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## **[232] Modulated magnetic-field susceptibility measurements for in-situ studies of organic/ferromagnetic interfaces**

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In this work we present the implementation of a sinusoidal modulation of the magnetic field to a Reflectance Difference Magneto-Optical Kerr Effect (RDMOKE) setup with increased sensitivity that allows detecting variations of the Kerr rotation angle below  $1 \mu\text{rad/mT}$  at applied fields of a few mT. We illustrate the capabilities of the setup for Ni thin films grown on Cu(110)-(2x1)O surfaces that exhibit a sharp spin reorientation transition (SRT) of the magnetic easy axis from in-plane to out-of-plane at a coverage of 9 ML. Additional frequency analysis of the magneto-optic response to the magnetic field reveals new details of the Ni-SRT and demonstrates the potential of the setup for studying ultrathin organic/ferromagnetic interfaces.

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