Supplementary material

Design and fabrication of a series of metal-mediated assemblies with tetrapyridylporphyrins for supramolecular solar cells

Wen-Ting Deng [a], Jia-Cheng Liu* [a], Jing Cao [a], Dong-Cheng Hu [a], Ren-Zhi Li* [b], Neng-Zhi Jin [c]

[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, P. R. China.*

[b] *State Key Laboratory of Polymer Physics and Chemistry, Changchun Institute of Applied Chemistry, Chinese Academy of Sciences, Changchun 130022, P. R.China.*

[c] *Gansu Computing Center, Lanzhou 730030, P. R.China.*

*Corresponding authors.
Tel: +869317971039, fax: +869317971989.
E-mail addresses: *jcliu8@nwnu.edu.cn* (J. C. Liu), *renzhi.li@ciac.jl.cn* (R. Z. Li).

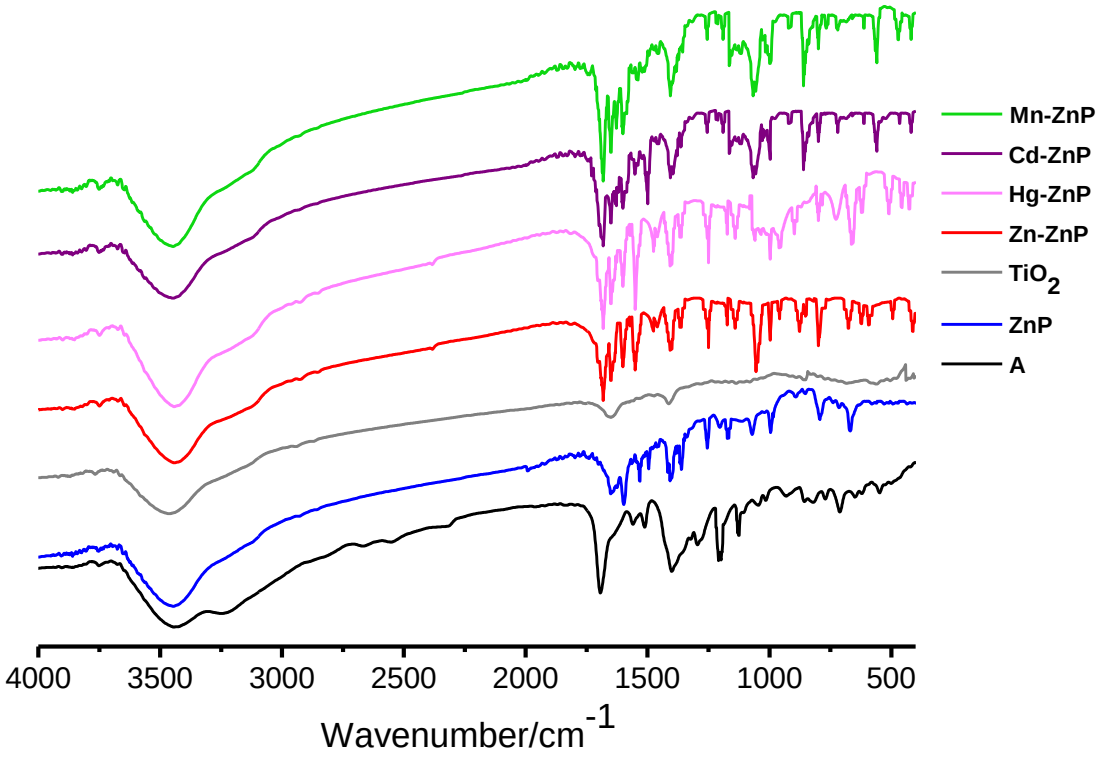

Fig. S1 The IR spectra of **A**, TiO_2, **ZnP** and **ZnP-M-A**.

