

Program: Tuesday, October 12th (Morning)

Zoom Link 1:	https://kaust.zoom.us/j/91789450817
Zoom Link 2:	https://kaust.zoom.us/j/96299636036

Time Zone: Saudi Arabia Time (Riyadh, UTC+03:00)

8.00 – 8.15	Login Phase (Link 1)	
8.15 – 8.30	Welcome – SASCI Chairman, Prof. Hong Im, KAUST (Link 1)	
8.30 – 9.30	Invited Speaker – Mr. Yehia Khoja, Ministry of Energy: The circular carbon economy national program, the energy innovation program, and the AI center for energy to unlock additional value from the energy sector (Link 1)	
9.30 – 9.40	Short Break	
9.40 – 12.10	Session 1.1: Applications of ML/AI tools (Link 1) <i>Session Chair: Dr. Jihad Badra, Saudi Aramco</i>	Session 1.2: Low carbon fuels and CCUS (Link 2) <i>Session Chair: Dr. Tamour Javed, Saudi Aramco</i>
9.40 – 10.00	Data-driven prediction of flame lift-off-length and ignition delay of ECN spray-A <i>Balaji Mohan, Saudi Aramco</i>	The future of direct air capture at NEOM <i>Yasmeen Najm, NEOM</i>
10.00 – 10.20	A transfer learning approach to multi-target temperature-dependent reaction rate prediction <i>Emad Al Ibrahim, KAUST</i>	Analysis of methane, propane, and syngas oxy-flames in a fuel-flex gas turbine combustor for carbon capture <i>Medhat Nemitallah, KFUPM</i>
10.20 – 10.40	Fuel design using genetic algorithm and artificial neural networks <i>Faisal Albaqami, KFUPM</i>	Mobile carbon capture for marine applications: An MDEA/PZ solvent process model case scenario <i>Fethi Khaled, Saudi Aramco</i>
10.40 – 10.50	Short break	
10.50 – 11.10	Machine learning model for gasoline compression ignition at low loads <i>Zahra Al Ibrahim, Saudi Aramco</i>	Doping effect of oxygenated and non-oxygenated bio-oils on non-premixed turbulent hydrogen-based flames <i>Yilong Yin, University of Adelaide</i>
11.10 – 11.30	A machine learning surrogate approach for the optimization of fuel-engine design <i>Mohammed Almomtan, KAUST</i>	A decoupling model approach to studying the pyrolysis and oxidation of C6-C10 saturated fatty acid methyl esters (FAMES) <i>Xiaoyuan Zhang, KAUST</i>
11.30 – 11.50	Utilization of machine learning to predict the products' yields from co-pyrolysis of biomass and polymers <i>Aessa Alabdrabalnabi, KAUST</i>	Effect of exhaust gas recirculation (EGR) and ethanol addition on ignition delay Times of Gasoline Fuels <i>Khalid Aljohani, KAUST</i>
11.50 – 12.10	Large eddy simulation with flamelet progress variable approach via neural network acceleration <i>Lorenzo Angelilli, KAUST</i>	High-temperature mid-IR absorption and kinetic study of the dioxolanes <i>Mohammad Adil, KAUST</i>
12.10– 13.10	Lunch Break	

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13.10 – 14.10	Invited Speaker – Prof. Bassam Dally, KAUST: New insights into laminar and turbulent sooting flames (Link 1)	
14.10 – 14.20	Short break	
14.20 – 16.50	Session 2.1: Fundamental combustion research, measurement techniques and modelling (Link 1) <i>Session Chair: Prof. Thibault F. Guiberti, KAUST</i>	Session 2.2: Engines and power generation systems with lower carbon footprint (Link 2) <i>Session Chair: Prof. Deanna Lacoste, KAUST</i>
14.20 – 14.40	Minimum ignition energy measurement of methane-air at cryogenic conditions <i>Anupam Ghosh, KAUST</i>	Fuel economy assessment of modern engine technologies in a range-extended electric vehicle <i>Emre Cenker, Saudi Aramco</i>
14.40 – 15.00	Direct numerical simulations of super-knock development process in IC-engine conditions <i>Minh Bau Luong, KAUST</i>	An unconventional internal combustion engine as a range extender for low carbon mobility <i>Giovanni Vorraro, KAUST</i>
15.00 – 15.20	Numerical study on NO _x formation in premixed turbulent C ₃ H ₈ -air flames diluted with CO ₂ -H ₂ O, <i>Hemaizia Abdelkader, University of Sciences and Technology Houari Boumediene</i>	Ignition regimes of GCI engines and the usefulness of autoignition surrogates for GCI fuels with varying sensitivities <i>Jihad Badra, Saudi Aramco</i>
15.20 – 15.30	Short break	
15.30 – 15.50	Autoignition experiments of iso-octane at ultra-lean and lean conditions <i>Khayyom Hakimov, KAUST</i>	Numerical evaluation of cold operation strategies in a heavy-duty gasoline compression ignition engine <i>Emma Zhao, Aramco Services Company</i>
15.50 – 16.10	Numerical study of lean premixed humidified hydrogen-methane-air combustion in a generic triple swirl burner <i>Neha Vishnoi, Indian Institute of Technology Ropar</i>	A computational investigation of the combustion behavior and turbulence-chemistry interaction in a narrow-throat prechamber combustion engine <i>Mickael Silva, KAUST</i>
16.10 – 16.30	Active control of thermoacoustic instabilities in a premixed laminar flame using time phased bursts of nanosecond repetitively pulsed discharges <i>Ammar Alkhalifa, KAUST</i>	A priori computational assessment of laminar flame speed correlation in an ultralean prechamber engine <i>Ghufran Alkhamis, KAUST</i>
16.30 – 16.50		Multiple injections to enable fuel flex engines <i>Bassam Aljohani, KAUST</i>
16.50	End of first day	

