Supporting Information

Control of Molecular Orientation and Carrier Transport of Thiophene-based Semiconducting Polymer via Superparamagnetic Nanoparticles Fe_3O_4@C Assisted Magnetic Alignment method

Di Hui[1], Tian Li[2,*], Chun Ye[2,*] and Guoxing Pan[1,*]

1. Institutes of Physical Science and Information Technology, Anhui University, Hefei 230601, China

2. Anhui Province Key Laboratory of Condensed Matter Physics at Extreme Conditions, High Magnetic Field Laboratory (HMFL), Chinese Academy of Science, Hefei 230031, China,

Corresponding Authors

*E-mail: tianli@hmfl.ac.cn (T.L.);

cye927@hmfl.ac.cn (C.Y.);

pangrady@mail.ustc.edu.cn (G.P.)

`

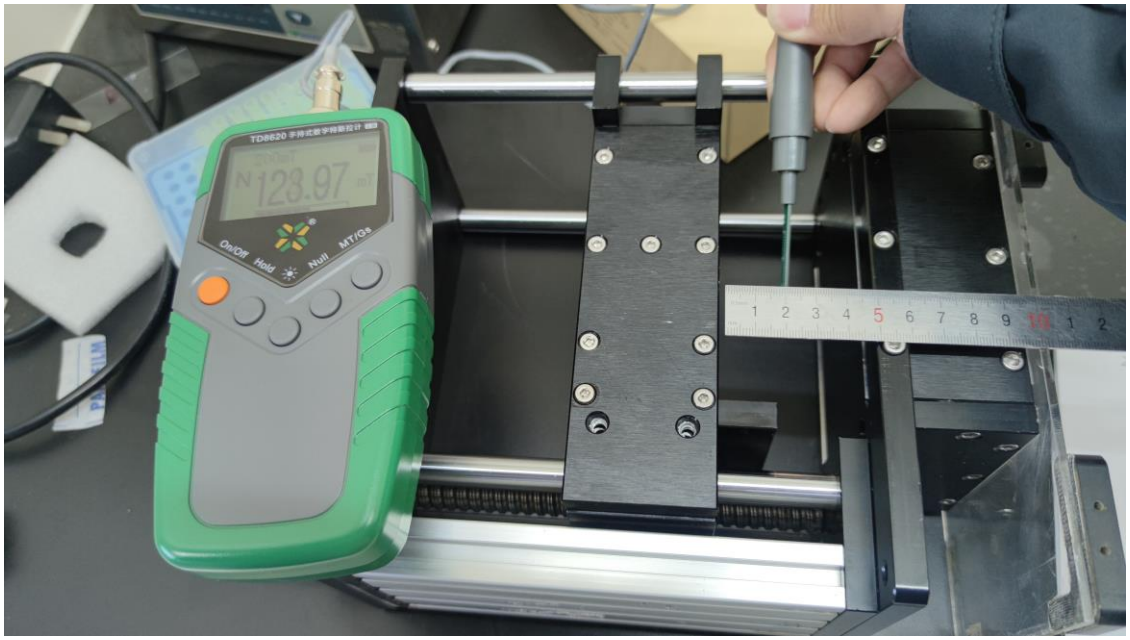

Figure S1. The photograph of the magnet (0.12 T)

