

Supplementary information for  
**On the high-temperature phase transition of a new chlorocadmate (II)  
complex incorporating the symmetrical clusters Cd<sub>2</sub>Cl<sub>6</sub>: Structural, optical  
and electrical properties**

Hanen Elgahami<sup>a</sup>, Abderrazek Oueslati<sup>a</sup>, Samia Nasr<sup>b</sup>, Ferdinando Costantino<sup>c</sup>, Houcine Naili<sup>d\*</sup>

<sup>a</sup>Laboratory of spectroscopic characterization and optical materials, Faculty of Sciences, University of Sfax, B.P. 1171, 3000 Sfax, Tunisia

<sup>b</sup>Chemistry Department, Faculty of Science, King Khalid University, P.O. Box 9004, Abha 61413, Saudi Arabia.

<sup>c</sup>Department of Chemistry Biology and Biotechnologies University of Perugia Via Elce di Sotto 8, 06123 Perugia, Italy.

<sup>d</sup>Laboratory Physico Chemistry of the Solid State, Department of Chemistry, Faculty of Sciences, University of Sfax, BP 1171, 3000 Sfax, Tunisia.

### Contents

**Figure S1.** Experimental and calculated XRD patterns for [(C<sub>4</sub>H<sub>9</sub>)<sub>4</sub>P]<sub>2</sub>Cd<sub>2</sub>Cl<sub>6</sub> at 300 K and 370 K.

**Figure S2.** Ln (σ<sub>DC</sub>.T) vs. 1000/T plots, which satisfy the Arrhenius law.

**Figure S3.** Ln σ<sub>AC</sub> versus 1000/T at different frequencies.

**Figure S4.** Temperature dependence of the exponent β value of modulus complex for [(C<sub>4</sub>H<sub>9</sub>)<sub>4</sub>P]<sub>2</sub>Cd<sub>2</sub>Cl<sub>6</sub>.

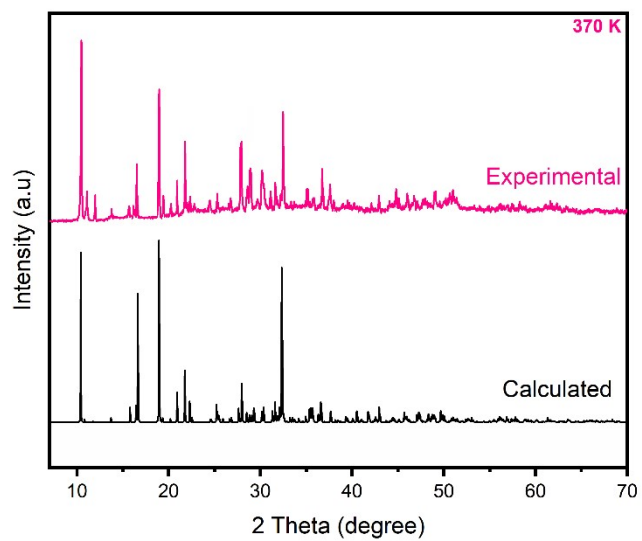
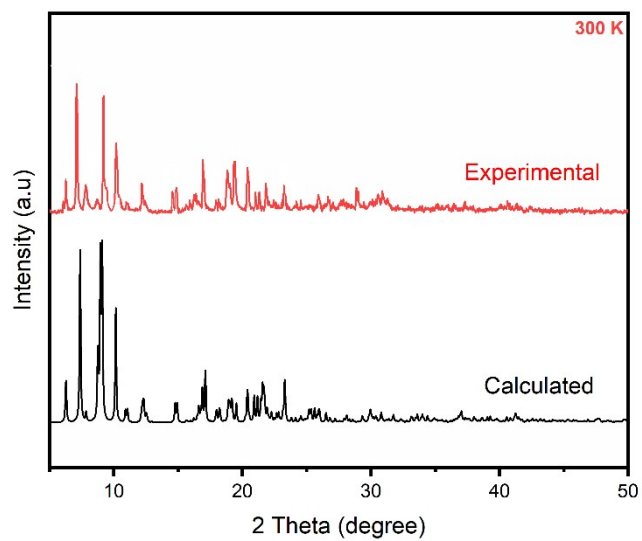


Fig. S1: Experimental and calculated XRD patterns for  $[(C_4H_9)_4P]_2Cd_2Cl_6$  at 300 K and 370 K.

