

## **Electronic Supplementary Information**

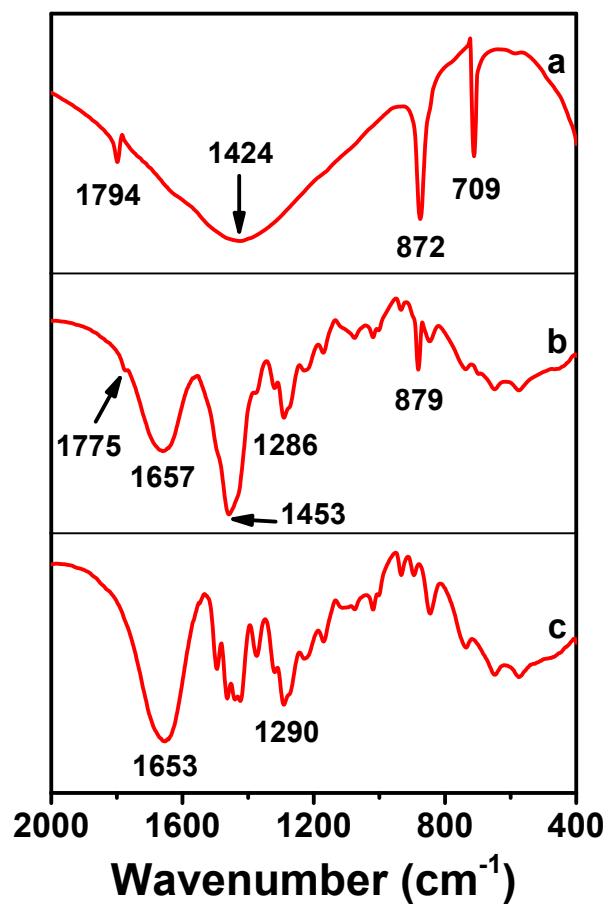
# **Self-healing and easy to shape mineralized hydrogels for iontronics**

*Jinfeng Cao, Yanhui Kang, Xiaoqing Wu, Chen He, Jinping Zhou\**

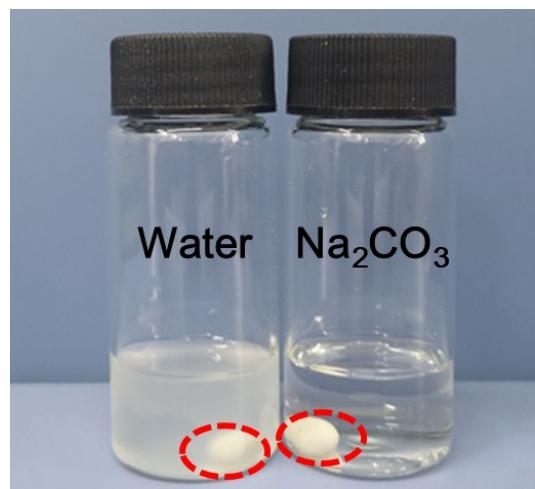
Hubei Engineering Center of Natural Polymers-based Medical Materials, Key Laboratory of Biomedical Polymers of Ministry of Education, Sauvage Center for Molecular Sciences, and Department of Chemistry, Wuhan University, Wuhan 430072, China

