Electronic Supplementary Material (ESI) for New Journal of Chemistry.

Electronic Supporting Information

Three dimensional molybdenum oxide/polyaniline hybrid nanosheet networks with outstanding optical and electrochemical properties

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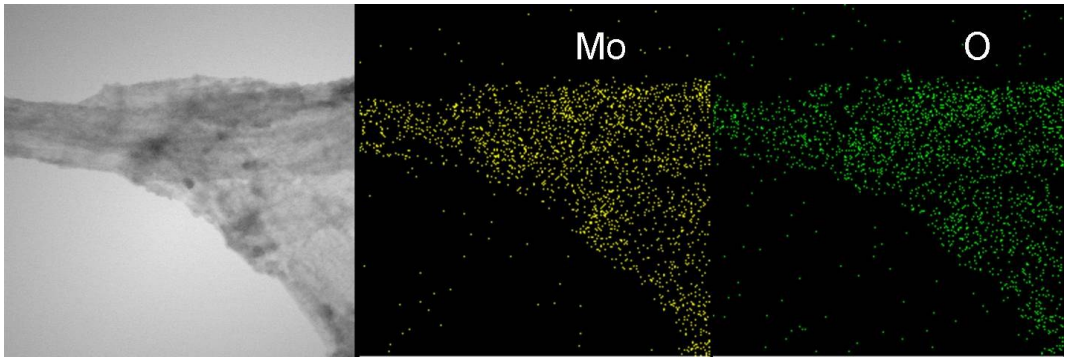
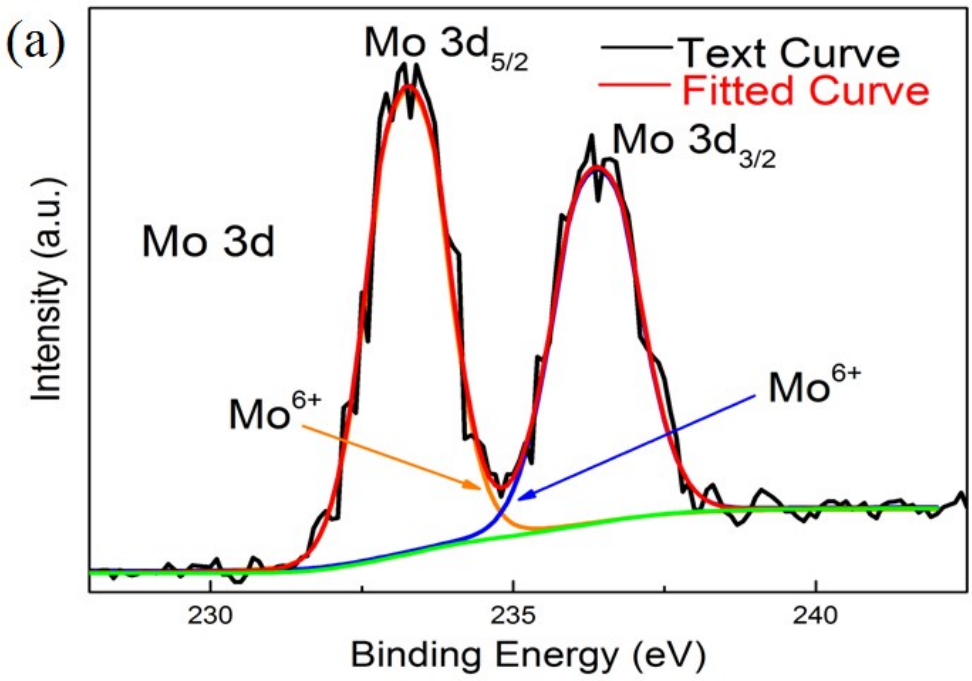
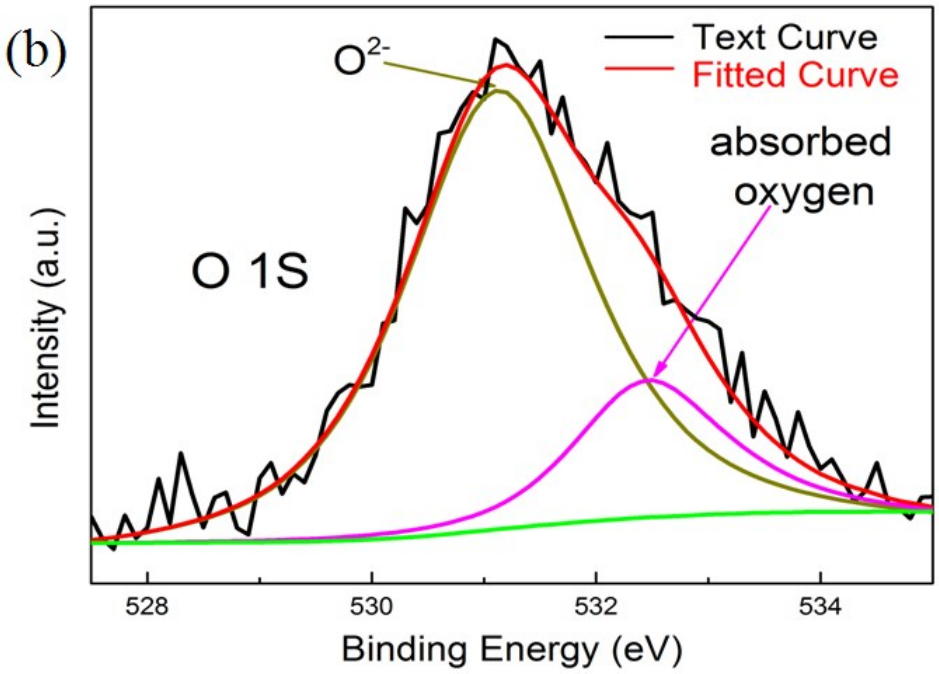
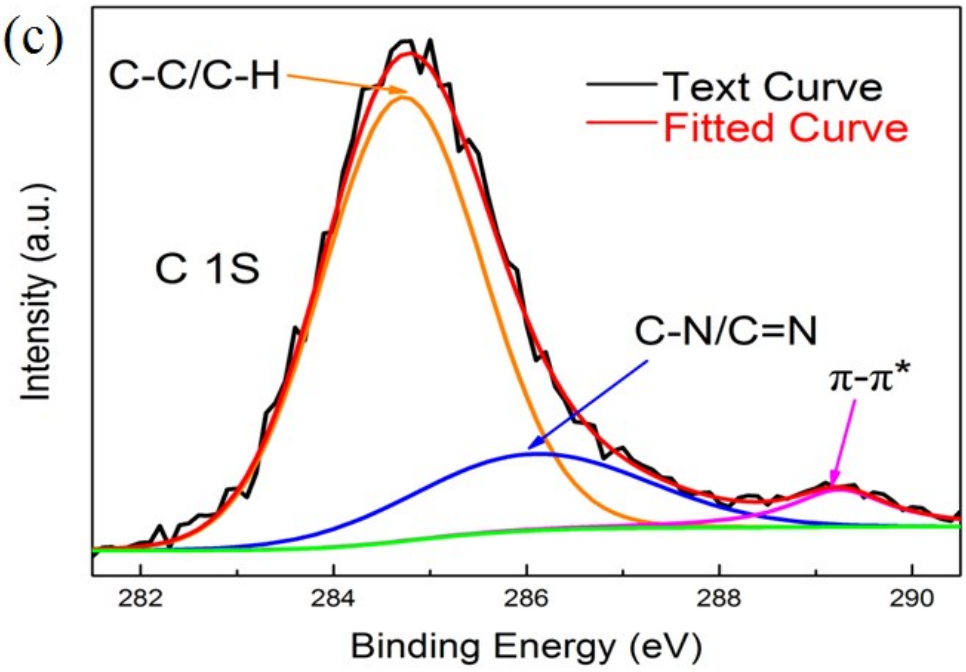


