KAUST Research Conference AL OCT ENERGY March 6-8, 2023

Auditorium between Bldgs. 4 and 5 KAUST, Thuwal, Saudi Arabia



ccrc.kaust.edu.sa/ai-for-energy

This research conference is organized by the CCRC with financial support from the Office of Research Funding and Services (RFS).



Monday, March 6

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08:00 AM	Breakfast
	Conference Welcome Address and Opening Remarks
08:15 AM	Mani Sarathy, Associate Director of the CCRC and Professor of CE, KAUST
08:20 AM	Larry Carin, Provost and Professor of ECE, KAUST
	AI for Fuel and Engine Design I
08:30 AM	Sili Deng, MIT
	Chemical Reaction Neural Network for Energy Applications
09:00 AM	André Nicolle, Aramco
	Machine Learning for Fuel Design
09:30 AM	Matthias Ihme, Stanford University
	Guiding the Blind: Injecting Knowledge into Combustion Machine Learning
10:00 AM	Coffee Break and Group Photo
10:30 AM	Alessandro Stagni, Politecnico di Milano
	Big Data and Data Science for the Intelligent Development of Kinetic Mechanisms
11:00 AM	Paolo Guida, KAUST
	Al-driven Chemical Characterization with MolEvo
11:30 AM	Patrick Burkardt, Aachen University
	Bio-Hybrid Fuel Blends for Spark-Ignition Engines – Design and Performance Analysis
12:00 PM	Lunch
	AI for Fuel and Engine Design II
01:00 PM	Jihad Badra, Saudi Aramco
	Can AI help in Reducing the Environmental Impact of the Transport Sector
01:30 PM	Daniel Mira Martinez, The Barcelona Supercomputing Center
	Application of Digital Models for Energy Conversion Systems: a Physics Perspective
02:00 PM	Roberto Torelli, Argonne National Laboratory
	Artificial Intelligence and Computational Fluid Dynamics to Accelerate Time-to-Design
	of Energy/Propulsion Systems
02:30 PM	Coffee Break
03:00 PM	Mohammed Al-Abdulmohsen, Saudi Aramco
	Optimization of Khurais Steam and Fuel Gas Using Machine Learning - Futuristic IR4.0
	Platform Resetting the Benchmark
03:30 PM	Sasa Milojevic, University of Stuttgart
	Optimization of High-efficient Powertrain Systems Powered by AI and ML
04:00 PM	Yehia Khoja, Ministry of Energy
	AI in Energy Strategy
05:00 PM	Poster Session and Dinner

Tuesday, March 7

08:30 AM	Breakfast
	Opening Remarks
08:45 AM	Jürgen Schmidhuber, AI Initiative Director and Professor of CS, KAUST
	AI for Hydrogen and Renewables I
09:00 AM	Joshua Ivanhoe, H2GO Power
	Real-time Optimization of Renewable-powered Hydrogen Systems

09:30 AM	Khaled Alshehri, SDAIA
	AI Applications for Smart Grid Operations and Economics
10:00 AM	Aseel Addawood, Ministry of Energy
	Local AI Talent Development
10:30 AM	Coffee Break
11:00 AM	Ahmed Bubshait, Ministry of Energy
	The Future of AI in Energy
11:30 AM	Aliaksei Mazheika, Technical University of Berlin
	AI-driven Search for New Catalytic Materials
12:00 PM	Yousung Jung, Korea Advanced Institute of Science and Technology
	AI-Enabled Inverse Design of Materials
12:30 PM	Lunch
	AI for Hydrogen and Renewables II
01:30 PM	Antonio Attili, University of Edinburgh
	Machine-learning Modelling of Turbulent Premixed Flames
02:00 PM	Abdul Ghani Olabi, University of Sharjah
	Digital Twin & Artificial Intelligent for Renewable Energy & Energy Storage Systems
02:30 PM	Luigi Cavallo, KAUST
	A Multivariate Linear Regression Workflow for Catalysts Design with Few-Entry Datasets
03:00 PM	Coffee Break
03:30 PM	Ricardo M. Pinto de Lima, KAUST
	An Effective Decomposition Method to Solve the Unit Commitment Problem Involving Stochastic
	Renewable Generation Units
04:00 PM	Kangming Li, University of Toronto
	I Build AI Because I Don't Trust Myself

Wednesday, March 8

08:30 AM	Breakfast
	Al for Sensing and Diagnostics in Energy-related Applications
09:00 AM	Heather Allen, Ohio State University
	Molecular Spectroscopic Sensing Development through Machine Learning
09:30 AM	Aamir Farooq, KAUST
	Al-enabled Spectroscopic Sensing
10:00 AM	Silvio Giancola, KAUST
	Harnessing the Power of Computer Vision for Energy-related Applications
10:30 AM	Ahmed Al-Jarro, Aramco Research Center at KAUST
	Al Powered Sensing and Diagnostics for Energy Network Integrity
11:00 AM	Coffee Break
11:30 AM	Wazen Solami-Al, SABIC
	SABIC Manufacturing Evolution in Digitalization Era
12:00 PM	Ken Alvord, CNTXT
	Unlocking AI by Solving the Data Problem
12:30 PM	Abdullah Alluhaib, Saudi Electricity Company
	The Role of AI in Transforming the Power Industry
01:00 PM	Lunch
02:00 PM	CCRC Lab Tour 1
03:00 PM	Coffee Break
03:30 PM	CCRC Lab Tour 2









Additional Information

Location:

The conference will take place at the Auditorium between buildings 4 & 5. The Poster Session will be held at the Lobby of Building 5 seaside (Level 2).



The emergency number: +966 (12) 808 0911 from a mobile phone or 911 from KAUST landline

The Wi-Fi: KAUST-Guest

Bus: There will be a bus going from Visitor's Center to Al Khozama Hotel, and then heading to the Building16 (campus). Timings are: from 7 AM to 9 AM, and from 5 PM to 7 PM.

On demand bus: Operates 7-days per week during non-peak hours. To use the on-demand bus, download the Rekab app available on Google Play Store or Apple App Store. *Workdays from 6:00 P.M. to 1:00 A.M.*

Weekends/Holidays from 6:30 A.M. to 01:00 A.M

In case you need a taxi, please see options below: 1. SAPTCO: saptco.taxi@kaust.edu.sa 012 808-5616 012 808-5617

2. HANCO: HancoTransport@kaust.edu.sa 012 808-5647 012 808-5604

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