



Home ► All Journals ► Physical Sciences ► Ferroelectrics ► List of Issues ► Volume 185, Issue 1 ► Hypereine characterization of BaTi1-xHfx



Abstract

It is known that the substitution of cations in perovskites produce changes in the macroscopic properties of these materials. A case to study is for example the influence of 4⁺-cation B' partially substituted by other 4⁺-cation B' when ABO₃ is ferroelectric and AB'O₃ is paraelectric. In this work the system $BaTi_{1-x}Hf_xO_3$ with x = 0.05, 0.10, 0.15 and 0.20 is studied by Perturbed Angular Correlations (PAC) spectroscopy in order to get microscopic information through the electric field gradient tensor (EFG) produced by electrons close to probes. Samples were prepared by solid state reactions and characterized by x-ray powder diffraction analyses and irradiated with thermal neutrons to produce ¹⁸¹Ta, the PAC probe. Two hyperfine quadrupole interactions were detected. One of them correspond to probes in sites with defects originated during the nuclear processes after neutron irradiation. The other probes are located in B sites. At RT the hyperfine parameters are analyzed in terms of Hf concentration.



People also read

Open access

Cited by 3

Information for

Authors	Overview
R&D professionals	Open journals
Editors	Open Select
Librarians	Dove Medical Press
Societies	F1000Research
Opportunities	Help and information
Opportunities Reprints and e-prints	Help and information Help and contact
Reprints and e-prints	Help and contact

Keep up to date

Register to receive personalised research and resources by email

Sign me up



Copyright © 2025 Informa UK Limited Privacy policy Cookies Terms & conditions

Accessibility

Registered in England & Wales No. 01072954 5 Howick Place | London | SW1P 1WG

