

Multi-color Electrochromic Device on a Patterned ITO Glass Electrode

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Multi-color electrochromic (EC) device was fabricated on a patterned ITO glass template. Organic dyes were employed as electrochromophore and adsorbed onto TiO₂ nanoparticles. An electrochromophore was directly adsorbed on to TiO₂ particle that was dispersed in a mixture of PEG acrylate and PEGDME, to afford electrochromic organic-inorganic composites. The chromophores showed intense color change upon application of bias potential > 1.5 V. Patterning of ITO glass for separating each color section was carried out by wet etching process, so that electrically isolated multi cell could be prepared on ITO glass electrode. The multi-color cell allowed digitalized signal to operate separately upon the applied voltage. Coloration efficiency and optimal composition of the multi-color EC device, evaluated by a reflective UV-Vis spectrometric method, will be presented.