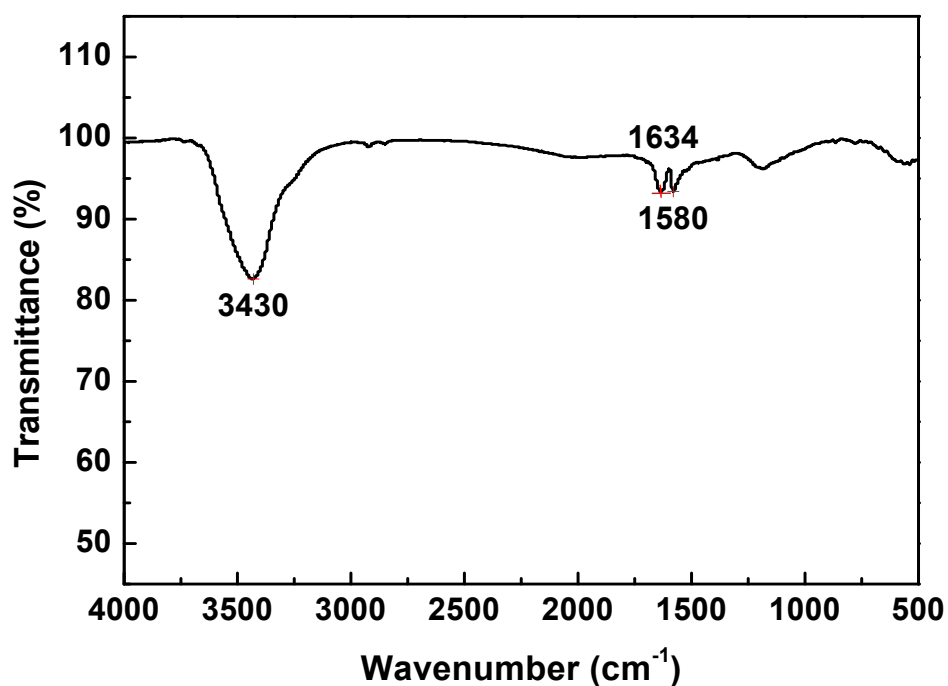


## Supplementary Information

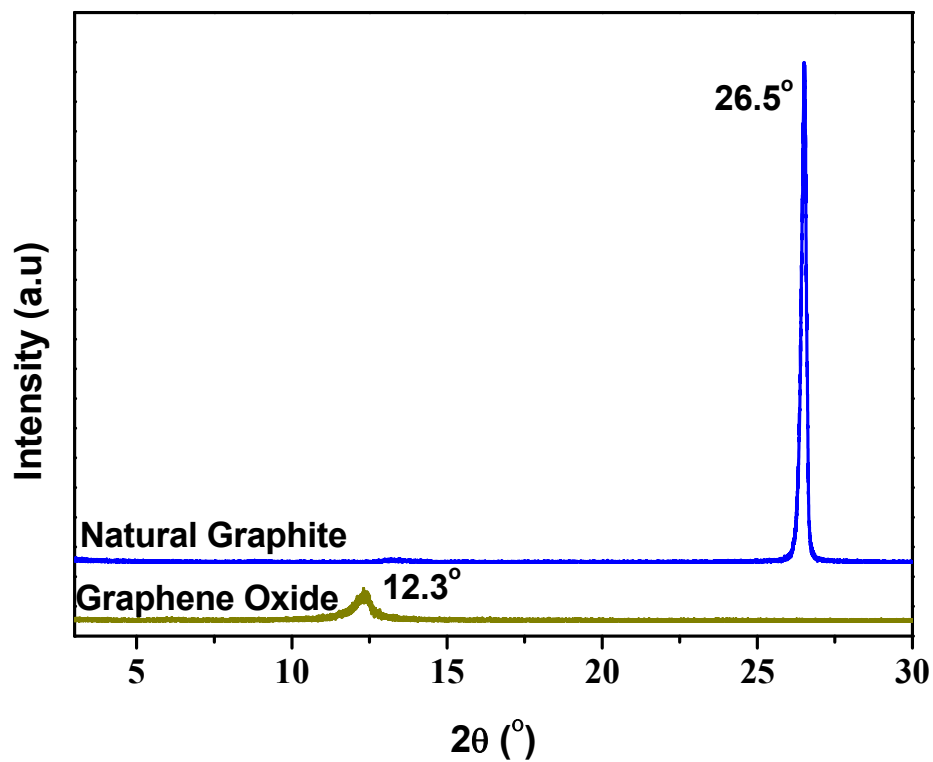
# Tough and Highly Stretchable Graphene Oxide/Polyacrylamide Nanocomposite Hydrogels

