

# COMBUSTION WEBINAR

**Fundamental combustion research of low-carbon fuels (LCFs): Understanding, predicting and regulating combustion chemistry**

**Speaker:** Yuyang Li, Shanghai Jiao Tong University

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COMBUSTION  
WEBINAR



**Abstract:** This lecture reports our recent progresses in fundamental combustion research of low-carbon fuels (LCFs) such as ammonia, syngas, biofuels and renewable synthetic fuels, with special interest in power machinery applications. Advances in experimental and diagnostic methods facilitated the understanding of reaction kinetics and combustion characteristics of representative LCFs, especially toward engine-relevant conditions. Kinetic models were developed with updated rate constants and validated against a vast amount of experimental data from our work and in literature, resulting in highly-predictive and widely-applicable models for these fuels. Control strategies were also explored to regulate the reactivity of fuels and pollutant formation, especially the combustion enhancement of low-reactivity LCFs such as ammonia and biogas.

**Biography:** Prof. Yuyang Li obtained his PhD degree from University of Science and Technology of China (USTC) and is now a professor and a vice dean at School of Mechanical Engineering, Shanghai Jiao Tong University (SJTU). His research interests include combustion chemistry, flame dynamics, spray and droplet combustion, and industrial combustion, especially for low-carbon fuels. He has published more than 150 peer-reviewed journal articles with an H-index of 35, including 85 on Combustion and Flame and Proceedings of the Combustion Institute. He has been awarded the Research Excellence Award of the Combustion Institute, the China Youth Science and Technology Award, the State Natural Science Award of China (2nd Grade) and so on. He serves as a Colloquium Co-Chair of 38th and 39th International Symposium on Combustion, a Board Member of Combustion Section of Chinese Society of Engineering Thermophysics, a Program Co-Chair of China National Symposium on Combustion, an Executive Co-Chair of 1st Sino-Russia Workshop on Low-Carbon/Low-Emission Combustion for Gas Turbine Applications, a Scientific Committee Member of 1st Symposium on Ammonia Energy, and an Editorial Board Member of Applied Sciences.

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