

## **Electronic Supplementary Information**

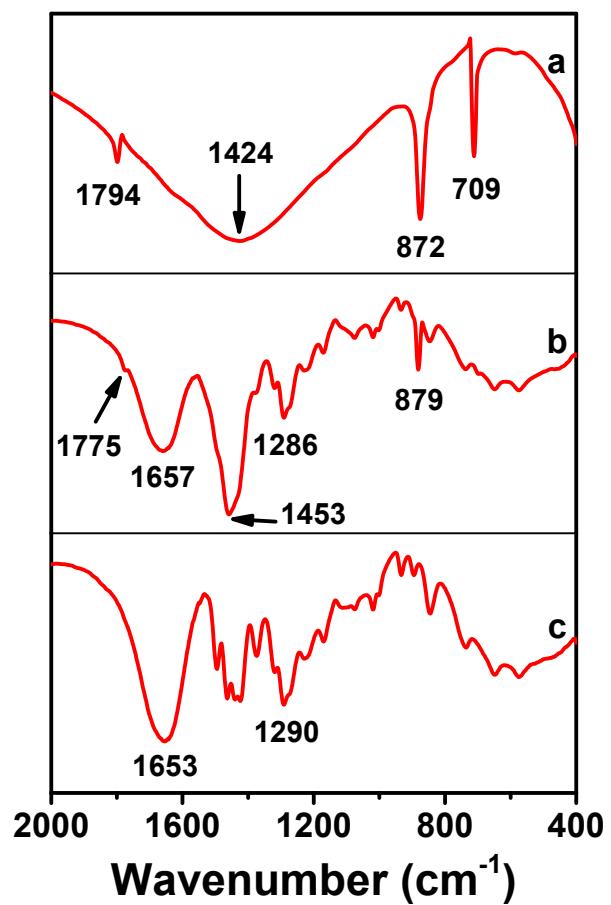
# **Self-healing and easy to shape mineralized hydrogels for iontronics**

