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Pressure tuning of coercivity states in Ni-V2O3 magnetic heterostructures CHRISTIAN URBAN, IVAN K. SCHULLER, UC, San Diego, Physics Department — Control over coercivity of magnetic materials (e.g. Fe, Ni, Co) in bulk or thin films can be achieved by using compounds which undergo a structural phase transition[1,2]. The transition temperatures of these materials are sensitive to externally applied pressure. We show that this translates well to the coercivity change of the magnetic materials in close proximity which renders pressure an additional tuning parameter for the coercivity control. We recorded hysteresis loops as a function of temperature and pressure with a standard magnetometer and a pressure cell for magnetic measurements to study systematically the role of pressures up to 1.3 GPa in Ni/V2O3 thin films. Funding: The oxide research at UCSD is supported by an AFOSR grant FA9550-14-1-0202. The magnetism aspects at UCSD are funded Office of Basic Energy Science, U.S. Department of Energy, BES-DMS funded by the Department of Energy's Office of Basic Energy Science, DMR under grant DE FG02 87ER-45332. One of us (I.K.S.) acknowledges a US DoD Vannevar Bush Fellowship. REF.: 1. J. de la Venta, S. Wang, J. G. Ramirez and I. K. Schuller, Appl. Phys. Lett. 102, 122404 (2013). 2. C. Urban, A. Quesada, T. Saerbeck, M. A. Garcia, M. A. de la Rubia, I. Valmianski, J. F. Fernandez, and Ivan K. Schuller, Appl. Phys. Lett. 109, 112401 (2016)

Christian Urban
UC, San Diego, Physics Department

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