Department of
Mechanical Engineering
The University of Hong Kong

DEPARTMENT OF
MECHANICAL ENGINEERING
THE UNIVERSITY OF HONG KONG

SEMINAR

Optical gas sensing with photoacoustic spectroscopy

Date: 1 August, 2025 (Friday)
Time: 2:00p.m. - 3:00 p.m.
Venue: HW7-35, Haking Wong Building
HKU

Speaker: Professor Wei Ren
Mechanical and Automation Engineering
The Chinese University of Hong Kong

Abstract:
Photoacoustic spectroscopy (PAS) is a highly sensitive optical sensing technique used to detect acoustic vibrations generated in a gas sample when it absorbs modulated laser radiation. A microphone is often employed in PAS to capture the sound waves produced by laser absorption within an acoustic resonant cell. In addition to its compact design, PAS benefits from higher laser emission power, as the acoustic intensity is directly proportional to the incident laser power. In this talk, I will discuss recent advancements in the development of ultra-sensitive photoacoustic gas sensors and their various applications.

Biography:
Ren Wei is currently a Professor in the Department of Mechanical and Automation Engineering at The Chinese University of Hong Kong. He earned his B.S. degree from Tsinghua University in 2006 and his Ph.D. in Mechanical Engineering from Stanford University in 2013. His research focuses on optical sensing, laser spectroscopy, and combustion diagnostics, resulting in over 140 peer-reviewed journal publications. Professor Ren is the co-editor of Applied Physics B, a senior editor for PhotoniX, and a senior member of Optica. Additionally, he is the co-founder of LaSense Technology Limited, a national high-tech enterprise that received the 2023 Deloitte Hong Kong Rising Star award.

ALL INTERESTED ARE WELCOME

For further information, please contact Prof. N.X. Fang at 3917 2639.