

A Correlation between Electrochromic Molecular Structure and Device Performance

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Electrochromic (EC) materials showing reversible color change with external electrical stimuli have been widely applied to diverse applications including displays. In this work, we fabricated EC displays based on EC gels consisting of the EC material (asymmetric mono-heptyl viologen (MHV) or symmetric di-heptyl viologen(DHV)), copolymer (P(VDF-co-HFP)) and ionic liquid ([BMI][TFSI] or [BMI][BF₄]). In particular, we investigated a correlation between the molecular structure of EC materials and device performance. Also, we successfully demonstrated multi-colored EC displays based on the MHV and DHV.