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New Paradigms for Spintronics: Spin-Valve Effect in Single-Crystal Ruthenates[1] M. GE, S. CHIKARA, O.B. KORNETA, T.F. QI, G. CAO, Center for Advanced Materials, University of Kentucky — The spin valve effect is thought to be a delicate quantum phenomenon that depends upon precision deposition and nanoscale patterning of artificial thin-film heterostructures whose quality and performance are difficult to control. Here we demonstrate that a novel, strong spin valve effect exists in *bulk* single-crystal ruthenates having an anisotropic, layered crystal structure [1]. This discovery opens new avenues to understand the underlying physics of spin valves, and fully realize its potential in practical devices.

[1] G. Caoet al., *PRL***100**, 016604 (2008)

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