

SENIS - Customer Reference:

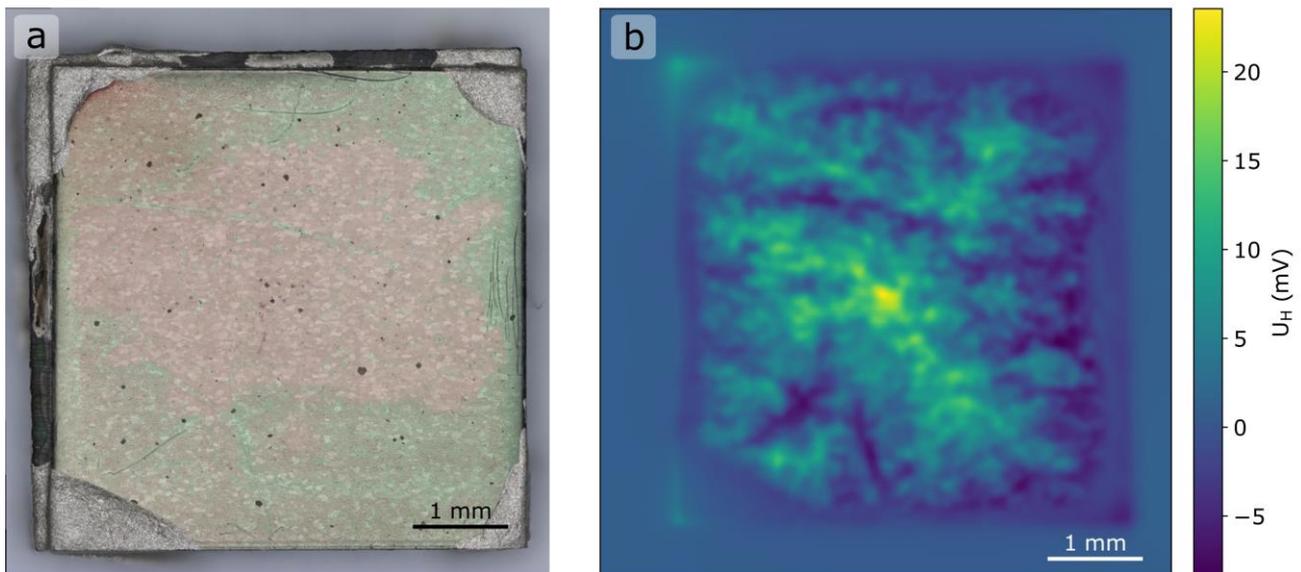
TU Wien, Atominstitut, Low Temperature Physics and Superconductivity



At the low temperature physics and superconductivity group we investigate superconductors for their fundamental physics as well as their potential for applications. We specialize in high-resolution Scanning Hall Probe Microscopy at cryogenic temperatures.

TU Wien, Vienna, Austria

High Temperature Superconductors (HTS) are capable of carrying large currents nearly loss-free over wide distances. They can generate high magnetic fields and their potential use for power transmission cables, particle accelerators and fusion reactors is the subject of research all over the world. However, the current flow in HTS is severely impeded by large angle grain boundaries. With Scanning Hall Probe Microscopy, we map the remnant magnetic field of superconductors and calculate the current flow in grains and across grain boundaries. The Hall probes provided by SENIS are suitable for our high-resolution scanner at 77 K and show a very good magnetic field resolution. Thanks to the small active area of the Hall sensor we can resolve the granular nature of superconducting thin films.



a. Digital light microscope image of a thin film HTS with 250 nm thickness. **b.** Hall scan at 77 K with 50 μm spatial resolution. The granular nature of the superconducting layer can be clearly resolved.

About SENIS AG

SENIS AG, Switzerland develops, manufactures and supplies advanced sensors and instruments for magnetic field and electric current measurement as well as the corresponding development and engineering services. Our solutions and services help our clients in the automotive, consumer electronics, test and measurement industries, as well as research institutes to create powerful, robust and effective products and to carry out cutting-edge research and development.

SENIS® Cryogenic Hall probe C1C-0YC02L and the corresponding signal processing electronics is applied at TU-Wien, Austria for microscopic high-resolution scanning at cryogenic temperatures.