

Electronic Supplementary Material (ESI)

Durable and recyclable conjugated microporous polymers mediated controlled radical polymerization under white LED light irradiation

Longqiang Xiao,^{a,b} Qiuyu Li,^a Yabin Liu,^a Xiaoling Fu,^a Yulai Zhao,^a Jingyu Cai,^{a,b} Xiangyu Yin,^a Linxi Hou^{a,c,*}

^aDepartment of Materials-Oriented Chemical Engineering, School of Chemical Engineering, Fuzhou University, No. 2 Xueyuan Road, Fuzhou, 350116, P. R. China

^bQingyuan Innovation Laboratory, Quanzhou, Quanzhou, 362801, P. R. China

^cFujian Key Laboratory of Advanced Manufacturing Technology of Specialty Chemicals, Fuzhou University, No. 2 Xueyuan Road, Fuzhou, 350116, P. R. China

Corresponding authors: Linxi Hou (lxhou@fzu.edu.cn)

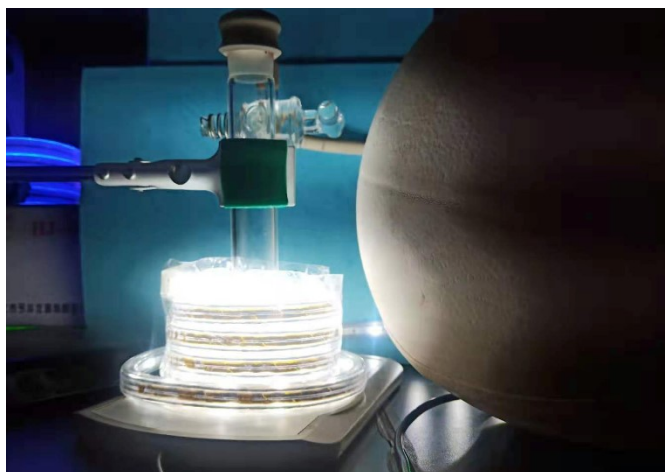


Figure S1 Photo of the polymerization set-up.

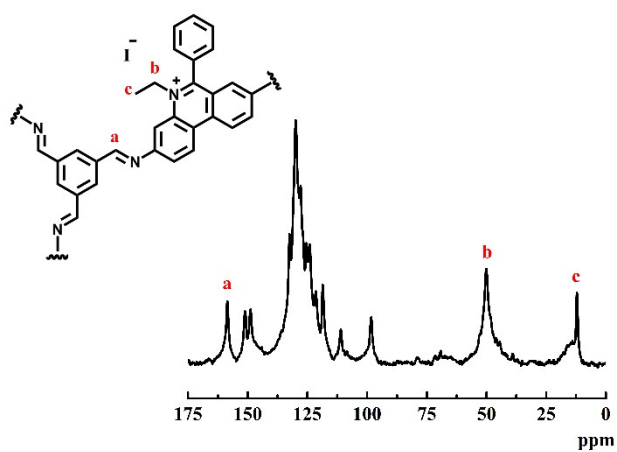


Figure S2. The ^{13}C CP/MAS NMR spectrum of EI-CMP.

