Contribution ID: **27** Type: **Poster**

Influence of electromagnetic radiation on characteristics of superconductor-manganite nanocomposite

We study temperature dependence of resistance and current-voltage characteristics of nanocomposite MgB2-La0.67Ca0.33MnO3 formed by components with substantially different granules size: MgB2 (5-10 μm) and La0.67Ca0.33MnO3 (20-30 nm). Nanocomposite under consideration is a three-dimensional structure of weakly coupled Josephson-type S-FM-S contacts (S-superconductor, FM-ferromagnetic metal). Electromagnetic radiation effects on the superconducting resistive transition and the current-voltage characteristics of the nanocomposite were detected and discussed.

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