Supporting Information

Ultra-stretchable, tough, anti-freezing and conductive cellulose hydrogel for wearable strain sensor

Daijun Chen[a], Xiaoli Zhao[a], Xinran Wei[a], Jialin Zhang[a], Dan Wang[a], Hao Lu[b], Pengxiang Jia[a]*

[a]*Key Laboratory of Synthetic and Natural Functional Molecule of Ministry of Education, College of Chemistry and Materials Science, Northwest University, Xi'an, Shaanxi 710127, China*

[b]*Max Planck Institute for Polymer Research, Ackermannweg 10, 55128 Mainz, Germany*

Corresponding Author

pxjia@nwu.edu.cn (P. Jia)

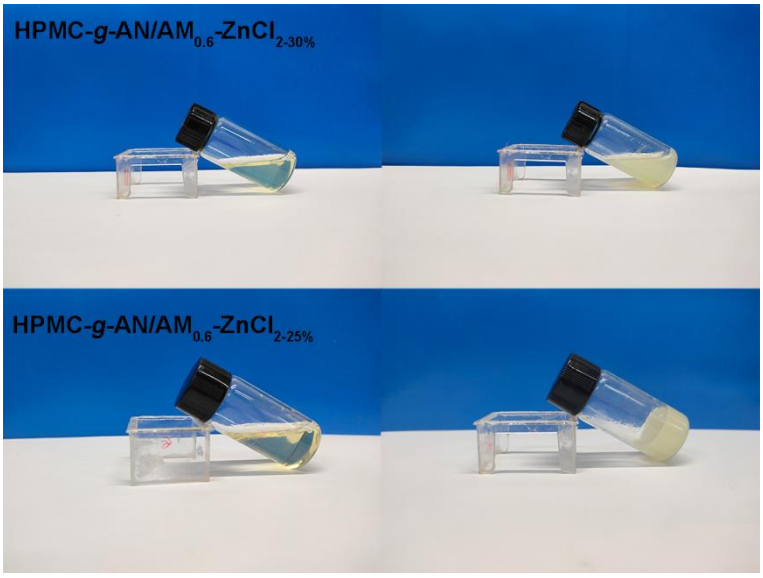

Figure S1. Images of HPMC-*g*-AN/$AM_{0.6}$-$ZnCl_{2\text{-}30\%}$ (top) and HPMC-*g*-AN/$AM_{0.6}$-$ZnCl_{2\text{-}25\%}$ (bottom) sample before and after grafting polymerization.

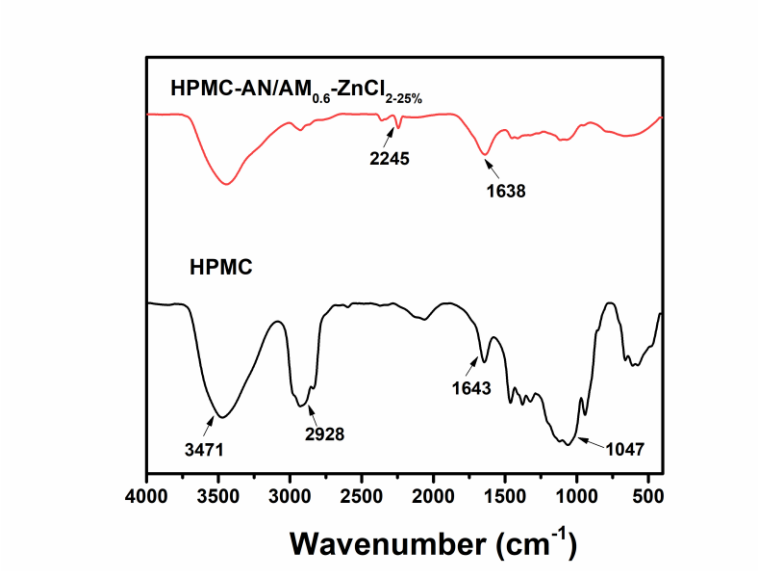

Figure S2. The FTIR spectra of HPMC-*g*-AN/$AM_{0.6}$-$ZnCl_{2\text{-}25\%}$ and HPMC.

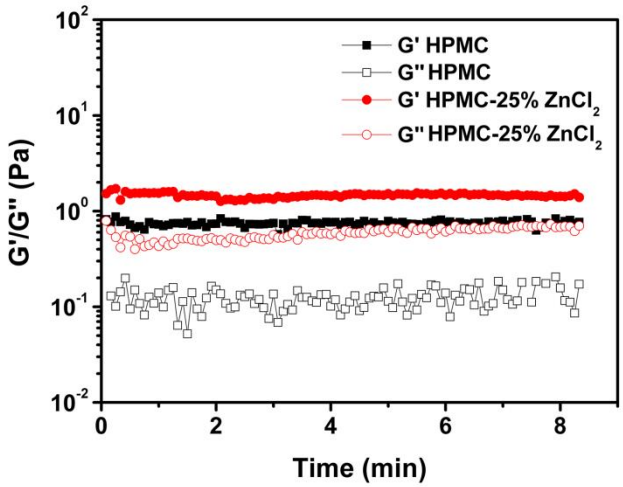

Figure S3. Rheological behavior of the HPMC and HPMC-25% $ZnCl_2$ solution.

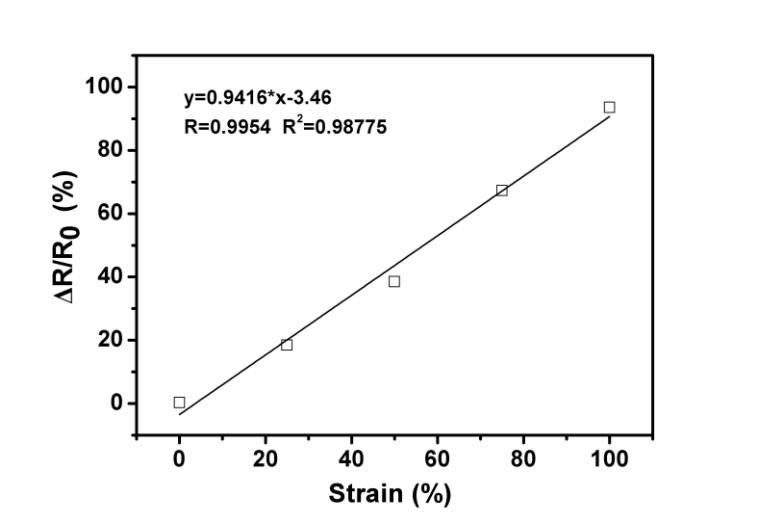

Figure S4. The plots of the relative variation of resistance as a function of strain.