---

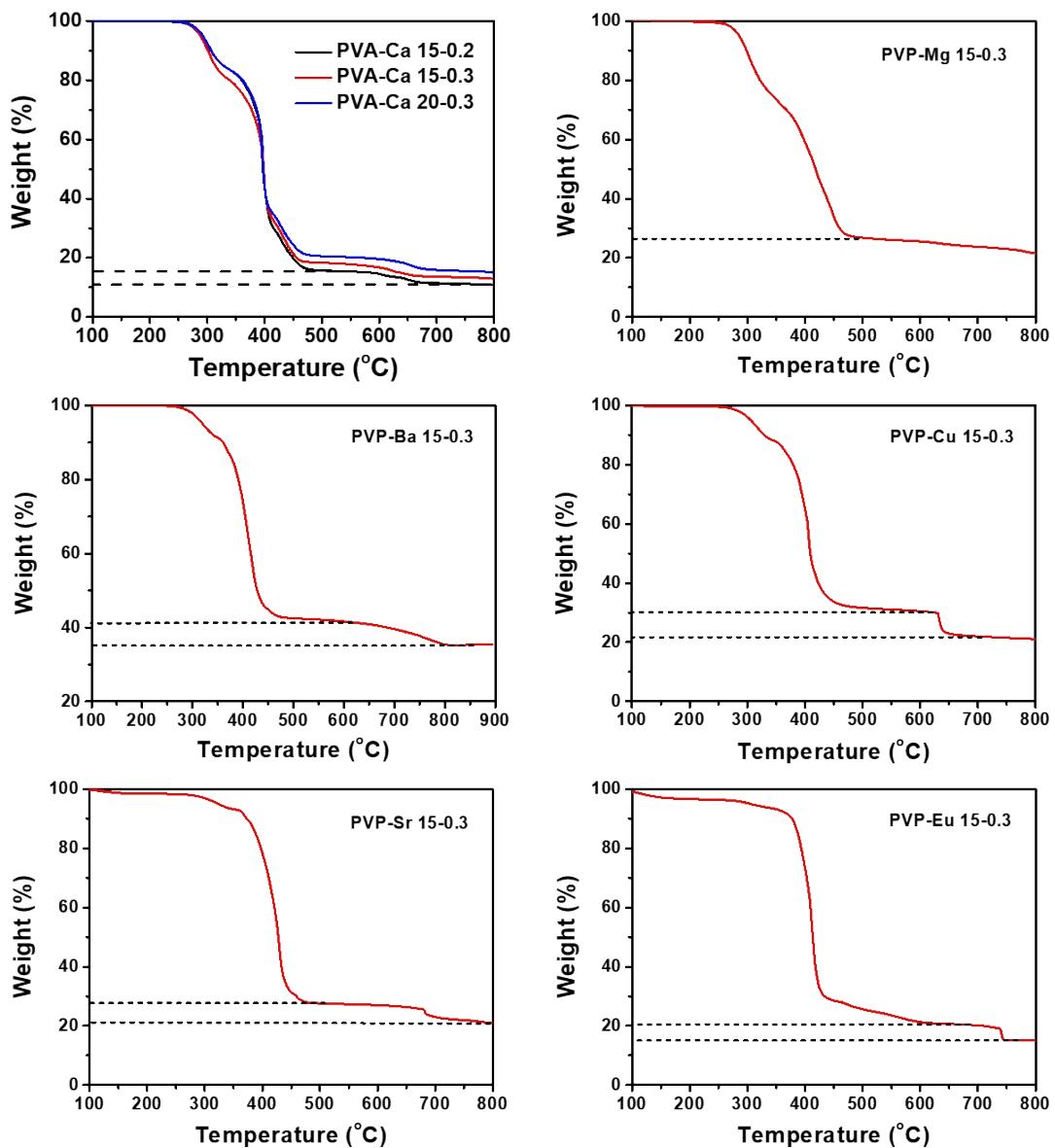
\*Corresponding author, Tel: +86-27-68752977, Fax: +86-27-68754067



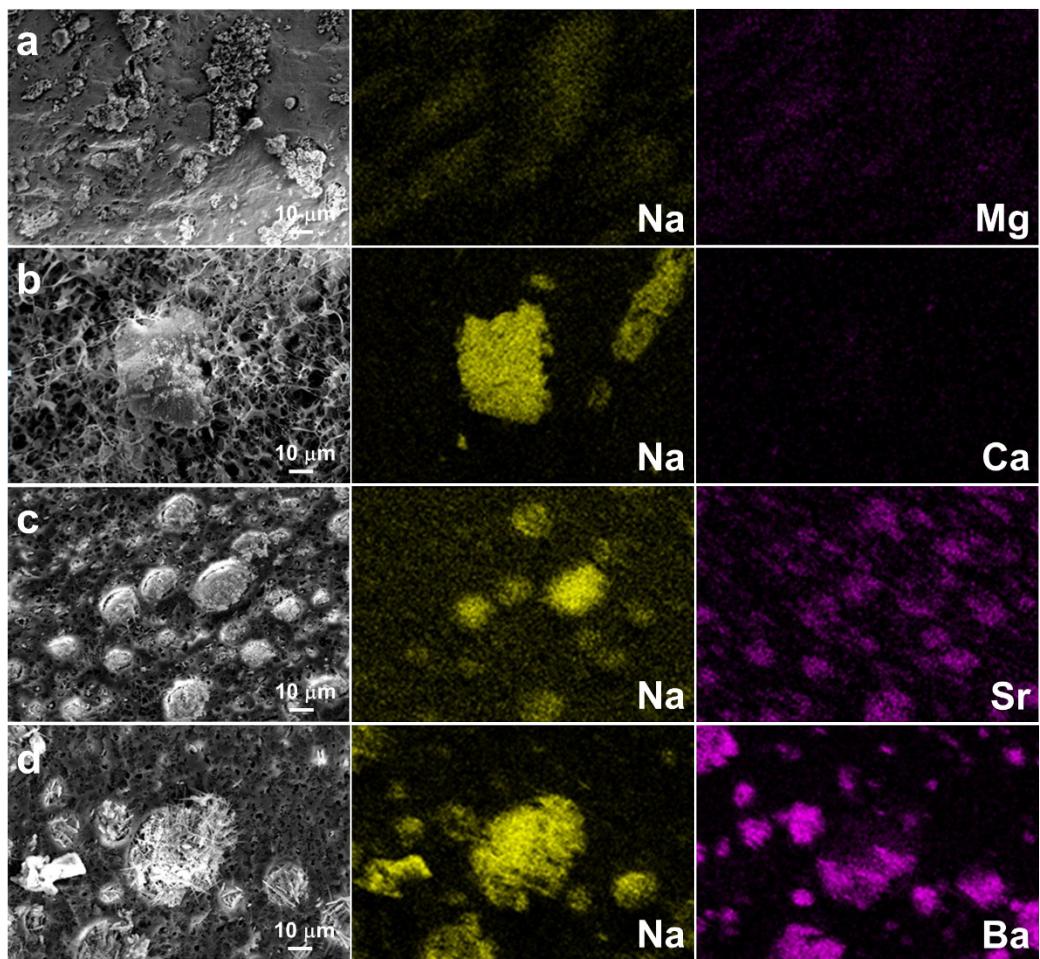
**Fig. S1** IR spectra of (a)  $\text{CaCO}_3$ , (b) PVP-Ca 15-0.3 and (c) PVP.



