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Dielectric and magnetic study of gel grown iron-manganese-nickel ternary levo-tartrate crystals

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Various metallic tartrate crystals find different applications in science and technology. Iron-manganese-nickel ternary levo-tartrate crystals of different compositions have been grown by single-diffusion gel growth technique in silica hydrogel medium. The metallic composition in the crystals was estimated by EDAX. The coloration of the crystals changed with composition of metallic content. The powder XRD study suggested the crystalline nature and indicated the presence of some extra phases. The grown crystals were characterized by dielectric and magnetic studies. The dielectric constant, conductivity and imaginary part of permittivity and dissipation factor decreases with increasing frequency. Resistivity of the sample increases with increasing frequency. Magnetic susceptibility is calculated. Samples were found paramagnetic in nature, i.e., the magnetic field is strengthened by the presence of the material.

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