

**2026 SPRING TECHNICAL MEETING
WESTERN STATES SECTION OF THE COMBUSTION INSTITUTE
Hosted by Oregon State University – Portland, OR**

Monday, 23 March 2026

8:30 – 5:00 Registration:

9:00 – 9:20 Breakfast:

**9:20 – 9:35 Welcome Address in
Welcome Remarks:**

9:35 – 10:35 Plenary Lecture in: Dr. Erica Fischer, Oregon State University
Title: *Designing for the Inevitable: Wildfire and the Built Environment*
Session Chair:

10:35 – 10:45	Transition to Morning Sessions		
	Microcombustion & New Combustion Concepts Session Chair:	Fires & Fire Safety I Session Chair:	Internal Combustion, Gas Turbines, & Rocket Engines I Session Chair:
10:45 – 11:05	1A01: 128891351 Effect of mixing uniformity on pulsed plasma assisted fuel reforming <i>S.-Y. Huang, S.B. Cronin, P.D. Ronney</i>	1B01: 128964671 HIGRAD/FIRETEC – A 25 year review <i>A.J. Josephson, R.R. Linn</i>	1C01: 130604595 Numerical Damköhler investigation of premixed laminar methane and hydrogen flames at elevated pressures and temperatures <i>M. Overbaugh, V. McDonell</i>
11:05 – 11:25	1A02: 130643699 Effects of geometry on mixing and electron density uniformity in plasma-assisted reactors <i>M.J. Zarate, S.-Y. Huang, P.D. Ronney</i>	1B02: 129860397 ML-based kinetic parameter inference from thermogravimetric analysis <i>S.N. Scott, M.W. Kury</i>	1C02: 130636367 Experimental evaluation of reformed ammonia as a spark ignition engine fuel <i>T.A. Archer, R.J. Bremmer, B. Windom, D. Olsen</i>
11:25 – 11:45	1A03: 130718241 Ignition of lean hydrogen–oxygen mixtures in a platinum microtube <i>J. Cicanese, K. Kumar</i>	1B03: 130005815 A data-driven tool for adding fluid effects to conduction-only heat transfer models <i>B. Hejnal, M. Kury</i>	1C03: 130770787 Enabling ammonia utilization in dual-fuel, diesel-piloted compression-ignition engines via on-board reforming <i>S. Schripsema, D. Olsen, R. Bremmer, B. Windom</i>
11:45 – 12:05	1A04: 130724351 Particle density effect on CuO reduction in dust flame combustion <i>R. Guerrero, J. Kalman</i>	1B04: 130558159 Smoldering combustion and emissions of Douglas fir lumber <i>A. Burton, A. Henry, R. Spring, N. Bolden, K. Rivers, T. Rowley, M. Hajilou</i>	1C04: 130783007 LPG/DME blends: Operation in a boosted medium to heavy duty spark ignited engine <i>R. Churchill, J.F. Rodriguez, D. Olsen, B. Windom</i>
12:05 – 12:25	1A05: 130773231 Ignition of lean methane–oxygen mixtures in a platinum microtube <i>J. Cicanese, K. Kumar</i>	1B05: 130570379 Near-limit flames in a quiescent microgravity environment <i>L. Carmignani, S. Kaplan, S. Bhattacharjee, S. Olson, P. Ferkul</i>	

12:25 – 1:25	LUNCH Women in Combustion Luncheon:		
	Numerical Methods & Machine Learning Techniques Applied to Combustion Session Chair:	Fires & Fire Safety II Session Chair:	Internal Combustion, Gas Turbines, & Rocket Engines II Session Chair:
1:35 – 1:55	1A06: 130598485 Numerical modeling and parametric study of two wood crib configurations using two approaches in fire dynamics simulator <i>I. Pitari, E.C. Fischer, J. Floyd</i>	1B06: 130706021 Firebrand combustion duration based on ignition exposure times <i>B.M. Cook, D.L. Blunck</i>	1C06: 130786673 Performance optimization of a heavy-duty propane engine using direct injection, exhaust gas recirculation and controlled end-gas auto-ignition. <i>T. Fosudo, B. Windom, D. Olsen</i>
1:55 – 2:15	1A07: 130764677 Physics-informed machine learning for reconstructing temperature, velocity, pressure, and species profiles from video data <i>B.L. Cohen, P.D. Ronney</i>	1B07: 130750013 Wind and packing effects on ember ignition of coast live oak leaf litter <i>M. Lopez, L. Carmignani</i>	1C07: 130857549 ABC: Argon in a Brayton cycle — An exploratory numerical study <i>R. Rajasegar, T. Strickland, D.L. Pintor, R. Dibble</i>
2:15 – 2:35	1A08: 130805003 Predicting firebrand generation from structures in wildland–urban interface fires using machine learning models <i>R.K. Sharma, D. Sharma, M. Pant</i>	1B08: 130761011 Ignition behavior of dry wood under varied convection and radiation heat transfer <i>M. Andersen, S.Z. Vijlee, D. Blunck</i>	1C08: 130858771 Highest-efficiency in the world, argon power cycles: Historical review, recent progress review <i>T. Strickland, R. Rajasegar, R.W. Dibble</i>
2:35 – 2:55	1A09: 130751235 Variational auto-encoder based deep learning technique for filling gaps in reacting PIV data <i>S. Yellapantula</i>	1B09: 130779341 Effect of roofing materials on ignition-capable firebrands <i>D. Sharma, D. Blunck</i>	
2:55 – 3:15	BREAK		
	Soot and Nanomaterials Session Chair:	Fires & Fire Safety III Session Chair:	Sprays, Droplets, & Supercritical Combustion I Session Chair:
3:15 – 3:35	1A10: 130288097 Flame ice cold-trap for characterization of trace soot precursors in laminar flames <i>F.G. Juarez, J. Camacho</i>	1B10: 130803781 Development of a firebrand generator with continuous feeder for wind-driven firebrand research <i>B. Cook, A. Nicholson, B. Nguyen, W. Schwieter, C. Reese, D. Sharma, D. Blunck</i>	1C10: 130508057 Investigation of the magnetic memory effect on droplet evaporation <i>B.M. Joshi, B.D. Shaw</i>

