

The Effect of Microstructure in Magnetic Properties of Barium Ferrite

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Abstract : To study the effect of microstructures, long-time grinding and nonmagnetic phase on magnetic properties of barium ferrite, isotropic samples of barium ferrite magnets, $Ba_{0.6}Fe_2O_3$, were prepared by ceramics and co-precipitation methods. Magnetic measurements indicate a higher demagnetization of the samples prepared by chemical method due to lack of remanent stress and crystallographic imperfections in this case. Also, the intermediate nonmagnetic phase is less in samples prepared by chemical method. The optimum sintering temperature for maximum storage of magnetic energy is 925-950°C for chemical and 950-1000°C for ceramic methods.