

Abstract Submitted
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Dielectric Properties of Organic Charge-Transfer Salts J. K. H. FISCHER, P. LUNKENHEIMER, S. KROHNS, Experimental Physics V, EKM, University of Augsburg, Augsburg, Germany, R. S. MANNA, Experimental Physics VI, EKM, University of Augsburg, Augsburg, Germany, B. HARTMANN, H. SCHUBERT, M. LANG, J. MÜLLER, Phys. Inst. Univ. Frankfurt, SFB/TR 49, Frankfurt, Germany, J. A. SCHLUETER, Materials Research, National Science Foundation, Arlington, Virginia, United States, C. MÉZIERE, P. BATAIL, Laboratoire MOLTECH, UMR 6200 CNRS-Université d'Angers, Bt. K, UFR Sciences, Angers, France, A. LOIDL, Experimental Physics V, EKM, University of Augsburg, Augsburg, Germany — The BEDT-TTF-based charge-transfer salts have attracted considerable attention due to their often intriguing dielectric properties. An example is κ -(BEDT-TTF)₂Cu[N(CN)₂]Cl. It was recently found to exhibit multiferroicity, for which a new electric-dipole driven mechanism was proposed [1]. The polar moment in this system was suggested to arise from the dimerization of the BEDT-TTF molecules, combined with charge order. Another interesting recent example is α -(BEDT-TTF)₂I₃, which shows the signature of relaxor-ferroelectric behavior [2]. Here, we will present an overview of the dielectric properties of the above systems and provide new results on κ -(BEDT-TTF)₂Hg(SCN)₂Cl, which also seems to show relaxor-ferroelectric behavior in its charge-ordered state. In addition, we present measurements of δ -(EDT-TTF-CONMe₂)₂Br. This compound lacks dimerization, but exhibits charge order already at room temperature. [1] P. Lunkenheimer *et al.*, Nat. Mater. **11**, 755 (2012). [2] P. Lunkenheimer *et al.*, Phys. Rev. B **91**, 245132 (2015).

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