

Abstract Submitted
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Hysteresis loops on transition metal doped Zinc Oxide thin film using Sol-Gel method SUNIL THAPA, Dept., of Physics and Astronomy, Bowling Green State University, POONEH SAADATKIA, FARIDA SELIM, Dept., of Physics and Astronomy, Center for Photochemical Sciences, Bowling Green State University — Transition metal doped also known as Diluted magnetic semiconductors (DMS) are in rise due to their potential application in Spintronic devices. Sol-gel method was used to deposit transition metal doped zinc oxide in a glass substrate and dry at 120 C for 10 minutes. After coating 16 times, the films were annealed depending upon the dopant materials. This method is a cheap way to obtain uniform thin films. SQUID (Superconducting Quantum Interference Device) was done to measure the extremely subtle magnetic field. Most of the doped zinc oxides showed hysteresis loop, but for 2%Al3%Co doped zinc oxide observed inverted hysteresis loops. The reversed hysteresis can be explained using a two layer model. In addition, SEM (Scanning Electron Microscopy) was done to observe the surface structure and spectrometer was used to measure the absorbance of the thin film.

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