CCEM SUMMER SCHOOL

Advanced STEM , EELS & Appliations

DATE June23-27, 2025

LOCATION McMaster University

This 5-day intensive course is designed for experienced electron microscopy users to deepen their expertise in aberration-corrected electron microscopy, advanced detectors, and data acquisition techniques. Participants will receive expert-led training on electron optics, microscope alignment, EELS spectrometry, and hands-on operation of CCEM's TFS Spectra Ultra, Nion HERMES, and TFS Talos F200X. The course also includes lectures, demonstrations, and hands-on data processing sessions, providing practical skills for solving complex characterization challenges.

TOPICS

- Aberration-corrected TEM, STEM
- AI in microscopy
- Alignment of microscopes with correctors
- Cryo microscopy for materials science
- EELS data processing
- Electron tomography reconstruction methods
- Energy loss near-edge structures
- Inelastic scattering and ultimate resolution
- In situ gas and liquid cell
- Monochromated EELS, EELS mapping
- Operation of monochromators
- Optimization of spectroscopy data acquisition
- STEM quantitative image analysis
- 4D STEM

CONFIRMED INSTRUCTORS

N. Bassim (McMaster U); B. Goodge (MPI CPfS); P. Hartel (CEOS); A. Hitchcock (McMaster U); M. Lagos (McMaster U); J. Lebeau (MIT); C. Ophus (Stanford U); Q. Ramasse (SuperSTEM); Z. Saghi (CEA); L. Spillane (Gatan); D. Stroppa (Dectris); J. Taillon (NIST); R. Twesten (Gatan); S. Woo (ORNL)

COST

All meals and course notes are included in the registration fee ranging from $1700.CDN/full-time students to $3000.CDN/researchers. Accommodation will be separate and the responsibility of attendees

Register online by March 4, 2025 at ccem.mcmaster.ca/events/summer-school-2025/