

Abstract Submitted
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Cascade and Accumulation of Spin at CuPc/GaAs (100) interface HUANJUN DING, IRFAN IRFAN, YONGLI GAO, Department of Physics and Astronomy, University of Rochester, MIRKO CINCHETTI, MARINA SANCHEZ-ALBANEDA, JAN-PETER WUSTENBERG, OLEKSIY ANDREYEV, MICHAEL BAUER, MARTIN AESCHLIMANN, Department of Physics, University of Kaiserslautern — We have investigated the spin dynamics in organic semiconductor, copper phthalocyanine (CuPc), with spin and time resolved two photon photoemission spectroscopy (STR-2PPE). Spin polarized electrons are generated optically from GaAs substrate, and injected into the unoccupied states of CuPc film. The apparent spin relaxation time is observed to have strong energy dependence. The spin polarization at high energy levels decreases much faster than that of the low energy levels. The experimental results are then explained by a cascade model. The calculation suggests that the spin information of the hot electrons can be well preserved during the energy relaxation process.

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