Polydopamine-functionalized polymer particles as templates for mineralization of hydroxyapatite: Biomimetic and *in vitro* bioactivity

Junli Cui, †a Chao Ma,†b Zhenni Li,a Longyun Wu,b Wei Wei,c Min Chen,*b Bo Peng,*d and Ziwei Deng*a

a School of Materials Science and Engineering, Shaanxi Normal University, Xi’an, 710062, China

b The Affiliated Drum Tower Hospital of Nanjing University Medical School, Nanjing, 210008, China

c Department of Gastrointestinal Surgery, The Second Affiliated Hospital of Nanjing Medical University, Nanjing, 210011, China

d Department of Chemistry, Physical and Theoretical Chemistry Laboratory, University of Oxford, South Parks Road, Oxford OX1 3QZ, United Kingdom

† These two authors contributed equally to this work.

Corresponding authors:

* Dr. Min Chen, E-mail: croweminchan@aliyun.com

* Dr. Bo Peng, Tel: +44-1865285417. E-mail: pengbo006@gmail.com

* Dr. Ziwei Deng, Tel:+86-29-81530804. Fax:+86-29-81530702. E-mail: zwdeng@snnu.edu.cn
**Fig. S1** TEM image of PS particles after incubation in SBF solution for 3 days.
Fig. S2 TEM images of PS/PDA composite particles (a) and the produced PS/PDA/HAP hybrid materials after incubation of PS/PDA composite particles in SBF solution for (b) 3; (c) 7; and (d) 10 days at a high magnification, respectively.
Fig.S3 Scanning electron microscopy (SEM) images of PS/PDA composite particles (a) and the resulting PS/PDA/HAP hybrid biocomposites after the incubation of PS/PDA composite particles in the SBF solutions for (b) 3; (c) 7; and (d) 10 days, respectively.
Fig. S4  Scanning electron microscopy (SEM) images (a, b) and their corresponding energy dispersive X-ray (EDX) spectra (c) of PS/PDA composite particles. SEM images in (b) show the typical PS/PDA composite particles from (a) at a high magnification.