

Abstract Submitted
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Electrical transport properties of C_{60} superconductors in the vicinity of Mott metal-insulator transition YUKI MATSUDA, Department of Physics, Tohoku Univ., SATOSHI HEGURI, WPI-AIMR, Tohoku Univ., YUKI MATSUTA, Department of Physics, Tohoku Univ., KATSUMI TANIGAKI, WPI-AIMR, Tohoku Univ., Department of Physics, Tohoku Univ. — It was revealed in 2008 that Cs_3C_{60} showed superconductivity up to 38K under high pressure [1]. As the lattice constant is increased, the superconducting critical temperature (T_C) decreases after experiencing the maximum T_C and finally Cs_3C_{60} becomes a Mott insulator [2]. This result suggests that C_{60} superconductors cannot be simply explained by the BCS theory [1-4]. There are strong electron correlations in the vicinity of Mott metal-insulator transition. Electrical transport properties are required because they provide us importantly intrinsic information on the electronic states, but the systematical electrical transport measurements have not been made due to the experimental difficulties. It will be reported that we have successfully obtained the electrical transport properties of expanded C_{60} superconductors in pellet form by using a specially designed pressure cell. [1] A. Y. Ganin *et al.*, *Nat. Mater.* **7**, 367 (2008). [2] A. Y. Ganin *et al.*, *Nature* **466**, 221 (2010). [3] Y. Takabayashi *et al.*, *Science*, **323**, 1585 (2009). [4] R. H. Zadik *et al.*, *Sci. Adv.* **1**, e1500059 (2015).

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