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Ferroelectric Transition and Dielectric Nonlinearity in Hydrogen Bonded Metal-organic complex- $[Nd(C_4H_5O_6)(C_4H_4O_6)][3H_2O]$

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Abstract—*Ferroelectric nature of a lanthanum based metal-organic complex, $[Nd(C_4H_5O_6)(C_4H_4O_6)][3H_2O]$, is reported. The paraelectric-ferroelectric transition is of second order. It occurs at 295 K and is higher than that of transition metal based MOCs. The nature of the transition is order-disorder type and the spontaneous polarization is attributed to the ordering of protons. The small conductivity of the complex is attributed to the hopping of protons between different localized states. The dielectric nonlinearity parameters have been also evaluated using Landau– Devonshire phenomenological theory.*