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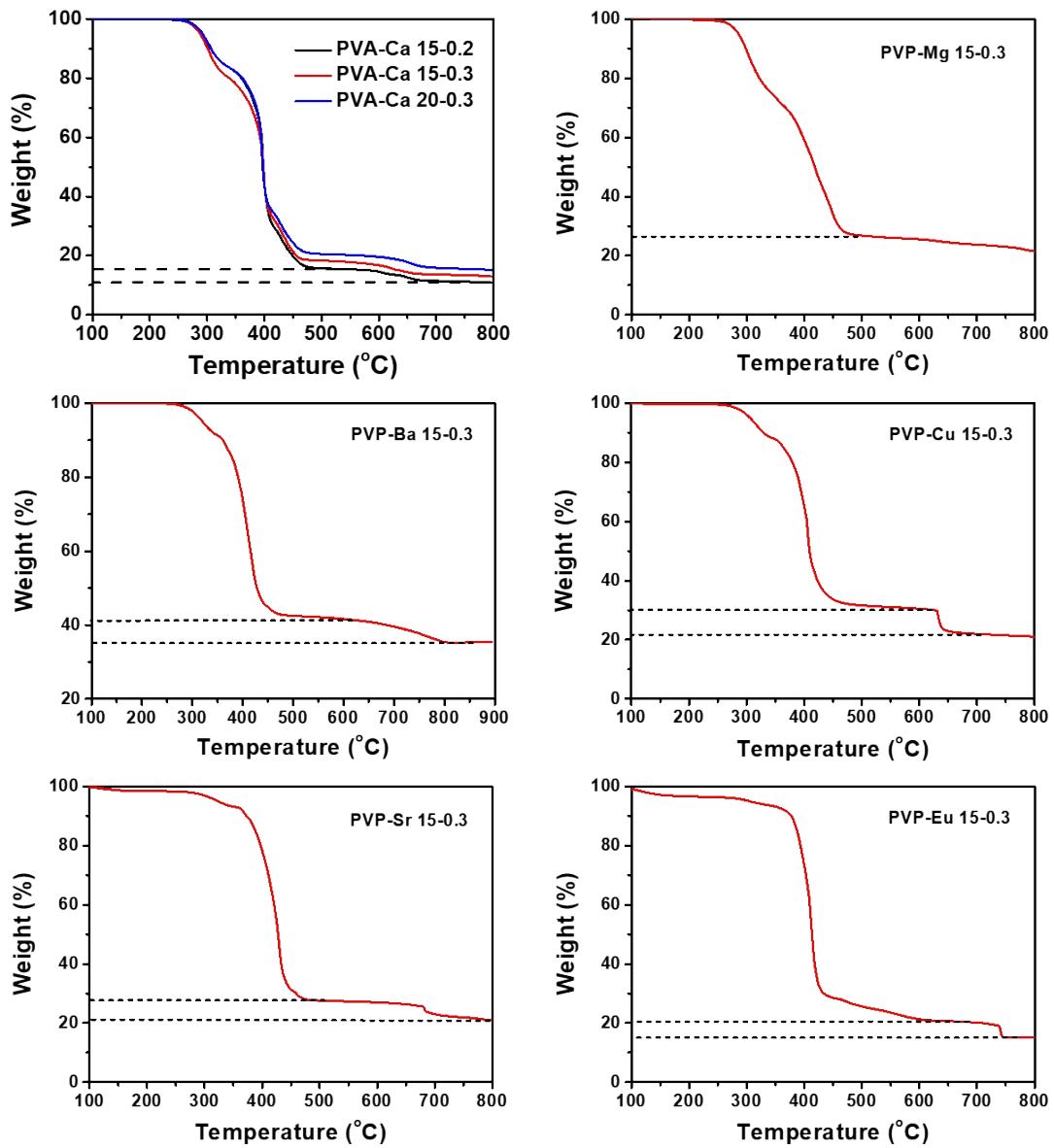
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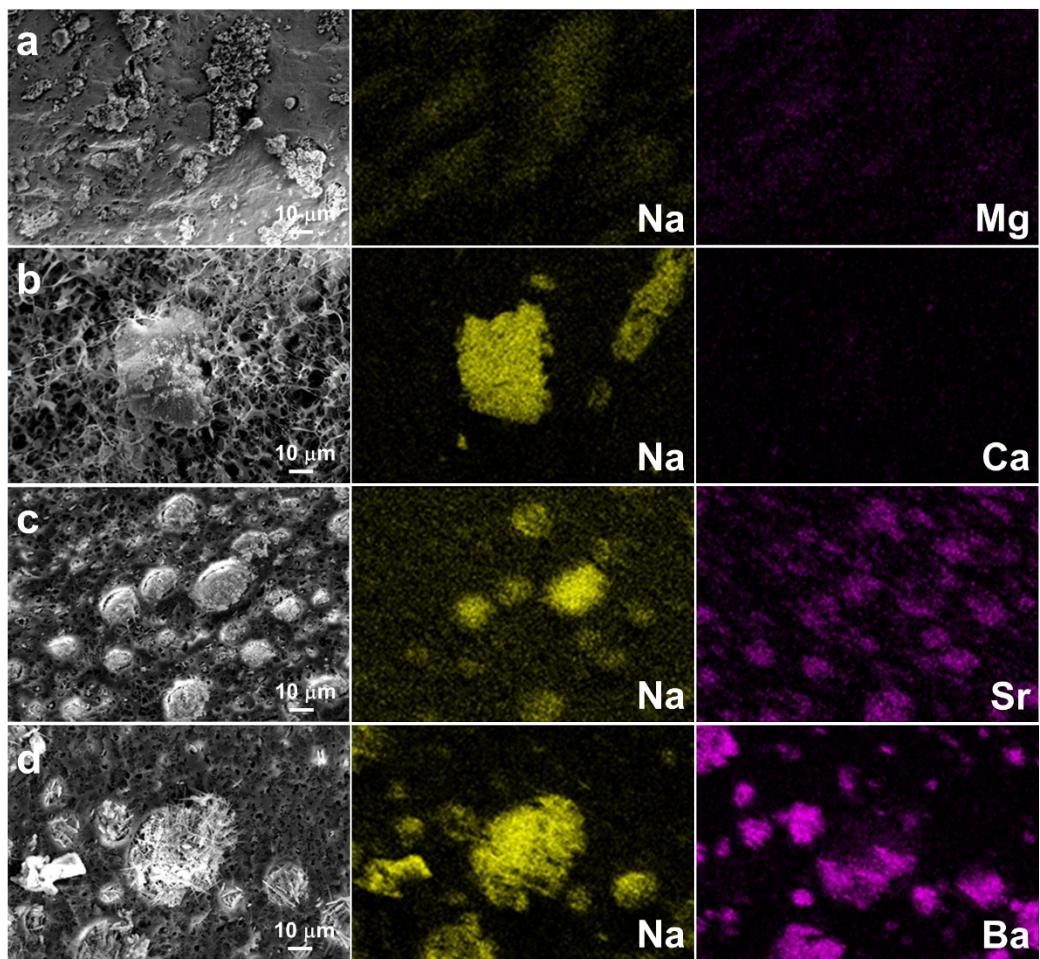
**Fig. S1** IR spectra of (a)  $\text{CaCO}_3$ , (b) PVP-Ca 15-0.3 and (c) PVP.



