



Saudi Arabian Section of the Combustion Institute

15th SAS-CI Annual Conference
19th – 20th October 2025

King Abdullah University of Science and Technology (KAUST)

Venue: Lecture Theatre between Building 4 and Building 5

<https://maps.app.goo.gl/SPekkpSFH5Aqn6V97>

Hosted by



جامعة الملك عبد الله
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Theme: Fuels and Fire Safety for Energy Transition

Day 1: Sunday, 19th October 2025

8:30 – 9:00	Arrival and registration
9:00 – 9:10	Welcome Remarks – SAS-CI Chairman
9:10 – 9:50	Plenary Lecture 1: Fire Safety Under a New Energy Mix <i>Speaker: Prof. Jose Torero (University College London)</i>
9:50 – 10:30	Plenary Lecture 2: Runaway Fire in Lithium-Ion Batteries <i>Speaker: Dr. Janardhanraj Subburaj (KAUST)</i>
10:30 – 10:50	Coffee Break
Session 1: Fire Safety – Hydrogen, Ammonia and Batteries (Chair: Prof. Deanna Lacoste)	
10:50 – 11:40	Panel Discussion: Mitigation of Fire Hazards in the Future Moderator – Prof. Deanna Lacoste 1. Prof. Jose Torero 2. Dr. Janardhanraj Subburaj 3. Eng. Majed AlMarri
11:40 – 11:55	Study of Hydrogen Flames Blended with Liquid hydrocarbon Fuels, Sonu Kumar, KAUST
11:55 – 12:10	Transient Explosive Dynamics in Extinction Events, Urbano Martinez, KAUST
12:10 – 12:25	Group Photo
12:25 – 13:45	Lunch Break
13:45 – 14:30	Plenary Lecture 3: Fuels of the Future <i>Speaker: Prof. Paul Hellier (University College London)</i>
Session 2: Combustion of Future Fuels (Chair: Dr. Ahmad Almaleki)	
14:30 – 14:45	Enhancement Mechanisms of NRP Glow Discharges Applied to an Ammonia-Hydrogen-Air Flame, Ammar Alkhalifa, KAUST
14:45 – 15:00	Thermodynamic Optimization of Fuel Reforming for Pre-combustion CO ₂ Capture, Fay Idrees, Aramco
15:00 – 15:15	Towards Compact Mechanisms for Sustainable Aviation Fuels: Updated Lumping Scheme in the FGMech Framework, Qiren Zhu, KAUST
15:15 – 15:30	Assessment of Strategies to Enhance the Performance of a Glow Plug-Assisted Methanol Engine, Xinlei Liu, KAUST
15:30 – 16:00	Coffee Break

Poster Session

Fire Safety – Hydrogen, Ammonia and Batteries:

1. Efficiency and Safety Evaluation of Green Hydrogen and Ammonia Energy Pathways Using a Hazard-Adjusted Round-Trip Efficiency Framework, Burcu Yigitoglu, KFUPM
2. lumpedBatteryFoam: An OpenFOAM Solver for Lumped Electrochemical–Thermal Modeling of Lithium-Ion Cells, Muhammad Hasnain Tariq, Politecnico di Milano, Italy
3. Safety Considerations and Technological Pathways for Electric Vehicles, Hydrogen Combustion, and Low-Temperature Combustion Engines, Khaoula Rahmouni, Université d'Oum El bouaghi, Algeria

Combustion of Future Fuels

4. Deep UV Absorption Diagnostics for Thermal Decomposition Reactions: Crotonaldehyde and Beyond, Dapeng Liu, KAUST
5. Effects of Diesel-Gasoline Fuel Blend on the Diesel Engine Performance at Different Altitude Conditions, Hasan Koten, Istanbul Medeniyet University, Turkiye
6. Impact of blending alcohols, ethers and ketones with TPRF mixtures on smoke point: an experimental and neural network analysis, Ruaa Ala Eldin Ageeb Abakar, KFUPM
7. Measurements and characteristics of the lift-off height for non premixed hydrogen flames, Doha Melliti, KAUST
8. Ammonia-Methane Blends in Non-Premixed Flames: Impacts on Stability, Structure, and Emissions, Adamu Alfazazi, KAUST
9. Characterization of a Swirling Flame for Sustainable Aviation Fuel (SAF) Combustion Applications, Mohamad Ghulam, KAUST
10. LES Numerical Study on the Effects of Swirler Angles on a $\text{CH}_4/\text{CO}_2/\text{O}_2$ Flame with High Hydrogen Content in a DLE Gas Turbine Burner, Naef A. A. Qasem, KFUPM
11. Detailed chemistry modeling of ammonia/methane combustion in a swirl burner for gas turbine combustion applications, Medhat A. Nemitallah, KFUPM

Experimental and Numerical Studies in Combustion

12. Flame Transfer Functions of Premixed Cracked-Ammonia and Ammonia-Methane Swirl Flames, Ahmed Gaber H. Saif, KFUPM
13. Turbocharger-Based Exhaust Energy Recovery for Hybrid Powertrains: Insights from a 1D Simulation Study, Raghu Vamsi Kodaboina, KAUST
14. Experimental Investigation of Pre-Chamber Hydrogen Combustion in Methanol-Fueled Heavy-Duty Engine, Sadique Khan, KAUST
15. Triple-flame propagation against a Poiseuille flow in a channel with porous walls, Faisal Al-Malki, Taif University