Electronic Supplementary Material (ESI) for Journal of Materials Chemistry C

This journal is © The Royal Society of Chemistry 2016

Fabrication of oriented organic-inorganic ultrathin films with enhanced electrochromic property

Awu Zhou,[a] Xiaoxi Liu,[a] Yibo Dou,[b] Shanyue Guan,[a] Jingbin Han*[a] and Min Wei[a]

a. State Key Laboratory of Chemical Resource Engineering, Beijing University of Chemical Technology, Beijing 100029, P. R. China

b. Beijing Key Laboratory for Green Catalysis and Separation, Department of Chemistry and Chemical Engineering, Beijing University of Technology, Beijing 100124, P. R. China.

CORRESPONDING AUTHOR FOOTNOTE

∗ Corresponding author. Phone: +86-10-64412131. Fax: +86-10-64425385.

E-mail: hanjb@mail.buct.edu.cn

Supplementary Figures

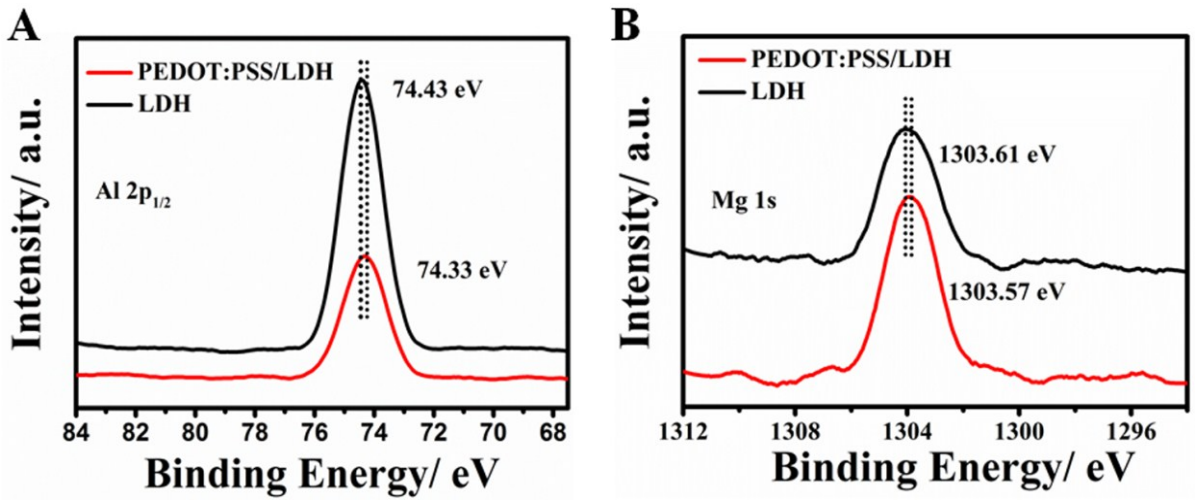

Fig. S1 (A) Al $2p_{1/2}$ and (B) Mg 1s XPS spectra for $(PEDOT:PSS/LDH)_n$ UTFs (red curve) and LDH (black curve).

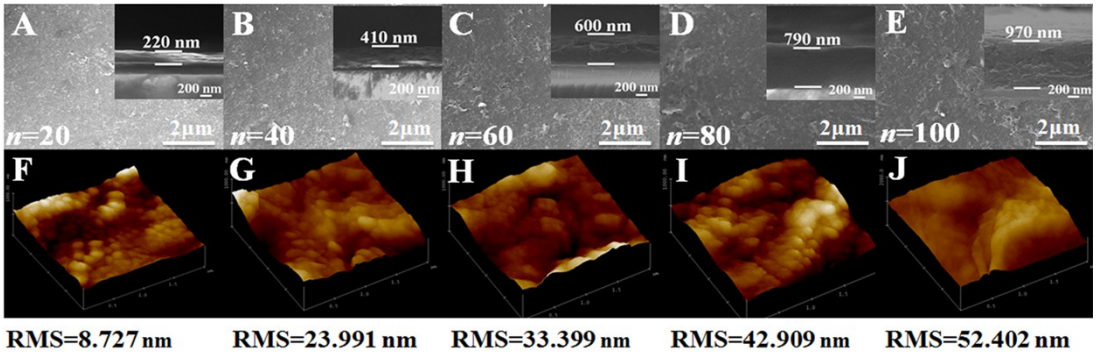

Fig. S2 (A) ~ (E) Top view and side view (inset) of SEM images for the $(PEDOT:PSS/LDH)_n$ UTFs. (F) ~ (J) AFM images (2 μm × 2 μm) of the $(PEDOT:PSS/LDH)_n$ UTFs. n=20, 40, 60, 80, 100, respectively.

