

The Light-Induced Phase Transition in $\text{La}_{5/8-x}\text{Pr}_x\text{Ca}_{3/8}\text{MnO}_3$ ($x=0.3$) micro-wires

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$\text{La}_{0.325}\text{Pr}_{0.3}\text{Ca}_{0.375}\text{MnO}_3$ wires have presented a persistent and reversible light-induced phase transition in the warming process at a critical point where nanosecond pulsed laser (532nm) transfers the sample from a ferromagnetic metal (FM) to a charge-order insulator (COI), while voltage is not necessary to sustain the transition and heating could restore the sample to its original state. The pulsed light is supposed to excite manganites over the energy barrier between FM and COI, giving rise to the sudden increase in resistance, supported by the disappearance of such transition in an applied magnetic field.