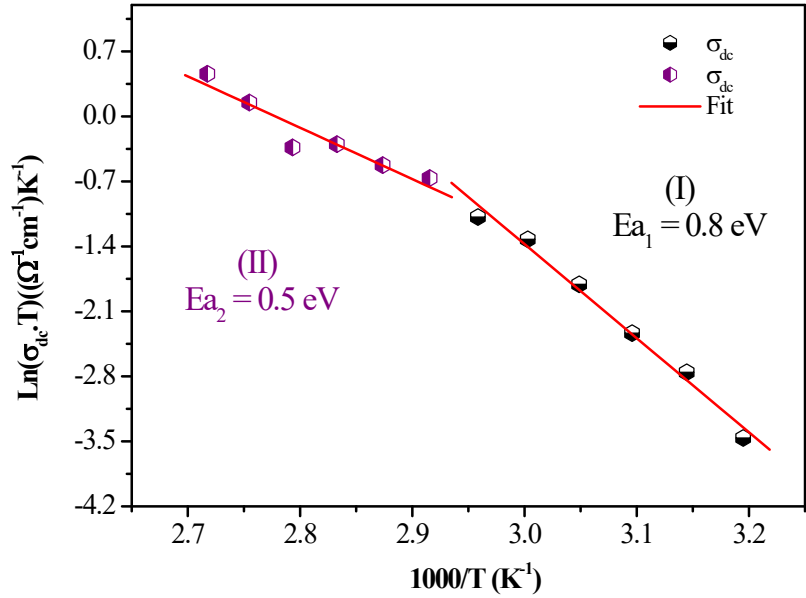


Fig. S2:  $\text{Ln}(\sigma_{\text{DC}} \cdot T)$  vs.  $1000/T$  plots, which satisfy the Arrhenius law.

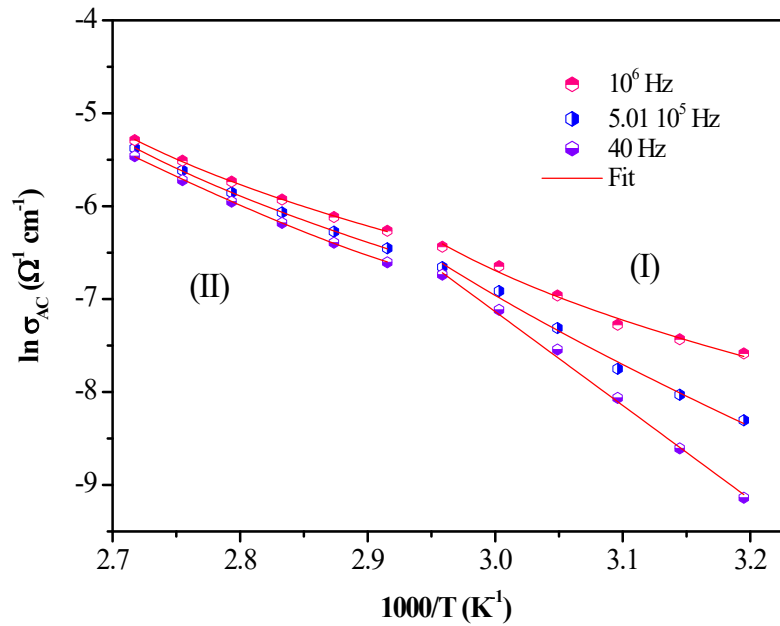


Fig. S3:  $\text{Ln} \sigma_{\text{AC}}$  versus  $1000/T$  at different frequencies.

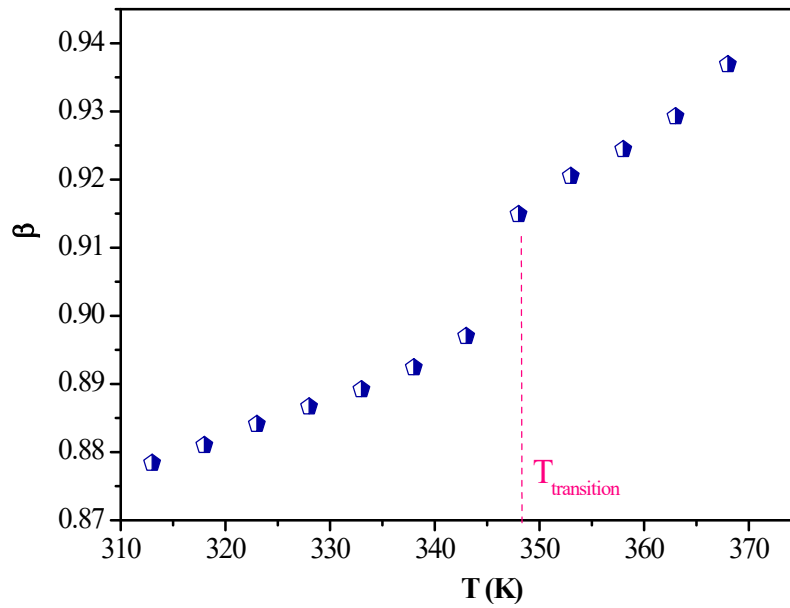


Fig. S4: Temperature dependence of the exponent  $\beta$  value of modulus complex for  $[(C_4H_9)_4P]_2Cd_2Cl_6$ .