

CRYSTALLOGRAPHIC AND MAGNETIC PROPERTIES OF $\text{Fe}_{0.5}\text{Cu}_{0.5}\text{Cr}_2\text{Se}_x\text{S}_{4-x}$

Kyung Seon Back, Hyung Choi, Hyun Youn and Hang Nam Ok

Department of Physics, Yonsei University, Seoul 120-749, Korea

and

Chul Sung Kim

Department of Physics, Kookmin University, Seoul 136-702, Korea

(Received 24 August 1992 by A. Okiji)

$\text{Fe}_{0.5}\text{Cu}_{0.5}\text{Cr}_2\text{Se}_x\text{S}_{4-x}$ ($0 < x \leq 2$) has been studied by Mössbauer spectroscopy and X-ray diffraction. The crystal structure is found to be a cubic spinel and lattice constant a_0 increases linearly with increasing selenium concentration. The iron ions are ferric and occupy the tetrahedral sites. As interatomic distance increases by 1%, Néel temperature and magnetic hyperfine field decrease by 6 and 4%, respectively.