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# Electrochromic behavior of fluorine-doped tin oxide film via guided motion of Li ions

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## ABSTRACT

Electrochromic materials, which can change their optical properties in the presence of external electric potential stimuli, have attracted increasing attention due to their promising applications in many fields. In this work, an electrochromic device was assembled using commercial fluorine-doped tin oxide (FTO) film as the active electrochromic material. The light transmittance of FTO was controlled via guided motion of Li ions. The device can be reversibly switched between a deeply colored state and an uncolored state via the inserting/extracting of Li ions in the FTO film. Our results indicate that FTO is a promising electrochromic active material with high color efficiency and low cost.

**Keywords:** Electrochromic device; Fluorine-doped tin oxide; Transparent conductive film

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