

## Supporting Information

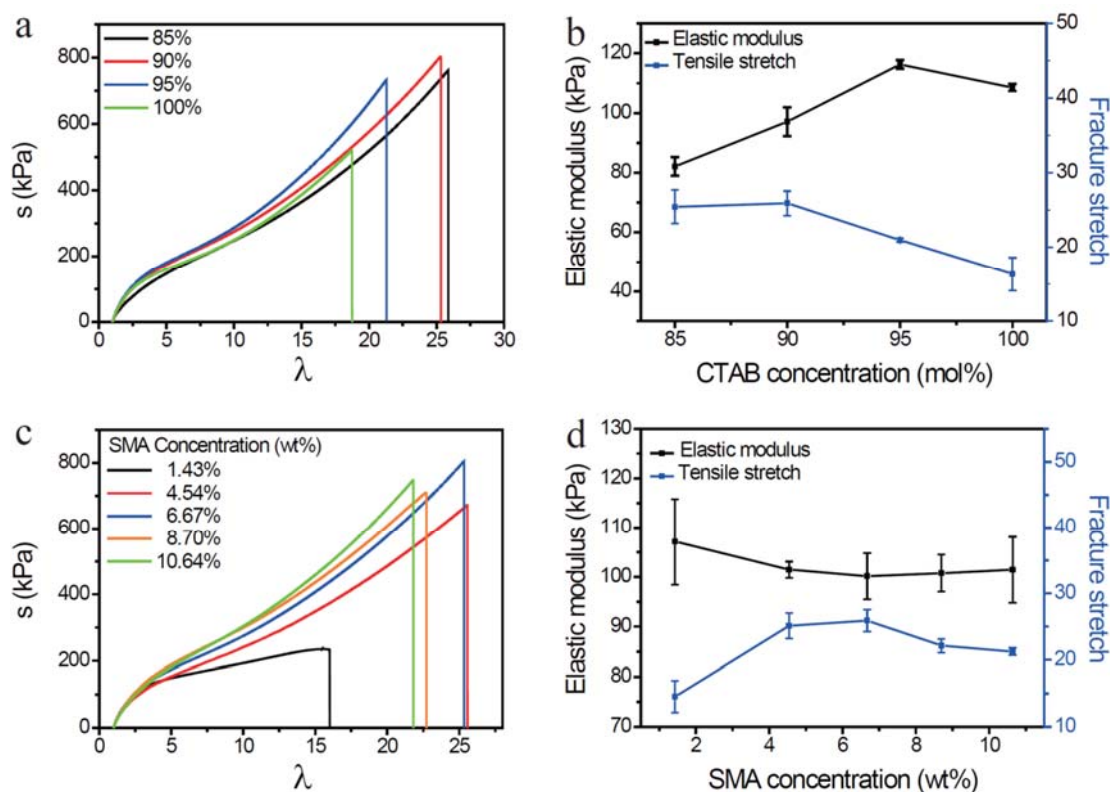
### Fully Physically Cross-Linked Double Network Hydrogels with Strong Mechanical Properties, Good Recovery and Self-healing Properties

Lina Ye, Qiong Lv, Xingyue Sun, Yongzhi Liang, Pengwei Fang, Xiaoyou Yuan, Ming Li, Xianzuo Zhang, Xifu Shang and Haiyi Liang.

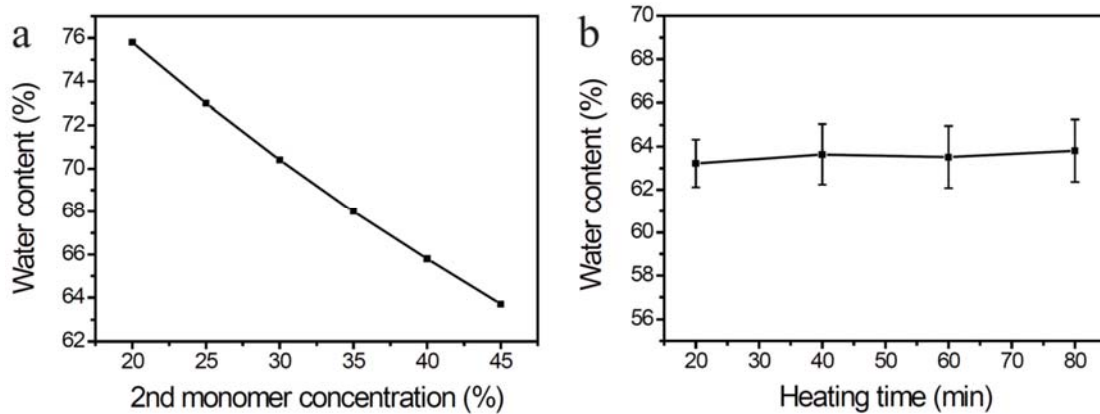
CAS Key Laboratory of Mechanical Behavior and Design of Materials, Department of Modern Mechanics, University of Science and Technology of China, Hefei, Anhui 230026, China.

Corresponding Author

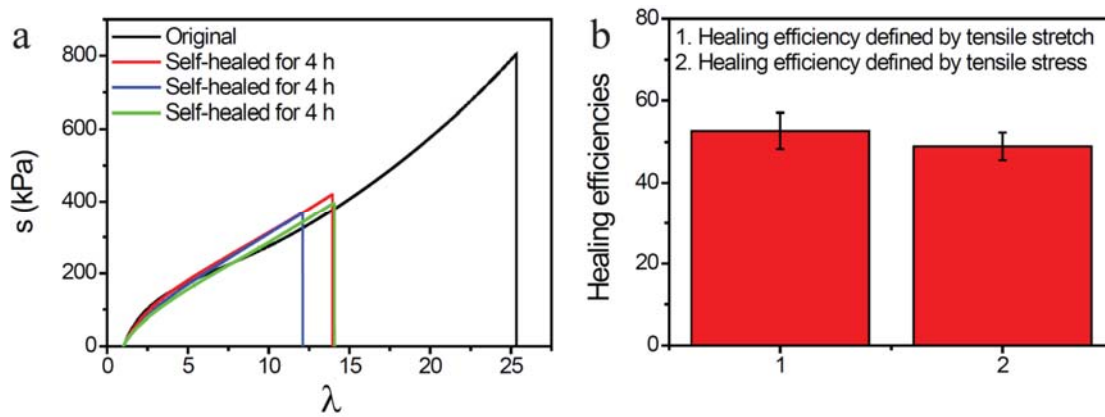
Email: hyliang@ustc.edu.cn



**Fig. S1** Effect of (a,b) the CTAB concentration and (c,d) the SMA concentration on the elastic modulus and tensile stretch of Curdlan/HPAAm DN gels. Error bars showed standard deviation; sample size  $n=3$ .



**Fig. S2** (a) Water content calculated for different concentration of 2nd monomer. (b) Water content for different durations of high temperature sterilization



**Fig. S3** (a) self-healing curves for three different samples, (b) healing efficiency calculated from (a).