

## **Near-field Microwave Microscopy for Local Characterization of Magnetic Materials**

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Microwave Near-Field measurements gained attention during the last decade for characterizing micro- and nano-structured samples with several possible implications for Materials Science and even for Biology. The measurement technique is based on the utilization of a probe for scanning a surface in contact or non-contact mode, depending on the setup, on the required response and on the sensitivity. Two main aspects favored the development of Near-Field analysis for local measurements at micro- and nano-size level: (i) the penetration of microwaves, thus allowing the possibility for surface and sub-surface characterization, and (ii) the high lateral resolution, dominated by the probe size and not by the wavelength. The talk will deliver an updated state of the art for the characterization of magnetic materials in terms of local probing of ferromagnetic resonant conditions for micro-sized Py resonators.