

Electrospun Polycarbonate Nanofibrous Membrane for High Efficiency Particulate Matter Filtration

*Qian Li,^{*1} Yiyang Xu,¹ Hanghang Wei,¹ Xiaofeng Wang,^{*1}*

¹National Center for International Research of Micro-Nano Molding Technology,

School of Mechanics and Engineering Science, Zhengzhou University,

Zhengzhou 450002, China

Corresponding Authors:

* Qian Li: qianli@zzu.edu.cn & Xiaofeng Wang: xiaofengwang@zzu.edu.cn

Supporting information

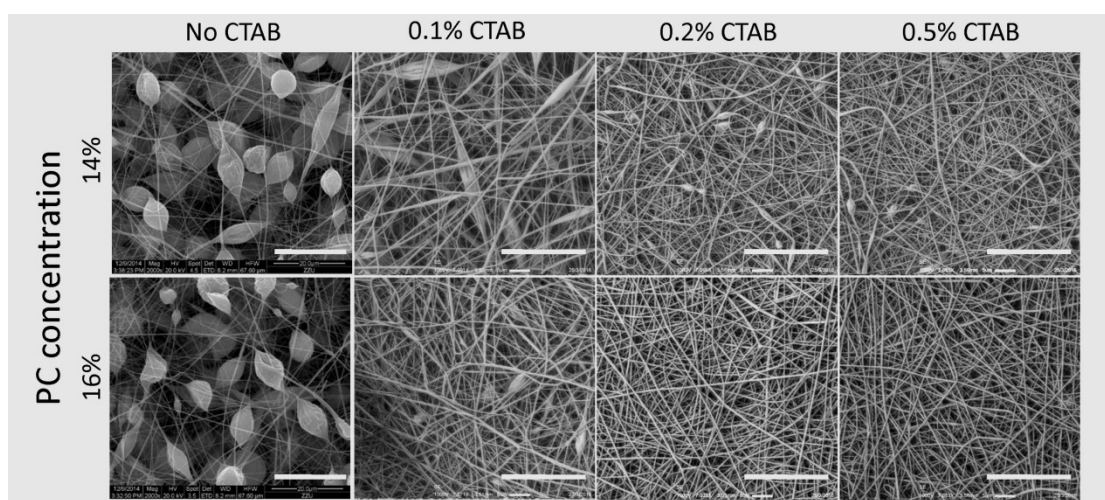


Fig. S1 Effect of CTAB on electrospinning PC. Bead free and uniform PC fiber can't be electrospun from PC/THF/DMF solution with low PC concentration (around 16%), because of relatively high surface tension of PC solution. Addition of CTAB increased charge density of the solution, which significantly increased the charge repulsion leading to formation of fine PC nanofibers. As shown in Fig. S1, in the case of 14%, addition of CTAB greatly decreased the bead density, however, not eliminated. This was mainly because of insufficient molecular chain entanglement due to low PC concentration. Uniform and bead free PC nanofibers were successfully produced with CTAB content higher than 0.2 wt. % of PC in the case of 16%. Keeping increasing CTAB content caused no obvious changes, so the better content was 0.2%. The scale bar measures 20 μm