

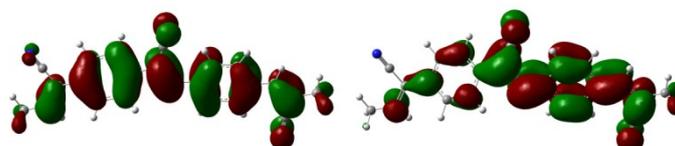
## Synthesis of fluorescent conjugated polymers photocatalyst based on knoevenagel Polycondensation for hydrogen production

Xinhua Cao<sup>a\*</sup>, Yiran Li<sup>a</sup>, Binqian Liu<sup>b</sup>, Aiping Gao<sup>a</sup>, Juntao Cao<sup>a\*</sup>, Yongsheng Yu<sup>a</sup>, Xiaohan Hei<sup>c</sup>  
<sup>a</sup>College of Chemistry and Chemical Engineering & Henan Province Key laboratory of Utilization of Non-metallic Mineral in the South of Henan, Xinyang Normal University, Xinyang 464000, China E-mail: caoxhchem@163.com; jtcao11@163.com.

<sup>b</sup>State Key Laboratory Breeding Base of Photocatalysis Fuzhou University, Fuzhou, 350002, P. R. China.

<sup>c</sup>College of municipal and environmental engineering, Henan University of Urban Construction, Pingdingshan 467000, China

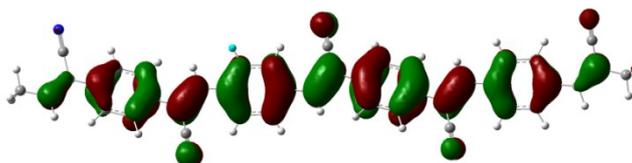
(1) HOMO and LUMO orbital diagrams of **p-P** monomer



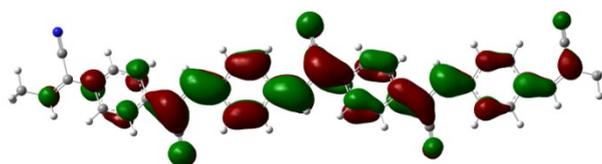
HOMO 6.09 eV

LUMO -2.79 eV

(2) HOMO and LUMO orbital diagrams of **p-P** dimer

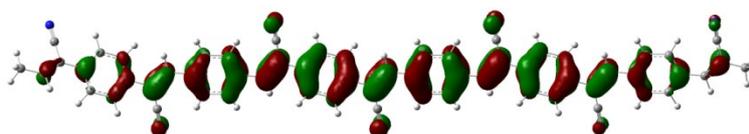


HOMO 5.94 eV

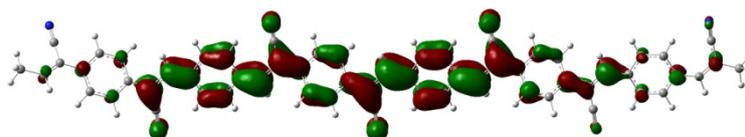


LUMO -3.09 eV

(3) HOMO and LUMO orbital diagrams of **p-P** trimer



HOMO 5.91 eV



LUMO -3.20 eV

**Figure S1** HOMO and LUMO orbital diagrams of **p-P** monomers, dimer and trimer.