

MAGNETOPHOTORESISTANCE IN $\text{Pr}_{1-x}\text{Ca}_x\text{MnO}_3$ THIN FILMS

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The colossal magnetoresistive insulator to metal switching of almost nine orders of magnitude under the significantly reduced magnetic field is achieved by illumination for the low bandwidth manganite thin films. Similarly, by changing the measuring bias voltage through the sample the required magnetic field for insulator-metal transition can be further fine-tuned. By applying a magnetic field of suitable strength, the samples can also be tuned to be extra sensitive to the illumination having colossal effect on the resistivity at low temperatures. This kind of utilizing of multiple external stimulants, which together change the properties of the material could have significant impact on the new generation of phase-change memories working under affordable conditions.