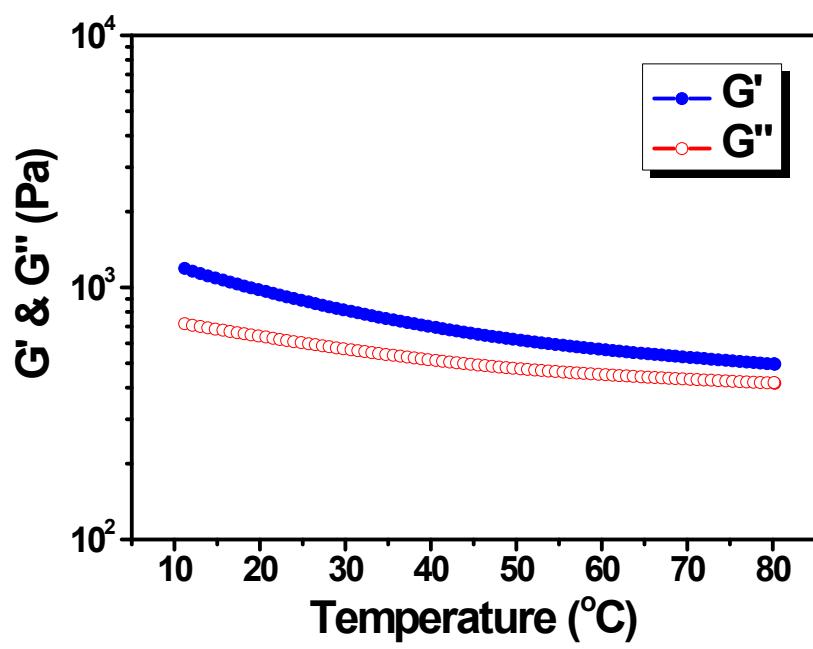
**Fig. S2** Photographs of the PVP-Ca 15-0.3 hydrogels immersed in distilled water and  $1 \text{ mol L}^{-1}$   $\text{Na}_2\text{CO}_3$  aqueous solution.



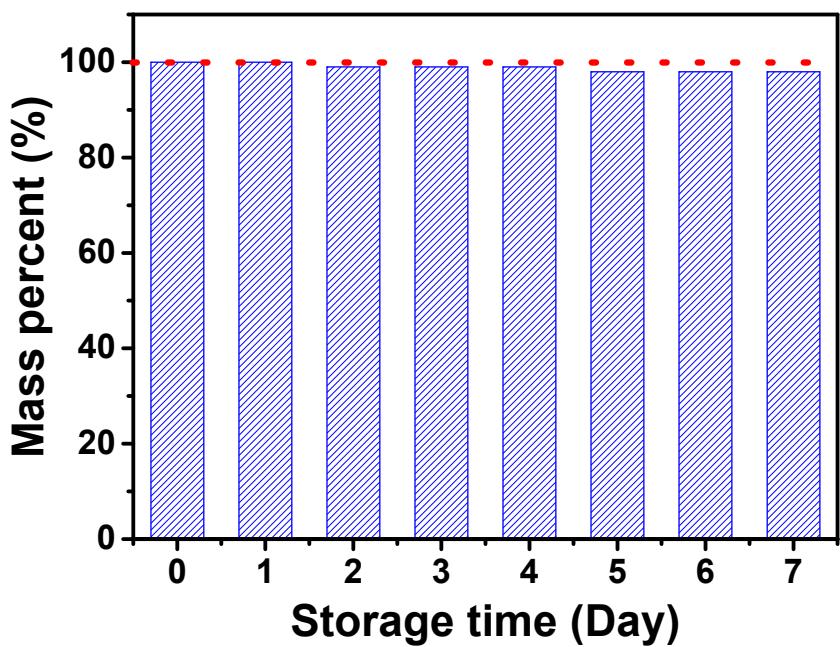
**Fig. S3** TG curves of the mineralized hydrogels under an air atmosphere.



**Fig. S4** SEM images and the corresponding elemental mapping of the mineralized hydrogels: (a) PVP-Mg 15-0.3, (b) PVP-Ca 15-0.3, (c) PVP-Sr 15-0.3, (d) PVP-Ba 15-0.3.



**Fig. S5.** Dependence of temperature on the  $G'$  and  $G''$  of PVP-Ca 15-0.3.



**Fig. S6** Dependence of the mass change of the PVP-Ca 15-0.3 hydrogels sealed with two VHB tape on the storage time at 25 °C.