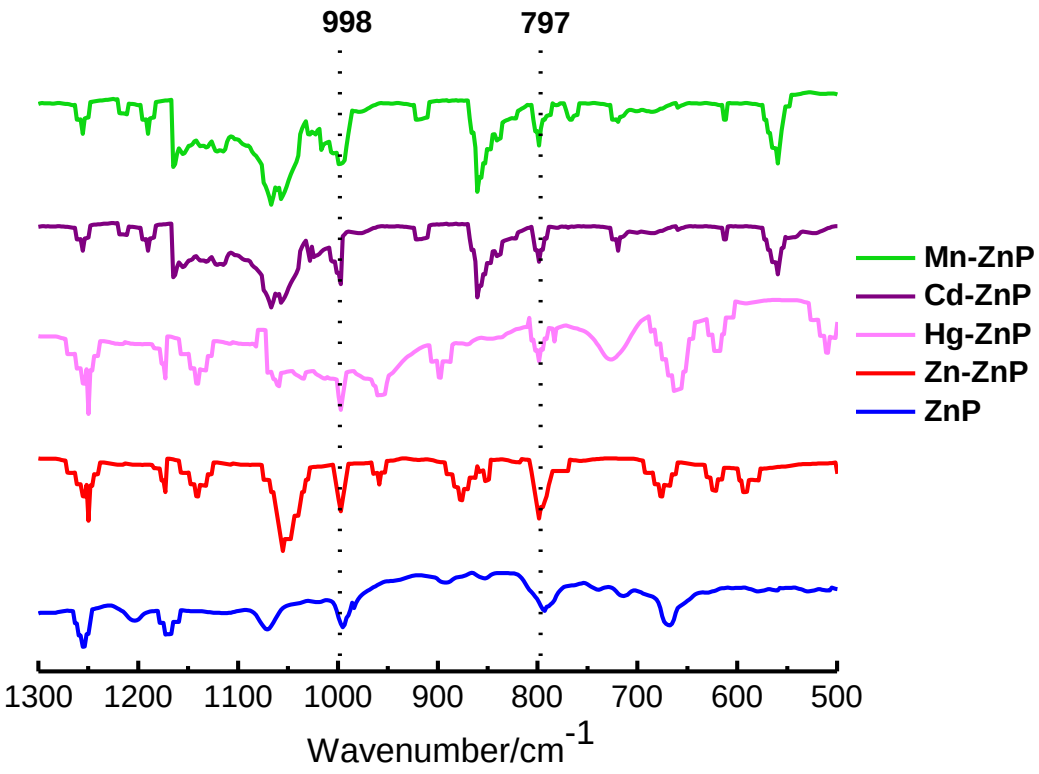

Fig. S2 The IR spectra of **ZnP** and **ZnP-M-A** in the region of 500-1300 cm^{-1}.

Table S1. The peak wavelength of the UV-vis absorption and fluorescence spectra of **ZnP** in DMF solution and these assemblies absorbed on TiO_2 thin films.

Dye	Absorption λ_{max}/nm	Emission/nm
ZnP	424, 577, 598	608, 653
ZnP-Zn-A	445, 575, 618	601
ZnP-Hg-A	438, 569, 611	599
ZnP-Cd-A	437, 571, 612	603
ZnP-Mn-A	438, 572, 613	604