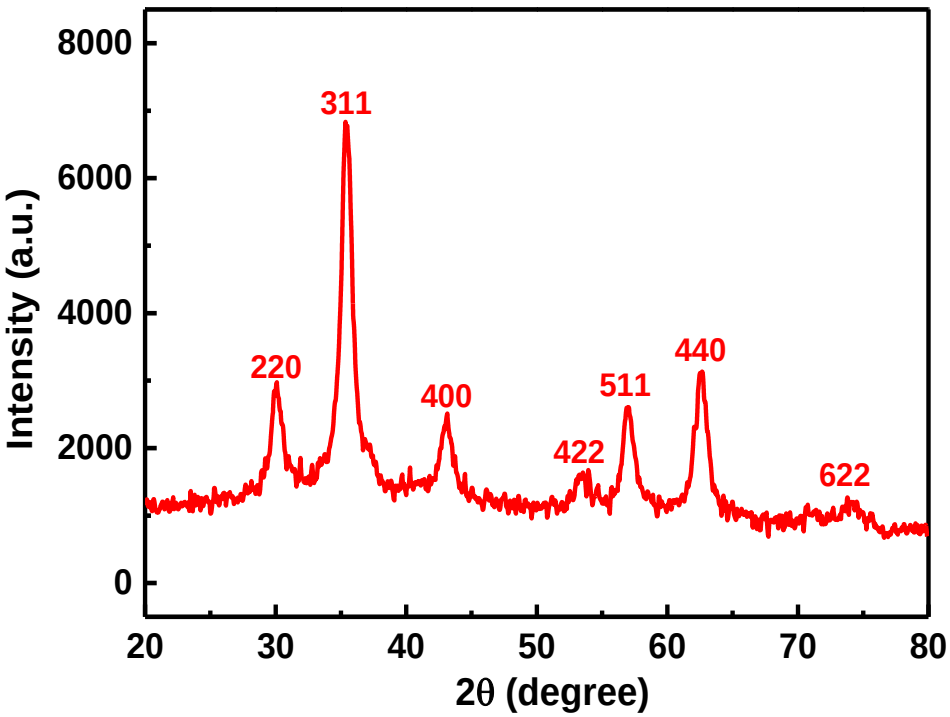

Figure S2. The XRD pattern of the Fe_3O_4@C nanoparticles.

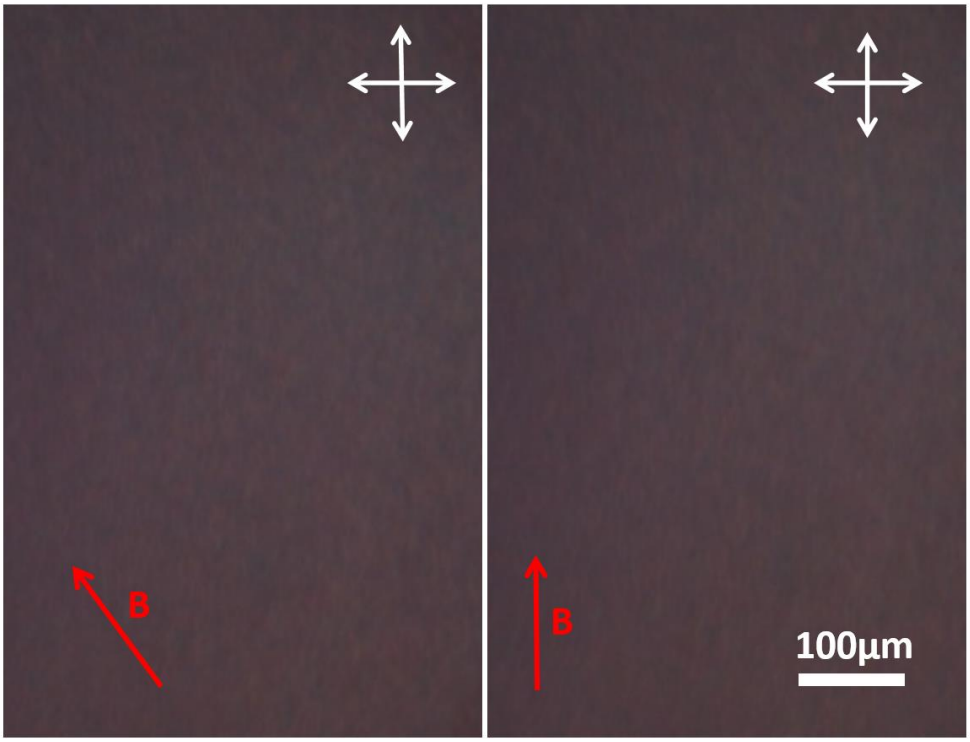

Figure S3. The POM images of the magnetically aligned pure PBTTT film. The red arrows denote the magnetic field direction;

