

Abstract Submitted  
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**Hall effect in organic single-crystal field-effect transistors** J. TAKEYA, KOICHI YAMADA, CRIEPI, K. TSUKAGOSHI, Y. AOYAGI, RIKEN, T. TAKENOBU, Y. IWASA, IMR, Tohoku University — Hall effect is detected in organic field-effect transistors at room temperature, using appropriately shaped rubrene ( $C_{42}H_{28}$ ) single crystals. It turned out that inverse Hall coefficient, having a positive sign, is close to the amount of electric-field induced charge upon the hole accumulation. The observation of the normal Hall effect means that the accumulated surface charge is well extended in space over molecules, so that the external magnetic field can provide a transverse electromotive force. The result is consistent with band-like transport of the surface carriers rather than consecutive hopping processes occurring in response to the source-drain voltage in the organic transistors.

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