	Soot and Nanomaterials Session Chair:	Fires & Fire Safety III Session Chair:	Sprays, Droplets, & Supercritical Combustion I Session Chair:
3:35 – 3:55	1A11: 130625369 Soot modeling in wildland fires <i>J. Berryhill, A. Hesabi, B. Shotorban, D.O. Lignell</i>	1B11: 130830665 Effect of siding materials on firebrand temperature & size <i>C. Stelzer, D. Sharma, D. Blunck</i>	1C11: 130693801 Simulation of lean blow characteristics of lean premixed prevaporized combustor with Jet-A and HEFA-SPK as fuels <i>N.A. Sreejith, B. Perry, D. Montgomery, M. Rahimi, S. Yellapantula, M. Day</i>
3:55 - 4:15	1A12: 130649809 Particle size effects of B4C-CuO burning rates <i>G. Lopez, D. Lopez, J. Kalman</i>	1B12: 131158161 Numerical modeling of steady PMMA combustion in a narrow channel with a regressed solid fuel domain and surface to surface radiation heat transfer <i>A. del Rio Blanco, F. Miller, S. Olson, I. Wichman</i>	1C12: 130756123 Evaluation of dual fidelity coupling strategies for multi-component vaporization in flow simulations of jet fuel sprays <i>D. Montgomery, B. Perry, N.A. Sreejith, M.S. Day, S. Yellapantula, R.L. McCormick</i>
4:15 - 4:30	BREAK		
	Detonations, Explosions, & Supersonic Combustion Session Chair:	Fires & Fire Safety IV Session Chair:	Sprays, Droplets, & Supercritical Combustion II Session Chair:
4:30 - 4:50	1A13: 130560603 Mode identification for mixed detonation/deflagration combustion <i>M.C. Barkdull, A.G. Novoselov</i>	1B13: 130702355 Ignition time of eucalyptus leaves varying heat flux and moisture content <i>M. Bayasi, C. Panian, L. Carmignani</i>	1C13: 130822111 Combined experimental and numerical analysis of exhaust gas recirculation on spray flame stability and emissions <i>S.S. Kannan, A.E. Kingsley, B. Windom</i>
4:50 - 5:10	1A14: 130701133 Numerical simulation of a hydrogen-fuelled rotating detonation rocket engine using detailed chemistry <i>J. Adams, K. Kumar</i>	1B14: 130796449 Wildfire smoke infiltration on the Tulalip Reservation <i>N. Bolden, K. Kilkenney, N. MacCarty</i>	1C14: 131153273 Assessment of STAR-CCM+'s capability to model cryogenic spray cooling <i>J.J. Adams, B.R. Patil, C.-J. Sung, K.E. Niemeyer</i>
5:10 - 5:30	1A15: 130824555 A numerical study of one-dimensional detonation wave structure in hydrogen <i>J. Adams, K. Kumar</i>	1B15: 131161827 Flame temperature measurements of steady PMMA combustion in simulated microgravity conditions using a narrow channel apparatus <i>D. Fredriksson, F. Miller, S. Olson, I. Wichman</i>	1C15: 131160605 Marangoni effects on the surrounding temperature field of a fiber-supported evaporating fuel droplet in microgravity <i>M. Rahmati, B.D. Shaw</i>
6:00 – 8:00	Reception –		
8:00	Young Researcher Mixer –		

Tuesday, 24 March 2024

8:30 – 12:00 Registration:

9:00 – 9:20 Breakfast:

9:20 – 9:25 Opening Announcements in

9:25 – 10:25 Plenary Lecture in: Dr. Joshua Heyne, Washington State University

 Title: *Fuel Composition by Design: How Property-Constrained Characterization Is Reshaping Sustainable Aviation Fuel Qualification*

Session Chair:

