

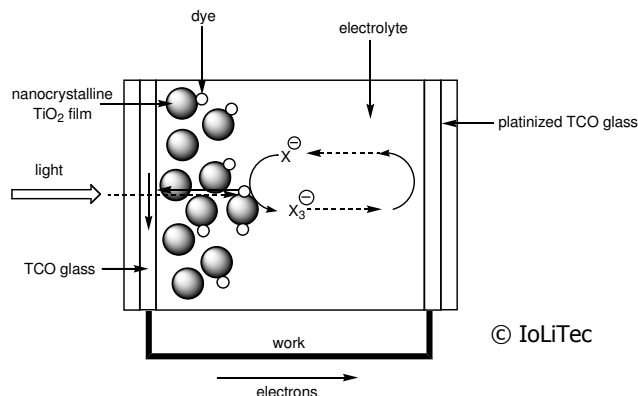
Electrolytes for dye-sensitised solar cells

Dye-sensitised solar cells (DSSCs) are considered a real alternative to the well-established silicon-based solar cells.^[1] Utilising a synthetic dye as the key component they convert sunlight into electricity via a complex electrochemical process. Their working principle is closely related to photosynthesis. Compared to silicon-based solar cells they offer the major advantage of staying functional even under diffuse light. They are transparent and can therefore be used as translucent, power-generating architectural building blocks and design elements.

From a very early stage, the development of the DSSC was linked closely to the use of an ionic liquids as the key component of the electrolyte, as their favourable properties, i.e. non-volatility, thermal stability and tuneable conductivity and miscibility, made them the obvious materials of choice for this purpose. Efficiencies of more than 10% have been achieved in the laboratory.^[2]

The efficiency of a DSSC is strongly dependent on the interaction of the many different components and materials used. The high purity and reliable quality standard of IoLiTec's products have earned the company its strong reputation and prime position as the preferred partner of many companies and research institutions working in the field. In collaboration with a number of top-class academic and industrial partners IoLiTec is working on the further development and commercialisation of the DSSC in Europe within the frame of the ColorSol[®]^[3] and FSZ-Industry projects.

IoLiTec offers not only a selection of iodide ionic liquids for DSSCs, but also different additives, used to enhance the performance of DSSCs^[4] and ready-to-use electrolytes are also available.



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Product Code	Compound	Quantities
IL-0048-HP	1-Ethyl-3-methylimidazolium iodide, >98%	25 g to 5 kg
IL-0025-HP	1-Methyl-3-propylimidazolium iodide, >98%	25 g to 5 kg
IL-0199-HP	1,3-Dimethylimidazolium iodide, >98%	25 g to 5 kg
IL-0231-HP	1-Allyl-3-methylimidazolium iodide, >98%	25 g to 5 kg
IL-0049-HP	1,2-Dimethyl-3-propylimidazolium iodide, >98%	25 g to 5 kg
IL-0050-HP	1-Butyl-1-methylpyrrolidinium iodide, >98%	25 g to 5 kg

References:

- [1] B. O'Regan, M. Grätzel, *Nature* **1991**, 353, 737–740
 [2]. M. Grätzel, *J. Photochem. Photobiol. C* **2003**, 4, 145–153
 [3]. www.colorsol.de
 [4] M. Gorlov, L. Kloo, *Dalton Trans*, **2008**, 2655-2666

