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Progress of Magnetic Force Microscope for detecting spin-polarized electrons in non-magnetic materials V.P. BHALLAMUDI, The Ohio State University, Y. JUNG, The Ohio State University, D.V. PELEKHOV, The Ohio State University, YU OBUKHOV, The Ohio State University, P.C. HAMMEL, The Ohio State University, T. MEWES, University of Alabama — While optical methods for detection of spin-polarized currents and spin accumulation in non-magnetic materials have proved quite successful, their applicability is limited to certain class of materials. Magnetic force microscopy (MFM) offers a more widely applicable alternative. We report here on the progress towards building such a high sensitivity low temperature-MFM spin detector. It employs optical interferometry for displacement detection. Issues related to techniques for detection and various challenges are discussed. Sample images demonstrating the high force sensitivity of the microscope are also presented.

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