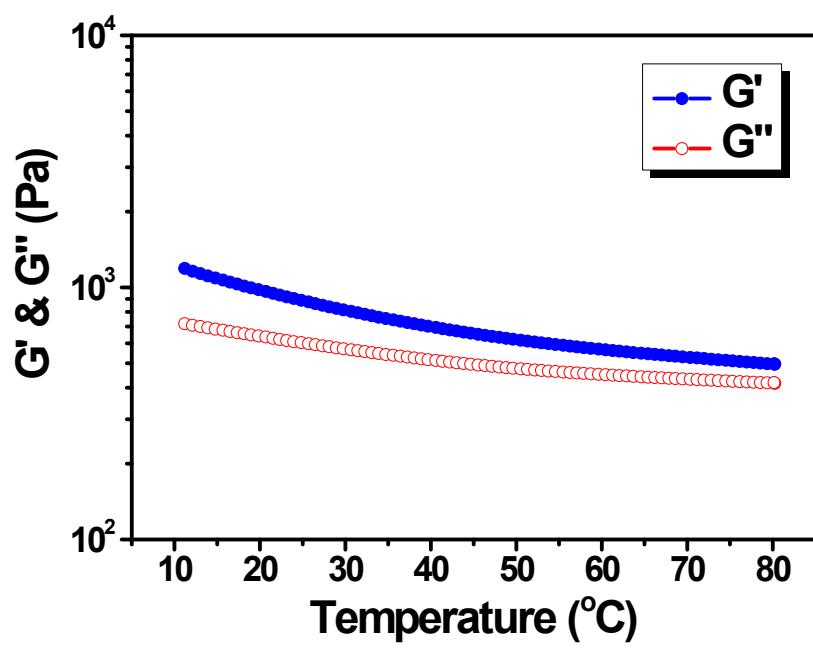
**Fig. S2** Photographs of the PVP-Ca 15-0.3 hydrogels immersed in distilled water and  $1 \text{ mol L}^{-1}$   $\text{Na}_2\text{CO}_3$  aqueous solution.



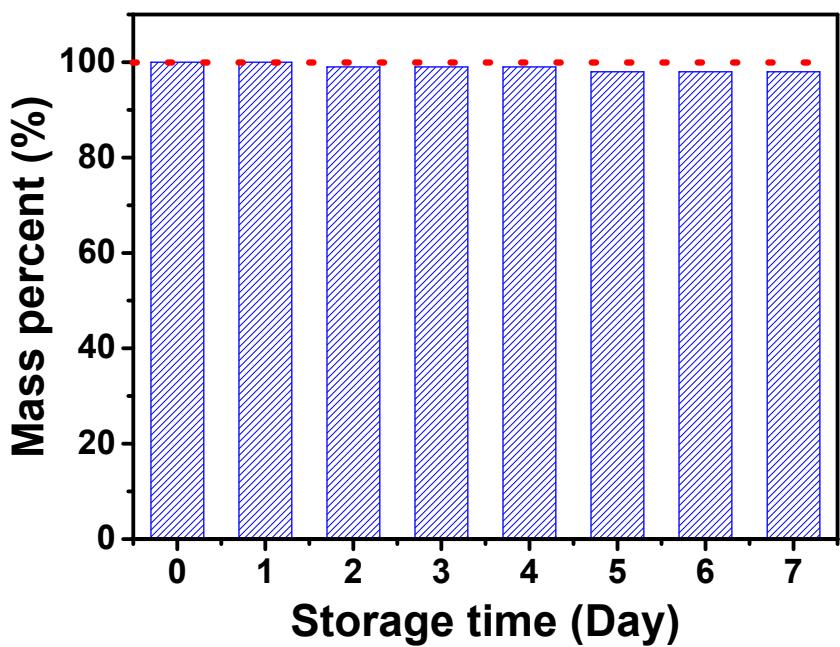
**Fig. S3** TG curves of the mineralized hydrogels under an air atmosphere.



**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.