Electronic Supplementary Material (ESI) for RSC Advances
This journal is © The Royal Society of Chemistry 2013

Synthesis of graphene oxide/polyacrylic acid nanocomposite hydrogel and its swelling and electroresponsive properties

Zhixin Tai[a,b], Juan Yang [a,b], Yuanyuan Qi[c],Xingbin Yan*[a,b], Qunji Xue[b]

[a] *Laboratory of Clean Energy Chemistry and Materials, Lanzhou Institute of Chemical Physics, Chinese Academy of Sciences, Lanzhou 730000, P. R. China*

[b] *State Key Laboratory of Solid Lubrication, Lanzhou Institute of Chemical Physics, Chinese Academy of Sciences, Lanzhou 730000, P. R. China*

[c] *The First People Hospital of Lianyungang, Jiangsu Province, 222002, P. R. China*

Corresponding author: Tel.: +86 931 4968055; fax: +86 931 4968055.

E-mail address: xbyan@licp.cas.cn

1. Micro-morphologies of the pure PAA hydrogel (a, c, e) and the GO/PAA composite hydrogel (b, d, f) shown in Figure S1.

2. Two video files named as “PAA” and “GO-PAA” display the vivid electroresponsive behaviors of the pure PAA hydrogel and the GO/PAA nanocomposite hydrogel under a 10 V electric field.

3. Because the two hydrogels are both transparent, the deformation of the hydrogels in the video files is hard to be observed. Thus, to further clearly illustrate the deformation process, a series of printscreen images of the video at different time were shown in Figure S2.

