

MODIFICATION OF SINTERING AND MICROSTRUCTURE DEVELOPMENT IN BISMUTH TITANATE CERAMICS BY PARTICLE NANOCOATING

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The high electrical conductivity makes bismuth titanate (BIT) ceramics unsuitable for use in electromechanical applications because efficient polarization is not possible. Both microstructure and electrical properties in BIT are highly anisotropic. The maximum of conductivity and remanent polarization are produced in the a-b plane of the platelet-like grains promoted by crystal structure. Being this so, the microstructure plays a critical role on the electrical properties of BIT ceramics. The aim of this work is to reduce plate-like grains anisotropy by modifying BIT powder particles with a nanocoating of a donor dopant which changes both sintering behaviour and microstructure development in BIT based ceramics.