Falkenstein-Smith, T. Cleary	2C14: Spectroscopic investigation of premixed H ₂ /NH ₃ /N ₂ -air flames stabilized on a H ₂ -air pilot flame K. Naude, M. Suarez, P. Parajuli, W. Kulatilak		2E14: Autoignition of n-decane droplets at various oxygen concentrations: Experimental observations under normal and microgravity M.J. Johnson, T.S. Krause, Y. Xu, V. Nayagam, D.L. Dietrich	2F14: Diffusion flame extinction: Exploring a unified criterion from quenching to blowoff C. Li, J. T'ien	2G14: Development of the modular Staged Pressurized Oxy-Combustion (SPOC) power plant for coal and biomass D. Magalhaes, Z. Yang, P. Verma, M. Cheng, A. Sankaranarayanan, Z. Wargel, R.L. Axelbaum	2H14: Testing of aqueous wastewater solutions using supercritical water oxidation C.A. Riggins, M.C. Hicks, U.G. Hegde, D.J. Gotti, J. Kojima, R.E. Padilla, Y. Xu
17:35 – 17:55	2A15: A high pressure jet-stirred reactor study of di-iso-pentyl ether and detailed kinetic modelling G. Cenedese, Z. Serinyel, M. Lailliau, G. Dayma, P. Dagaut	2B15: Theoretical estimate of radiative quenching for solid fuel diffusion flames in microgravity K. Budzinski, P.E. DesJardin	2C15: An assessment of kinetic models for ammonia flame extinction P. Papas, R. Fang, C.-J. Sung, L.L. Smith, J.F. Stevens		2E15: Cool, warm, and hot flames of farnesane droplets burning in microgravity T.S. Krause, V. Nayagam, D.L. Dietrich, T.I. Farouk, F.L. Dryer, F.A. Williams	2F15: A posteriori evaluation of principal component transport in homogeneous charge compression ignition conditions K.S. Jung, A. Kumar, T. Echehki, J.H. Chen	2G15: A novel dew point meter: Application to the measurement of the sulfuric acid dew point for combustion flue gas M. Cheng, Z. Wargel, R.L. Axelbaum	2H15: Plasma-coupled flow reactor studies of low-temperature plasma assisted kinetics of methanol blended with CO ₂ K. Bopaiah, T. Middleton, N. Tsolas

Room #	Hullabaloo	Traditions	Reveille 1	Reveille 2	Corp 1	Corp 2	Ross 1	Ross 2
	Reaction Kinetics VIII <i>Session Chair:</i> R. Choudhary S.R. Narayanan	Fire VIII <i>Session Chair:</i> L. Gagnon A. Trouvé	Alternative Fuels & Emissions VIII <i>Session Chair:</i> J. Mack P. Papas		Droplets & Sprays III <i>Session Chair:</i> F. Safiullah	Theory & Modeling III <i>Session Chair:</i> H.A. Maldonado Colman D. Pineda	Industrial and Applied I <i>Session Chair:</i> T. Robertson C. Xu	Novel III <i>Session Chair:</i> X. Mao W. Sun
17:55 – 18:15	2A16: Addressing key rate constant uncertainties in NH ₃ kinetics models using multiscale informatics <i>R.E. Cornell, C.E. LaGrotta, M.P. Burke</i>	2B16: Measurement of total heat generation and energy carried by ejected materials during thermal runaway process of 18650 lithium-ion batteries <i>P. Garg, L. Gagnon, D. Zeng, Y. Wang</i>	2C16: Development of natural gas/hydrogen fuel flexible reduced chemical mechanism for modeling of a low emission gas turbines <i>M.A. Valles Castro, I. Kessler, B.C. Windom</i>		2E16: Modeling temperature evolution in high - temperature surface caused by drop - wall interaction <i>S. Ahamed, S.-C. Kong</i>	2F16: Improvement of data-based reduced-order combustion models <i>E. Armstrong, J.C. Sutherland</i>	2G16: Reactor network modeling of a residential wood stove <i>E. Ackerman, B. Pawlowski, J. Mollendorf, P. DesJardin</i>	2H16: Numerical study on biomass co-firing in pressurized oxy-combustion <i>J. Zhang, L. Li, D. Magalhães, R.L. Axelbaum, X. Wang, V. Akkerman</i>
Banquet at the Ford Hall of Champions 18:45 - Doors Open 19:30 - Banquet Begins								
End of Day								

Wednesday, 22 March 2023

Announcements (Century Ballroom)

