

Abstract Submitted
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Spiral Spin Texture at Domain-Wall driven by Dzyaloshinskii-Moriya Interaction MINJUN LEE, Department of Physics and Astronomy, Seoul National University, JEONGHOON KWON, SUNGMIN KIM, SEONG JOON LIM, YOUNG KUK, Seoul National University — Controlling an electron spin and its measurement play a crucial role in spintronics. Especially in nano-scale devices local probing capability is important. From this point of view, spin-polarized scanning tunneling microscopy is a suitable local probing method for revealing surface spin texture. Here, we report the observation of spiral spin texture at a domain-wall. Spiral spin texture is driven by Dzyaloshinskii-Moriya (DM) interaction, which is realized by spin-orbit coupling of electrons in an inversion-asymmetric crystal field. We chose Co/Pt(111) system to study the DM interaction. Because Pt is a substrate with strong spin-orbit coupling, and Co is a ferromagnetic material with out-of-plane spin direction. We grew Co islands on Pt(111) single crystal, and found the spiral spin texture at the magnetic domain wall using a spin-polarized scanning tunneling microscope.

Minjun Lee
Department of Physics and Astronomy, Seoul National University

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