Structural and Magnetic Properties of Milled Nickel Powder

Authors : O. M. Lemine

Abstract : The effect of milling parameters on the structural and magnetic properties of nickel powder was investigated. The samples were characterized by X-ray powder diffraction and vibrating sample magnetometer (VSM). The results did not reveal any phase change of nickel during the milling. The average crystallite size decreases with a prolongation of milling times, whereas the lattice parameters increase. The hysteresis loop reveals the intrinsic magnetic behaviour. It was observed an increase in the magnetization which can be correlated to the volume expansion showed by XRD results.

Keywords : nickel powders, nanocrystallines, XRD, VSM
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