Eric Petersen, Local Host, 13th U.S. National Combustion Meeting

Wednesday U.S. Early Career Combustion Investigator Plenary 8:00 - 9:10 (Century Ballroom)

Bridging Combustion Fundamentals to Applied Problems

Derek Splitter, Oak Ridge National Laboratories

Session Chair: Paul Papas

Transfer 09:10 – 09:15

Room #	Hullabaloo	Traditions	Reveille 1	Reveille 2	Corp 1	Corp 2
	Reaction Kinetics IX <i>Session Chair:</i> <i>X. Dong</i> <i>C. Mulvihill</i>	Fire IX <i>Session Chair:</i> <i>E. Belmont</i> <i>S. Hossain</i>	Ammonia Reaction Kinetics <i>Session Chair:</i> <i>Y. Almarzooq</i> <i>D. Thomas</i>	Droplets and Sprays IV <i>Session Chair:</i> <i>J. Palmore</i> <i>Y. Xu</i>	Industrial and Applied II <i>Session Chair:</i> <i>Q. Meng</i>	Novel IV <i>Session Chair:</i> <i>X. Mao</i>
09:15 – 09:35	3A01: Automated kinetic models to predict the flame speeds of halocarbons <i>N. Khalil, S. Harris, R.H. West</i>	3B01: Modeling of firebrand dispersion and deposition in turbulent jet flows <i>P. Damiani, A. Mankame, B. Shotorban</i>	3C01: Experimental and detailed kinetics modelling study of NH ₂ chemiluminescence during ammonia combustion <i>A. Karan, M. Khan-Ghauri, C.M. Grégoire, O. Mathieu, E.L. Petersen, G. Dayma, C. Chauveau, F. Halter</i>	3D01: Statistics of the interactions between an underexpanded shock train and a liquid spray <i>C.B. Reuter, S.G. Tuttle</i>	3E01: Numerical investigation of dual-mode ignition in a novel hydrogen reactor <i>S.H.R. Whitman, B. Wu, Z. Wang, C. Xu</i>	3F01: Swiss-roll heat recirculating ammonia reformer for gas turbine applications <i>P. Radjowski, P. Bhuripanyo, C.-H. Chen, P. Ronney</i>
09:35 – 09:55	3A02: DRGEP autoencoders: Physics-based data-driven low-dimensional manifolds for capturing complex chemistry <i>N. Kincaid, A. Newale, P. Pepiot</i>	3B02: Severity of pollutant emissions from wildfires and prescribed fires <i>K. Töpferwien, A.Y.W. Lee, G. Vignat, E. Boigné, A. Feinberg, M. Prunicki, K. Nadeau, M. Kling, M. Ihme</i>	3C02: Investigation on the oxidation kinetics of ammonia/n-heptane mixtures up to 100 atm <i>B. Mei, Z. Wang, N. Liu, Y. Ju</i>	3D02: Modeling droplet vaporization with multicomponent diffusion and combustion properties with accuracy, efficiency, and flexibility <i>S. Singer</i>	3E02: Gas generation during thermal runaway of 18650 lithium-ion batteries with lithium iron phosphate cathode chemistry <i>C.A. Almodovar, L.R. Boeck, C.R.L. Bauwens</i>	3F02: An investigation of blue whirl scaling <i>E.T. Balci, E.S. Oran</i>
09:55 – 10:15	3A03: The low-temperature HyChem-I: Rationale and model development <i>R. Choudhary, P. Biswas, V. Boddapati, S. Clees, J. Shao, D.F. Davidson, H. Wang, R.K. Hanson</i>	3B03: Influence of adjacent fuels on ignition and burning during wildfires <i>P. Tiwari, N. Gardner, D. Sharma, D. Blunck</i>	3C03: Global pathway analysis to understand the plasma-assisted combustion of ammonia <i>P.N. Johnson, T.S. Taneja, S. Yang</i>	3D03: High-speed visualization of precursor droplet evaporation in flame assisted spray pyrolysis of NCM811 battery cathodes <i>M. Bhat, J. Zhang, C. Zhang, S. Deng</i>		3F03: Molecular beam mass spectrometry studies of non-thermal plasma-assisted ammonia decomposition and oxidation <i>J. Choe, D.E. Couch, N. Hansen, W. Sun</i>