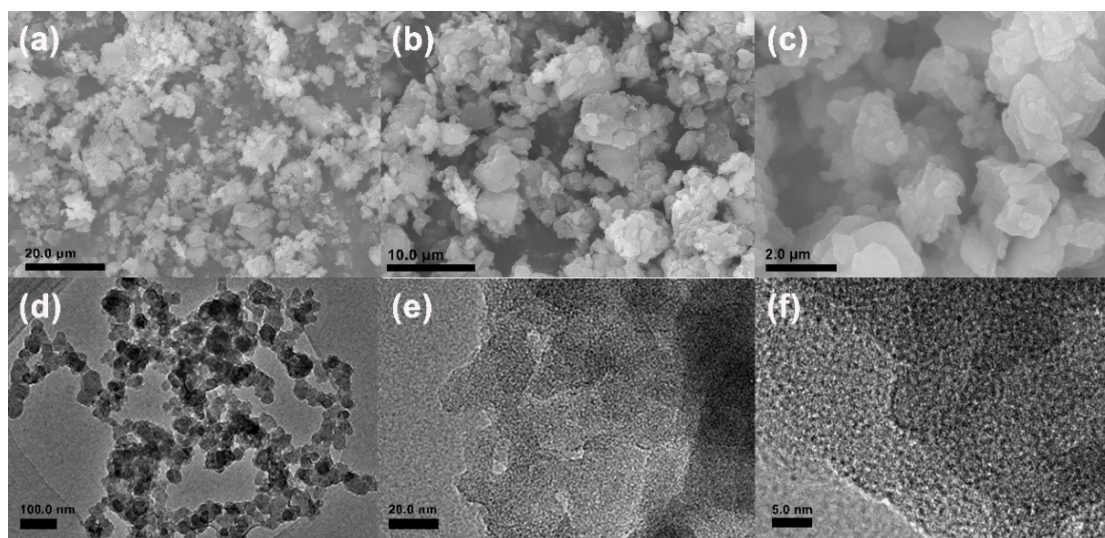


Figure S3. The SEM images (a-c) and TEM images (d-f) of EI-CMP.

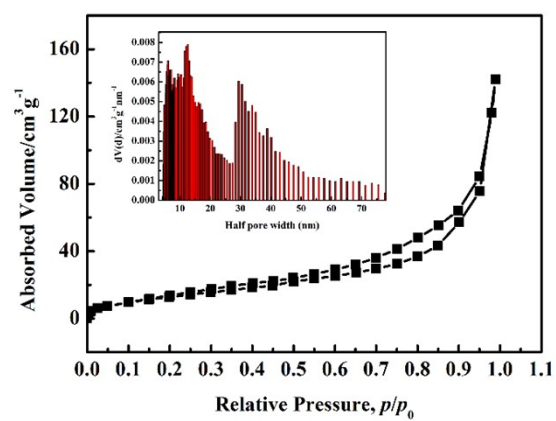


Figure S4. The N₂ adsorption and desorption isotherms of EI-CMP. Inset: The pore size distribution of EI-CMP.

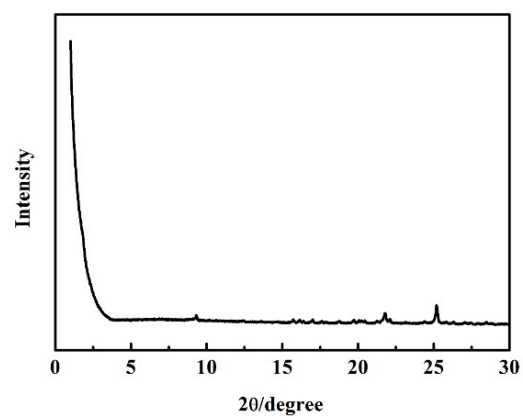


Figure S5. P-XRD pattern of EI-CMP.

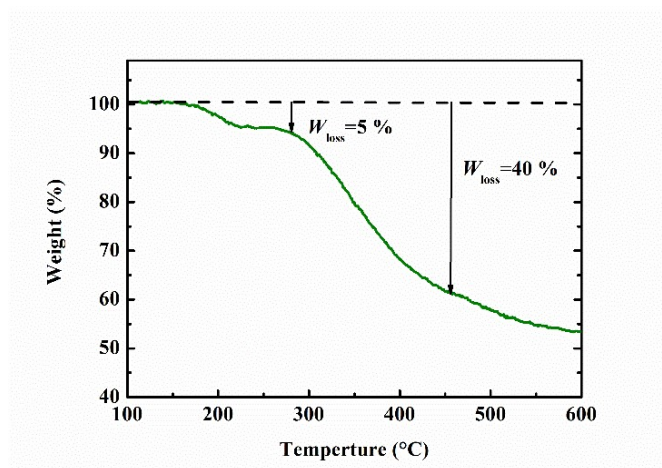


Figure S6. The TGA curve of EI-CMP [at the heating rate of 10 °C/min under N₂ (flow rate = 100 mL/min)]. W_{loss} denotes the weight loss.

