

## Wireless Synthesis and Activation of Electrochemiluminescent

### Thermoresponsive Janus Objects Using Bipolar Electrochemistry.

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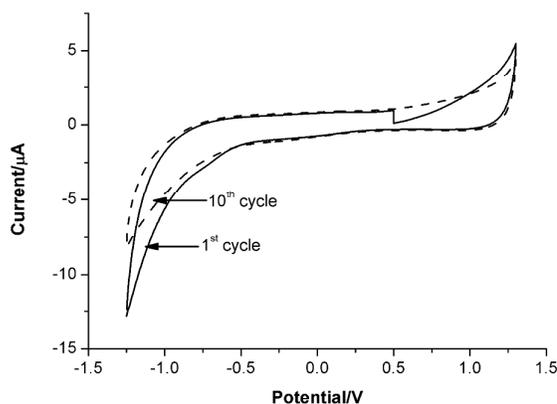
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#### Supporting Information

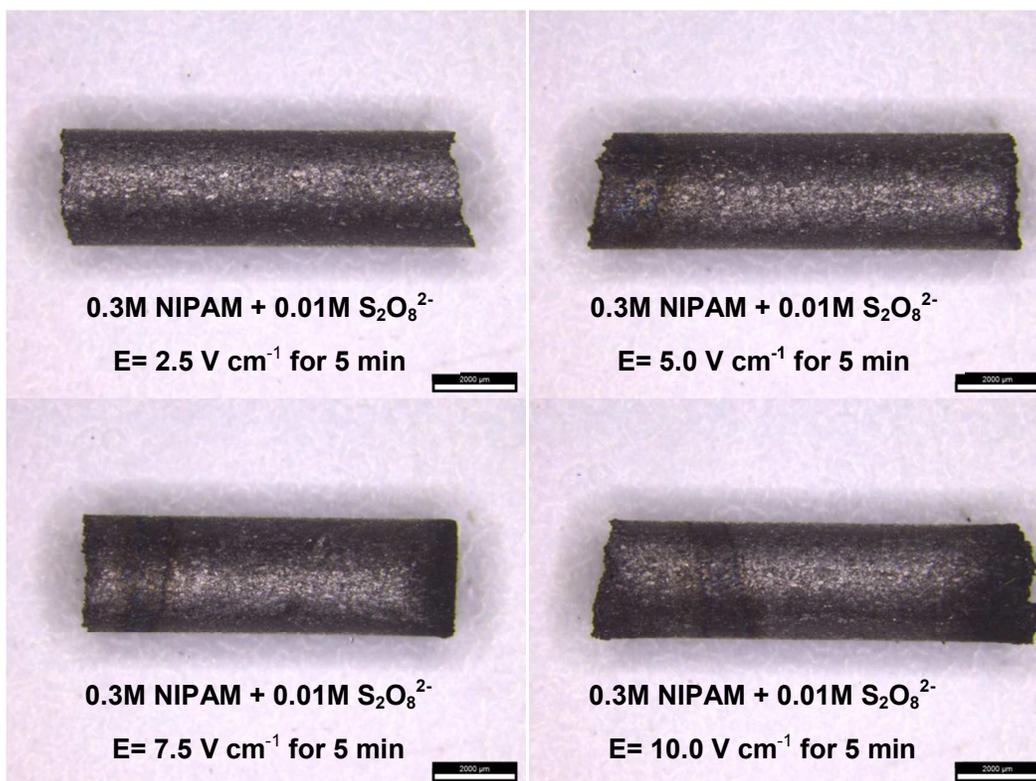
The potential scan rate was  $0.1 \text{ V s}^{-1}$ . Figure S1 shows the cyclic voltammogram of persulfate anions with NIPAM in  $0.1 \text{ M KNO}_3$  water solution on glassy carbon electrodes.



