

Abstract Submitted  
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**Ultrafast Pump-Probe Studies of the Light-Induced MIT and Recovery of Niobium Dioxide Thin Films** MELISSA BEEBE, College of William Mary, J. MICHAEL KLOPF, Helmholtz-Zentrum Dresden-Rossendorf, SALINPORN KITTIWATANAKUL, JIWEI LU, STUART A. WOLF, University of Virginia, R. ALEJANDRA LUKASZEW, College of William Mary — Niobium dioxide ( $\text{NbO}_2$ ) is a highly correlated binary oxide that, like vanadium dioxide ( $\text{VO}_2$ ), exhibits a first-order insulator-to-metal transition (IMT) at a material-dependent critical temperature, accompanied by a structural transformation from monoclinic to rutile. The nature of the IMT in  $\text{VO}_2$  has been discussed at length, while fewer studies have been carried out on  $\text{NbO}_2$ . Previous studies show that the IMT can also be optically induced in  $\text{VO}_2$  on a sub-picosecond timescale; here, we present the first ultrafast pump-probe studies showing this optically-induced transition in  $\text{NbO}_2$  thin films and compare these results to similar ones carried out on  $\text{VO}_2$  thin films.

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