

The aim of the work is characterization of structure and magnetic properties of various  $\text{CoFe}_2\text{O}_4/\text{SiO}_2$  nanocomposites. Emphasis was put on the correlation of the magnetic properties with particle size (samples with different annealing temperature) and with strength of the interparticle interactions (samples with different Fe/Si ratio or without silica matrix). Structure properties of all samples were determined by powder x-ray diffraction, scanning and transmission electron microscopy. Magnetic properties were determined by standard (temperature dependence of magnetization, magnetization isotherms) and advanced (a.c. susceptibility, memory effects) magnetic measurements. A sharp increase of the values of blocking temperature and coercivity with increase of strength of the interparticle interactions and with increase of particle size was observed. Particle size determines the maximum value of coercivity and blocking temperature and strength of the interparticle interactions shift these values in the interval determined by particle size.