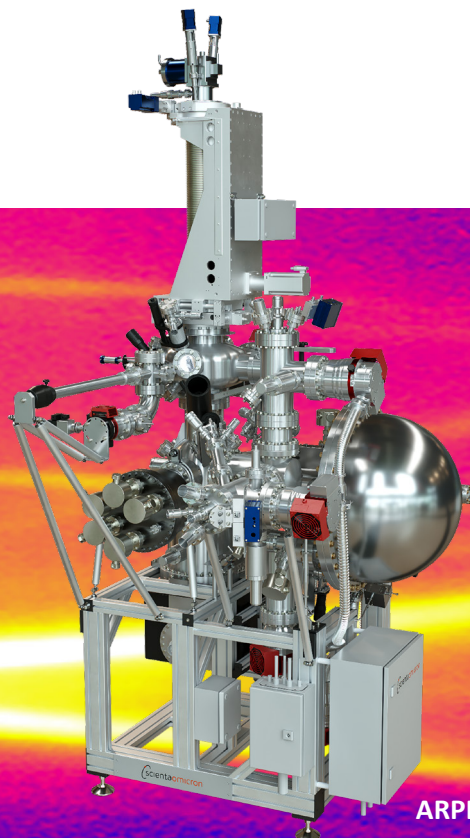
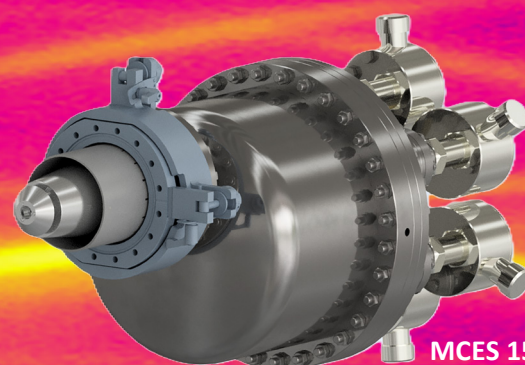




ARPES Lab



MCES 150

From electrons to collective excitations: The ARPES-HREELS synergy

High Resolution Electron Energy Loss Spectroscopy (HREELS) is a method for investigating the collective excitations of quantum materials.

The Scienta Omicron ARPES Lab now features a high-intensity, narrow-bandwidth electron source for HREELS measurements, seamlessly integrated into a single, cutting-edge system.

Combined with VUV and X-ray excitation sources and the groundbreaking DFS30 analyzer, featuring electrostatic 3D focus adjustment, the lab

empowers researchers to explore a wide range of quantum properties on a single sample, including:

- Electronic band structure
- Chemical composition
- Vibrational modes
- Dispersion of collective excitations (phonons, plasmons, excitons, magnons)

This unified setup makes the investigation of quantum materials more accessible and feasible than ever before!

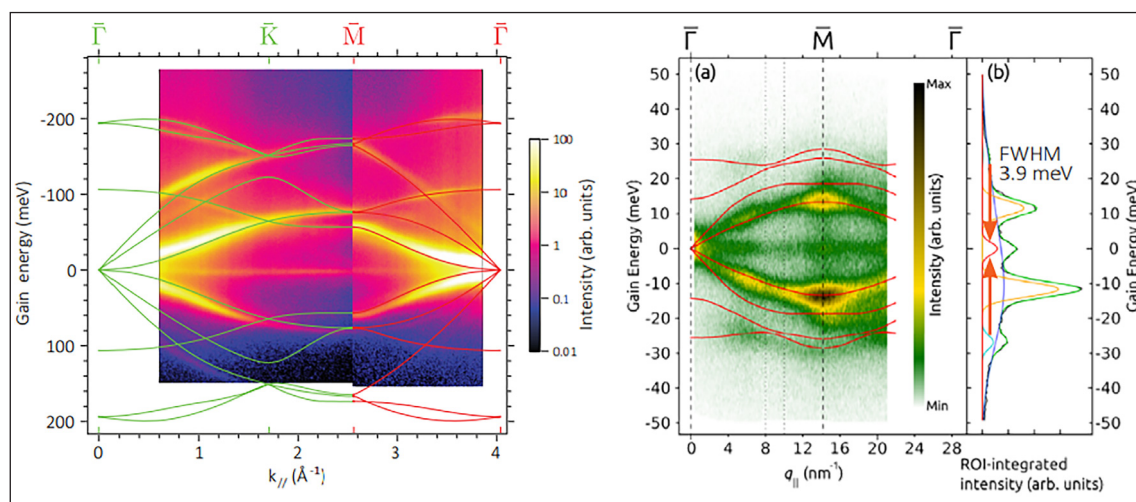


Figure 1, Left: Phonon dispersion of single crystal graphite, measured along the Γ -M direction. Single spectrum, primary energy 110 eV.

Data courtesy: Dr. F. C. Bocquet and Prof. F. S. Tautz, PGI-3 @ FZJülich, Dr. S. Tanaka, Osaka Univ.

Right: Dispersion of Cu(111) surface phonons, acquired in merely 7 minutes (private communication). The experimental resolution after multi-phonon background subtraction is 3.9 meV.

Data: Ibach et al, Review of Scientific Instruments, 88(2017)033903.

Explore now at www.scientaomicron.com/Arpes-Lab