

Investigation of entropy change in Co@Au nanoparticles via heat capacity measurements

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In recent years, special intent has been devoted to a magnetocaloric effect (MCE) in nanoparticles. Magnetocaloric refrigeration is manifested in term of isothermal magnetic entropy change. One of the most used methods for the determination of entropy change is specific heat measurement as a function of temperature at constant magnetic field. In our work, we have investigated the magnetocaloric effect (MCE) of core-shell Co@Au nanoparticles by heat capacity measurements in temperature range 1.9 - 55 K under external magnetic field from range 0 – 9 T. The MCE was studied in terms of isothermal magnetic entropy change after subtraction of the lattice heat capacity. The maximum entropy change of $3,54 \text{ J K}^{-1} \text{ kg}^{-1}$ was obtained at $\sim 15 \text{ K}$ when the field was changed from 0 to 9 T.

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