Hydrothermally grown nanoflowered WO$_3$ thin films on etched ITO for electrochromic studies

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Abstract: Herein, we present, for a first time, an electrochromic film of WO$_3$, fabricated on a ITO by etching process, adopting a low-cost, facile and template-free fabrication process. By using hydrothermal method, we obtained WO$_3$ films with a simplified architecture (ITO/HCl/WO$_3$) in which HCl supports WO$_3$ to form adhesive layer. Compared to ITO/WO$_3$ configuration, the ITO/HCl/WO$_3$ configuration exhibited a strong enhancement in terms of roughness, porosity, open-tunnel structure, current density and coloration efficiency (about 179 cm$^2$ C$^{-1}$). Moreover, electro-optical characterization illustrates high transmittance modulation (about 49% at 630 nm) with excellent stability, making it attractive for a practical application.

Biography
Dr. Anamika Vitthal Kadam has completed her PhD at the age of 31 years from Bharti Vidyapeeth University, Pune, MH, and India. She is working as Assistant Prof in D.Y. Patil Engg and Tech, Kolhapur, MH, India and having guideship of D.Y. Patil University. Se has published more than 25 papers in national and international journals and achieved a project under young scientist scheme with one minor research project.

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