

## Supporting Information

### **MMP-Responsive Bioactive Glass-Incorporated Hydrogels with Enhanced Antibacterial and Angiogenic Performance for Infected Wound Healing**

Wenjia Shao,<sup>‡ab</sup> Min Xing,<sup>‡c</sup> Linlin Zhao,<sup>d</sup> Xue Ke,<sup>b</sup> Kuicai Ye,<sup>c</sup> Shuhan Chen,<sup>\*b</sup>  
Hairong Liu,<sup>\*a</sup> Jiajun Qiu<sup>\*b</sup> and Xuanyong Liu<sup>\*bd</sup>

Author affiliations:

\*Corresponding authors

<sup>a</sup> College of Material Science and Engineering, Hunan University, No.2 Lushan South Road, Yuelu District, Changsha, Hunan 410082, P. R. China

E-mail: liuhairong@hnu.edu.cn

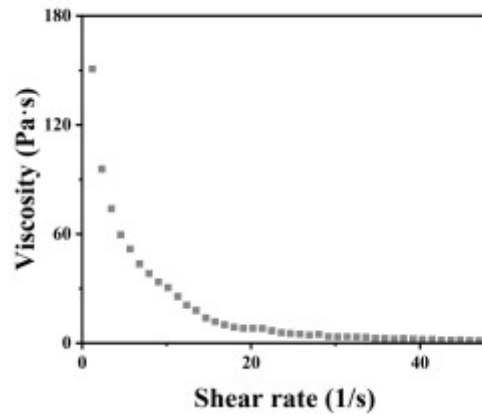
<sup>b</sup> State Key Laboratory of High Performance Ceramics, Shanghai Institute of Ceramics, Chinese Academy of Sciences, Shanghai, 200050, P. R. China

E-mail: chenshuhan@mail.sic.ac.cn, qiujiacun@mail.sic.ac.cn, xyliu@mail.sic.ac.cn

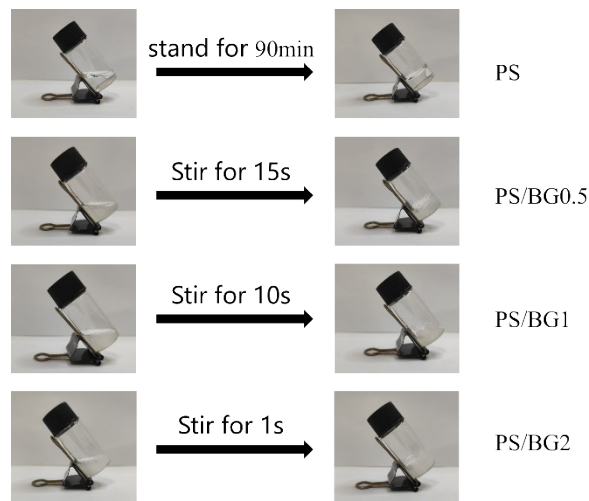
<sup>c</sup> Laboratory of Dental Biomaterials and Tissue Regeneration, Shanghai Xuhui District Stomatological Hospital, Shanghai, 200032, P. R. China

<sup>d</sup> Shanghai Engineering Research Center of Nano-Biomaterials and Regenerative Medicine, College of Biological Science and Medical Engineering, Donghua University, No.2999 Renmin North Road, Song Jiang District, Shanghai 201620, P. R. China

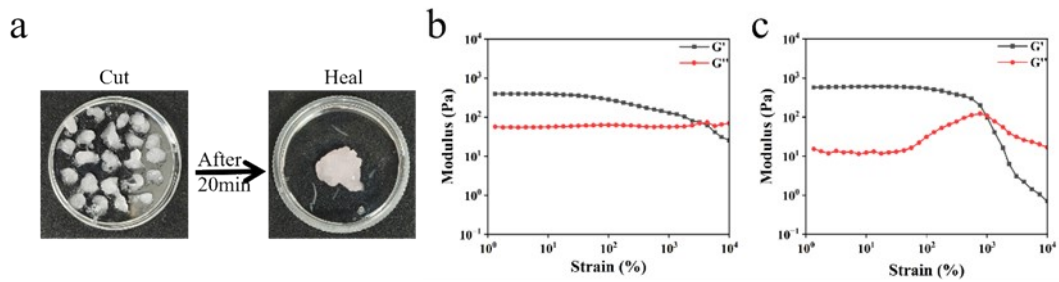
<sup>‡</sup> These authors contributed equally to this work.



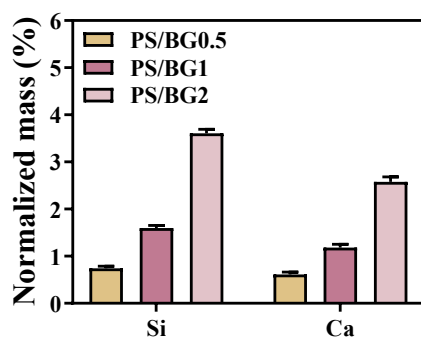
**Fig. S1.** The shear rate - viscosity curves (b) of the PS/BG2 hydrogel.



