Supplementary material

A novel self-assembly with horizontal anchor porphyrin for supramolecular solar cells

Yu Wu^{*a*}, Jun-Xiang Zhang^{*a*}, Xiao-Xia Feng^{*a*}, Jia-Cheng Liu^{* *a b*}, Ren-Zhi Li ^{*c}, Neng-Zhi Jin ^{*d*}

^a Key Laboratory of Eco-Environment-Related Polymer Materials of Ministry of Education, Key Laboratory of Polymer Materials of Gansu Province, Key Laboratory of Bioelectrochemistry & Environmental Analysis of Gansu Province, College of Chemistry and Chemical Engineering, Northwest Normal University, Lanzhou 730070, People's Republic of China.

^b State Key Laboratory of Coordination Chemistry, Nanjing University, Nanjing 210093, People's Republic of China

^c Key Laboratory of Flexible Electronics (KLOFE) & Institute of Advanced Materials (IAM), Jiangsu National Synergetic Innovation Center for Advanced Materials (SICAM), Nanjing Tech University (Nanjing Tech), Nanjing 211816, People's Republic of China

^d Gansu Computing Center, Lanzhou 730030, People's Republic of China.

*Corresponding authors. E-mail addresses: <u>jcliu8@nwnu.edu.cn</u> (J. C. Liu). E-mail addresses: <u>iamrzli@njtech.edu.cn</u> (R. Z. Li)

MPA series dyes perform methods



Figure S1. (a) Absorption spectra of MPA in DMF; (b) absorption spectra of dyes on TiO₂ film



Figure S2. Fluorescence spectra of MPA porphyrin dyes in DMF solution (solid line) and on TiO_2 (dash line) film



Figure S3. Molecular orbitals of MPA porphyrin dyes



Figure S4. Energy-level diagram of MPA porphyrin dyes



Figure S5. IPCE of DSSCs sensitized by MPA porphyrin dyes



Figure S6. J-V characteristics of DSSCs sensitized by MPA porphyrin dyes