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Robust isothermal electric switching of interface magnetization: A route to voltage-controlled spin electronics XI HE, YI WANG, NING WU, University of Nebraska , SIQI SHI, Zhejiang Sci-Tech University, A. CARUSO, University of Missouri, E. VESCOVO, Brookhaven Nat. Lab., KIRILL D. BELASHCHENKO, PETER DOWBEN, CHRISTIAN BINEK, University of Nebraska
— Promising spintronic device concepts utilize the electric control of magnetic interfaces. We present compelling evidence of a roughness-insensitive and electrically controllable ferromagnetic state at the (0001) surface of antiferromagnetic chromia. If this ferromagnetic surface is placed in close proximity with a ferromagnetic Co/Pd multilayer film, exchange coupling across a Pd interlayer induces an electrically controllable unidirectional anisotropy in the Co/Pd film. This electrically controlled exchange bias effect allows for reversible isothermal shifting of the global hysteresis loop of the Co/Pd film along the magnetic field axis from negative to positive values.
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