

MINI WORKSHOP 5 :

Precision Diagnostics with Infrared Spectroscopy and Imaging

結合紅外光譜與成像技術的精準診斷

This Mini-workshop highlights advanced applications of infrared spectroscopy and imaging for precision diagnostics.

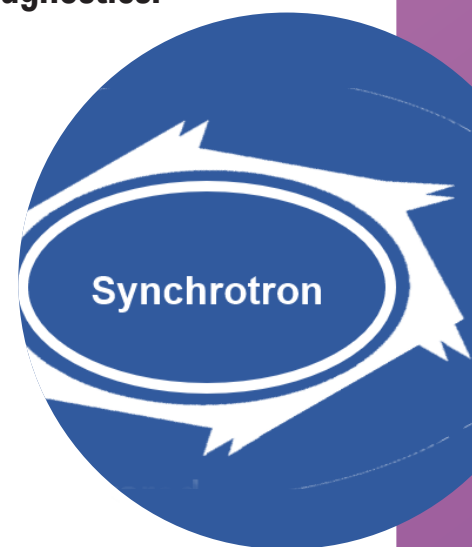
Topics include:

- Fourier-transform infrared (FTIR) spectroscopy and imaging
- Attenuated total reflectance (ATR)-FTIR
- Wax physisorption kinetics integrated with AI models

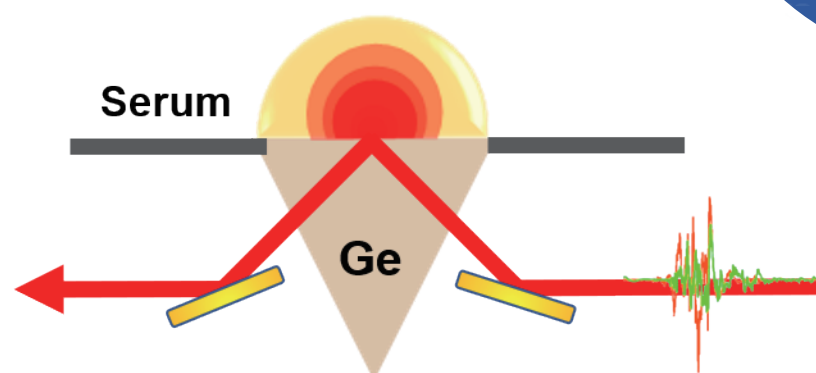
We showcase diagnostic applications in skin diseases, oral cancer screening, cardiovascular conditions linked to dyslipidemia, and lupus nephritis assessment.

Infrared techniques offer **label-free, non-destructive molecular profiling** of serum and tissue.

Join us to explore how IR spectroscopy and machine learning are transforming biomedical diagnostics.



Date: September 3
Time: 15:20 ~ 17:40
Place: E295



Session Chair: Dar-Bin Shieh (謝達斌)

15:20 | **Application of Fourier-transform Infrared Spectroscopy and Imaging in Elucidating the Mechanisms of Hair Loss in Mice**
15:50 | Hsin-Su Yu (余幸司), Kaohsiung Medical Univ. (高雄醫學大學)

15:50 | **Innovative Blood-Based Kidney Diagnostics: The Role of ATR-FTIR Spectroscopy in Precision Medicine**
16:10 | Mei-Ching Yu (余美靜), Linkou Chang Gung Hospital of The C.G.M.F. (林口長庚紀念醫院)

16:10 | **Saliva-Based Wax Physisorption FTIR Imaging for Early Detection of Oral Cancer**
16:30 | Wei-Ting Li (李偉廷), Liouying Chimei Hospital (柳營奇美醫院)

16:30 | **Break**
16:40

Session Chair: Yao-Chang Lee (李耀昌)

16:40 | **Application of Attenuated Total Reflection-Fourier Transform Infrared Spectroscopy in Semi-quantification of Blood Lipids and Characterization of the Metabolic Syndrome**
17:10 | Hsiang-Chun Lee (李香君), Kaohsiung Medical Univ. (高雄醫學大學)

17:10 | **WPK-FTIR Imaging and Machine Learning for Label-Free Detection of Glomerular Glycan Remodeling**
17:30 | Pei-Yu Huang (黃佩瑜), NSRRC (國家同步輻射研究中心)

17:30 | **Discussion**
17:40

All presentations by speakers will primarily be delivered in Chinese, with English used as a supplement.



第三十一屆用戶年會暨研討會
USERS' MEETING & WORKSHOPS



國家同步輻射研究中心
National Synchrotron Radiation Research Center