Room #	Hullabaloo	Traditions	Reveille 1	Reveille 2	Corp 1	Corp 2
	Reaction Kinetics IX <i>Session Chair:</i> <i>X. Dong</i> <i>C. Mulvihill</i>	Fire IX <i>Session Chair:</i> <i>E. Belmont</i> <i>S. Hossain</i>		Droplets and Sprays IV <i>Session Chair:</i> <i>J. Palmore</i> <i>Y. Xu</i>		Novel IV <i>Session Chair:</i> <i>X. Mao</i>
10:15 – 10:35	3A04: The low-temperature HyChem-II: Application to real fuels <i>R. Choudhary, P. Biswas, V. Boddapati, S. Clees, D.F. Davidson, H. Wang, R.K. Hanson</i>			3D04: Ignition enhancement of liquid ammonia sprays under engine-relevant conditions via ambient hydrogen addition <i>A.H. Bakir, H. Ge, Z. Zhang, P. Zhao</i>		3F04: Effects of flame on the morphology and electrochemical performance of nickel-rich cathode materials synthesized by flame assisted spray pyrolysis <i>J. Zhang, C. Zhang, M. Bhat, S. Deng</i>
10:35 – 10:55				3D05: Investigations in multiphase detonation phenomena <i>C.J. Young, V.O. Duke-Walker, J.A. McFarland</i>		3F05: Direct numerical simulation of a realistic supercritical carbon dioxide oxy-combustor <i>R. Mishra, D. Jarrahbashi</i>
Texas A&M Combustion Laboratories Tour 11:00 to 12:00 and 13:30 to 15:00 End of Day						

13th U.S. National Combustion Meeting Work in Progress Posters

- PP#01 Effect of hydrogen and NO_x addition on the ignition of iso-octane at ultra-lean and lean conditions
K. Hakimov (P), W. Tang, A. Nicolle, S. Sarathy, A. Farooq
- PP#02 Modeling pyrolysis of moving biomass particle considering shrinkage using overset lattice Boltzmann method
Y. Cho (P), S.-C. Kong
- PP#03 Effect of difluoromethane on ignition delay times of propane
E. Guzman (P), F. Goldsmith, R. Schwind
- PP#04 Theoretical conditions for burning in solid propellant slots
T. Hafner (P), S. Son, M. Ornek, D. Messer
- PP#05 Development of fs/ps CARS for quantifying pressure in a reacting gas mixture
M.A. Akkari (P), C. Dedic
- PP#06 Low cost in cylinder pressure sensors for high efficiency natural gas heavy-duty on-road engines
J. Rodriguez (P), D. Olsen, B. Windom, H. Xu, G. Hampson
- PP#07 Measuring critical fuel properties for high fidelity aviation turbine simulations
G.M. Fioroni (P), S. Yellapantula, R.L. McCormick
- PP#08 Engine-emissions-aftertreatment integrated simulation tool for enabling near zero emissions
A. Strzelec (P), S. Wahiduzzaman, S. Gundlapally, E. Koehler, B. Vernham
- PP#09 The characterization of hydrogen flames at high temperatures and pressures using a rapid compression machine
I. Kessler (P), M. Valles, B. Windom
- PP#10 A miniaturized ignition screening rapid compression machine for probing auto-ignition characteristics
M. Tomar (P), A. Dalmiya, P. Zhao, P. Lynch
- PP#11 Early plume development and NO_x chemistry in LO_x/H₂ and LO_x/CH₄ liquid rocket engines
C. Hagström (P), R. Speth
- PP#12 Radiation heat transfer modelling of a solid fuel slab burner for high performance computing
O. Mylotte (P), P. DesJardin
- PP#13 Post processing dual-comb spectroscopy data for interference free multi-species measurements in shock tubes
M. Geiser (P), R. Horvath, F. Arafin, S. Vasu, R.K. Rahman
- PP#14 Surface temperature and emissivity measurement for materials exposed to a flame through two-color IR-thermography
B. Saute (P), T. Pelzmann, J.-P. Gagnon, F. Dupont
- PP#15 Development of fs/ps CARS for quantifying pressure in a reacting gas mixture
M.A. Akkari (P), C. Dedic
- PP#16 High-temperature line strengths with He- and Ar-broadening coefficients of the P(20) line in the 1 ← 0 band of carbon monoxide
C. Gregoire (P), O. Mathieu, E. Petersen
- PP#17 Emission spectra from NH₃/H₂-Air and NH₃/H₂/N₂-air spherical laminar flames
Y. Almarzoq (P), M. Hay, M. Turner, W. Kulatilaka, E. Petersen
- PP#18 Laser absorption tomography of nitrous oxide destruction in reacting flows
B. Steavenson (P), L. Munera, T. Crumley, D. Pineda
- PP#19 Developing in-situ, gas-phase spectroscopy methods to explore combustion intermediate and product species
A. Stevenson (P), C. Dedic
- PP#20 High-speed imaging of the inhomogeneous ignition phenomena of propane
D. Mohr (P), E. Petersen, S. Cooper, M. Abulail, M. Sandberg, M. Hay, W. Kulatilaka, D. Nativel
- PP#21 Chemiluminescence imaging studies of piloted ammonia flames
W. Kulatilaka, M. Suarez (P), K. Naude, P. Parajuli, M. Hay
- PP#22 Hydroxyl (OH) planar-laser-induced fluorescence imaging of flame structure in piloted ammonia flames
W. Kulatilaka, M. Hay (P), A.P. Hardaya
- PP#23 Withdrawn

