Seção Abstracts

Relaxor behavior in multiferroic BiMn2 O5

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Resumo

In polycrystalline BiMn2 O5 a broad thermal stimulated depolarization current (TSDC) curve has been observed in the range from 10 K to 300 K and the pyroelectric coefficient determined. In magnetic susceptibility measurements reported in the literature, features appearing in the pyroelectric coefficient could also be identified for the same temperatures, suggesting a connection between electric and magnetic data above the Néel temperature. A detailed study of the dielectric constant from 240 K to 700 K for an extended range of frequencies revealed a broad maximum at low frequencies, characteristic of relaxor ferroelectrics, following Vogel-Fulcher relation. A freezing temperature of the polar nanoregions Tf = 512 K has been determined. This high temperature ferroelectric behavior is attributed to the Bi3+ in the distorted BiO8 cage.