This journal is © The Royal Society of Chemistry 2013

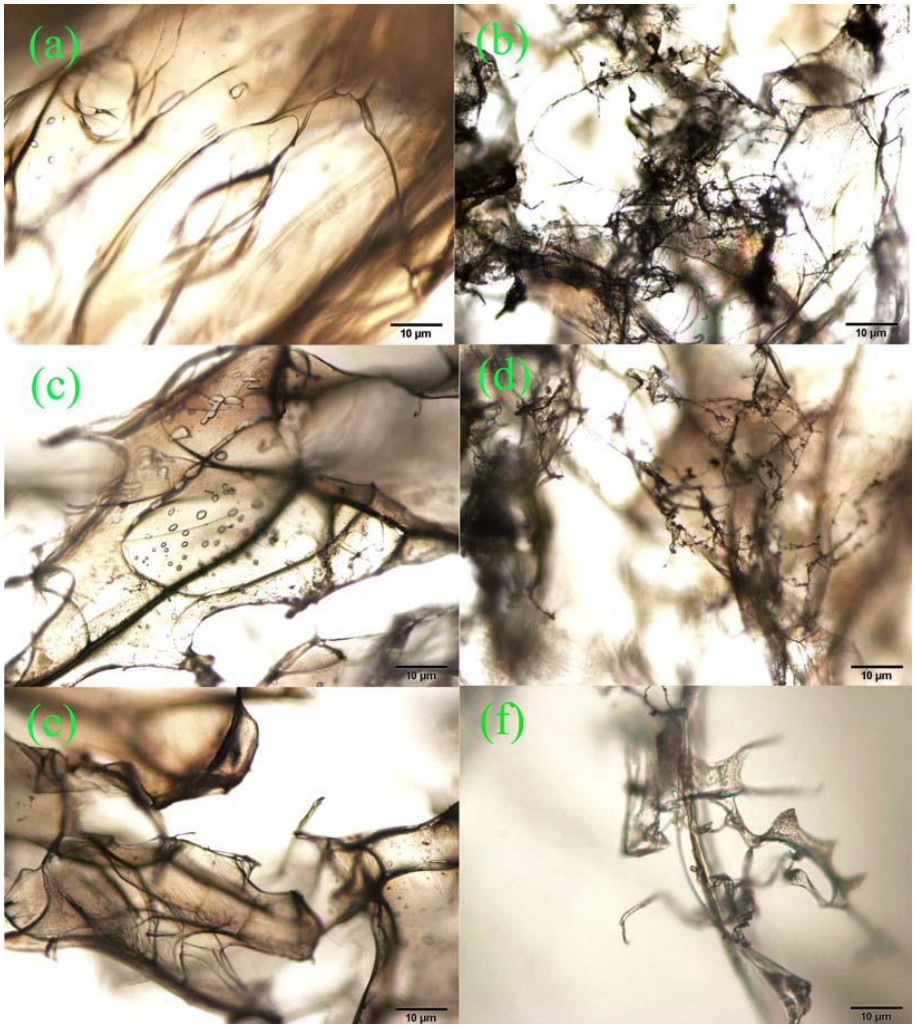
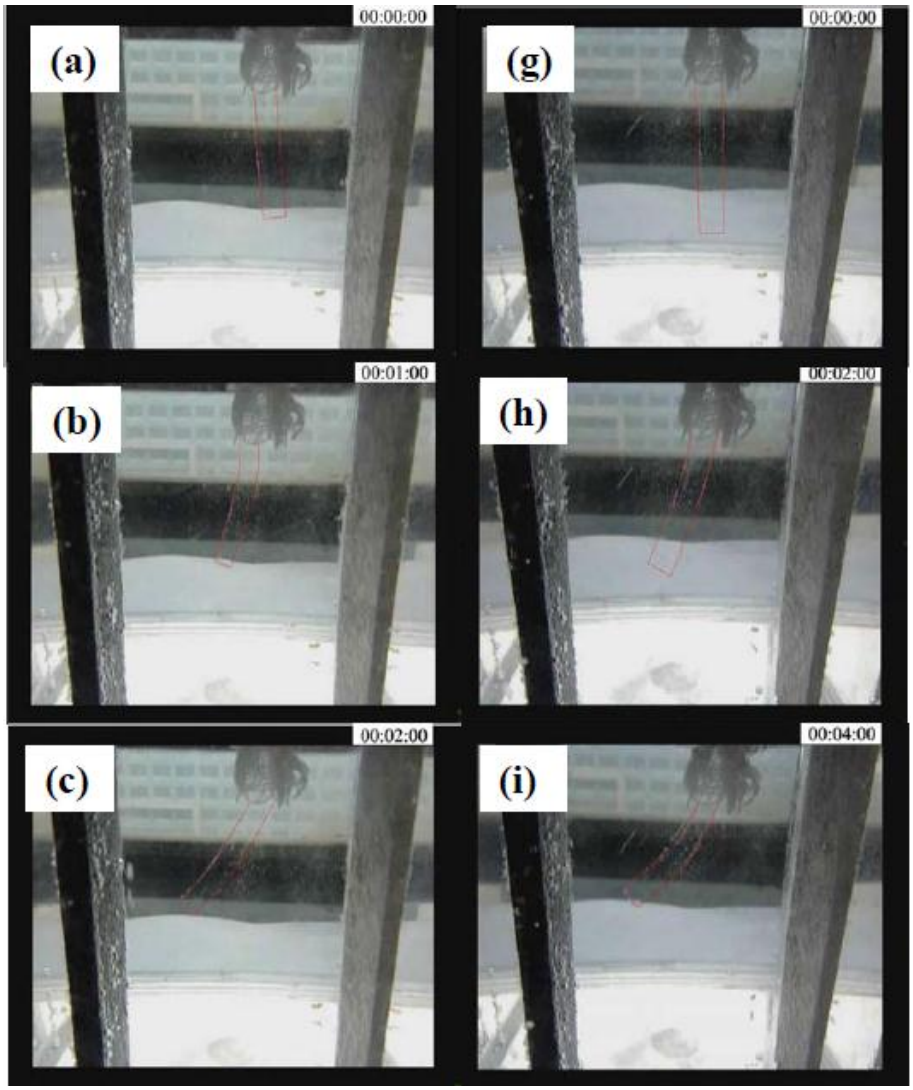


Figure S1 Optical through the microscope images of the pure PAA hydrogel (a, c, e) and the GO/PAA composite hydrogel (b, d, f).

