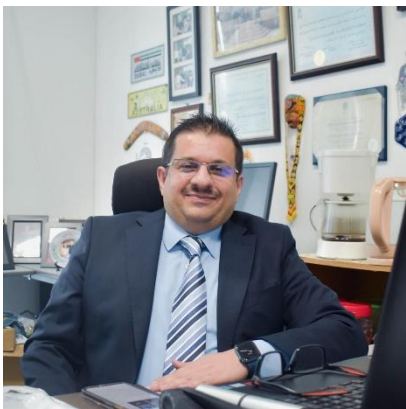


Plenary Speaker 2: Associate Professor Dr. Firas Basim Ismail (UNIVERSITI TENAGA NASIONAL,

Title: Toward 2035: Renewable Energy Innovations Transforming Our Future

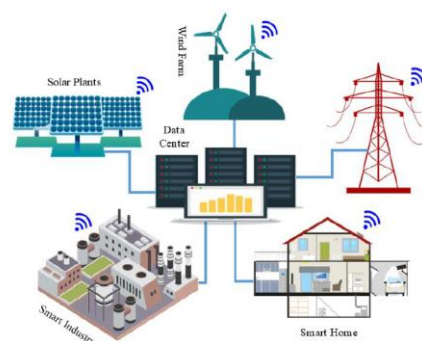


Dr. Firas Basim Ismail, Associate Professor and Head of the Smart Power Generation Research Center, Universiti Tenaga Nasional (UNITEN), Malaysia. Adjunct Professor, Sohar University, Oman. (Concurrent post)

Education: Dr. Firas Basim Ismail holds a Ph.D. in Mechanical Engineering from Universiti Teknologi PETRONAS, Malaysia (2010), an M.Sc. in Mechanical Engineering from the University of Technology, Iraq (2003), and a B.Sc. in Mechanical Engineering from the University of Technology, Iraq (1999). He completed his secondary education at Baghdad College High School – American School, Baghdad, Iraq (1995).

Employment: Dr. Firas joined Universiti Tenaga Nasional in 2013, where he has been actively engaged in research and development in thermo-fluid dynamics, power plant performance optimization, and renewable-smart power generation technologies. He has successfully led over 25 research projects, authored more than 150 journal and conference papers, and received 61 international awards. Dr. Firas is a Chartered Engineer with IMechE, UK, and has been invited as a plenary speaker at several international conferences.

Abstract: This Speech explores the transformative role of renewable energy innovations in addressing global challenges such as climate change and energy security. By 2035, significant milestones are expected to be achieved through targeted policies and technological advancements. Key innovations in solar technology, wind energy, bioenergy, and energy storage are discussed, along with the role of digitalization and AI in optimizing renewable energy systems. The paper also highlights global and regional efforts, including



Malaysia's National Energy Transition Roadmap (NETR), and addresses challenges such as intermittency, high costs, and material safety. The conclusion emphasizes the importance of strategic investments and collaboration to ensure a sustainable energy future.