Supplement files

ARTICLE

Construction of vertical arrayed three-dimension composite towards high coloration efficiency electrochromic film

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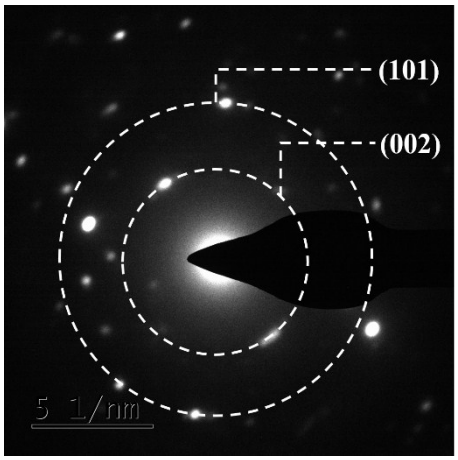

Figure S1. SAED pattern images of the prepared TiO_2 nanowires.

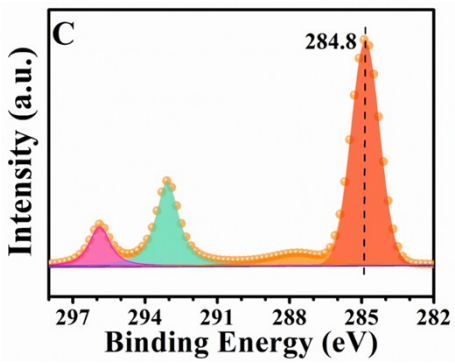

Figure S2. High-resolution XPS spectra for C 1s of prepared composite film.

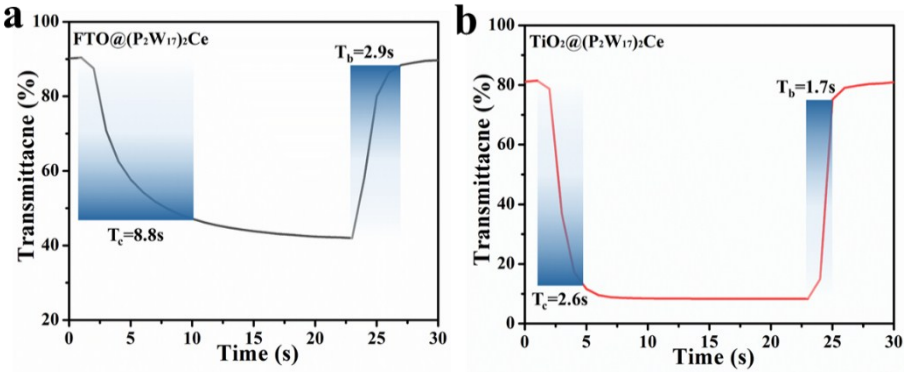

Figure S3. Coloration/bleaching time extracted for a 90% transmittance change for the prepared electrochromic films.

Table S1. Comparison of electrochromic performances of inorganic-based EC materials.

Number	EC Materials	△T[a]/(△A)[b]	tc/tb (s)[c]	CE (cm^2 C^{-1})[d]	Ref.
1	PSS/PAH/(P_2W_{15}/PAH)	(0.25)	5.5/6.0		1
2	PSS/Fe(phen)$_3$/(P_2W_{17}/Fe(phen)$_3$); PSS/Cu(phen)$_2$/(P_2W_{17}/Cu(phen)$_2$)	(0.22); (0.24)	7.4/7.0; 6.6/6.5		2
3	TiO_2/$P_2W_{17}V$	85.1%	5.6/4.1	67.7	3
4	TiO_2/W_{10}	49.5%	7.2/4.9		4
5	TiO_2/Na-P_5W_{30}	50%	1/1	71.1	5
6	TiO_2/(P_2W_{18}/PEI)	45.1%	1.9/6.7	69	6
7	PEI/P_2W_{18}/PEI/WO_3	48.4%	24.9/2.4	46.1	7
8	P_2W_{18}/CS-CNTs	20.3%	4.3/3.7	91.5	8
9	Ag/$W_{18}O_{49}$	58-86%	1.3/1.4-9/12.3	32.67-35.7	9
10	Nb-doped WO_3	61.7%	3.6/2.1	49.7	10
11	WO_3	75.6%	2.4/1.2	79.7	11
12	Co ions doped WO_3	75.4%	27.6/11.8	65.7	12
13	Prussian Blue	(2.35)	8.3/5.6		13
14	TiO_2/ WO_3	85.3%	3.0/1.1	102.1	14
15	TiO_2/(P_2W_{17})$_2$Ce	73.2%	2.6/1.7	111.3	Our work

a: transmittance; *b*: Absorbance; *c*: Swithcing time($t_{coloration}$/$t_{bleaching}$); *d*: Coloration effection

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