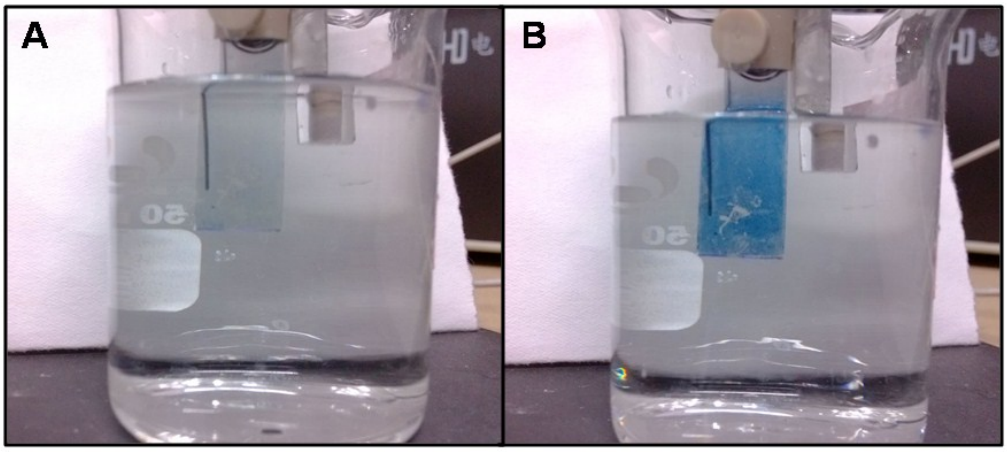

Fig. S3 Photographs of $(PEDOT:PSS/LDH)_{80}$ UTF: (A) oxidized at 1 V and (B) reduced at −1 V.

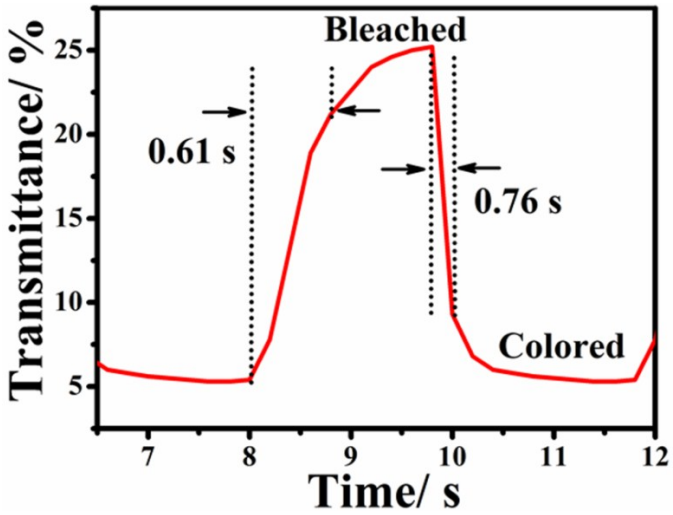

Fig. S4 Optical transmittance of spin-coated PEDOT:PSS film versus time between 1 V and −1 V at 650 nm.

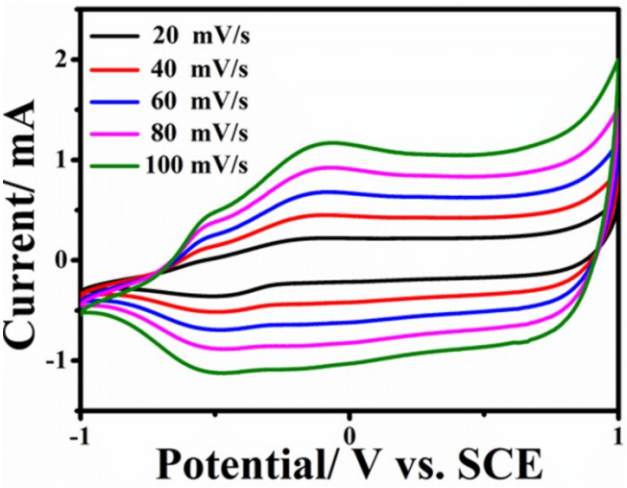

Fig. S5 CV curves of $(PEDOT:PSS/LDH)_{80}$/ITO with scan rate ranging from 0.02 to 0.1 V s^{-1} in 0.1 M $LiClO_4$/PC electrolyte.

