

Title (en)  
ORGANIC SOLID SELF-SUPPORTED ELECTROCHROMIC MATERIAL

Title (de)  
ORGANISCHES FESTES SELBSTGETRÄGERTES ELEKTROCHROMES MATERIAL

Title (fr)  
MATERIAU ELECTROCHROME, AUTOPORTANT, SOLIDE, ORGANIQUE

Publication  
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Application  
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Abstract (en)  
[origin: WO2006008776A1] A new type of organic solid electrochromic material obtainable by means of drugging of solid preexistant polymeric films with electrochromic molecules and plastifizing molecules has been invented. Such material has the self-support characteristics and can, hence, be realized both in sheets, suitable to be subsequently laminated between glaze or plastic surfaces, in laminas with conducting surfaces utilizable without further supports, and in forms different from that planar. Both the products deprived of further supports, and the composites laminated between glaze or plastic supports, which will be obtained from the electrochromic film object of the present invention, are characterized by high transparence and electro-chromism, being it possible to change their colour by application of weak electric field. The film can also be obtained in a version containing mycrodrops of Liquid Crystals, such to possess beyond the electrochromic characteristics also those electro-optical of PDLC film. In such version it is possible to modulate both its colour and its transparence. The electrochromic reponse time can be graded varying the engaged chemical formulations. In a more rapid version the reponse time is inferior also to that of fluid electrochromic films. The material is prepared by cooling of mixtures obtained by dissolving on heat the preformed polymers and the percentages of electrochromic molecules or other eventual substances as conducting or plasticizing polymers or olygomers. The material, presented in this invention is innovative compared to previous electrochromic materials, not only for the particular composition and formulation of the materials, but it can also be realized without being necessary bordered with glaze or plastic supports. The films of the material can be subsequently laminated between other conducting supports. However, some versions of the materials can be engaged without further supports. In this case the layers of organic or inorganic material with high electrical conductivity and further layers of externa isolation will have to be applied on their surfaces. In one of the versions the material object of the invention can be produced also in a variable trasparence way, adding to the formulations opportune quantities of liquid crystalline plasticizers. (electrochromic PDLC).

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