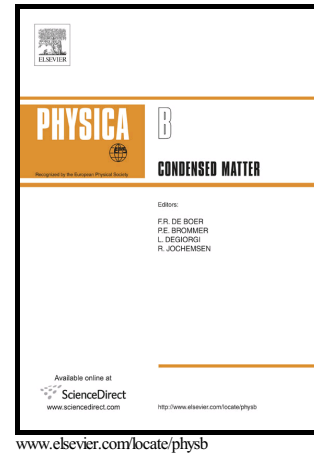


Author's Accepted Manuscript

The electrical properties and relaxation behavior of
 $\text{AgNb}_{1/2}\text{Ta}_{1/2}\text{O}_3$ ceramic

K.Ganga Prasad



PII: S0921-4526(16)30513-0
DOI: <http://dx.doi.org/10.1016/j.physb.2016.10.040>
Reference: PHYSB309700

To appear in: *Physica B: Physics of Condensed Matter*

Received date: 5 September 2016

Accepted date: 29 October 2016

Cite this article as: K.Ganga Prasad, The electrical properties and relaxation behavior of $\text{AgNb}_{1/2}\text{Ta}_{1/2}\text{O}_3$ ceramic, *Physica B: Physics of Condensed Matter* <http://dx.doi.org/10.1016/j.physb.2016.10.040>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting galley proof before it is published in its final citable form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain

The electrical properties and relaxation behavior of $\text{AgNb}_{1/2}\text{Ta}_{1/2}\text{O}_3$ ceramic

K.Ganga Prasad*

*Department of Physics, Indian Institute of Technology, Hyderabad, INDIA.***Corresponding author: kotagirigangaprasad@gmail.com***Abstract**

Polycrystalline $\text{AgNb}_{1/2}\text{Ta}_{1/2}\text{O}_3$ powder was prepared by solid state reaction method. Preliminary x-ray diffractogram analysis of some aspects of crystal structure showed that a single phase compound formed exhibiting a monoclinic system. Impedance spectroscopy showed the presence of both bulk and grain boundary effects in the material. The relaxation behavior was studied by fitting electric modulus with Bergman function confirms us the existence of non-Debye type of relaxation the material. The *ac* conductivity spectrum obeyed Funke's double power law and fitting in results, the hopping parameters n_1, n_2 were indicating the existence of small and large range polaron hopping in the material. The band gap of the material 3.02 eV measured by using UV visible spectroscopy.

Keywords: Ceramics; Dielectric properties; Complex impedance; Conductivity studies

Download English Version:

<https://daneshyari.com/en/article/5492160>

Download Persian Version:

<https://daneshyari.com/article/5492160>

[Daneshyari.com](https://daneshyari.com)