Fig. S1 TEM image of 3D MoO_3 nanosheet networks and corresponding EDS mappings.




(b)
O2-
Text Curve
Fitted Curve
absorbed
oxygen
O 1S
Intensity (a.u.)
528
530
532
534
Binding Energy (eV)


(c)
C-C/C-H
Text Curve
Fitted Curve
C 1S
C-N/C=N
π-π*
Intensity (a.u.)
282
284
286
288
290
Binding Energy (eV)

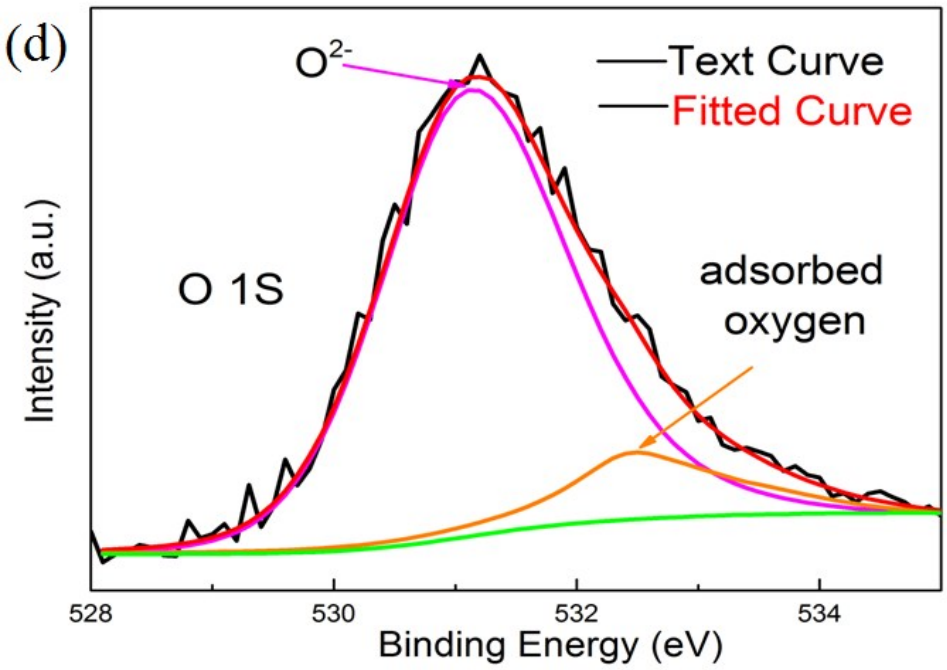


Fig. S2 (a) XPS Mo 3d spectrum of 3D MoO_3 nanosheet networks, (b) XPS O 1s spectrum of 3D MoO_3 nanosheet networks, (c) XPS C 1s spectrum of 3D MoO_3/PANI hybrid nanosheet networks and (d) XPS O 1s spectrum of 3D MoO_3/PANI hybrid nanosheet networks.

