

## Design of optimal quasi-solid electrolytes for efficient electrochromic device

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Quasi-solid electrolytes (QSEs) have been widely investigated and utilized in a variety of electrochemical applications because of the moderate ion conductivity and high physical stability. Generally, various organic solvents are used in QSEs because of the wide electrochemical window and low volatility, and the performances of QSEs are different by properties of each organic solvent. Meanwhile, electrochromic device (ECD) is an electrochemical device that blocking sunlight from outside by controlling the transmittance with a low voltage and has been actively studied for various applications in recent years. The ECD requires the use of QSEs with low volatility and high ionic conductivity for high diffusion coefficient, fast bleached/colored velocity and high durability of the devices. In this study, we have investigated several liquid electrolyte compositions with different solvents for each liquid electrolyte and correlated the performance of the ECD with the properties of each solvents. Then, we have prepared and characterize the QSEs by applying the determined liquid electrolyte composition. (Acknowledgement: ME No. 2017000140002/ RE201702218)