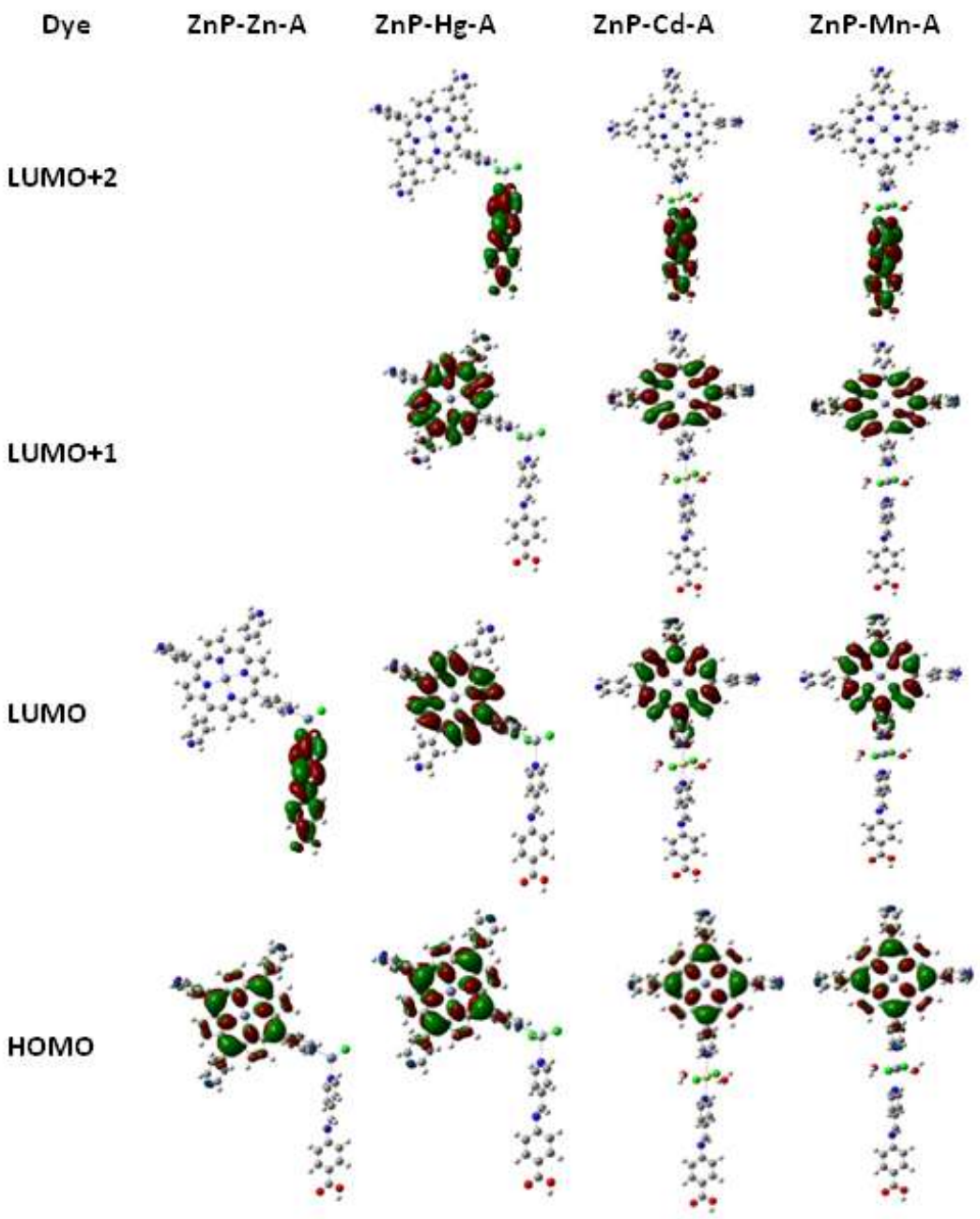

Fig. S3 Molecular orbital distributions of these assemblies.

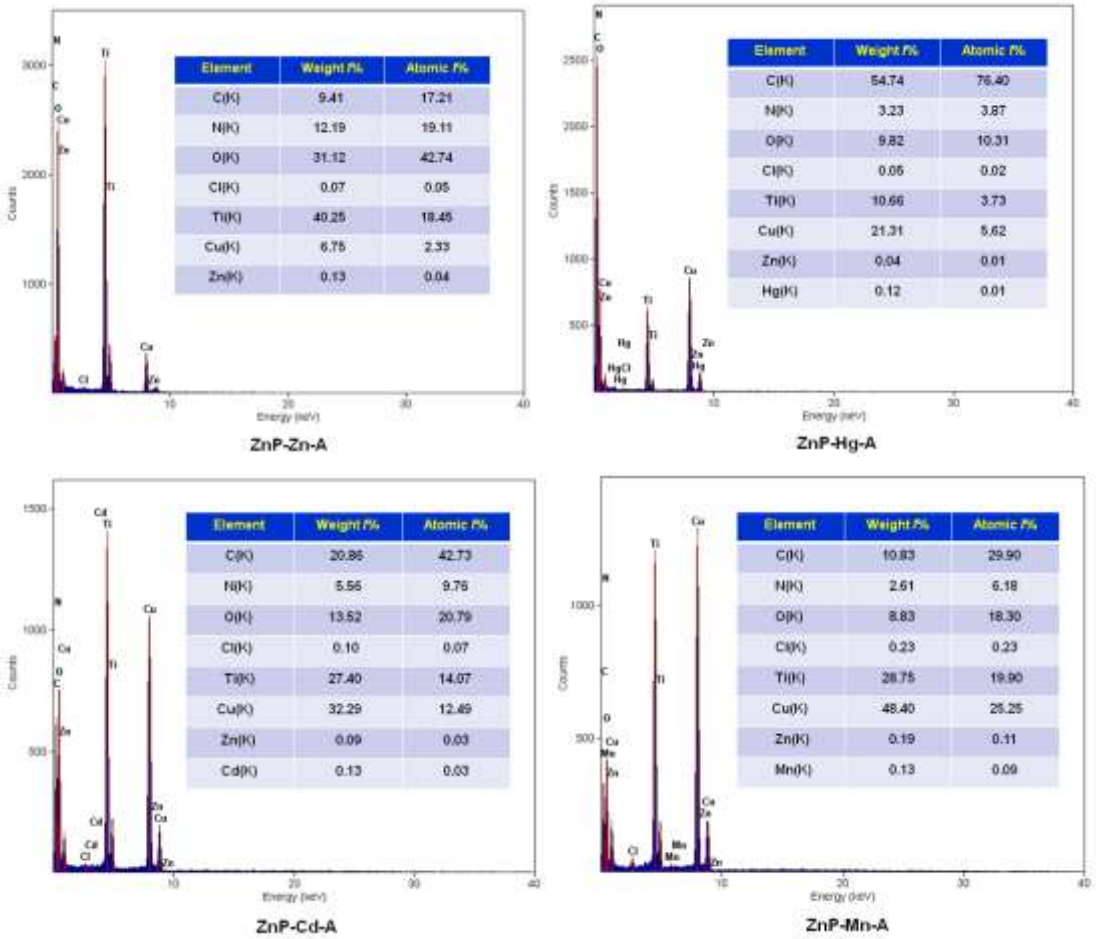

Fig. S4 EDX spectra of the assemblies immobilized on the TiO_2 nanoparticles. The inset tables give the data of elemental analyses.