

Abstract Submitted
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Enhancement of Photoinduced Effects in Annealed $\text{Bi}_{1-x}\text{Ca}_x\text{MnO}_3$ Thin Films.¹ K. KARKI, RAJESWARI KOLAGANI, G. YONG, R. KENNEDY, K. DEMARCHI, VERA SMOLYANINOVA, Towson University — Doped rare-earth manganese oxides (manganites) exhibit a rich variety of interesting physical phenomena including their sensitivity to application of magnetic, electric fields, and electromagnetic wave irradiation. A photoinduced insulator to conductor transition in charge-ordered (CO) manganites is especially interesting from the point of view of creating photonic devices. Thin films of $\text{Bi}_{0.4}\text{Ca}_{0.6}\text{MnO}_3$ exhibit large photoinduced effects associated with melting of the charge ordering by visible light and can support conducting and insulating phase coexistence on a submicron scale [1]. We have found significant increase of the photoinduced resistivity changes and the life time of the photoinduced conducting phase after annealing. The changes in current-induced effects in annealed films will be also reported, and the possible origin of these effects will be discussed. [1] V. N. Smolyaninova et al., Phys. Rev. B 76, 104423 (2007).

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