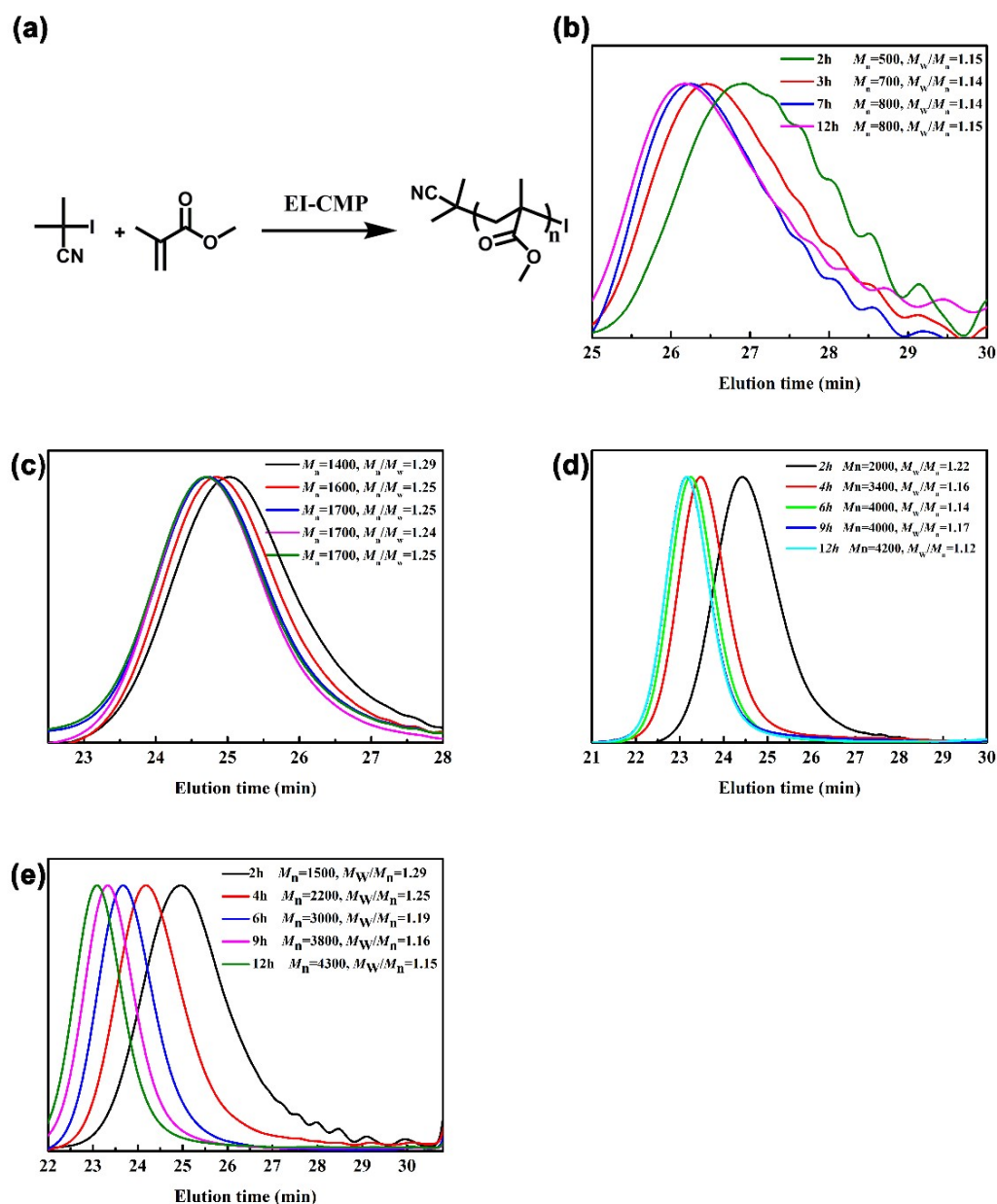


Figure S7. (a) Polymerization of MMA catalyzed by EI-CMP under white LED light irradiation. GPC traces of polymers obtained by using 0 mg (b), 5 mg (c), 10 mg (d) and 20 mg (e) of EI-CMP ($[MMA]_0/[CP-I]_0=100$) under white LED light irradiation.