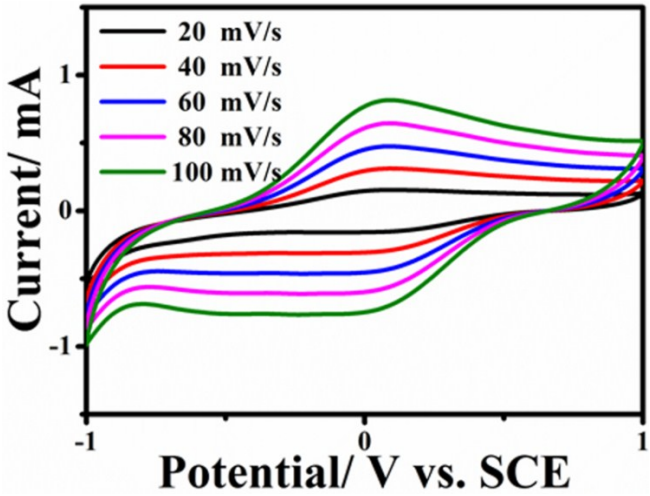

Fig. S6 CV curves of spin-coated PEDOT:PSS/ITO film with scan rate ranging from 0.02 to 0.1 V s^{-1} in 0.1 M $LiClO_4$/PC electrolyte.

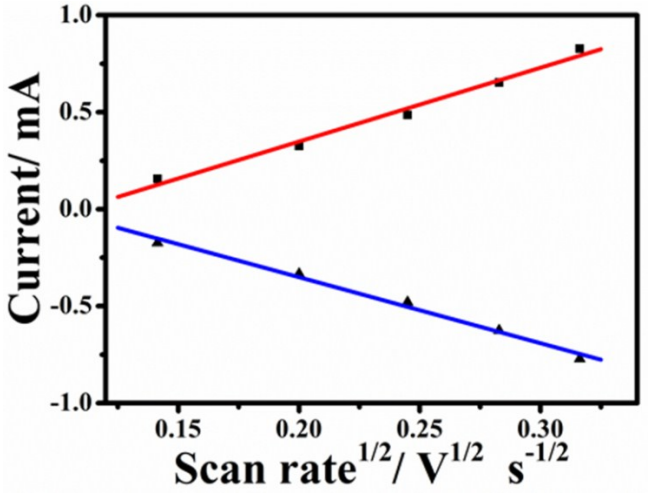

Fig. S7 The cathodic/anodic peak current as a function of the square root of scan rate for the spin-coated PEDOT:PSS/ITO film.

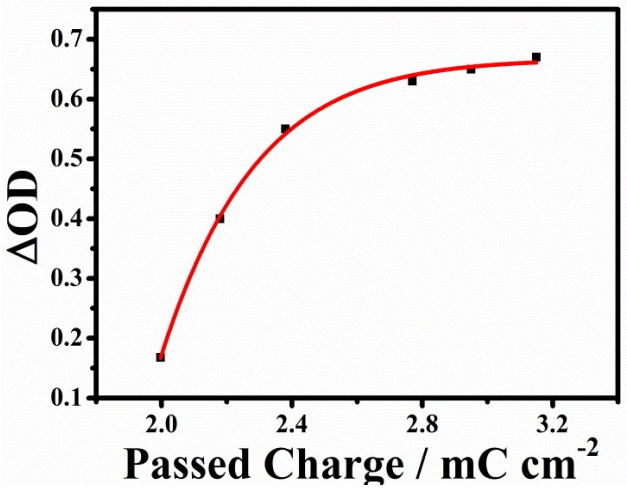

Fig. S8 Optical density (ΔOD=log[T_b/T_c]) of spin-coated PEDOT:PSS/ITO film as a function of passed charge (Q).

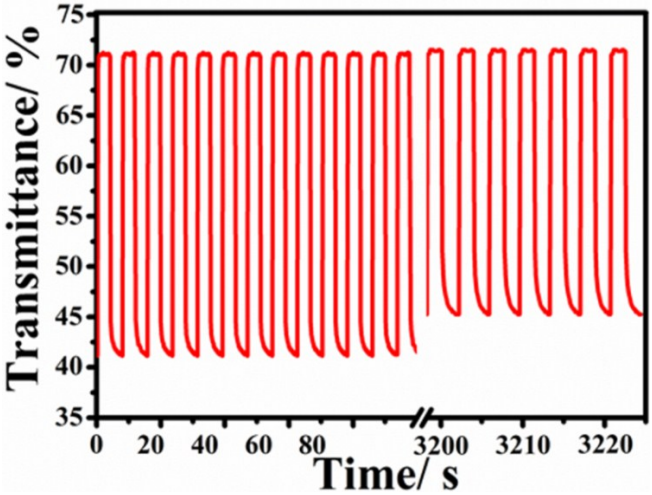

Fig. S9 Optical transmittance of $(PEDOT:PSS/LDH)_{80}$ UTF versus time between 1 V and −1 V at 650 nm (in 0.1 M $LiClO_4$/PC).

