

## Free-radical reaction synthesis of carbon by nitrogenous organic molecules and $\text{CCl}_4$

Zhen Fang,<sup>\*a,b</sup> Jianwen Li,<sup>a,b</sup> Weiguo Jia,<sup>\*a,b</sup>

<sup>a</sup> College of Chemistry and Materials Science, Anhui Normal University,  
Wuhu 241000, P. R. China.

<sup>b</sup> Key Laboratory of Functional Molecular Solids, Ministry of Education,  
Anhui Normal University, Wuhu 241000, P. R. China.

\* Corresponding author, Zhen Fang, E-mail: fzfscn@mail.ahnu.edu.cn.

Weiguo Jia, E-mail:wgjiasy@mail.ahnu.edu.cn

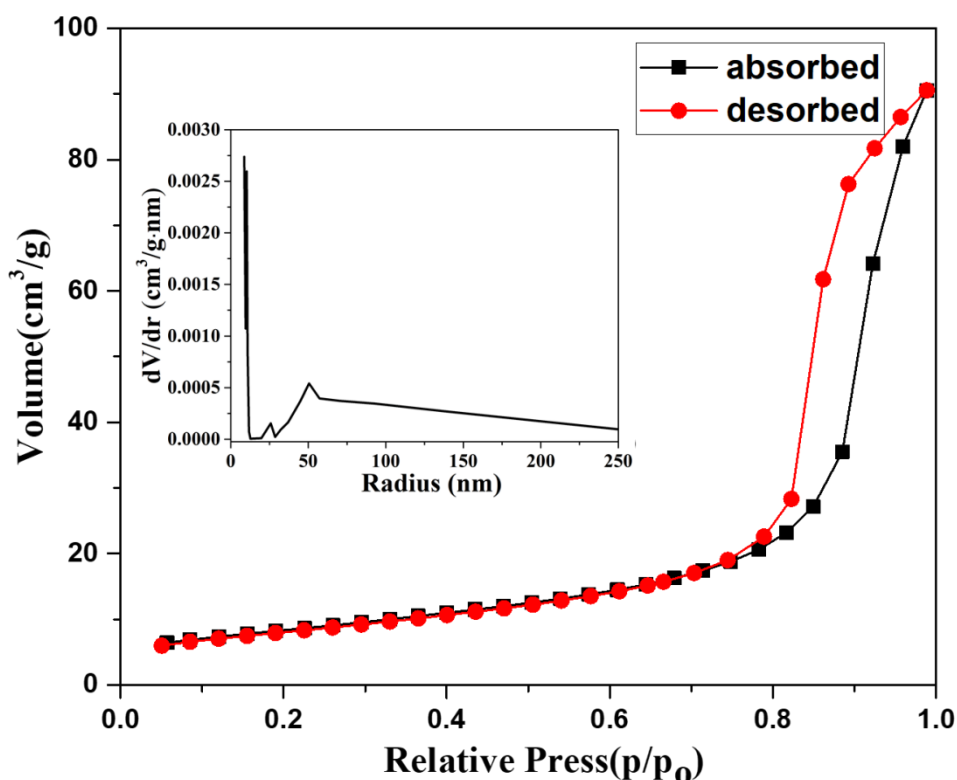


Fig. S1.  $\text{N}_2$  adsorption-desorption isotherms and pore size distribution (inset pattern) of the carbon hollow spheres.

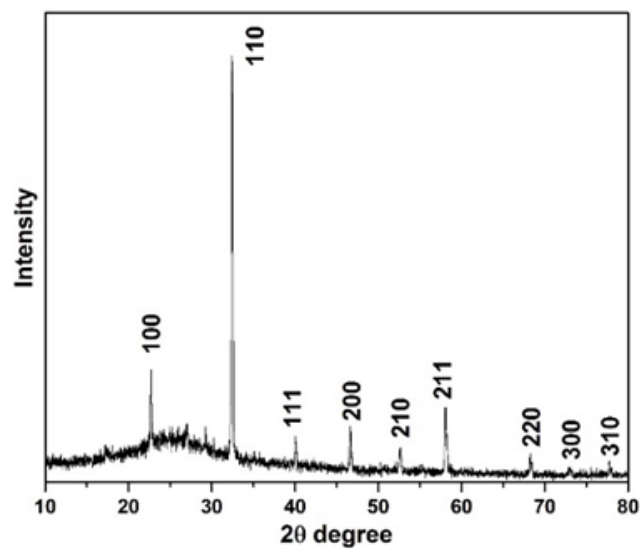


Fig. S2. XRD pattern of the unwashed solid product. ( $\text{NH}_4\text{Cl}$ , Space group: Fm-3m, cubic, PDF No. 34-0710)