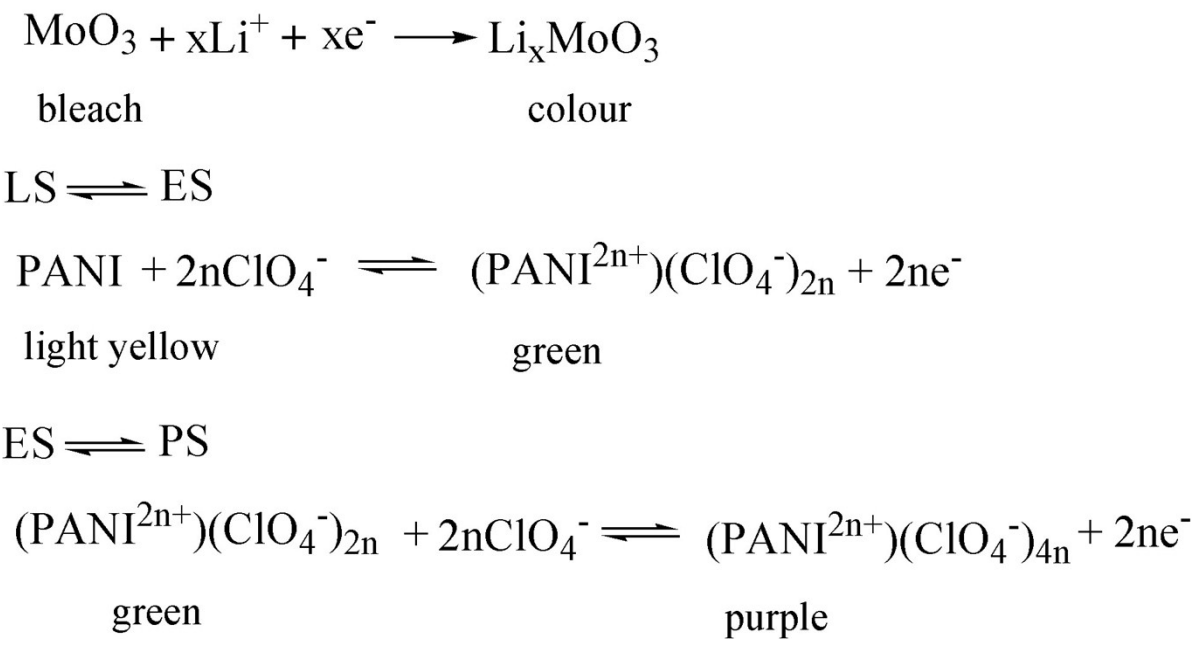
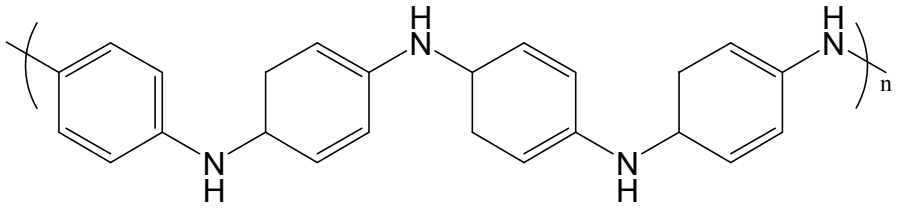
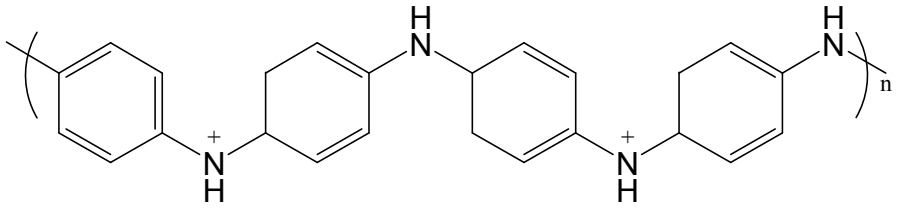


Fig. S3 Illustration of the dual electrochromic mechanism of 3D MoO_3/PANI hybrid nanosheet networks film.

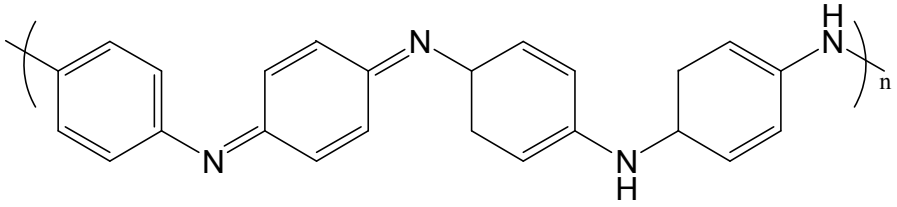
Leucoemeraldine base



Emeraldine salt



Emeraldine base



Pernigraniline salt

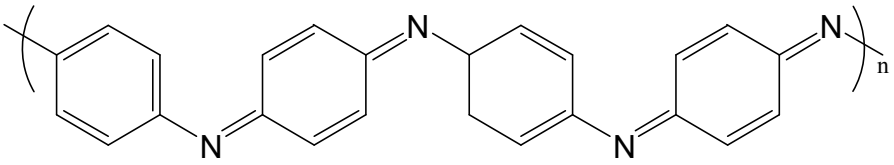


Fig. S4 The main molecular structures of LB, ES, EB, and PS.

