Abstract Submitted
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Photoinduced effects in $Bi_{1-x}Ca_xMnO_3$ thin films with different oxygen content[1] GRACE YONG, RAJESWARI KOLAGANI, KHIM KARKI, BENJAMIN HOFMANN, VERA SMOLYANINOVA, Towson University — Doped rare-earth manganese oxides (manganites) attract interest due to a variety of electronic, magnetic, and orbital states and their drastic response to application of modest external fields. A photoinduced insulator to conductor transition in thin films of $Bi_{0.4}Ca_{0.6}MnO_3$ associated with melting of the charge ordering [1] is especially interesting for potential photonic and opto-electronic device applications. From this point of view it is important to know what factors influence the photoinduced effects. We have found that oxygen content of $Bi_{0.4}Ca_{0.6}MnO_3$ thin films significantly modify conductive, structural and photoinduced properties. The role of growing and annealing conditions will be discussed. The change in magnitude and lifetime of photoinduced changes in films with different oxygen content will be reported. The possible origin of these changes will be discussed. [1] V. N. Smolyaninova at al., Phys. Rev. B 76, 104423 (2007)

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