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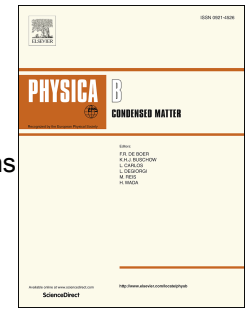


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PII: S0921-4526(18)30248-5

DOI: 10.1016/j.physb.2018.03.045

Reference: PHYSB 310806

To appear in: *Physica B: Physics of Condensed Matter*

Received Date: 19 February 2018

Revised Date: 24 March 2018

Accepted Date: 26 March 2018

Please cite this article as: M.S. Meikhail, A.H. Oraby, M.M. El-Nahass, H.M. Zeyada, A.A. Al-Muntaser, Electrical conduction mechanism and dielectric characterization of MnTPPCl thin films, *Physica B: Physics of Condensed Matter* (2018), doi: 10.1016/j.physb.2018.03.045.

# Electrical conduction mechanism and dielectric characterization of MnTPPCl thin films

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## Abstract

The AC conductivity and dielectric properties of MnTPPCl sandwich structure as Au/MnTPPCl/Au were studied. The conductivity of the MnTPPCl thin films have been interpreted by the correlated barrier hopping (CBH) model. The dominant conduction process have found to be the single polaron hopping conduction. The values of the hopping distance, $R_\omega$, barrier height, W, and the localized-state density, N, are estimated at different frequencies. The behavior of dielectric constant and dielectric loss was discussed as a function of temperature and frequency. The dielectric constant was described in terms of polarization mechanism in materials. The spectral behavior of dielectric loss is interpreted on the basis of the Giuntini et al. model [1]. The value of $W_M$ is obtained as 0.32 eV. A non-Debye relaxation phenomenon was observed from the dielectric relaxation mechanism.

**Keywords:** MnTPPCl; AC conductivity; Dielectric characteristics; Relaxation time.

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