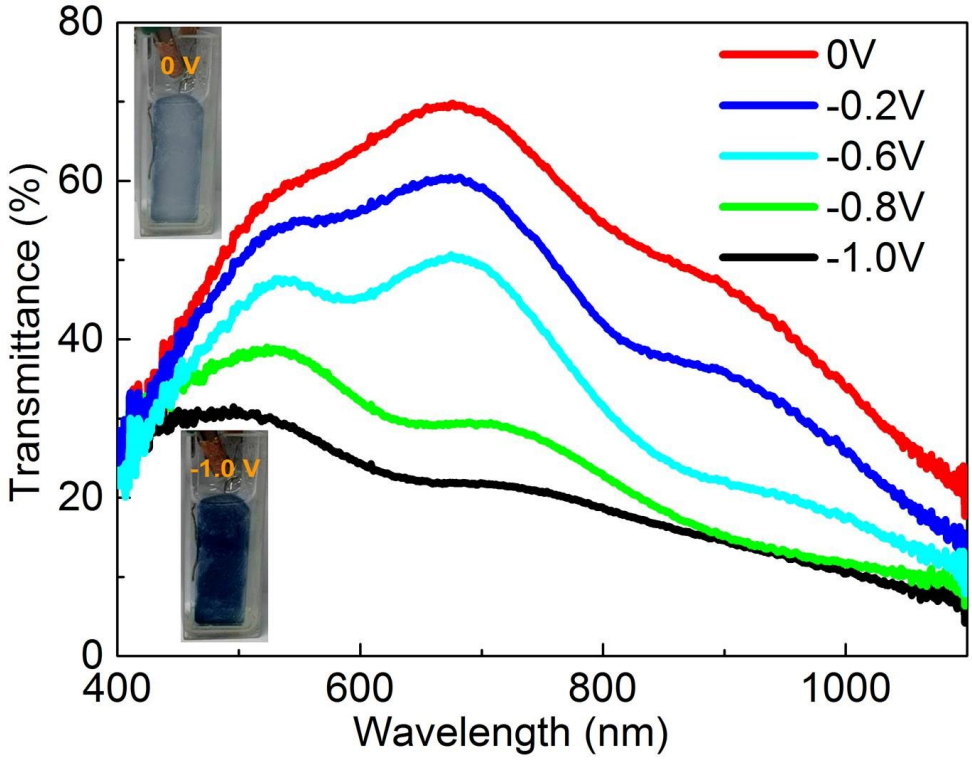


Fig. S5 Transmittance spectra for 3D MoO_3 nanosheet networks film under different voltages (inset of photos at 0 and -1.0 V).

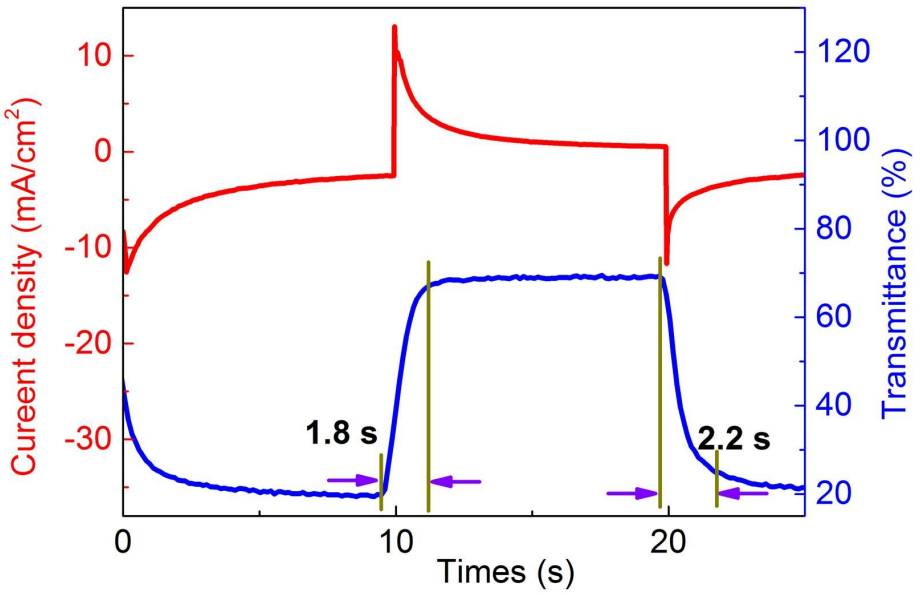


Fig. S6 Electrochromic response time of 3D MoO_3 nanosheet networks film at 671 nm by continuously stepping voltage between -0.6 and 0.2 V.

