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Acidothermally Proses Synthesis of Iron(III) Fluoride Nanoparticles and Single Crystals, Characterization and Gas Sensing Properties Studies

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## Abstract

One-Dimensional FeIII Fluoride single crystals and nanopowders have been synthesized and studied by single Crystal X-ray crystallography, Powder X-Ray Diffraction (XRD) and Scanning Electron Microscopy (SEM). Fe2O3 nanopowders were obtained by calcination of compound at 600 to 700°C under air atmosphere and were characterized by, Powder X-Ray Diffraction and Scanning Electron Microscopy (SEM). These FeF3 nanostructures have been tested for CO gas monitoring by depositing them as thick films on an interdigitated alumina substrate and evaluating the surface resistance of the deposited layer as a function of operating temperature and CO concentrations. The gas sensitivity tests have demonstrated that the FeF3 nanostructures, spherical morphology, exhibit high sensitivity to CO proving their applicability in gas sensors. The role of the nanostructure on the sensing properties of FeF3 is also discussed.

## Biography

She is Medicine Doctors and Researcher, The Field of M. Abrishamkar is Alternative Medicine and Nano-Medicine, Her research interests are in the application of nanotechnology in complementary medicine and Chinese medicine. Her research focuses on modern and classical medicine and Chinese medicine And in this regard, it has had very successful ways to treat patients.