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Fabrication of magnetic trilayer stripes using interference lithography MENG ZHU, NIST, Gaithersburg, MD, 20899 / University of Maryland, College Park, MD, 20742, JAMES MACARTHUR, Swarthmore College, Swarthmore, PA, 19081, ROBERT MCMICHAEL, NIST, Gaithersburg, MD, 20899-8412
— Both theoretical (PRB, 74, 024424, 2006) and experimental (APL, 90, 232504, 2007) studies of a single layer magnetic film edge have shown that the edge-mode of magnetization precession detected by ferromagnetic resonance (FMR) is an effective tool to probe magnetic properties of thin film edges. To extend the measurement technique to realistic devices such as spin-valves or tunnel junctions, magnetic multilayer stripes have to be fabricated. Here, we present the fabrication of Py/Cu/Co magnetic trilayer stripes by interference lithography. A resist stack consisting of positive photoresist 1805 and WIDE-B anti-reflective coating (ARC) is exposed by a blue laser at 405nm using Lloyd's mirror interferometer. Optimal soft-baking temperature of ARC results in an undercut during the development of the photoresist. This undercut facilitates the lift-off process after the evaporation of Py/Cu/Co trilayer. A uniform array of trilayer stripes with a period of ∼620nm was obtained.
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