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Current images and anomalous transport properties in phase-separated manganites MASASHI TOKUNAGA, The University of Tokyo, HUI SONG, YUSUKE TOKUNAGA, TSUYOSHI TAMEGAI — We have observed inhomogeneous current distributions in the phase-separated manganite crystals by using magneto-optical imaging technique. Increase of the current causes a change of conduction paths from inhomogeneous to homogeneous concomitantly with sharp increase in resistivity. Using this anomalous current-voltage relation, we demonstrate the possibility of low- field colossal magnetoresistance effects. In addition, we found oscillations of the current at a constant voltage condition. These anomalous transport properties are reasonably explained by taking into account the effects of Joule heating.

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