Electronic supplementary information (ESI) †

Fig. S1. SEM (a) top and (b) cross-sectional view of self organized TiO$_2$-MoO$_3$ composite oxide nano-structure.

Fig. S2. TEM-SAD patterns of TiO$_2$-MoO$_3$ composite oxide nano-tubes (a) before and (b) after annealing at 550 °C in air showing the crystallization of the as prepared amorphous nano-tubes into polycrystalline structure after annealing. In (b) A: anatase TiO$_2$, R: rutile TiO$_2$ and M: α-MoO$_3$. (c) TEM image of the selected area of the annealed nano-tube sample.
Self organized nano-tubes of TiO$_2$-MoO$_3$ with enhanced electrochromic properties

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Fig. S3. XPS spectra of (a) O1s, (b)Ti2p and (c) Mo3d in TiO$_2$-MoO$_3$ composite oxide nano-tubes. Spectra of O1s and Ti2p in TiO$_2$ nano-tubes have also been shown in (a) and (b) for comparaison.
**Fig. S4** EDX spectrum of TiO$_2$-MoO$_3$ composite oxide nano-tubes.

**Fig. S5.** Normalized reflectivity ($\Delta R$) from the surface of amorphous TiO$_2$-MoO$_3$ composite oxide nano-tube with respect to the number of anodic and cathodic cycle between +1.0V to -0.7V in 0.1M HClO$_4$ aqueous solution.