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Infrared Kerr measurements on ferromagnetic silicon and silicon carbide JUNGRYEOL SEO, ALOK MUKHERJEE, MUMTAZ MURAT ARIK, JOHN CERNE, Department of Physics, University at Buffalo, Buffalo, NY, USA, YU LIU, SHENGQIANG ZHOU, ROMAN BTTGER, Helmholtz-Zentrum Dresden-Rossendorf, Bautzner Landstrae 400, 01328 Dresden, Germany, BO SONG, Harbin Institute of Technology, Nangang, Harbin, Heilongjiang, China, GANG WANG, Institute of physics, Chinese Academy of Sciences, Haidian, Beijing, China — We measure the infrared (100-1000 meV) Kerr angle in ferromagnetic silicon and silicon carbide. The samples were either neutron irradiated or aluminum doped to induce ferromagnetic behavior. The samples are studied in the 10-300K temperature range at magnetic fields up to 7T. We also explore the dependence of the magneto-optical signal on samples with different irradiation exposure levels. This study provides new information on the optical, magnetic, and electronic properties of these materials. Work supported by NSF-DMR1410599 and the Helmholtz Postdoctoral Program PD-146.

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