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# Magnetic-Field-Induced Phases HMTSF-TCNQ studied at 1 GPa, up to 45 Tesla

K. Murata, Y. Fukumoto, R. Takaoka, K. Yokogawa, H. Yoshino<sup>1</sup>,  
W. Kang<sup>2</sup>, J.S. Brooks, D. Graf, A. Kiswandhi<sup>3</sup>  
T. Sasaki,<sup>4</sup> R. Kato<sup>5</sup>,

<sup>1</sup>*Graduate School of Science, Osaka City Univ., Japan*

<sup>2</sup>*Department of Physics, Ewha Womans Univ. South Korea*

<sup>3</sup>*NHFML/FSU, USA*

<sup>4</sup>*Institute for Materials Research, Tohoku Univ., Japan Tohoku Univ., Japan*

<sup>5</sup>*Condensed Molecular Materials Laboratory, Riken, Japan*

*Email: muratak@sci.osaka-cu.ac.jp*

Very new and refined results on the Magnetic-Field-Induced (FI) Phases, which is very likely the FICDW, in the ideal crystals of the HMTSF-TCNQ, examining up to 45 T down to 0.3 K tuning the pressure of 1 GPa, where CDW is suppressed, is to be reported. In this report, we show the precise AMRO (angular dependence of magnetoresistance oscillations) and its temperature dependence comparing with the FISDW in TMTSF2X salts. HMTSF-TCNQ, which is an analogue of TTF-TCNQ with a charge transfer of 0.74, has been known to undergo a CDW transition at 30 K at ambient pressure. Although the gross nature of the FI phases was obtained [1], further research has been limited because ideal single crystals were hard to obtain. Recently, one of us (R/K) succeeded to refine the crystal growth and we could unveil remarkably what is being realized in the FI phases, to a greater extent. The nature which became clear on the FI phases was: 1) the AMRO together with the magnetoresistance, which shows distinct entrance to the FI-phase as a first order transition with a consistent view for the first time, 2) the threshold field of the FI was unchanged at least between 0.3 and 4 K, irrespective of the positive or negative magnetoresistance below the FI threshold field, 3) New phase looks present above 30 T. The results are completely a new and help understanding not only of the new FI-phase, probably FICDW but also the FI-phase in general.

[1]. K. Murata et al., J. Phys. Soc. Jpn. **79** (2010) 103702.