Domain Imaging as a Probe of the Interaction in Layered Magnetic Structures

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Abstract

Magnetic domains, comprise the versatile magnetic interactions in competition, are fingerprints of the many fascinating and complicated magnetic properties. The evolution of the magnetic domains has been realized as the crucial evidence of how these interactions play the roles in the material. Therefore the characterization of the domain structures is of key importance for unveiling their magnetic origin. In this talk, our recent approaches to the imaging of the magnetic domain evolutions will be addressed. They include resolving the in-plane magnetic anisotropies of the coupled bilayer and induced chiral structures at the critical thickness of the spin reorientation transition. In addition, the newly planned project on the in-situ domain imaging, with external magnetic as well as electric fields, is introduced. The challenges and opportunities using this technique are also discussed.