

Phase transitions and properties of 0D hybrid iodoantimonate(III) and iodobismuthate(III) semiconducting ferroics: $[\text{C}(\text{NH}_2)_3]_3\text{Bi}_2\text{I}_9$ and $[\text{C}(\text{NH}_2)_3]_3\text{Sb}_2\text{I}_9$.

Autorzy

Przemysław Szklarz

Michał Śmiałkowski

Grażyna Bator

Ryszard Jakubas

Jakub Cichos

Mirosław Karbowski

Wojciech Medycki

Jan Baran

Rok wydania

2021

Czasopismo

Journal of Molecular
Structure

Numer woluminu

1226

Strony

129387/1-129387/10

DOI

10.1016/j.molstruc.2020.129387

Kolekcja

Naukowa

Język

Angielski

Streszczenie

The guanidinium derivatives $[\text{C}(\text{NH}_2)_3]_3\text{Bi}_2\text{I}_9$ (GBI) and $[\text{C}(\text{NH}_2)_3]_3\text{Sb}_2\text{I}_9$ (GSI) are promising compounds from the viewpoint of their electrooptical and semiconducting properties. In this paper we present the optical, dielectric, UV–Vis, Raman and ^1H NMR (spin-lattice relaxation time, T_1 , and second moment, M_2) results of studies on GBI and GSI. The temperature and frequency dependent ac conductivity of GBI and GSI has been analyzed in terms of the Jonscher relationship. The parameters for the ac conductivity have been estimated. The UV–Vis spectra have been analyzed for GBI and GSI and the respective calculations regarding the band gap have been carried out. GBI and GSI reveal the semiconducting properties in their high temperature phases (σ_{ac} in the range $10^{-5} - 10^{-7}$ S/m). ^1H NMR studies indicate the key role of the guanidium cation dynamics in the phase transitions mechanisms.

Słowa kluczowe

Organic-inorganic hybrid composites, Guanidine, Materials, Semiconductivity, Phase transition

Adres publiczny

<http://dx.doi.org/10.1016/j.molstruc.2020.129387>

Strona internetowa wydawcy

<http://www.elsevier.com>

Artykuł

Plik został wygenerowany dnia 2026-10-08 01:42:38

Adres w repozytorium <https://old.chem.uni.wroc.pl/pl/repozytorium/hBu1fCF>.