

## Available Instruments

We presently use three instruments to perform quantitative Magnetic Force Microscopy and Kelvin Probe measurements, a UHV variable temperature, high-magnetic field instrument ( $5\text{ K} < T < 150\text{ K}$ ,  $-7\text{ T} < B < 7\text{ T}$  along z-axis) [1], and two instruments working under moderate vacuum conditions (one of which allows the application of magnetic fields up to 350 mT in the z-direction).

The UHV variable temperature, high-magnetic field instrument was designed by (H.J. Hug and his team at the Department of Physics of the University of Basel) 25 years ago is successfully operated for more than 2 decades. The replacement of the scanning force microscope with a high-stability UHV low temperature scanning force microscope developed at Empa by S. Vranjkovic and H.J. Hug, is currently under work. The room temperature instruments are instruments from Nanoscan AG strongly modified to obtain improved performance but are based on the design of a high-resolution MFM prototype developed by Hug and the Basel team for an US data storage company (where the instrument is still used for R&D activities).

## References:

- [1] H. J., Stiefel, B., van Schendel, P., Moser, A., Martin, S., & Güntherodt, H. J. (1999). *A low temperature ultrahigh vacuum scanning force microscope*. Review of Scientific Instruments, 70, 3625.