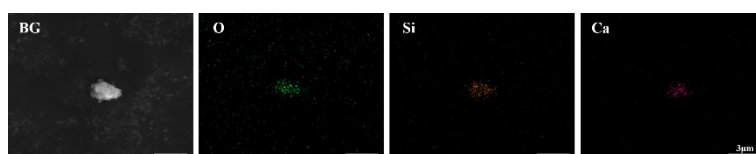
**Fig. S2.** Gelation process of PS, PS/BG0.5, PS/BG1, and PS/BG2 hydrogels.



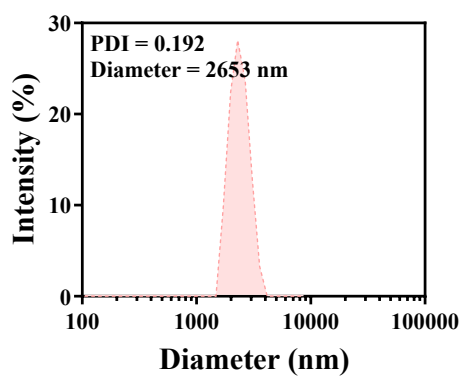
**Fig. S3.** (a) Optical images show the state of the PS/BG2 hydrogel after being cut into multiple fragments and the macroscopic reconnection state after healing at room temperature for 20 minutes. Storage modulus ( $G'$ ) and loss modulus ( $G''$ ) of the complete hydrogel (b) and cut hydrogel (c) within the stress range from 1% to 10000%



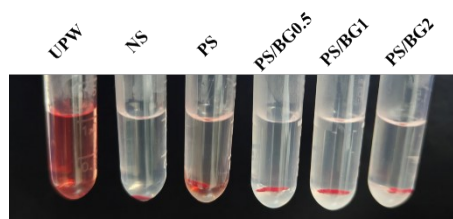
**Fig. S4.** Elemental ratios of Si and Ca in the PS/BG hydrogel.



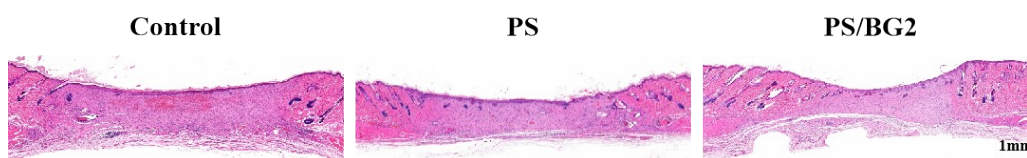
**Fig. S5.** Microscopic morphology and elemental compositions of BG.



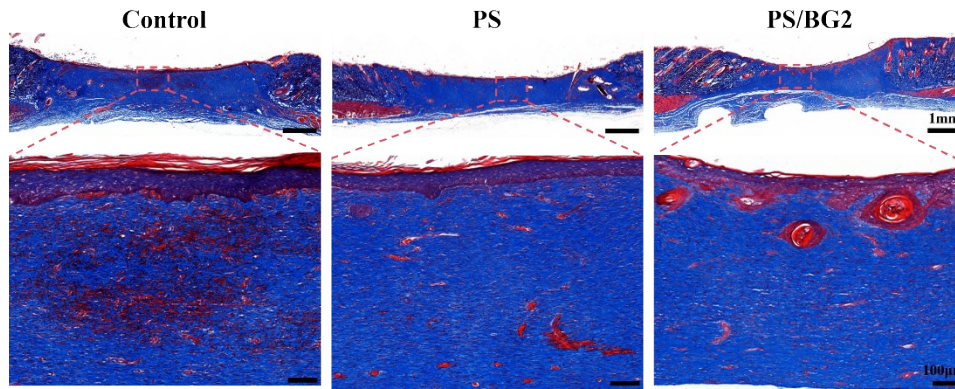
**Fig. S6.** Dynamic light scattering (DLS) hydrodynamic size analysis of BG.



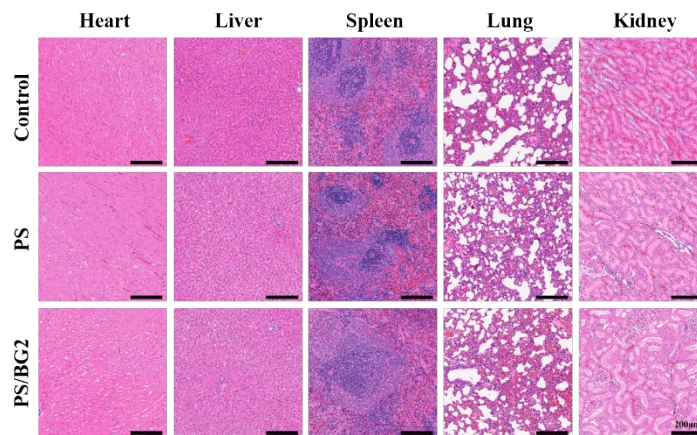
**Fig. S7.** Picture of hemolysis experiment



**Fig. S8.** Representative images of H&E staining.



**Fig. S9.** Representative images of Masson's trichrome staining.



**Fig. S10.** H&E staining of major organ sections.