A multifunctional PAN/PVP nanofiber sponge wound dressing loaded with ZIF-8 derived carbon nanoparticles with adjustable wetness for rapid wound disinfection and exudate management

Zhipeng Yuan*, Jing Zhang, Xinfu Zhao, Sijia Liu, Shimo Yu, Xiaochan Liu, Xinen Zhang, Xibin Yi *

Shandong Key Laboratory for Special Silicon-containing Material, Advanced Materials Institute, Qilu University of Technology (Shandong Academy of Sciences), Jinan, 250014, P. R. China

* for corresponding author.

E-mail address: yuanzp@sdas.org; yixb@sdas.org

S1. Thermogravimetric testing of ZnO@CNP-NFS

The thermal stability of ZnO@CNP-NFS is tested by TG-DSC (Mettler TGA/DSC3+). The test is conducted in an air atmosphere, with a range of room temperature to 800℃.

S2. Test method for Zn^{2+} release behavior of ZnO@CNP-NFS.

To test the Zn^{2+} release behavior of ZnO@CNP-NFS, a 2g ZnO@CNP-NFS was weighed and soaked in 6ml of PBS. The sponge was taken out daily and the Zn^{2+} concentration in the PBS was measured. Then the ZnO@CNP-NFS was squeezed dry and re placed in fresh PBS. This operation was repeated for ten consecutive days. The Zn^{2+} concentration in PBS was tested by ICP-OES (Varian 720).

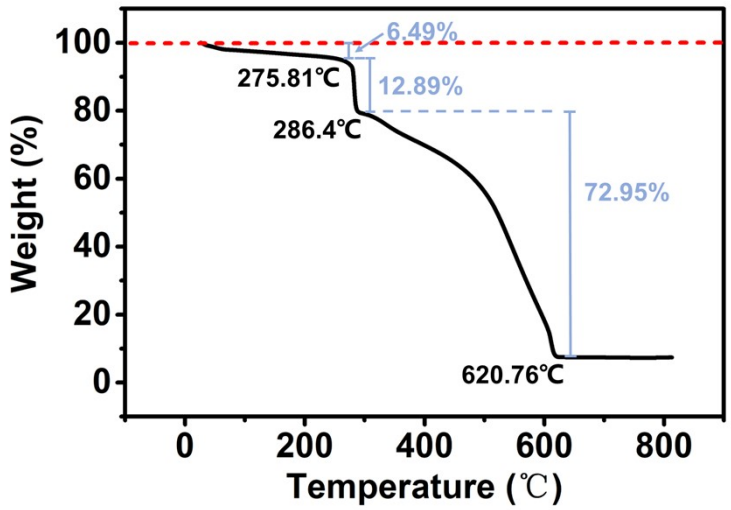

Figure S1 TG analysis of ZnO@CNP-NFS

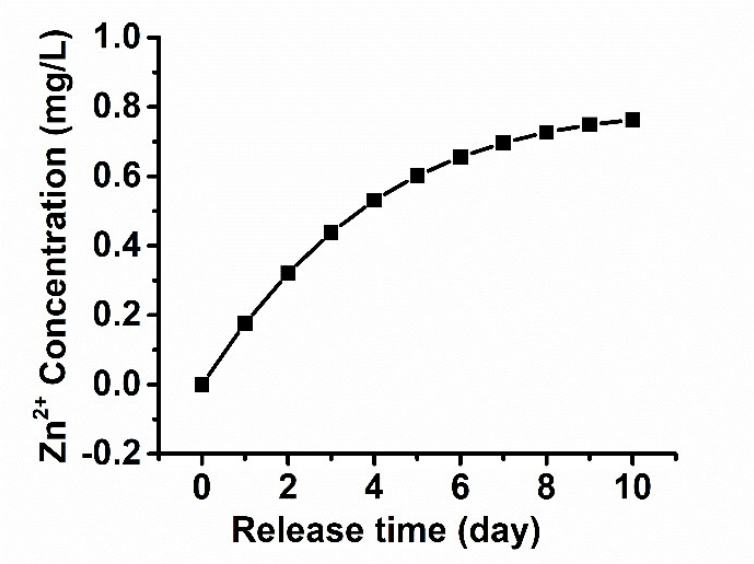

Figure S2 Zn^{2+} release curve of ZnO@CNP-NFS in PBS.

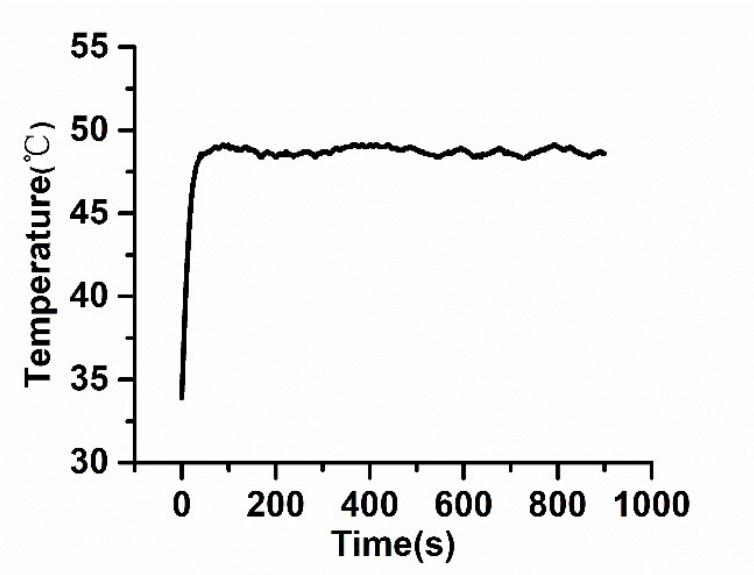

Figure S3 The photothermal heating curves of ZnO@CNP-NFS irradiated by 808nm NIR laser (1 W·cm^{-2}) during PTT treatment in vivo.