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DIELECTRIC PROPERTIES OF OVEN DRY MALAYSIAN WOOD

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ABSTRACT
Four species of selected local hard wood had been studied for dielectric properties. Measurements were made at frequency 10^{-2} Hz to 10^{6} Hz from room temperature to 100°C. Dielectric behaviors show that the low frequency dispersion (LFD) proposed by Jonscher and the DC conductivity dominated the profile of the dielectric processes. Dielectric analysis was made by shifting the data of relative dielectric permittivity and the loss factor to become a master curve. From the shift of the loss peak at various fixed temperatures the activation energy was determined by plotting of Arrhenius plot of ln ε" against 1000/T. The dielectric properties of wood were found to be dependent on temperature and density of wood species. Impedance, Z, and modulus, M, plots were also used to reveal the model of the dielectric behaviour in wood.

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