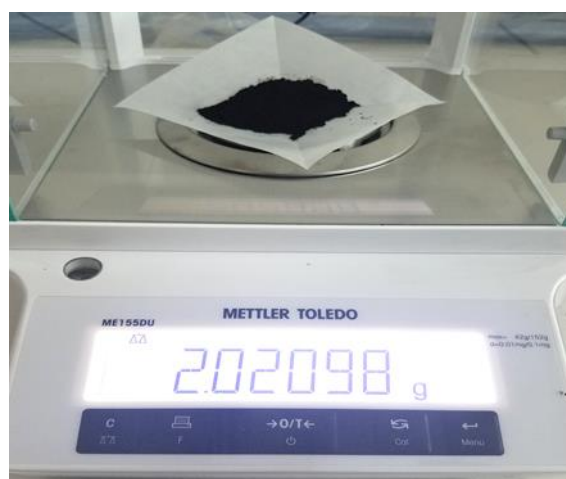


Fig. S3. Optic image of the carbon hollow spheres obtained in one pot reaction.

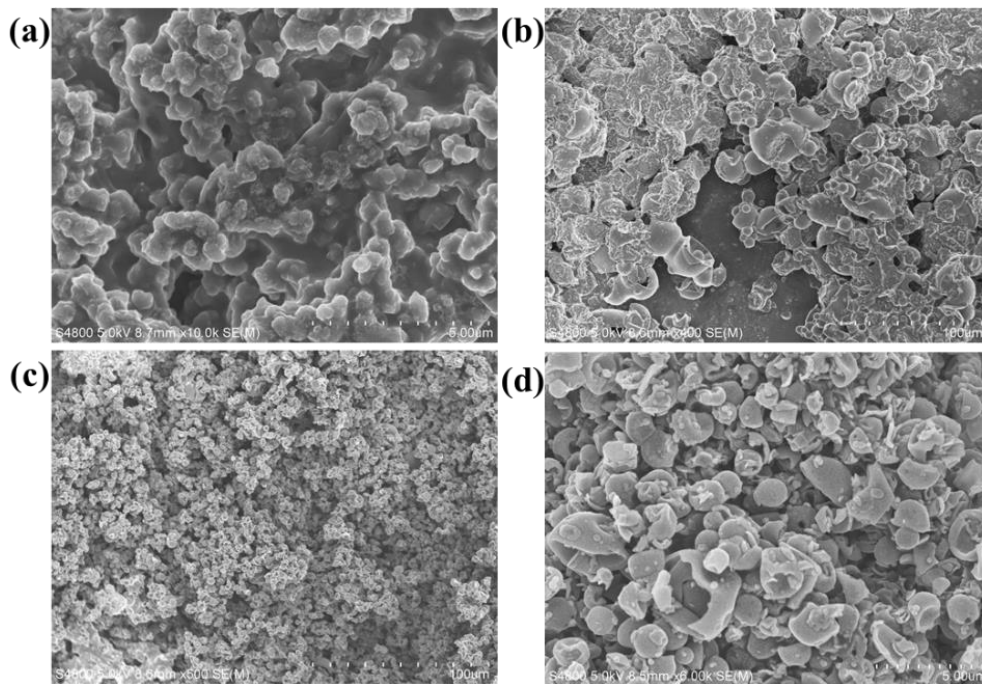


Fig S4. SEM images carbon products obtained in different P123 dosage,  
(a-d) 0, 1, 2, 6 mL.

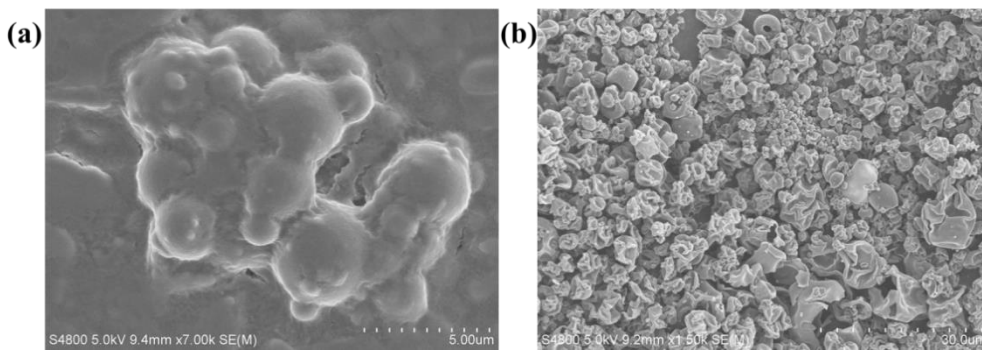


Fig. S5 SEM images of the products obtained at different reaction time,  
(a) 1 h, (b) 2 h.

