SAMPLE PREPARATION AND DIELECTRIC SPECTRUM EQUIVALENT CIRCUITS MODELING FOR Bi$_2$Mn$_2$O$_7$

Abdul Halim Shaari, Wan Mohd. Daud Wan Yusoff, Mansor Hashim, Zainal Abidin Talib, Lim Kean Pah, Tay Boon Ping

Physics Department, Faculty Science, 43400 UPM Serdang, Selangor Darul Ehsan, Malaysia.

ABSTRACT

A Bi$_2$Mn$_2$O$_7$ ceramic sample was prepared by solid state reaction method. Its dielectric property was then characterized by impedance analysis within frequencies range from $10^2$ Hz to $10^6$ Hz and temperatures range from room temperature to 450°C. All spectrums were then normalized into a single master curve. The dielectric response mechanism observed in the sample master curve spectrum were modeled by combinations of diffusive, quasi-dc, bound charge (dipole-like) elements with a nondispersive capacitor. The experimental data are in close agreement with the value obtained from equivalent circuit


REFERENCES