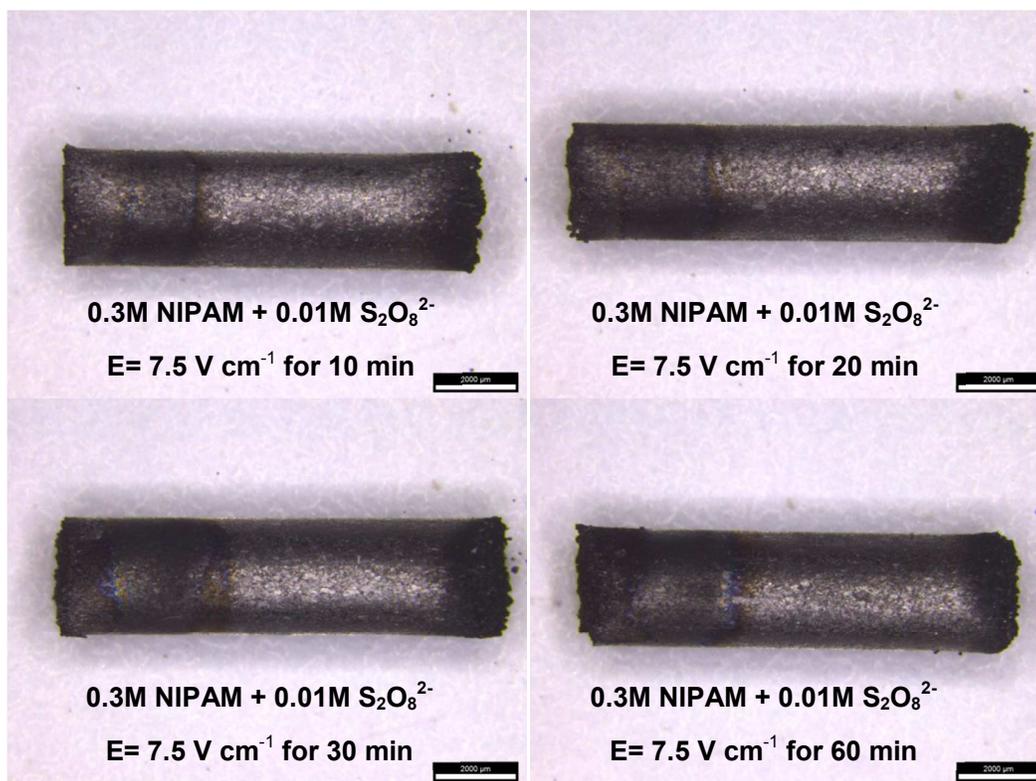
**Figure S1** CV of electrodeposition. Cyclic voltammogram of  $0.1 \text{ M KNO}_3 + 0.5 \text{ M NIPAM} + 0.015 \text{ M S}_2\text{O}_8^{2-}$



a)

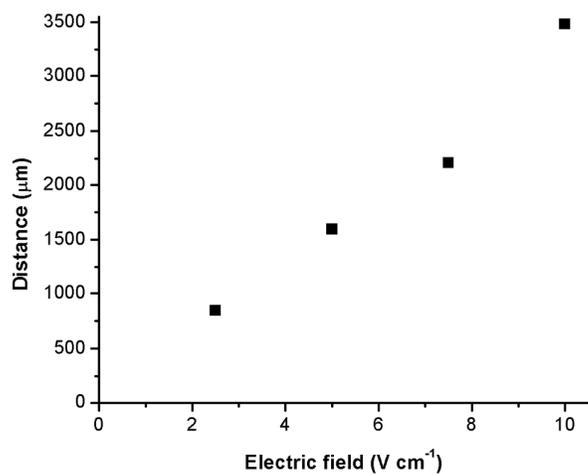


b)

