

KEYNOTE SPEAKER 2:

ASSOC. PROFESSOR DR. WEERACHAI CHAIWORAPUEK,
FACULTY OF MECHANICAL ENGINEERING TECHNOLOGY
KASETSART UNIVERSITY THAILAND

Title:

Heat Transfer Enhancement Using Ultrasonic Waves

Abstract:



Ultrasonic waves have emerged as a powerful tool for enhancing heat transfer performance across various thermal systems, offering novel methods to optimize efficiency and reduce operational costs. This session explores the latest advancements in using low-frequency ultrasound to improve heat transfer in both laminar and turbulent flows, including the impact of ultrasound on magnetic fluid flow through porous media, heat exchangers, and heating cylinders. By reviewing recent experimental and numerical studies, including the effects of ultrasonic waves on heat transfer, frictional resistance, and flow behaviors, we will illustrate how these techniques can be applied to achieve significant performance enhancements. Insights from case studies and experimental data

will be presented to demonstrate the potential of ultrasonic waves to revolutionize heat transfer technologies and offer new solutions for complex thermal management challenges.