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8.15 – 8.30	Login Phase (Link 1)	
8.30 – 9.30	Invited Speaker – Dr. Umesh Patil, Air Products: The true promise of H₂ in Saudi Arabia: Moving beyond the hype (Link 1)	
9.30 – 9.40	Short Break	
9.40 – 12.10	Session 3.1: Hydrogen and ammonia as energy carriers (Link 1) <i>Session Chair: Dr. Christos Kalamaras, Saudi Aramco Prof. Awad Alquaity, KFUPM</i>	Session 3.2: Air quality and fuel criteria pollutants (Link 2) <i>Session Chair: Prof. Gaetano Magnotti, KAUST</i>
9.40 – 10.00	Enhancing ammonia combustion by blending with diethyl ether <i>Binod Giri, KAUST</i>	Challenges on the road to zero-emission vehicles <i>Fakhar Mehmood, Saudi Aramco</i>
10.00 – 10.20	Experimental rig for hot ammonia nitridation studies <i>Nicole Laws, KAUST</i>	An interference-free laser-based methane sensor using cepstral analysis <i>Mhanna Mhanna, KAUST</i>
10.20 – 10.40	Oxidation of formic acid and decane using Jet Stirred Reactor <i>Shamjad Moosakutty, KAUST</i>	Experimental study on the Swirling Flame Combustion of Heavy Fuel Oil/Water Emulsion <i>Felipe Campuzano, KAUST</i>
10.40 – 10.50	Short break	
10.50 – 11.10	Hydrogen evolution from hydrocarbon pyrolysis in a simulated liquid metal bubble column reactor <i>Fabiyan Shamsudheen, KAUST</i>	Stability limits and emission performance of ammonia-methane swirl flames for future power generation <i>Marwan Abdullah, Saudi Aramco</i>
11.10 – 11.30	DNS of hydrogen flames at elevated pressures: turbulent flame speed analysis <i>Wonsik Song, KAUST</i>	Stability limits and emissions of double swirl burner with methane/ammonia blends <i>Alfaisal Albalawi, KAUST</i>
11.30 – 11.50	Hydrogen as a fuel for HCCI engines <i>Abdulrahman Mohammed, KAUST</i>	Experimental investigation of soot formation at elevated pressure in laminar inverse diffusion flames <i>Peng Liu, KAUST</i>
11.50 – 12.10	Characterization of a novel dual-fuel, dual-swirl burner for carbon free fuels <i>Amit Kotch, KAUST</i>	Soot formation in ammonia-hydrocarbon combustion <i>Peng Liu, KAUST</i>
12.10– 13.10	Lunch Break	

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13.10 – 14.10	Invited Speaker – Prof. Sophie Colson, Tohoku University: Study of ammonia combustion fundamental characteristics (Link 1)	
14.10 – 14.20	Short break	
14.20 – 16.30	Session 4.1: Combustion measurement techniques, diagnostics and emissions (Link 1) <i>Session Chair: Dr. Emre Cenker, Saudi Aramco</i>	Session 4.2: Combustion and reaction kinetics (Link 2) <i>Session Chair: Prof. Abdul Gani Abdul Jameel, KFUPM</i>
14.20 – 14.40	Elucidating first stage ignition chemistry of dimethyl ether using a laminar flow reactor <i>Awad Alquaity, KFUPM</i>	On the accuracy of CO/H ₂ Kinetic Mechanisms for Prediction of Syngas Non-premixed Flames Characteristics <i>Syed Mughees Ali, Eindhoven University of Technology</i>
14.40 – 15.00	A step toward quantitative planar laser-induced fluorescence of hydroxyl radical in hydrogen-fueled detonations <i>Karl Chatelain, KAUST</i>	Surrogate formulation and chemical kinetic modeling of vacuum residual oil <i>Mohammed AlAbbad, KAUST</i>
15.00 – 15.20	Dual-camera high-speed imaging of ethanol combustion in a high-pressure shock tube <i>Miguel Figueroa Labastida, KAUST</i>	Global chemical kinetics of HFOs pyrolysis for practical applications <i>Elia Colleoni, KAUST</i>
15.20 – 15.30	Short break	
15.30 – 15.50	A laser diagnostic for HCN detection in mid-infrared <i>Ali Elkhazraji, KAUST</i>	Kinetic and product analysis of the pyrolysis of <i>Salicornia bigelovii</i> under CO ₂ and N ₂ atmospheres <i>Jinan Aljaziri, KAUST</i>
15.50 – 16.10	Characterization of a Cassegrain optical system for spatially-resolved measurements of flame chemiluminescence spectra <i>Amjad Aljarallah, KAUST</i>	Investigating 1, 3-butadiene kinetics using UV absorption spectroscopy <i>Dapeng Liu, KAUST</i>
16.10 – 16.30	Laser-induced fluorescence of NO in laminar and turbulent ammonia-hydrogen-nitrogen diffusion flames at high pressure <i>Guoqing Wang, KAUST</i>	-
16.30	Closure of the 11th SAS-CI meeting	

Virtual Platform

This year the event will be held online as a virtual conference. Please use the dedicated **Zoom links** for each session given in the **program pages** to login. You can switch between parallel sessions if needed. If you are presenting in one of the sessions you will can use the panelist dedicated links sent to your email, otherwise if you are joining as an attendee please choose **Attendees** link populated here.

Contact Information

For any queries regarding this event, you can reach out to one of the following organizers:

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This meeting is jointly organized by the Transport Technologies Division, R&DC, Saudi Aramco, and the Clean Combustion Research Center (CCRC) at King Abdullah University of Science and Technology (KAUST).