

Magnetic AFM: sampling magnetic domains with incredibly high resolution

Daniele Passeri^a

^a Department of Basic and Applied Sciences for Engineering, Sapienza University of Rome, Italy

Magnetic force microscopy (MFM) is an atomic force microscopy (AFM) based technique which enables the acquisition of images reflecting the distribution of magnetic domains of the sample at the nanometer scale simultaneously to the topography. MFM has a broad range of applications, e.g., from magnetic recording media to magnetic nanomaterials, nanocomposites, and biological materials [1,2]. Extraction of quantitative information from the acquired MFM images, however, is not straightforward and requires the use of suitable experimental approaches and accurate analytical methods.

The purpose of this work is to give an overview of some applications of MFM, to highlight some experimental issues which are fundamental in the quantitative analysis of MFM data, with particular emphasis on electrostatic artifacts, and to discuss some possible approaches and solutions.

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- [1] D. Passeri et al., *Biomatter* **4** (2014), e29507.
 - [2] D. Passeri et al., *Magnetic force microscopy*, in *Magnetic characterization techniques for nanomaterials*, C.S.S.R. Kumar (Ed.), Springer-Verlag Berlin Heidelberg (2017), Chapter 7, pp 209-259.