

Abstract Submitted
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Magnetic switching due to hydrogen absorption in Co/Pd multilayers¹ KINESHMA MUNBODH, FELIO PEREZ, Dept. of Physics, West Virginia University, SAMUEL DUCATMAN, Dept. of Physics, Grinnell College, DAVID LEDERMAN, Dept. of Physics, West Virginia University — Co/Pd multilayers with cobalt thicknesses ranging from 2.5 Å to 12 Å and palladium thicknesses ranging from 6.5 Å to 15 Å have been fabricated by d. c. sputtering on Al₂O₃ (110) in an argon atmosphere. The morphological and structural characterizations revealed smooth surfaces, layered structure and highly oriented growth in the [111] direction. The magnetic and electronic transport properties were measured in a hydrogen and helium atmosphere at room temperature using a vibrating sample magnetometer and a four-point technique with current-in-plane configuration, respectively. All samples exhibited significant changes on the magnetic and transport properties as a function of hydrogen absorption. These preliminary results show that these devices may be used effectively as corrosion resistant hydrogen sensors and hydrogen storage devices.

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