عنوان مقاله:

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

محل انتشار:

اولین کنگره بین المللی شیمی و نانو شیمی از پژوهش تا فناوری (سال: 1397)

تعداد صفحات اصل مقاله: 11

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خلاصه مقاله:

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 700ºC 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.

کلمات کلیدی:

Iron(III) Fluoride, Nanopowders, gas sensing, Single Crystal

لینک ثابت مقاله در پایگاه سیویلیکا: