



Cryogen-free low temperature SPM for quantum research

Image courtesy: Prof. Stephan RAUSCHENBACH , University of Oxford

Lunch Seminar NC-AFM 2025

August 5 | 12:00-13:40 | Oak Canal Park Hotel | 2nd floor “Sakura”

From Scienta Omicron: Juergen Koeble, Yuuki Fukushima and Bernd Guenther

Today's and future quantum research has strong requirements by means of low temperatures, magnetic field, ultra-high vacuum and low mechanical and electrical noise. With modern alternative cooling technologies, it is possible to avoid the nowadays high-priced use of liquid helium. We present a new modular cryogen-free low temperature scanning probe microscope for STM and AFM in ultra-high vacuum which is most suitable for modern quantum research. It fits into most lab environments due to its small size and its remarkably silent acoustic noise properties. The ARCTIC SPM combines long-term stable low temperature operation with a dry superconducting magnet. The highly compact scanning probe microscope head offers easy optical access and can be combined with optical elements (lenses and parabolic mirrors) for advanced optical experiments even in the presence of a high magnetic field.

Register at



ARCTIC SPM lab

- High Performance – Cryogen-free cooling with high resolution STM/STS and best QPlus™ AFM sensitivity
- Well-confined & homogeneous Magnetic Field
- Small footprint with noise-canceling for ultra-quiet operation
- Modular & Upgradeable – Easy integration of RF, optics and more...

