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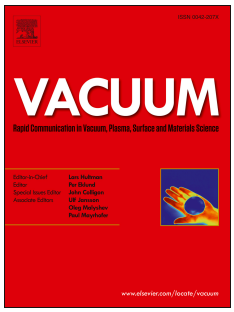

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Structural, morphological and optical properties of $BiFe_{0.99}Cr_{0.01}O_3$ thin films

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Abstract

In this paper, the linear optical response of Cr doped $BiFeO_3$ (BFCO) using first principles calculations based on the density functional theory (DFT) is reported. The electronic and magnetic properties of BFCO are studied. Cr doping is found to result in an increase in magnetization in BFO. To corroborate the theoretical understanding in BFCO, Cr doped BFO thin film is also deposited via a multistep spin coating technique. The structural and optical characterization of the thin film are performed and the obtained results are compared with the theory.

Keywords: Cr doped BFO, linear optical response, DFT, thin films, structural and morphological properties