DOI: https://doi.org/10.36094/sc.v89.2024.Tuning_of_I-V_Characteristics_of_Hybrid_Inorganic.Roy.253

ARTICLE

Sci. and Cult. 90 (7–8) : 253-256 (2024)

TUNING OF I-V CHARACTERISTICS OF HYBRID INORGANIC-ORGANIC p-Si/ $La_{0.7}$ $Sr_{0.3}MnO_3$/CuPc/Au HETEROSTRUCTURE UNDER EXTERNAL PERTURBATIONS OF LIGHT AND MAGNETIC FIELD

SATABDI ROY*, MD. MINHAJ ALI** AND P. DEY**

We investigated the p-Si/$La_{0.7}$ $Sr_{0.3}$ MnO_3/CuPc/Au hybrid heterostructure under red light and magnetic field. Under dark condition, it displayed a nonlinear, irreversible I-V curve, likely due to the Schottky nature of the LSMO/CuPc heterojunction. The device exhibited positive MR, which may arise from increased spin-dependent scattering at the LSMO depletion region. Increase in light intensity likely boosted exciton generation and dissociation at the LSMO/CuPc interface, enhancing photocurrent through the device.