## **Supporting Information**

## Self-powered Sandwich-structured Scaffold with Dual-electroactive

## **Properties to Regenerate Damaged Intervertebral Discs after**

## Discectomy

Jing Wang<sup>1#</sup>, Leizhen Huang<sup>1#</sup>, Tao Guo<sup>2</sup>, Zheng Liu<sup>1</sup>, Huilun Xu<sup>1</sup>, Hao Yang<sup>1</sup>, Limin Liu<sup>1</sup>, Ganjun Feng<sup>1</sup>\*, Li Zhang<sup>1</sup>\*

- Analytical Testing Center, Department of Orthopedic Surgery and Orthopedic Research Institute, West China Hospital, Sichuan University, Chengdu 610065, China
- Department of Orthopedic Surgery, Guizhou Provincial People's Hospital, Guiyang 550002, China

<sup>#</sup> The two authors contributed equally to the work.

\* Corresponding authors

E-mail address: nic1976@scu.edu.cn (Li Zhang); gjfenghx@wchscu.cn (Ganjun Feng)

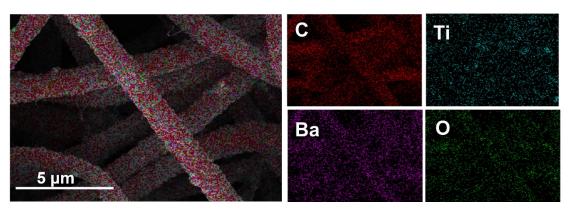


Figure S1 EDS mapping of B5 fibrous membrane.

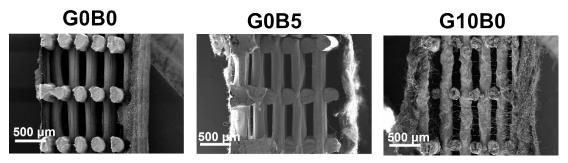


Figure S2 The cross-section SEM images of G0B0, G0B5, and G10B0.

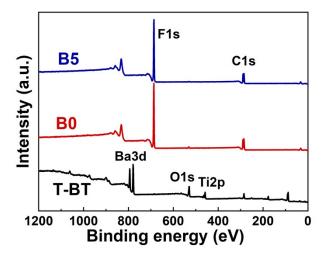


Figure S3 XPS spectra of T-BT nanoparticles as well as B0 and B5 fibrous membranes.

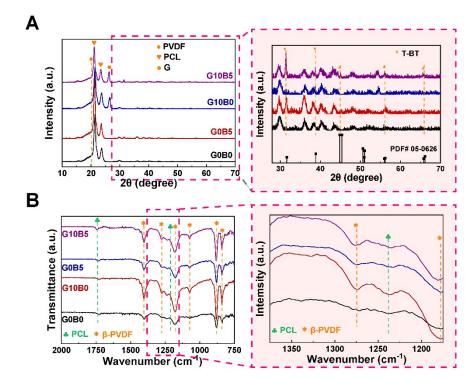
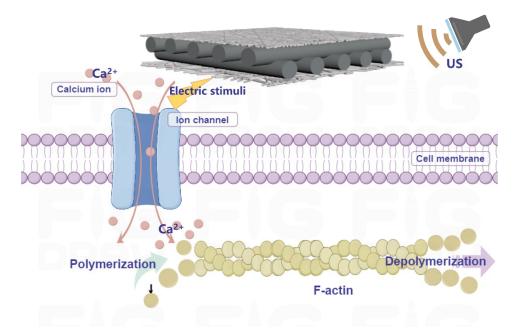


Figure S4 XRD patterns (A) and FT-IR spectra (B) of different sandwich-structured scaffolds.



**Figure S5** The schematic illustrating the underlying mechanisms of the G10B5 dual-electroactive scaffold promoting cell adhesion and migration under US treatment.