This journal is © The Royal Society of Chemistry 2013



To be continue

This journal is © The Royal Society of Chemistry 2013

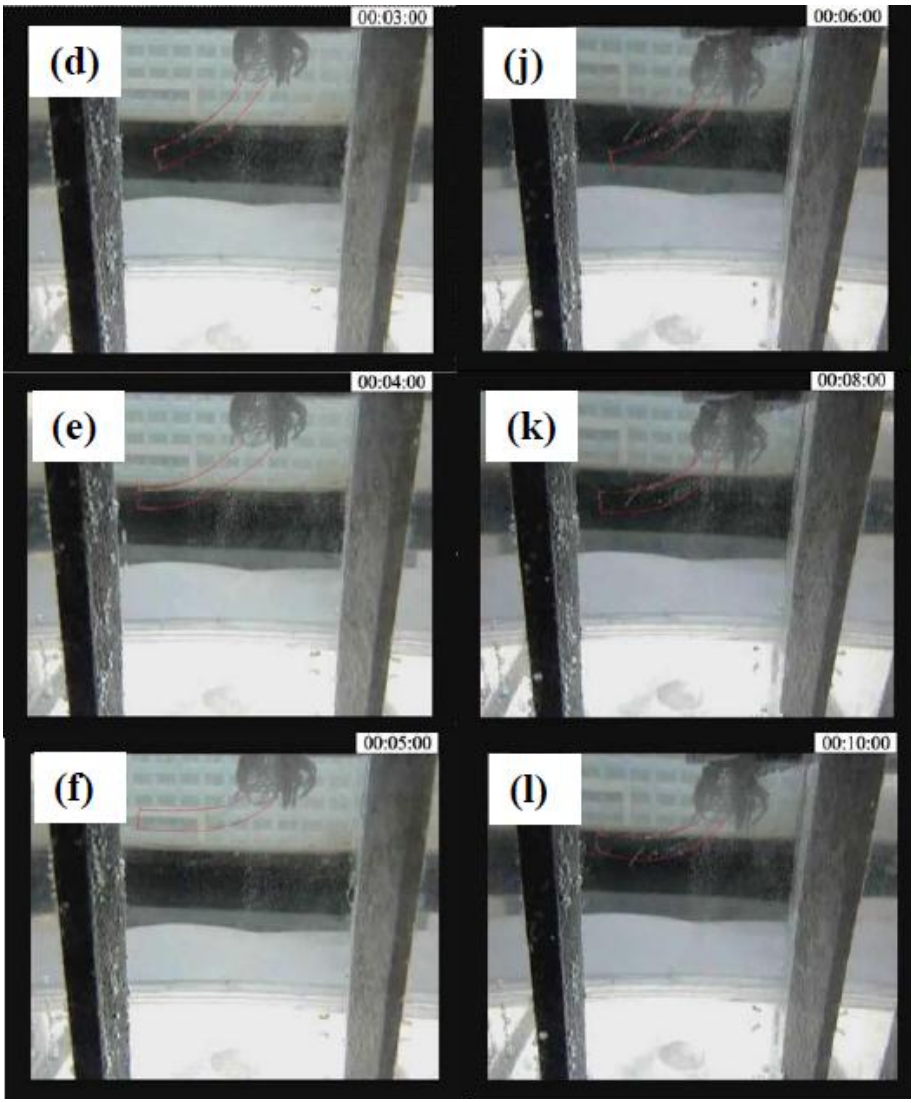


Figure S2 The printscreen images of the two video files at different time. Left images (a, b, c, d, e and f) are the GO/PAA composite hydrogel and right images (g, h, i, j, k and l) are the pure PAA hydrogel. The red lines are added in order to mark the hydrogels' flames.