Electronic Supplementary Information

Theoretical investigation on structural and electronic properties of organic dye C258 on $TiO_2(101)$ surface in dye sensitized solar cells

Ping-Ping Sun, Quan-Song Li,^{*} Li-Na Yang, Zhu-Zhu Sun, Ze-Sheng

Li *

Key Laboratory of Cluster Science of Ministry of Education, Beijing Key Laboratory of Photoelectronic/Electrophotonic Conversion Materials, Beijing Key Laboratory for Chemical Power Source and Green Catalysis, School of Chemistry, Beijing Institute of Technology, Beijing 100081, China

*Corresponding author: Prof. Quan-Song Li; Ze-Sheng Li

E-mail: liquansong@bit.edu.cn; zeshengli@bit.edu.cn; Fax: +86 10 68918670; Tel:

+86 10 68918670



Fig. S1. Configuration of the periodical $(TiO_2)_{256}$ system.



Fig. S2. Different adsorption modes on the surface of anatase (101) for C 258.



Fig. S3. The band structure of $(TiO_2)_{256}$ calculated by DFTB with Fermi level marked in dashed line.



Fig. S4. Density of states (DOS) of $(TiO_2)_{256}$ system.



Fig. S5. DOS and PDOS for Mha configuration system.



Fig. S6. DOS and PDOS for BBH configuration system.



Fig. S7. Selected frontier molecular orbitals of C258.