

Abstract Submitted  
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**Giant Spin-Orbit Bowing in GaAs<sub>1-x</sub>Bi<sub>x</sub>** A. MASCARENHAS, B. FLUEGEL, S. FRANCOEUR, National Renewable Energy Laboratory, S. TIXIER, E. C. YOUNG, T. TIEDJE, University of British Columbia, Department of Physics and Astronomy — We report a giant bowing of the spin-orbit splitting energy  $\Delta_0$  in the dilute GaAs<sub>1-x</sub>Bi<sub>x</sub> alloy for Bi concentrations ranging from 0 to 1.8 %. This is the first observation of a large relativistic correction to the host electronic band structure induced by just a few percent of isoelectronic doping in a semiconductor material. It opens up the possibility of tailoring the spin-orbit splitting in semiconductors for spintronic applications.

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