

Abstract Submitted
for the MAR11 Meeting of
The American Physical Society

Effect of carbon doping on optical constants of half-metallic ferromagnet Mn_5Ge_3 N. STOJILOVIC, University of Wisconsin Oshkosh, RONGWEI HU, The Johns Hopkins University, C. PETROVIC, Brookhaven National Laboratory, S.V. DORDEVIC, The University of Akron — Mn_5Ge_3 is an intermetallic ferromagnetic compound with the high Curie temperature ($T_C = 296$ K), a high spin polarization ($P = 42\%$), and a good lattice match to germanium. Doping of Mn_5Ge_3 with carbon increases T_C above room temperature and makes these compounds promising candidates for spin injectors for potential spintronics applications. In this study we employ optical spectroscopy to measure near-normal reflectance in the frequency range from far-infrared to ultraviolet ($70 - 50000 \text{ cm}^{-1}$) at temperatures between 10 and 300 K. In particular, we study the effect of carbon doping on the optical constants to gain a better insight into how it affects the electronic properties of the parent compound.

N. Stojilovic
University of Wisconsin Oshkosh

Date submitted: 17 Nov 2010

Electronic form version 1.4