

## Technique for anisotropic extension of molecular crystals: application to organic superconductors

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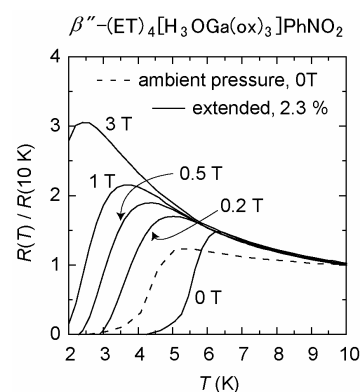
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We have developed a technique for anisotropic extension which is widely applicable to molecular crystals. By using this newly developed instrument, the temperature dependence of electrical resistances of several  $\beta''$ -type ET salts were successfully measured. As shown in the Figure, the temperature of the insulator-superconductor transition is increased. This observation indicates the robustness of the inhomogeneous molecular charges due to the inter-site Coulomb interaction. Our conjecture is examined in the light of analysis of the intermolecular distances and the vibrational spectroscopy. The charge ordering, superconducting and metallic phases are mapped with the time-averaged molecular charges. We will discuss what dictates the (in)homogeneous molecular charges, from the viewpoint of an alternation between the intermolecular distances [1, 2]. The details of our instrument will also be presented.



[1] T. Yamamoto, M. Uruichi, A. Kawamoto, K. Yakushi, *Phys. Rev. B.* **2006**, 73, 125116.

[2] T. Yamamoto, J. Eda, A. Nakao, R. Kato, K. Yakushi, *Phys. Rev. B.* in press.