

Supporting Information For

**Thermal Control Materials of Carbon/SiO<sub>2</sub> Composites with  
a Honeycomb Structure**

Shichao Zhang<sup>1</sup> Xiankai Sun<sup>1\*</sup> Linghao Wu<sup>1</sup> Bing Ai<sup>1</sup> Haoran Sun<sup>1</sup> Yufeng Chen<sup>1</sup>

<sup>1</sup> China Building Materials Academy Co., Ltd, No.1 Guan Zhuang Dong Li, Chaoyang

District, Beijing, 100024, P. R. China

---

Xiankai Sun (✉),

E-mail: sunxiankai2008@163.com; Tel: +86 010-51167551

Shichao Zhang: zhangshichao@cbma.com.cn, Linghao Wu: 16116339@bjtu.edu.cn, Bing Ai:  
aibing2018@163.com, Haoran Sun: moto398@126.com; Yufeng Chen:

chenyunfeng@tom.com

<sup>1</sup> China Building Materials Academy Co., Ltd., No.1 Guan Zhuang Dong Li, Chaoyang District,  
Beijing, 100024, P. R. China

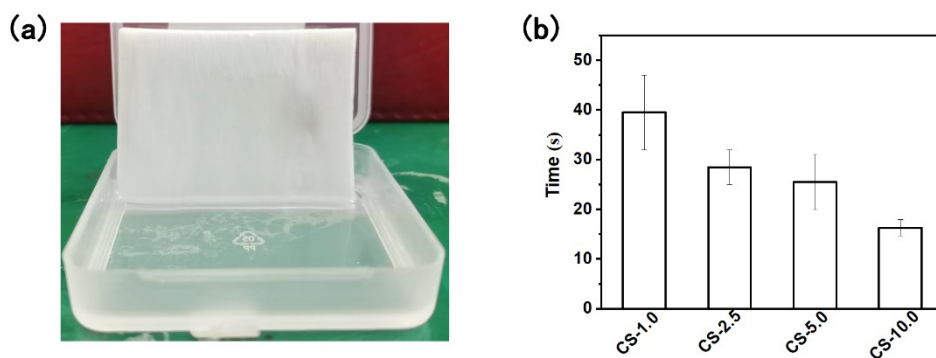


Fig. S1 Picture of the SiO<sub>2</sub> aerogel precursor solution adsorbed along cellulose microtubule axis by delignified poplar chips (a). The time required for filling SiO<sub>2</sub> aerogel precursor solution along the cellulose microtubule axis from bottom to the top end face of the deligninized poplar chips (b, the axial length of the deligninized poplar flake is 35 mm).

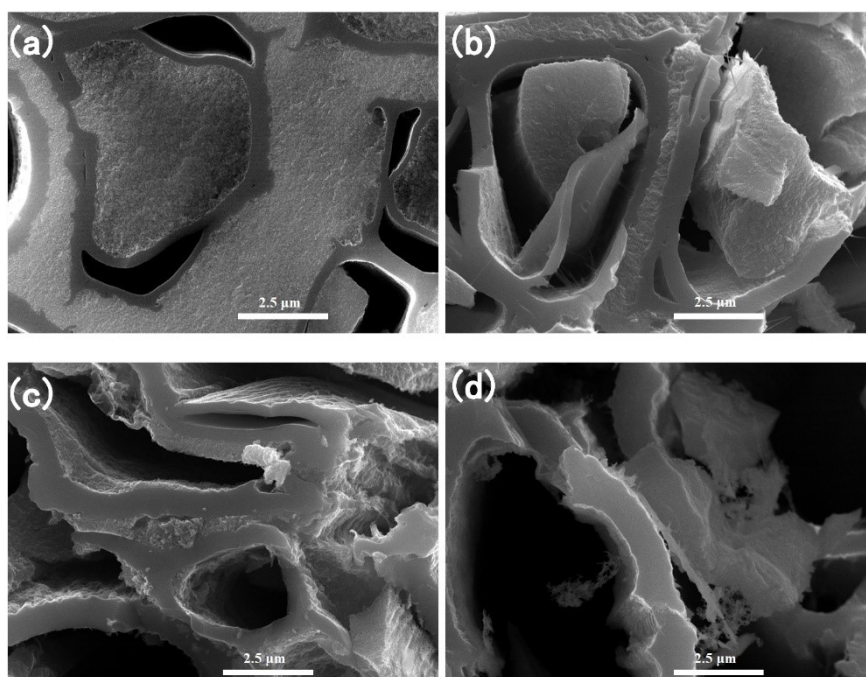


Fig. S2 The SEM images of the intertubules of the anisotropic carbon/SiO<sub>2</sub> composite bionic thermal control materials, (a) ACS-1.0, (b) ACS-2.5, (c) ACS-5.0 and (d) ACS-10.0.

Table S1 The pore structure parameters of the anisotropic carbon/SiO<sub>2</sub> composite bionic thermal control materials

Sample	$S_{\text{BET}}(\text{m}^2 \cdot \text{g}^{-1})$	$V_{\text{total}}(\text{cm}^3 \cdot \text{g}^{-1})$	$D_{\text{average}}(\text{nm})$
ACS-1.0	153	0.2788	5.8
ACS-2.5	183	0.2498	7.3
ACS-5.0	85	0.2450	8.8
ACS-10.0	24	0.0930	11.5