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Author

Ki-chul Kim. Seung Beom Kang. Min Hwan Kwak. Kwang-yong Kang. Young-sung Kim.

Author/Editor Affiliation

Ki-chul Kim. : Department of Material Design Engineering, Mokwon University, 21 Mokwon-gil, Seo-gu, Daejeon 302-729, South Korea

Seung Beom Kang. Min Hwan Kwak. Kwang-yong Kang. : IT Convergence & Component Laboratory, Electronics and Telecommunications Research Institute, 138 Gajeongro, Yuseong-gu, Daejeon 305-350, South Korea

Young-sung Kim. : Graduate School of NID Fusion Technology, Seoul National University of Technology, 138 Gongreung-gil, Nowon-gu, Seoul 139-743, South Korea

Title

Dielectric Characteristics of co Doped ZnO Thin Films at Terahertz Frequencies

Source

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Abstract

We report the complex dielectric characteristics of the Co doped ZnO thin films by terahertz time-domain spectroscopy. The Co doped ZnO thin films are prepared by sol-gel spin coating process on glass substrate. The crystal structure and morphology of the Zn_{1-x}Co_xO films are characterized by high resolution X-ray diffraction and scanning electron microscopy, respectively. The Zn_{1-x}Co_xO thin film with 10 at.% Co concentration exhibits highly c-axis orientation and the lowest electrical resistivity. The measured THz pulse and the complex dielectric constant of Zn_{0.8}Co_{0.2}O film exhibit different behavior to others due to the decrease of the crystallinity of the film. (7 References).