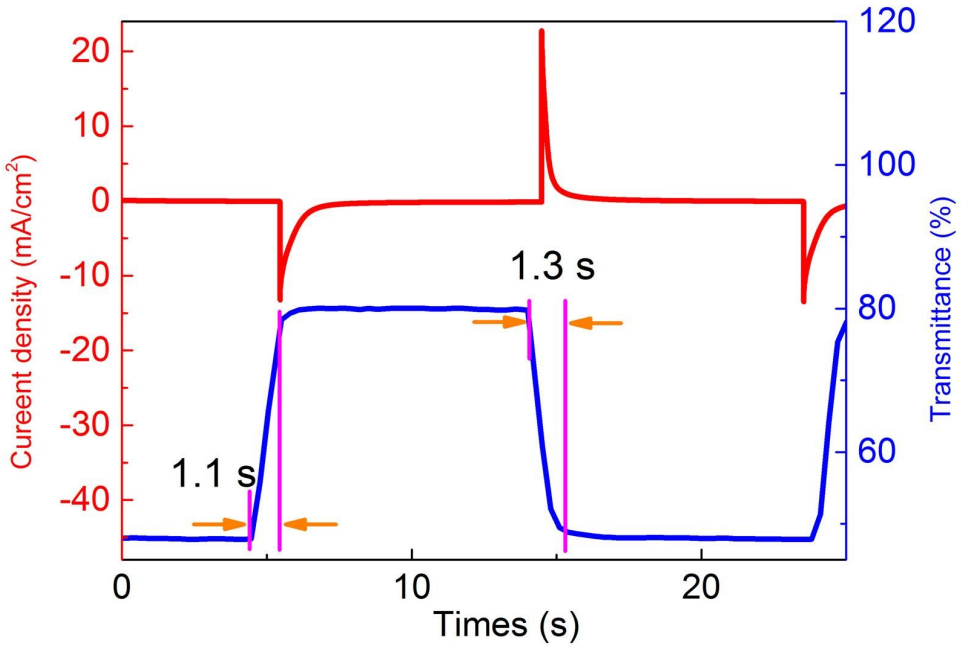


Fig. S7 Electrochromic response time of PANI film at 592 nm by continuously stepping voltage between -0.2 and 0.8 V.

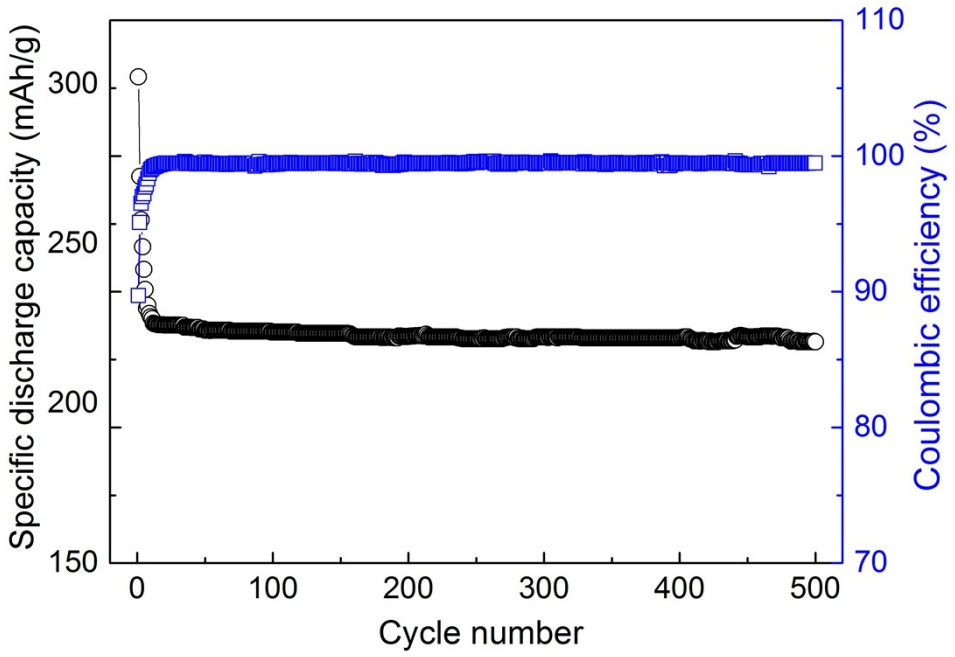


Fig. S8 The cycling performance and coulombic efficiency of 3D MoO_3/PANI hybrid nanosheet networks film at a current density of 1 A g^{-1}.