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Dielectric Properties and Conductivity of KHCO_3

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Abstract: KHCO_3 compound was characterized in three principle realms: for its dielectric properties as a function of temperature and frequency in the ranges 300--370 K and 50 Hz to 1 MHz, respectively; bulk conductivity as a function of temperature, via impedance technique; and relaxation time as function of temperature. Variations of the bulk conductivity and relaxation time with temperature have been found to yield two segments, with two different activation energies. The activation energy for the two segments due to bulk conductivity have been found as 1.96 eV and 1.85 eV, while the activation energy due to relaxation have been found to be 1.85 eV and 1.83 eV. The phase transition which was detected by DSC at $T = 322$ K has been verified by the dielectric and conductivity measurements.

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