

Abstract Submitted
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Ultrafast dynamics of VO₂ thin films measured in pump-probe configuration¹ ELIZABETH RADUE, William and Mary College, SALINPORN KITTIWATANAKUL, JIWEI LU, S. A. WOLF, University of Virginia, ZHENG-PING FU, MASASHI YAMAGUCHI, RPI, ENRICO ROSSI, R. A. LUKASZEW, IRINA NOVIKOVA, William and Mary College — The semiconductor-metal transition of VO₂ continues to be a vigorously studied phenomenon due to complicated interplay between the structural change and the electronic bands. It is also potentially a very useful material, particularly because of its ultrafast transition to the metallic state excited with a femtosecond pulse. We have been exploring the effects of polarization of the pump in relation to the probe affects the sub-picosecond response of VO₂ thin films, which will be important in designing ultrafast switches. We have also been looking at pumping our VO₂ films with a THz source that directly pumps the lattice, and have found the film responds optically on a slower scale than when pumped with 800 nm, suggesting that there is an electronic response from disturbing the lattice.

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