- PP#24 High-pressure flame thermometry using femtosecond TPLIF of seeded krypton
W. Kulatilaka, M. Hay, P. Parajuli (P)
- PP#25 Investigation of niacin dust cloud ignition and combustion using OH-PLIF
W. Kulatilaka, C. Schweizer (P), C. Mashuga
- PP#26 Droplet evaporation and combustion research at CAMPhyRE Group
J. Palmore (P), M. Setiya
- PP#27 Laser-induced combustion and shock wave expansion dynamics of nano-aluminum
B. Singh (P), S. Biswas
- PP#28 Laser-ignited solid-fuel characteristics
F. Rodriguez (P), E. Petersen
- PP#29 Detailed kinetics applied to the numerical study of wildland fuels combustion and emissions
C. Saggese (P), W. Sun
- PP#30 Flammability and performance of a wood composite material and a water/gelatin-based flame retardant
J. Avalos (P), M. Difieri, J. Cobian-Iñiguez, J. Esmay, L. Davila, S. Lee, J. Hardy
- PP#31 Investigating the role of oxygen availability in glowing firebrand accumulations under natural convection
L. Zhu (P), J. Urban
- PP#32 Experimental study on the ignition behavior of wildland fuels ignited by heated metal particles
S. Saha (P), J. Cobian-Iñiguez
- PP#33 Development of a computer vision method for rate of fire spread estimation in wildland fuels
E. Ameri (P), K. Awayan, C. Duran, P. Mendoza Rueda, D. Sepulveda, J. Cobian-Iniguez
- PP#34 Light scattering study of soot produced by burning contaminated liquid fuels with heavy metal ions
R. Ebini (P), J.A. Hubbard, C. Sorensen, D. Wiemann, T. Settecerri
- PP#35 Flexi Alcohol Mix (FAM) fuel as potential fuel for reactivity-controlled compression ignition engine
V. Sharma (P), J.J. Thomas
- PP#36 Prechamber-equipped optical constant volume combustion chamber
D. Sen (P), S. Biswas
- PP#37 Reducing emissions of methane through advanced radical kinetics and adaptive burning in large-bore engines
F. Pommier (P), T. Jacobs
- PP#38 ACME: Advanced Combustion via Microgravity Experiments
D. Stocker (P)
- PP#39 Measuring temperature and extinction of diluted NH₃-H₂ counterflow diffusion flames
D. Thomas, J. Jarosz (P), W. Schutte, P. Walls
- PP#40 Spherically expanding hydrofluorocarbon/air flames in microgravity
J. Mathew (P), J. Tavares, J. Jayachandran
- PP#41 Non-spherical NH₃-air flames and laminar burning velocity measurements
N. Van Dam (P), C. Bossi, B. Nawaz, M.N. Nasim, A. Shaalan, D. Assanis, J. Mack
- PP#42 Measurements of laminar flame thickness and application to hydrodynamic instability
M. Turner (P), M. Hay, W. Kulatilaka, E. Petersen
- PP#43 Experimental and modeling studies of hydrogen/oxygen/air diffusion flame under the influence of an applied DC electric field
S. Pathmasiri (P), V. Akkerman, F. Goulay, H. Perera, M. Tinsley, L. Lei
- PP#44 Effect of fuel reactivity on flare efficiency and combustion dynamics
O. Alagbe, S. Biswas, R. Das (P)
- PP#45 Carbon capture technology based on oxygen-enriched flameless combustion, a technoeconomic analysis.
R. Maldonado (P)
- PP#46 Withdrawn
- PP#47 Characterizing strong ignition overpressure in oxy-methane combustion experiments
M. Sandberg (P), M. Turner, E. Petersen

