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**Vortex Pinning Enhancement in Patterned MoGe Thin Films Coated with Permalloy** MICHAEL LATIMER, ZHILI XIAO, Northern Illinois University, Argonne National Laboratory, RALU DIVAN, IL WOONG JUNG, WAI-KWONG KWOK, Argonne National Laboratory — Resistivity measurements on permalloy (Py) coated MoGe thin films containing periodic hole arrays were carried out to study the effects of magnetic material filling the hole array. Thin films of MoGe were patterned via focused-ion-beam (FIB) milling to create pinning sites for the vortex lattice. A Py layer was deposited onto the hole array using magnetron sputtering. We investigate periodic hole arrays coated with magnetic material to determine the change in transport properties with varying magnetic fields. Samples with and without a Py coating were tested to determine the effect of magnetic material filling the hole array on the vortex lattice. Significant pinning enhancement was found in the Py coated samples.

Michael Latimer  
Northern Illinois University, Argonne National Laboratory

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