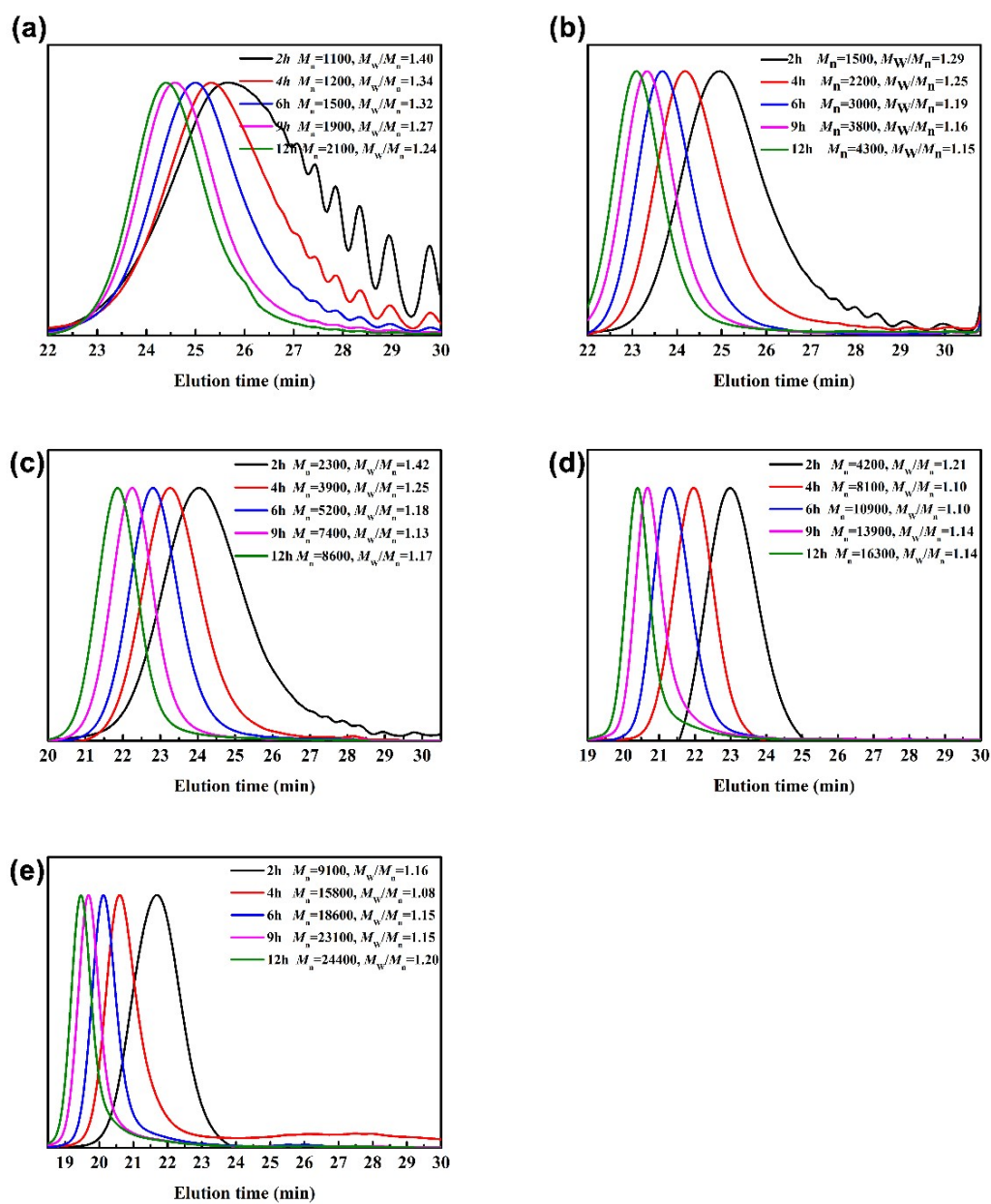


Figure S8. GPC traces of polymers obtained by using $[MMA]_0/[CP-I]_0 = 50$ (a), 100 (b), 200 (c), 500 (d), 1000 (e) (20 mg of EI-CMP) under white LED light irradiation.

