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ELECTRO-TRANSPORT STUDIES OF SILVER-DOPED $FESE_{0.94}$ SUPERCONDUCTING SYSTEM

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We present electro-transport studies of polycrystalline $FeSe_{0.94}$ optimally doped with 6 wt % Ag. The $J_c(T)$ dependence at temperatures very close to Tc shows quadratic behavior, characteristic for proximity coupled grains through the Ag/Ag_2Se impurity phases. The difference between transport and magnetically obtained critical current is discussed. The influence of various applied current amplitudes on the pinning energy behavior $Up(H,T,J_a)$ is analyzed using the magneto-resistive measurements.

CRISTAL STRUCTURES, MAGNETIC AND TRANSPORT PROPERTIES OF CALCIUM BASED PEROVSKITES

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The $Ca_2Fe_{1-x}Ni_xMoO_6$ with $x \leq 0.2$ and $Ca_{1.5}La_{0.5}FeMo_{1-x}W_xO_6$ with $x \leq 0.3$ double perovskites crystallize in a monoclinic type structure having $P2_1/n$ space group. The saturation magnetizations at 4 K decrease when Fe is replaced by Ni, and increase when W content is higher. The magnetic properties of the above systems can be described by a cluster glass contribution superposed on essentially ferrimagnetic type ordering. The resistivities increase as result of the substitutions. The temperature and field dependences of magnetoresistivites (MR) were analysed considering the presence of both intergrain tunneling mechanism as well as an intragrain contribution. The MR values at 10 K, in field of 7 T, are of 36 % for Ca_2FeMoO_6 and 17 % for $Ca_{1.5}La_{0.5}FeMoO_6$ samples. The degree of spin polarization increases when crystallographic ordering is enhanced.