10:25 – 10:35	Transition to Morning Sessions		
	Chemical Kinetics I Session Chair:	Laminar & Turbulent Flames I Session Chair:	Environmental Aspects of Combustion Session Chair:
10:35 – 10:55	2A01: 129798075 Oxidation kinetics of NH₃/DME at high pressure <i>Z. Wang, B. Mei, W. Xu, Y. Ju</i>	2B01: 130531275 Unsteady counterflow flames under dual-frequency excitations <i>J.G. Rivera Lizarralde, A. Saha</i>	2C01: 130740237 Measurement of ultra-fine particle number–size distributions and PM_{2.5} emission factors from burning Douglas-fir and Ponderosa pine <i>M. Aghajari, D. Blunck</i>
10:55 – 11:15	2A02: 130460399 Two-step kinetic model reduction with adaptive chemistry <i>B. Yu, R. Xu</i>	2B02: 130532497 Cellularly unstable hydrogen-ammonia Bunsen flames <i>A. Hsing, J.G. Rivera Lizarralde, M. Sánchez-Sanz, A. Saha</i>	2C02: 130780563 Low-sulfur quantification methods for aviation fuels <i>C. Faulhaber, S.-J. Lee, P. Garcia-Alfaro, K. Sidiqi, J. Ledezma, J. Heyne</i>
11:15 – 11:35	2A03: 130652253 Computational and experimental study of homogeneity in jet-stirred reactors for chemical kinetics <i>T. Badum, S. Huang, J.-Y. Wang, P.D. Ronney</i>	2B03: 130677915 Flame propagation characteristics of decomposed ammonia mixtures in a rapid compression machine <i>J.H. Bicksler, B.C. Windom</i>	2C03: 130792783 Catalytic combustion of hydrogen/methane fuel blends using a Pd-Al₂O₃/cordierite catalyst <i>Z. Baskerville-Bridges, M. Mangalampalli, G. Feliscuzo, B. Padak</i>
11:35 – 11:55	2A04: 130687691 Autoignition of hydrogen-oxygen-argon mixtures in a rapid compression–expansion machine <i>H. Newman, K. Kumar</i>	2B04: 130712131 Laminar flame characteristics of blended ammonia fuels <i>M. Aljabery, W. Jayani Jayasuriya</i>	2C04: 130817223 Analysis of 100% drop-in SATF compositional solution space sensitivity to property constraints <i>A. Kelly, Z. Yang, R. Boehm, J. Heyne</i>
11:55 – 1:00	LUNCH		

	Chemical Kinetics II Session Chair:	Laminar & Turbulent Flames II Session Chair:	Biomass Combustion & Gasification Session Chair:
1:00 – 1:20	2A05: 130781785 50 Year Golden Anniversary laser probing of vibrational excited CO products from shock wave initiated oxidation of CS₂ presented to WSSCI Fall 1975 <i>R.W. Dibble</i>	2B05: 130794005 Stability of laminar premixed ammonia/hydrogen/air flames at elevated pressures <i>Z. Baskerville-Bridges, B. Padak</i>	2C05: 130635145 Effects of forced-draft air injection on mass and size distribution of particulate matter emissions in a biomass cookstove <i>Y. de la Cruz, N. MacCarty</i>
1:20 – 1:40	2A06: 130855105 A coupled 1D jet-reactor framework for simulating ammonia and ammonia-hydrogen jet ignition in hot co-flow conditions <i>T. Strickland, D. Lopez-Pintor, R. Dibble, J.M. Garcia-Oliver, R. Rajasegar</i>	2B06: 130797671 Study on the effect of fuel particle size on the flame residence time and rate of spread of masticated fuels <i>J. Cobian-Iñiguez, H. Zang</i>	2C06: 130641255 Exploring the impact of forced secondary air on particulate emissions and combustion behavior of a heating stove <i>P. Shrestha, D. Evitt, S. Bentson, J. Berger, N. MacCarty, D. Blunck</i>
1:40 – 2:00	2A07: 130695023 Characterizing the temperature field in a rapid compression-expansion machine via computational fluid dynamics <i>H. Newman, K. Kumar</i>	2B07: 130806225 Composition stratification in ammonia-hydrogen flames <i>R. Chaurasiya, A.G. Novoselov</i>	2C07: 130775675 Influence of pellet stove fuel-bed parameters on inorganic particulate matter emissions: recommendations for design <i>D.P. Evitt, D.L. Blunck, N.A. MacCarty</i>
2:00 – 2:20	2A08: 130763455 Ethylene formation during thermal decomposition of diethyl carbonate behind reflected shock waves <i>J.D. Reynolds, Y. Yan, P. Barnouin, R. Mitchell Spearrin</i>	2B08: 130813557 The role of flame extinction in turbulent boundary layer flashback of lean hydrogen flames <i>S. Wang, A.G. Novoselov</i>	2C08: 130785451 Numerical investigations of the destruction of PFAS in hot combustion products of natural gas in air and hydrogen in oxygen <i>T. Strickland, B. Crowe, R. Dibble</i>
2:40	Adjourn		