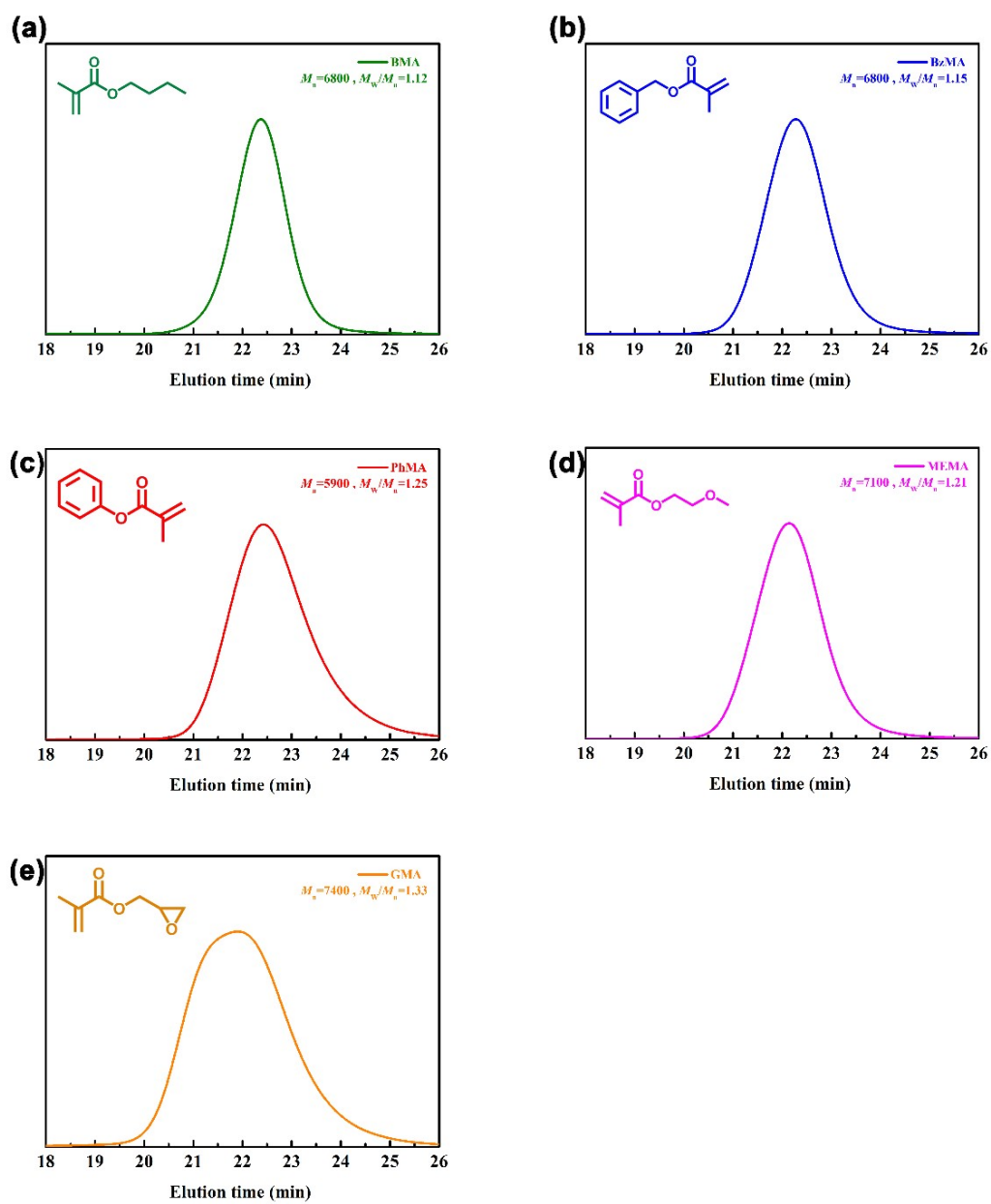


Figure S9. GPC traces of polymers obtained from different monomers.

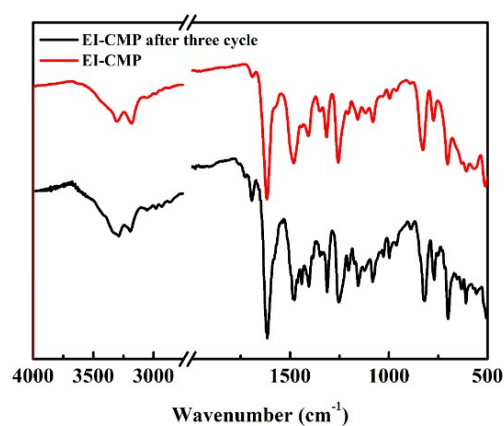


Figure S10. FT-IR spectra of newly prepared EI-CMP and recycled EI-CMP (3rd).

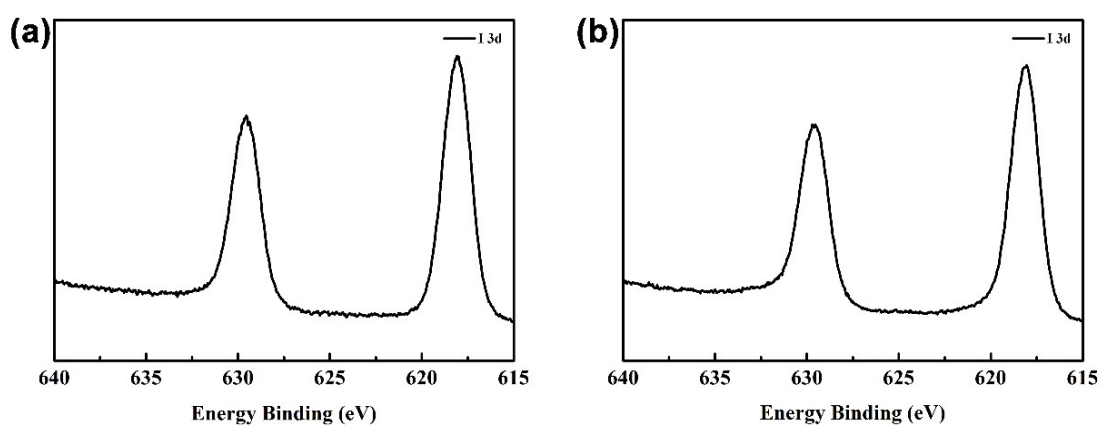


Figure S11. XPS spectra of I 3d of newly prepared EI-CMP and recycled EI-CMP (3rd).



Figure S12. The photography of EI-CMP.

Reference

- 1 J. Sarkar, L. Xiao, A. Goto, *Macromolecules*, 2016, **49**, 5033-5042.
- 2 Z. Lu, X. Fu, H. Yang, Y. Zhao, L. Xiao, L. Hou, *Polym. Chem.*, 2021, **12**, 183-188.