Elaboration and characterization of iron oxide samples

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Hematite samples were prepared from iron nitrate with the usual sol gel method. A balanced starting mixture is used. The calcination was carried out at the same temperature and with the same holding time for all the samples. The samples were sintered using the same temperature and holding time. The heat treatment steps are preceded by grinding and then forming a pellet under a pressure kept constant

The samples were characterized by X-ray diffraction (XRD), Fourier Transform Infrared Spectroscopy (FTIR), and Atomic Force Microscope (AFM). The analysis by DRX shows the obtaining of the hematite phase accompanied by the parasitic phases. The intensities of the main lines increase and move to the left.