Electronic Supplementary Information (ESI):

Flexible and monolithic zinc oxide bionanocomposite foams by a bacterial cellulose mediated approach for antibacterial applications

Pei-Pei Wang\textsuperscript{a}, Jun Zhao\textsuperscript{a}, Rui-Fei Xuan\textsuperscript{ab}, Yun Wang\textsuperscript{a}, Chen Zou\textsuperscript{a}, Zhiquan Zhang\textsuperscript{c}, Yizao Wan\textsuperscript{d} and Yan Xu\textsuperscript{*a}

\textsuperscript{a}State Key Laboratory of Inorganic Synthesis and Preparative Chemistry, Jilin University, Changchun 130012, China;
\textsuperscript{b}College of Materials Science and Engineering, China University of Mining and Technology, Xuzhou 221116, China;
\textsuperscript{c}College of Chemistry, Jilin University, Changchun 130012, China;
\textsuperscript{d}School of Materials Science and Engineering, Tianjin University, Tianjin 300072, China.

To whom the correspondence should be addressed:

Prof. Dr. Yan Xu
State Key Lab of Inorganic Synthesis and Preparative Chemistry
Jilin University
2699 Qianjin Street
Changchun 130012
China
Email: yanxu@jlu.edu.cn
Figure S1. Thermal gravimetric analysis: (A) BC aerogel. (B) ZnO/BC foam with 40 wt% ZnO obtained after 3 h of autoclaving at 85 °C. (C) The ZnO/BC foam with 70 wt% ZnO after 6 h of autoclaving at 85 °C.
Figure S2. (A) A ZnO/BC foam obtained from solvothermal crystallization using the residual ethanol/hexamine of Step 2. (B) A ZnO/BC foam obtained by one-pot solvothermal crystallization according to the specified stoichiometry. (C) A ZnO/BC foam obtained using *iso*-propanol in place of ethanol. (D) A ZnO/BC foam obtained by refluxing in ethanol and crystallization in water/hexamine under autogenous pressure conditions.

**Figure S3.** Nitrogen adsorption-desorption isotherm of the ZnO powder.
**Figure S4.** (A) FTIR spectra: (a) the BC aerogel; (b) the intermediate product of Step 1; (c) the ZnO/BC foam showing the increasing intensities of the peaks at 554 cm\(^{-1}\) and 1577 cm\(^{-1}\), and weakening absorption at 1650 cm\(^{-1}\). (B) XPS survey spectra of the ZnO powder, 40 wt% ZnO/BC foam and 70 wt% ZnO/BC foam. (C) Deconvoluted XPS peaks of O 1s of the 40 wt% ZnO/BC foam and 70 wt% ZnO/BC foam.