## **Supporting information**

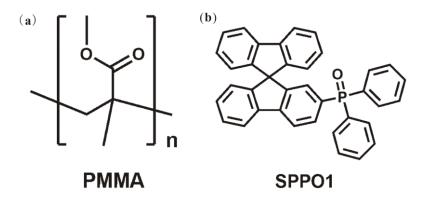
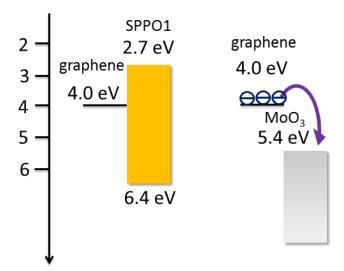


Figure S1. The molecular structures of (a) PMMA and (b) SPPO1.



**Figure S2.** Energy band diagram of graphene and SPPO1. The band structure of graphene and MoO3 is also illustrated for comparison.

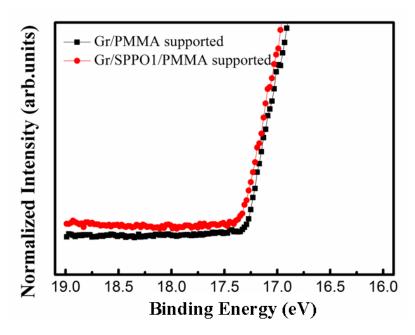


Figure S3. UPS spectra of G-P and G-PS.