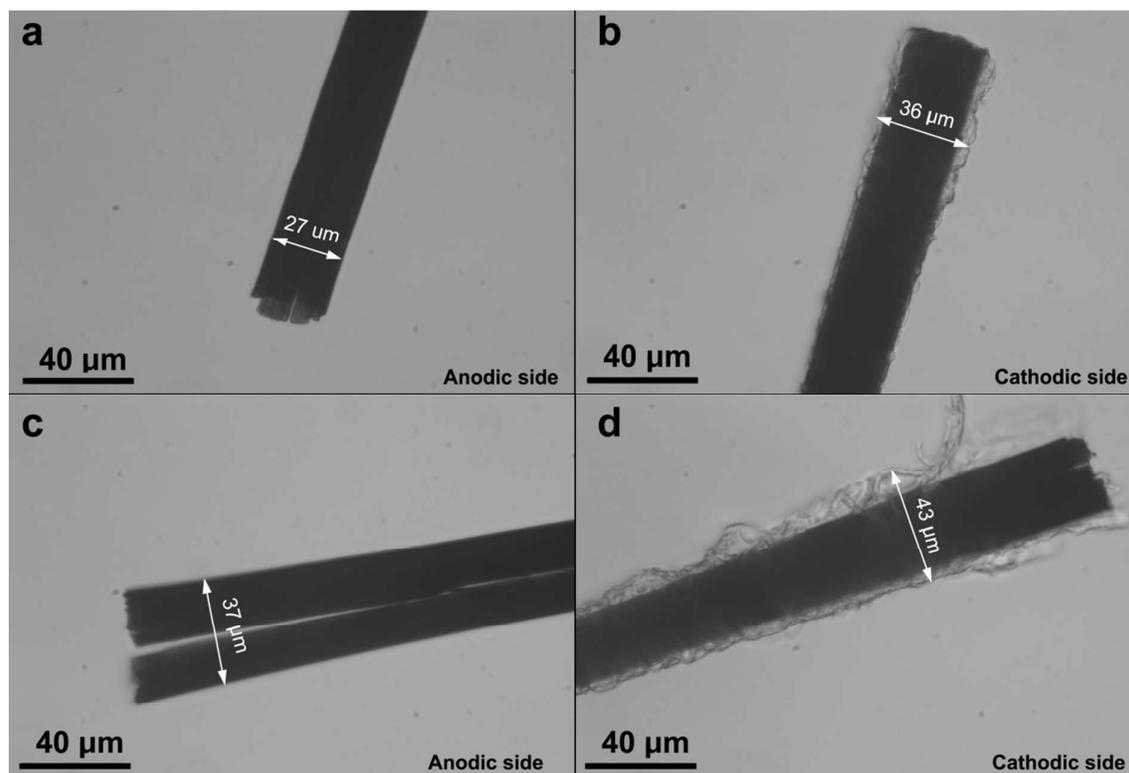


**Figure S2** Images of the pNIPAM deposited on graphite rod at a) different potentials and b) deposition times

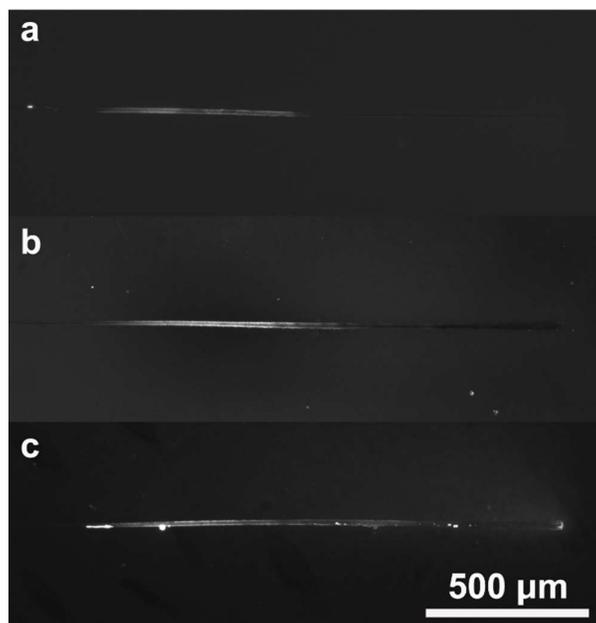
a)



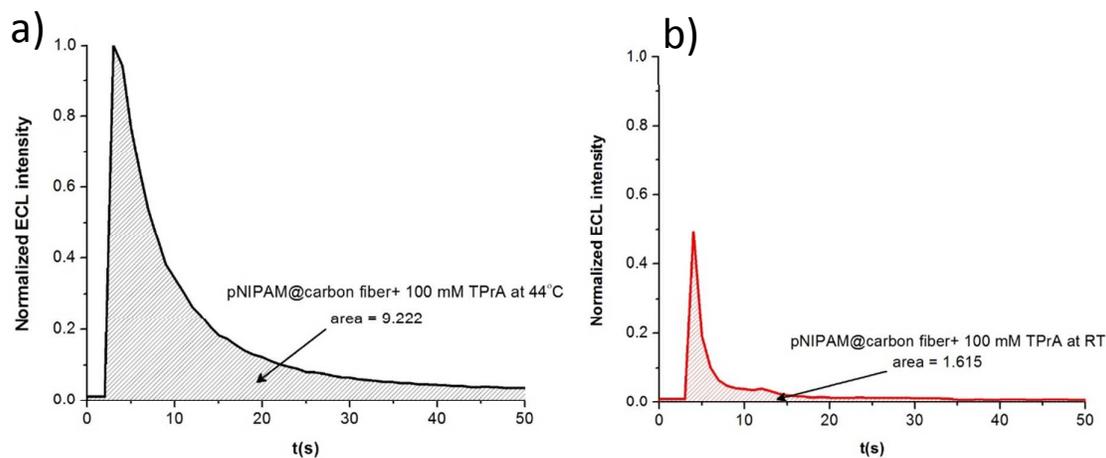
**Figure S3 :** Variation of the distance between the end of the graphite rod and the middle of the polymer band. In function of the electric fields for  $t = 5$  min



**Figure S4** The optical image of the anodic and cathodic side of carbon fiber after electropolymerization at  $5 \text{ V cm}^{-1}$  for 5 minutes (a-b) and  $5 \text{ V cm}^{-1}$  for 10 minutes (c-d)



**Figure S5** The optical image of the thermoresponsive gel on carbon fiber at  $E = 5 \text{ V cm}^{-1}$  for 1 min and different concentration of KPS a)  $[\text{S}_2\text{O}_8^{2-}] = 0.015 \text{ M}$ , b)  $[\text{S}_2\text{O}_8^{2-}] = 0.030 \text{ M}$  and c)  $[\text{S}_2\text{O}_8^{2-}] = 0.045 \text{ M}$ .



**Figure S6** : Calculation of the peak area of the normalized ECL intensity curves. a) at  $44^\circ\text{C}$ , b) at room temperature