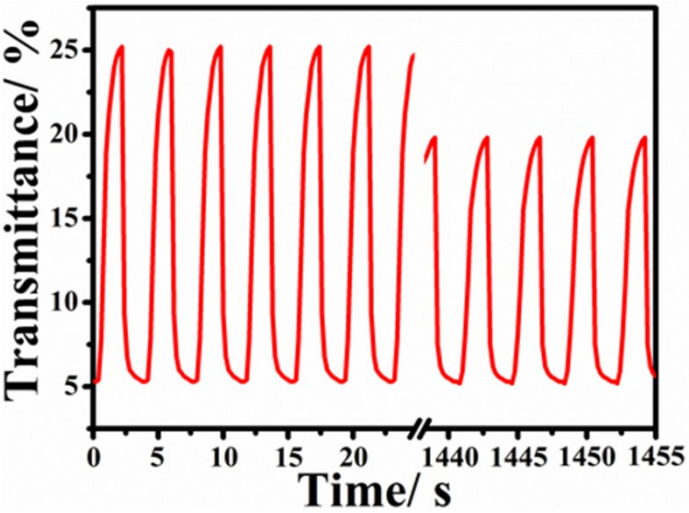

Fig. S10 Optical transmittance of spin-coated PEDOT:PSS film versus time between 1 V and −1 V at 650 nm (in 0.1 M $LiClO_4$/ PC).

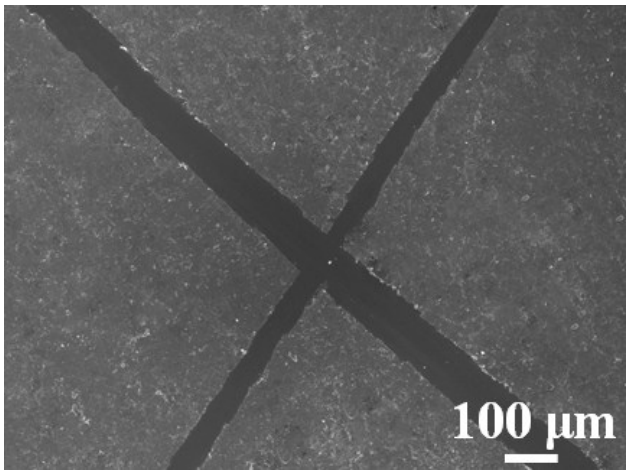

Fig. S11 Top-view SEM image of the $(PEDOT:PSS/LDH)_{80}$ film on ITO glass upon scratching after 400-cycle electrochemical measurements in 0.1 M LiClO4/PC solution.

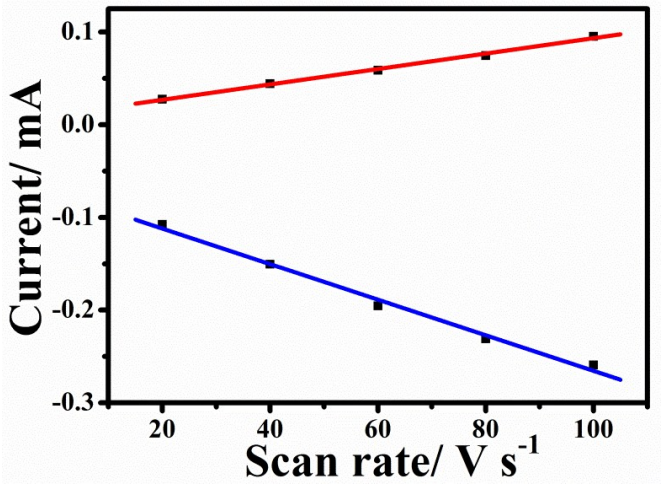

Fig. S12 The cathodic/anodic peak current as a function of the scan rate for the $(PEDOT:PSS/LDH)_{80}|LiClO_4$-PC|ITO device.