

Abstract Submitted
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Exploring magnon-induced spin transfer torques with ultrafast MOKE¹ J. PAUL, P. DEY, W. WENDT, P. JAYATHILAKA, H. BELLIVEAU, C. MILLER, D. KARAIKAJ, University of South Florida — We report our efforts to use pump-probe time-resolved magneto-optical Kerr effect (MOKE) to investigate magnon-induced spin torque. A femtosecond laser pulse is used to create magnons that transfer their momentum to the free layer; a probe pulse subsequently probes the spin torque transfer through the device. The samples had the structure Ta (5nm)/ Ni₈₀Fe₂₀ (10nm)/ Cu (5nm)/ Ni₈₀Fe₂₀ (10nm)/ IrMn (15nm)/ Ta (5nm), and were grown on Si (100) substrates via magnetron sputtering. Using e-beam lithography, nanopillars with dimensions 200 nm by 140 nm were created in an array, which was probed by ultrafast MOKE.

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