- PP#48 Progress on development of a portable, miniature slab burner
J. Karapetian (P), J. Kalman, B. Pizarro-Romero
- PP#49 Experimental evaluation of battery safety hazards
C. Landry (P), P. Adefiranye, S. McCaulley, J. Thomas
- PP#50 Ethanol+N₂O as potential rocket propellants: An experimental and kinetic modeling study.
M. Preußker (P), J. Schmacka, K.A. Heufer
- PP#51 Kinetic study of unsaturated cyclic ketone reactions with the OH radical
P. Rutto (P), H. Moran, T. Selby, F. Goulay
- PP#52 Uncertainty quantification and constraint of chemical kinetic mechanisms of methanol, n-decane and n-heptane oxidation based on flow reactor experiments utilizing sensitivity analysis
A.V. Kock (P), S.H. Won, M.K. Yoon, F.L. Dryer
- PP#53 Effect of temperature on turbine lubricating oil pyrolysis
R. Juarez (P), N. Gutierrez, E.L. Petersen
- PP#54 Shock-tube CO measurements during the combustion of ethylene carbonate, a battery electrolyte component
C. Gregoire (P), E. Petersen, O. Mathieu, H. Nakamura, K. Kanayama, K. Maruta
- PP#55 Ignition of HTPB using an endwall injector system on a shock tube
M. Abulail (P), M. Sandberg, S. Cooper, E. Petersen
- PP#56 A machine-learning-powered workflow for predicting transition state structures
X. Dong (P), L. Pattanaik, S.-C. Li, K. Spiekermann, A. Menon, H. Wu, H.-W. Pang, W. Green
- PP#57 Simulating Supercritical Pressure Jet Stirred Reactor (SP-JSR) conditions for propane oxidation with real-gas effects through reactive molecular dynamics (ReaxFF)
C. Burger (P), A.D. Lele, Y. Ju
- PP#58 Experimental kinetics study on diethyl carbonate oxidation
O. Mathieu (P), E. Petersen, C. Gregoire, S. Cooper
- PP#59 Using HiPS as a mixing model for transported PDF calculations of turbulent non-premixed flames
M. Behrang (P), D. Lignell
- PP#60 Deep learning modeling of the filtered generalized progress variable dissipation rate in turbulent premixed combustion
A. Robang (P), C. Lacey, G. D'Alessio, M. Mueller
- PP#61 Recent developments for a turbulent flame speed experiment
N. Lindblade (P), E. Petersen, M. Turner, B. Dolle
- PP#62 Characterization of the turbulent flow field in a turbulent flame vessel
B. Dolle (P), E. Petersen
- PP#63 Learning reduced order surrogate models with Chemtab
D. Deighan (P), A. Salunkhe, P. Desjardin, V. Chandola
- PP#64 Effect of mixing characteristics on efficiency of pulse plasma-assisted fuel reforming
S. Huang (P), S. Weng, S.B. Cronin, P.D. Ronney

13th U.S. National Combustion Meeting Author Listing

<i>Author</i>	<i>Paper #</i>	<i>Author</i>	<i>Paper #</i>	<i>Author</i>	<i>Paper #</i>	<i>Author</i>	<i>Paper #</i>
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Ackerman, E.	2G16	Bakir, A.H.	1C14, 3D04	Bonilla, I.J.	2H03	Chintersingh, K.-I.A.	1G02
Aggarwal, S.K.	1C07	Balci, E.T.	1F11, 3F02	Bonville, L.J.	1G04, 1E16	Cho, J.	1C15, 2A10
Agrawal, A.K.	1F02, 2H05, 2H07	Baldwin, J.H.	1B05	Bopaiah, K.	2H15	Choe, J.	3F03
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Ahmed, M.M.	2B07	Barlow, R.	1B17	Breer, B.	1C12	Christianson, M.G.	1A15, 2A03
Ajmani, K.	2C03	Barnes, S.C.	1A16	Brezinsky, K.	1E13, 2G01, 2G04	Chu, C.	1C09
Akita, K.	2D06	Baumgardner, M.E.	1D01	Briggs, T.	1C05	Chung, W.T.	1H14, 2H02
Akkerman, V.	1D01, 1B03, 1G11, 2H16	Baumgart, A.	1F05	Brouzet, D.	1C01	Churchill, R.	1F13
Almarzooq, Y.M.	1E03	Bauwens, C.R.L.	3E02	Budzinski, K.	2B15	Cich, M.J.	1E08
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