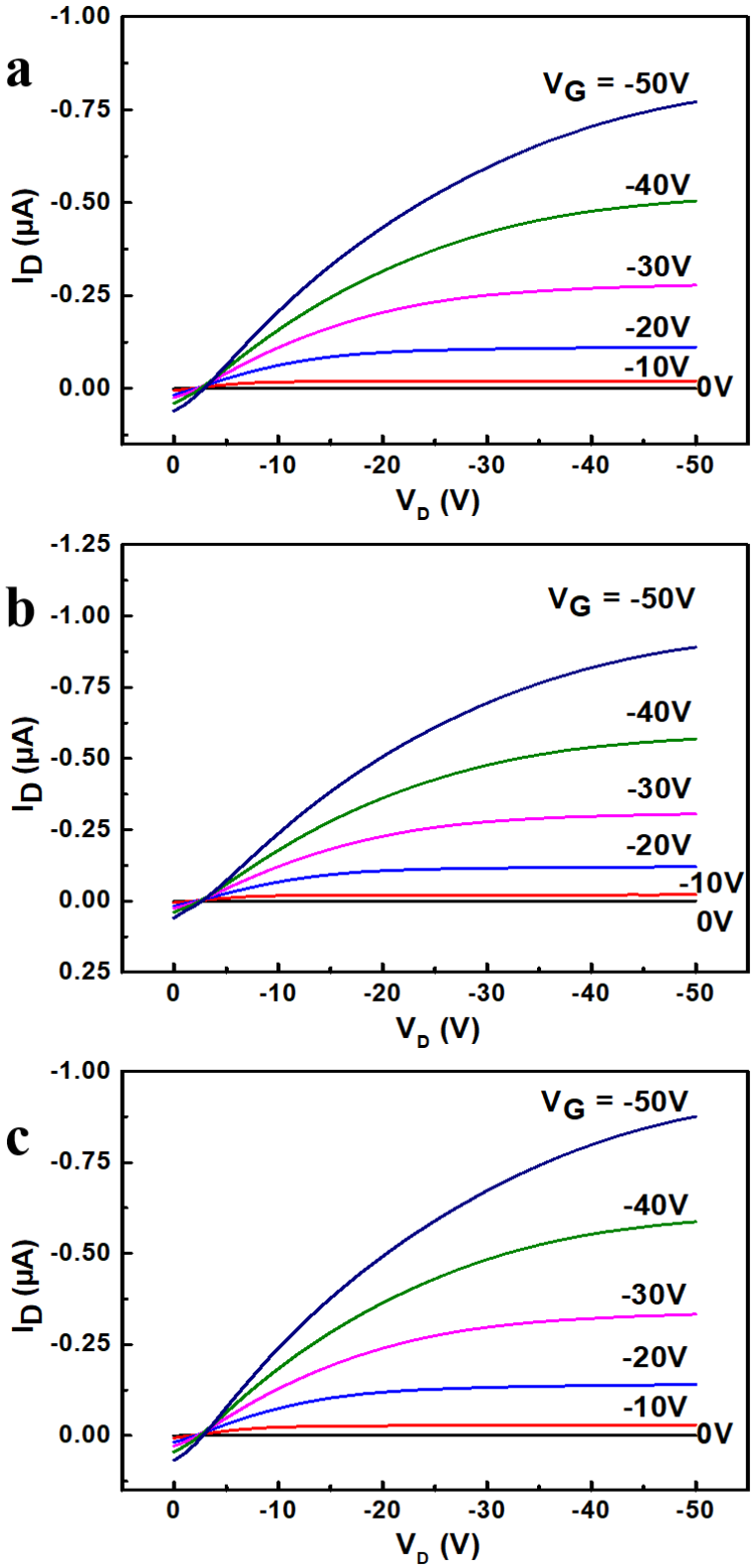

Figure S4. Output curves of the OFET devices of the magnetically aligned Fe_3O_4@C/PBTTT composite film with channel current perpendicular to magnetic field direction (a), unaligned spin-coated pure PBTTT film (b) and spin-coated Fe_3O_4@C/PBTTT composite film (c), respectively.