

ELECTROCHROMIC DEVICE WITH GRAPHENE/FERROELECTRIC ELECTRODE

ABSTRACT OF THE DISCLOSURE

In accordance with a version of the invention, graphene with a ferroelectric material is used as the transparent electrode material in an electrochromic device. The use of curved and dynamically flexing substrates enables flexible and stretchable applications for electrochromic films. Furthermore, the nonreactive and impermeable nature of graphene increases the durability of the device through increased resistance to external impurities. In addition, the incorporation of ferroelectric materials allows the device to exhibit nonvolatile usage; that is, devices can remain transparent with no external power source. Furthermore, devices may exhibit a charging effect, permitting recovery of energy stored in alignment of ferroelectric dipoles within the ferroelectric material.

(Figure 2)