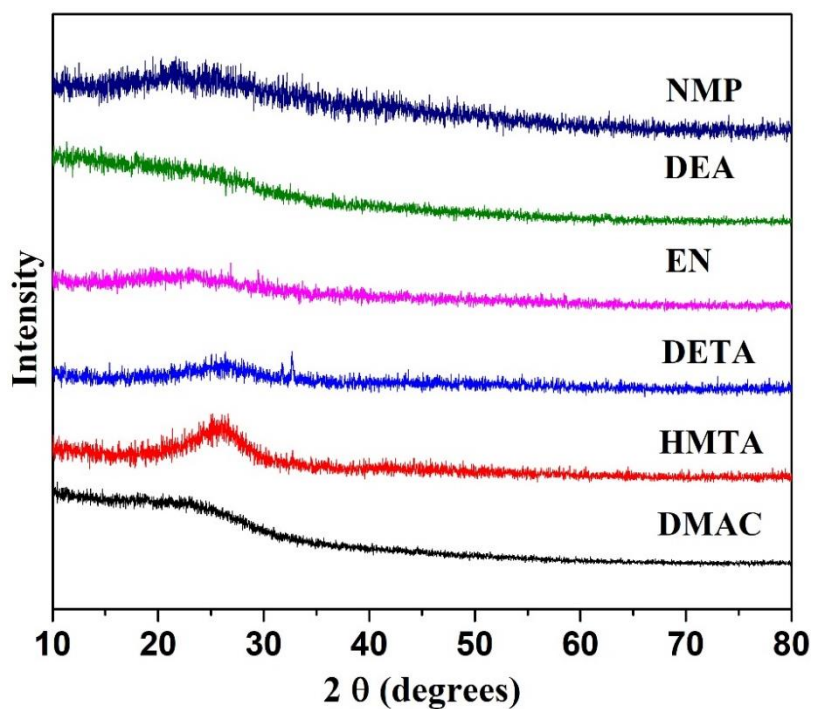


Fig. S6 XRD pattern of the products obtained by using different nitrogenous organic molecule.

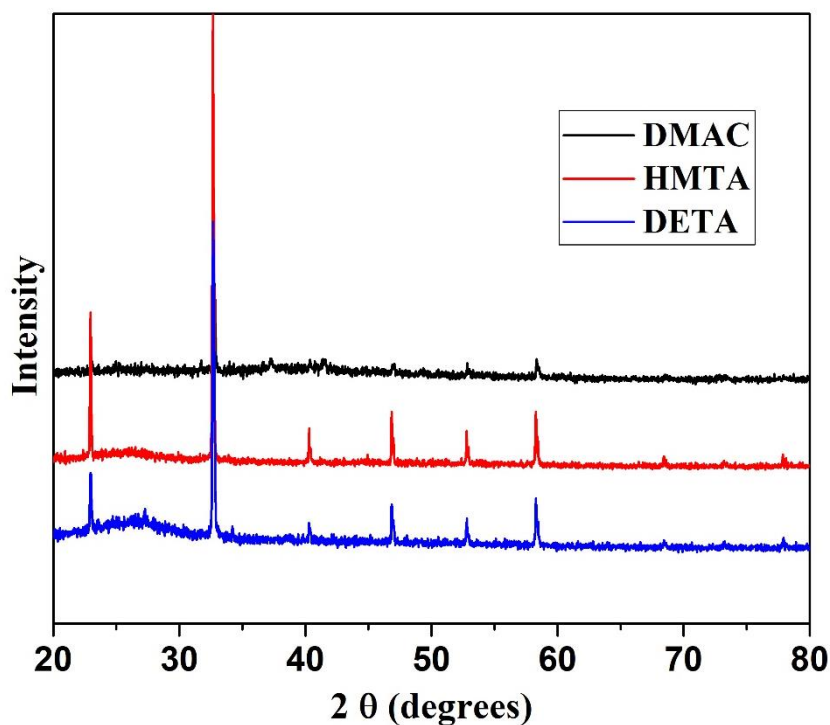


Fig S7. XRD pattern of the unwashed solid products by using DMAC, HMTA and DETA, all the peaks can also be indexed by cubic phase  $\text{NH}_4\text{Cl}$ .