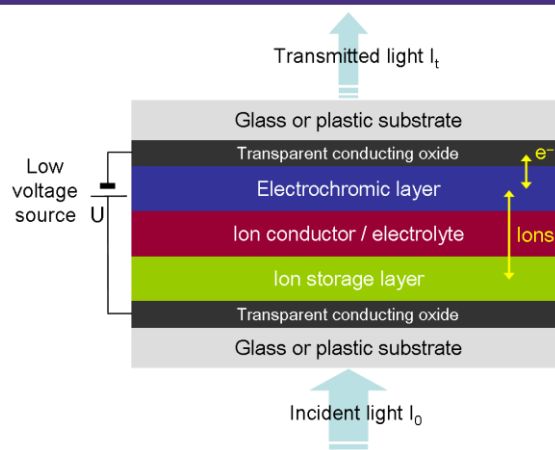


## ELECTROCHROMIC DEVICES



Principle of Electrochromism<sup>1</sup>

### Formulations for Li<sup>+</sup> conducting electrochromic membranes

Imidazolium based ionic liquids are good plasticizers for poly(methylmethacrylate) (PMMA).<sup>2</sup> It has been also shown that polymers based on PMMA and ionic liquids can give self-standing, flexible and transparent films with very good conductivity.<sup>3</sup>

REFERENCES	FORMULATION
EM003	[LiTFSI 0.3M/BMITFSI : PMMA (60:40 wt%)] in 2-butanone <sup>4</sup> Conductivity : 0.3mS/cm
EM004	LiTFSI 1M/PMITFSI : PEO membrane <sup>5</sup>

- \* BMITFSI : 1-Butyl-3-methylimidazolium bis(trifluoromethanesulfonyl)imide
- \* PMITFSI : 1-Propyl-3-methylimidazolium bis(trifluoromethanesulfonyl)imide
- \* PEO : Polyethylene oxide

### Formulations for H<sup>+</sup> conducting electrochromic membranes

For these membranes, Solvionic suggests formulations based on protic ionic liquids:  
[PROTIC IONIC LIQUID : PMMA (60:40 wt%)] in 2-butanone

REFERENCES	PROTIC IONIC LIQUID
AmSF2008c	N,N-Dimethyl-N-(2-hydroxyethyl)ammonium bis(trifluoromethanesulfonyl)imide, 99%
Im0008c	1-H-3-methylimidazolium bis(trifluoromethanesulfonyl)imide, 99%
Im2308c	1-Allyl-3H-imidazolium bis(trifluoromethanesulfonyl)imide, 99%

Solvionic develops and produces formulations according to your specific needs.  
For more information please contact us: [Sale@solvionic.com](mailto:Sale@solvionic.com)

<sup>1</sup><http://www.nanoeffects.de>

<sup>2</sup>M.P. Scott et al., Chemistry Communication (2002)1370-1371

<sup>3</sup>M.A.B.H. Susan et al., Journal of American Chemical Society, 127 (2005)4976-4983

<sup>4</sup>S. Duluard et al., Electrochimica Acta, 55 (2010) 8839-8846

<sup>5</sup>Hydro-Quebec Patent : WO2006/039795