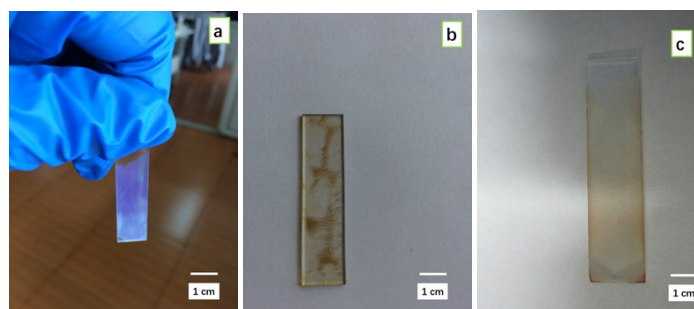
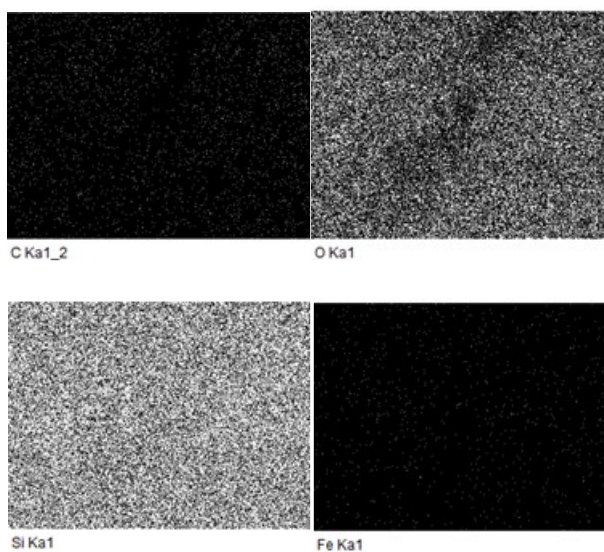


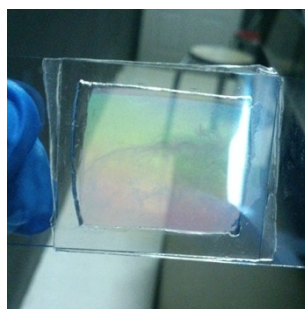
**Fig. S1** Cross-sectional SEM images of the silica MCCTs (a) and nanostructured  $\text{Fc}(\text{COCH}_3)_2$  film (b).

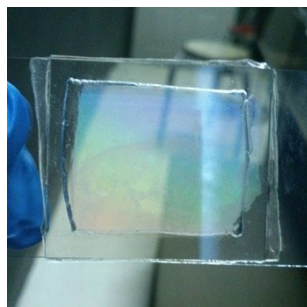


**Fig. S2** Photographic images of the silica MCCT (a), compact  $\text{Fc}(\text{COCH}_3)_2$  (b), and nanostructured  $\text{Fc}(\text{COCH}_3)_2$  film (c).

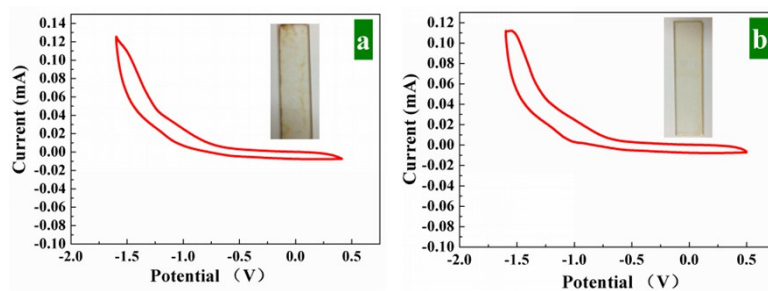


**Fig. S3** Elemental mapping images of the nanostructured  $\text{Fc}(\text{COCH}_3)_2$  film.

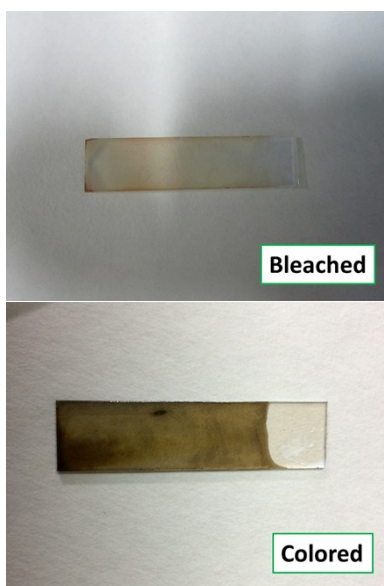




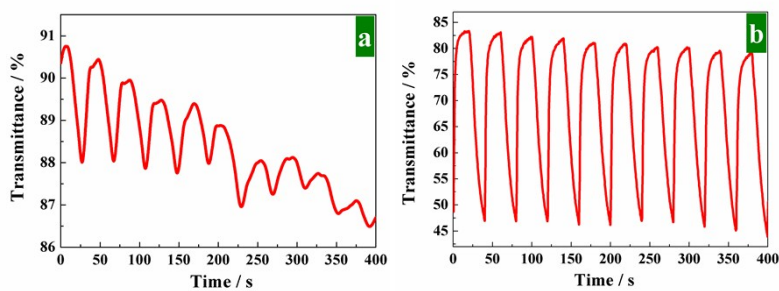
**Fig. S4** Photographs of the nanostructured  $\text{Fc}(\text{COCH}_3)_2$  film.



**Fig. S5** Cyclic voltammograms of compact  $\text{Fc}(\text{COCH}_3)_2$  with uneven (a) and uniform (b) surface.



**Fig. S6** Photographs of nanostructured  $\text{Fc}(\text{COCH}_3)_2$  film ( $1 \times 3 \text{ cm}^2$ ) in a colored and bleached state.



**Fig. S7** The switching response curves of compact (a) and nanostructured  $\text{Fc}(\text{COCH}_3)_2$  film (b), 10 periods.