We are excited that Dr. Peter Rickhaus from Qnami will present at Magnetism 2025

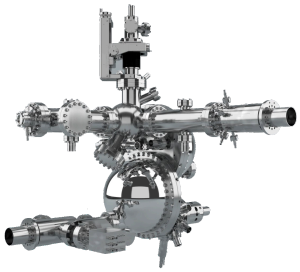
This event has ended

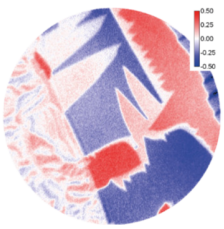
See the session details here

Highly Parallelized Spin Detection

The Imaging Spin Filter from FOCUS GmbH

- 2D Spin Filter. HAXPEEM up to
- 10 keV.
- UV-PEEM. Imaging XPS:
- <150nm. Momentum Microscopy.





The spin filtered PEEM image of a polycrystalline iron sample shows a strong spin contrast for different magnetic domains.

Discover more

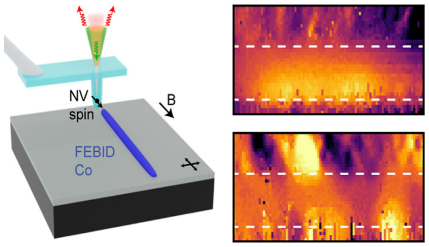
FEBID Nanomagnets for Spin Qubit Control

Understand what Annoys your Qubits

A popular realization of silicon spin qubits uses nanomagnets to provide a magnetic field gradient. Nevertheless, this poses a significant fabrication challenge, as the gradient needs to be as homogenous and reproducible as possible. A team led by Prof. Martino Poggio (Poggio Lab, University of Basel) reported on a unique combination of fabrication and characterization techniques to address this challenge. They fabricated Cobalt nanomagnets by focused electron beam deposition (FEBID). Their findings reveal that FEBID nanomagnets possess unique properties that, in combination with the ability of FEBID to produce 3D magnetic geometries, enable unprecedented optimization possibilities to fabricate nanomagnets for spin qubit control. Crucial feedback for this work was the ability to accurately characterize the nanomagnets.

By using the **Qnami ProteusQ**, the lead author Liza Zaper (PhD Student in Poggio Lab and Application Scientist at Qnami), was able to investigate their magnetic properties under large in-plane bias fields of up to 200 mT. With the Qnami Quantum Microscope, Liza could not only measure large magnetic field gradients but also reveal small distortions of this gradient.

View article. Top image from ACS Appl. Nano Mater. 2024, 7, 4, 3854-3860.



View ProteusQ and product range