M.A. Ahmed, S.T. Bishay, M.A. Gabal and N. Helmy, "Relaxation phenomena in EDAMn_{1-x}Cd_xCl_4 perovskite; 0 \leq x \leq 1" *Journal of Materials Science*, 40 (2005) 411.

The electrical properties measurements were carried out for the complex (CH\_2\_2(NH\_3\_2Mn\_1-xCd\_xCl\_4, 0.0 \leq x \leq 1.0 at different temperatures as a function of frequency (100–1000 kHz). Four transition points were obtained for \( x = 0.5 \), which are assigned as thermochromism, interlayer exchange interaction, order–disorder and chain melting. The presence of more than one straight line in the conductivity data clarifies the presence of more than one conduction mechanism, and the calculated values of the activation energy indicate the semiconducting characteristics of the investigated complexes. The values of the calculated relaxation time indicate its dependence on Cd content as well as the heating temperature. The expected critical concentration at \( x = 0.5 \) agree well with the percolation theory of Mont-Carlo group. The IR spectra indicate that the force constant of the bonds and the atomic mass vibration are affected by Cd content.