



Department of
Mechanical Engineering
The University of Hong Kong



SEMINAR

Title: Central Fabrication Laboratory- Technical sharing session – Scanning Electron Microscope

Date: 9th Oct 2025 (Thursday)

Time: 13:30 - 14:30

Venue: Room 7-34/35, Haking Wong Building, HKU

Speaker: Dr. Liu QinWen

Hitachi High-Tech Scientific Solutions Co., Limited.

Language: Mandarin

Limited seats available on a first-come first-served basis

Abstract:

The Central Fabrication Laboratory (CFL) is a cutting-edge cleanroom facility located at the University of Hong Kong. Its primary mission is to provide advanced fabrication facilities and expertise to enhance teaching and research activities in micro/nano fabrication. As a leading research laboratory, CFL offers open access not only to University of Hong Kong members but also to local and international institutions, researchers, and companies, with collaborations from the private sector always encouraged. The technical sharing sessions offered by CFL are designed to keep participants updated on the latest micro/nano fabrication techniques and provide valuable networking opportunities with experts from around the world.

In today's rapidly evolving technological landscape, the development of advanced micro- and nano-fabrication techniques for creating thin films and complex microstructures has become increasingly common. As a result, there is a growing demand for precise and reliable characterization methods to analyze these sophisticated materials. This seminar will focus on the capabilities and applications of Scanning Electron Microscopy (SEM) systems, highlighting their essential role in modern research and development. Additionally, the session will feature a selection of notable application case studies, briefly showcasing how SEM is utilized across various scientific and industrial fields. Attendees will gain valuable insights into the latest techniques and practical examples that demonstrate the vital importance of SEM in advancing micro- and nano-scale research.

SEM is a powerful and versatile imaging technique widely used in material science, electronics, and nanotechnology. Equipped with advanced features such as high-resolution imaging, elemental analysis via energy-dispersive X-ray spectroscopy (EDS), and various detector options, SEM allows researchers to observe surface morphology, microstructures, and topographical details with exceptional clarity. Its ability to provide detailed three-dimensional-like images at the micro and nanoscale makes it an essential tool for analyzing nanomaterials, metallic materials, and complex composite structures. SEM is essential for applications ranging from quality control and failure analysis to research and development of new materials, including those used in lithium-ion batteries and electronic devices. With its precise imaging capabilities and integration with other analytical techniques, SEM offers comprehensive insights that drive innovation and support the advancement of cutting-edge materials and technologies.

Biography:

Dr. Liu QinWen graduated from the Key Laboratory of Materials Science at Guilin University of Technology, Ministry of Education. He has been engaged in sample preparation, scanning electron microscopy, atomic force microscopy, and other related work for 13 years. He has in-depth research experience in microscopic analysis of ceramic and semiconductor samples.

ALL INTERESTED ARE WELCOME

For further information, please contact Mr. YIP P.S. (3910 2637, psanyip@hku.hk) or Prof. Chan P.K.L. (3917 2634, pklc@hku.hk).