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Dielectric study of hydrogen sulphate (AHSO_4 and BHSO_4 , A=sodium, B=potassium) crystals

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The family of hydrogen sulphate salts forms an interesting group of materials as the bonding in them is characterized by the presence of strong hydrogen bonds which influence their properties considerably. It is imperative to have better idea about the geometry of sulphate tetrahedron, hydrogen bonding pattern between HSO_4^- ions and the dynamical interaction in these systems in order to establish a correlation between their properties and structure. Sodium hydrogen sulphate crystals are used as flux or decomposing minerals, substitute for sulphuric acid in dyeing, disinfectant manufacture of sodium hydrosulphide, sodium sulphate and soda alumina, liberating CO_2 in carbonic acid baths in thermophores, carbonizing works, manufacture of manganese cements, paper, soap, perfumes, food, industrial cleaners, metal pickling are mainly used for the conservation of bees and tartrate into potassium tartrate, ethyl acetate and lab reagents. Potassium hydrogen sulphate belongs to the hydrogen sulphate family MHSO_4 (M= Cs, K, Rb and/or NH_4) that show high temperature phase transition phenomena that in some cases are related to fast-ion conducting phases; these transitions have been investigated by several authors. The hydrogen bonding pattern between the HSO_4^- tetrahedral ions play a dominant role in determining the properties of these compounds. For example, these bonds are responsible for the ferroelectric phase transition found in ammonium and rubidium hydrogen sulphate.

Biography

Azha Periasamy has completed his PhD from Bharathiar University, Coimbatore, Tamilnadu. He is working as Assistant Professor in Electronics and Instrumentation. He has published 14 referred journals of international and national level.

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