Ruiqiong Liu, Songmiao Liang, Xiu-Zhi Tang, Dong Yan, Xiaofeng Li, and Zhong-Zhen Yu

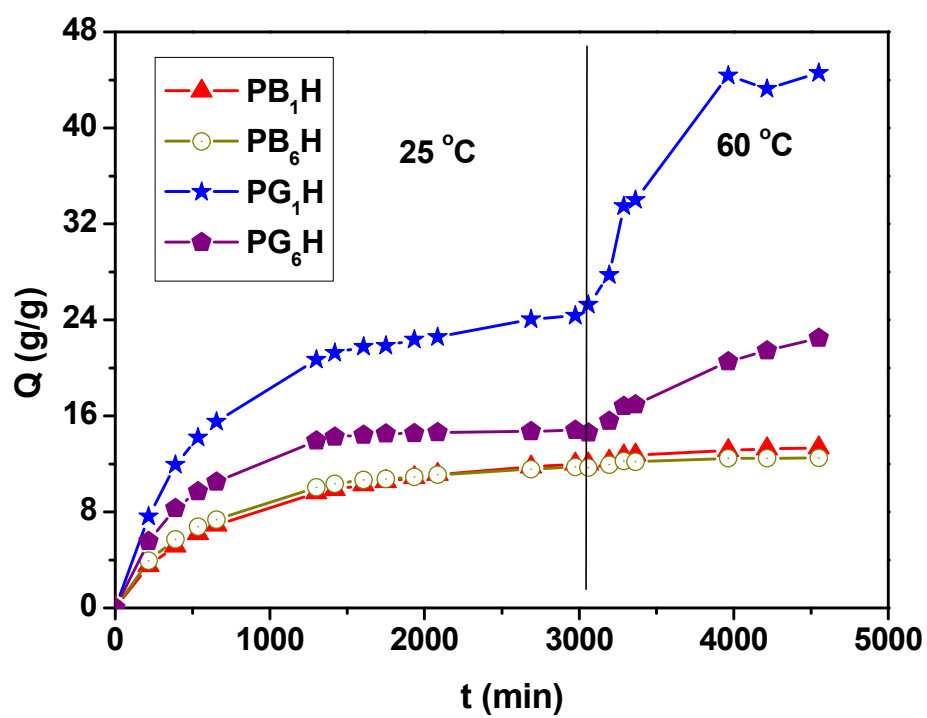
State Key Laboratory of Organic-Inorganic Composites, Department of Polymer Engineering,  
College of Materials Science and Engineering, Beijing University of Chemical Technology,  
Beijing 100029, China



**Fig. S1** FT-IR spectrum of natural graphite. The adsorption peak at 1580 cm<sup>-1</sup> corresponds to C=C carbonyl stretching. The broad and intense peak at 3430 cm<sup>-1</sup> is attributed to H<sub>2</sub>O. The peak at 1634 cm<sup>-1</sup> is due to the skeletal vibration of graphitic domains or H<sub>2</sub>O.



**Fig. S2** XRD spectra of natural graphite and graphene oxide. Natural graphite shows a strong diffraction peak at  $26.5^\circ$ , while graphene oxide exhibits a diffraction peak at  $12.3^\circ$ , indicating a complete oxidation of natural graphite.



**Fig. S3** Swelling ratios of  $PB_1H$ ,  $PB_6H$ ,  $PG_1H$  and  $PG_6H$  swollen in deionized water for 49 h at 25 °C followed by 28 h at 60 °C.