PURDUE FLUIDS SEMINAR SERIES

ADVANCES IN NUMERICAL SIMULATIONS AND EXPERIMENTAL MEASUREMENTS ON COMBUSTION

MONDAY NOVEMBER 30, 2026
SEMINAR 1:30PM-2:30PM ARMS B071
DISCUSSION 2:30PM-2:45PM ARMS B071



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Abstract

This presentation introduces ongoing numerical and experimental studies of combustion at Kyoto University. The main topics are (1) Experiment and numerical simulation of combustion for hypergolic propellant (J. Hayashi and Y. Daimon, CPE Lab and University of Tsukuba), (2) LES of thermoacoustic instability in an aero-engine model combustor (Y. Cho and R. Kurose, TSE Lab), and (3) DNS of detonation-turbulence interaction (S. Suzuki and R. Kurose, TSE Lab). This presentation will also introduce the MHI Innovative Combustion Dynamics Laboratory (MHI-ICD Lab), which is a joint industry-academia research laboratory established at Kyoto University in April 2026 and led by R. Kurose, J. Hayashi, N. Horibe, T. Saito, and Y. Murakami.

Biography

Ryoichi Kurose has been a Professor in the Departments of Mechanical Engineering and Science at Kyoto University since 2017. He serves as Editor-in-Chief of Advanced Powder Technology (APT) and as an Editorial Board Member of Applications in Energy and Combustion Science (AECS). He is a Fellow of The Combustion Institute. His research interests include turbulence, momentum, mass, and heat transport phenomena, and chemical reactions in industrial and environmental flows. In particular, his research focuses on reacting and combusting flows in a wide range of engineering applications, including energy conversion systems and engines, which includes gas-, liquid-, and solid-fueled combustion and gasification.

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