

Symposium Potentials for NVs sensing magnetic phases, textures and excitations (SYNV)

jointly organised by
 the Low Temperature Physics Division (TT),
 the Magnetism Division (MA),
 the Metal and Material Physics (MM), and
 the Semiconductor Division (HL)

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The understanding of ordered magnetic phases is essential from fundamental and application perspectives. While ferromagnets are currently used in non-volatile, high-density data storage devices, topologically trivial and non-trivial magnetic phases are discussed for future low-energy information processing schemes. An overarching scientific quest towards achieving high performance devices, is to obtain a detailed understanding of the stabilization of magnetic phases, the interactions at play, the resulting magnetic textures, and their excitations. Color centers such as nitrogen vacancies (NV) in diamond represent a modern platform to access key magnetization parameters on the nanoscale and therefore represent an important method to provide a deeper insight into the mechanisms at play. This symposium brings together experts from different but overlapping fields of static and dynamic NV sensing, using tip-based single NV scanning methods as well as ensemble-based widefield imaging concepts. The speakers will provide an overview of the recent and exciting developments of this spectroscopy technique with a particular emphasis on material science questions.

Overview of Invited Talks and Sessions

(Lecture hall Audimax 2)

Invited Talks

SYNV 1.1	Mon	13:30–14:00	Audimax 2	Harnessing Nitrogen Vacancy Centers in Diamond for Next-Generation Quantum Science and Technology — ●CHUNHUI DU
SYNV 1.2	Mon	14:00–14:30	Audimax 2	Nanoscale imaging of spin textures with single spins in diamond — ●PATRICK MALETINSKY
SYNV 1.3	Mon	14:30–15:00	Audimax 2	Spin-based microscopy of 2D magnetic systems — ●JÖRG WRACHTRUP
SYNV 1.4	Mon	15:15–15:45	Audimax 2	Exploring antiferromagnetic order at the nanoscale with a single spin microscope — ●VINCENT JACQUES
SYNV 1.5	Mon	15:45–16:15	Audimax 2	Nanoscale magnetic resonance spectroscopy with NV-diamond quantum sensors — ●DOMINIK BUCHER

Sessions

SYNV 1.1–1.5	Mon	13:30–16:15	Audimax 2	Potentials for NVs sensing magnetic phases, textures and excitations
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