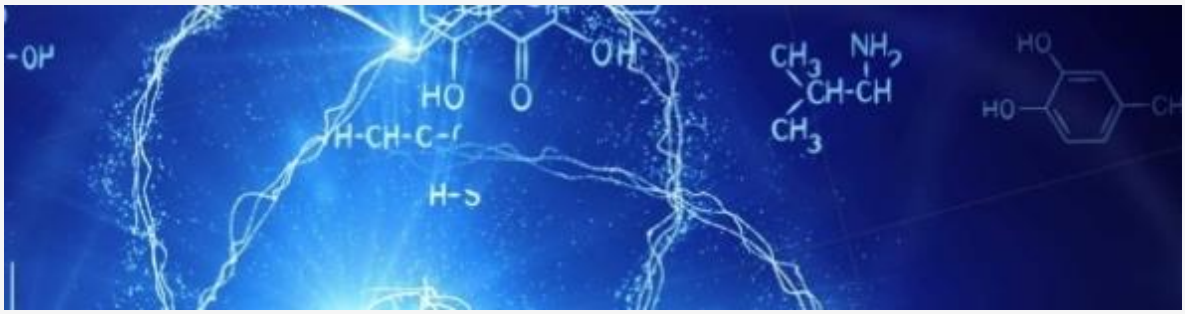
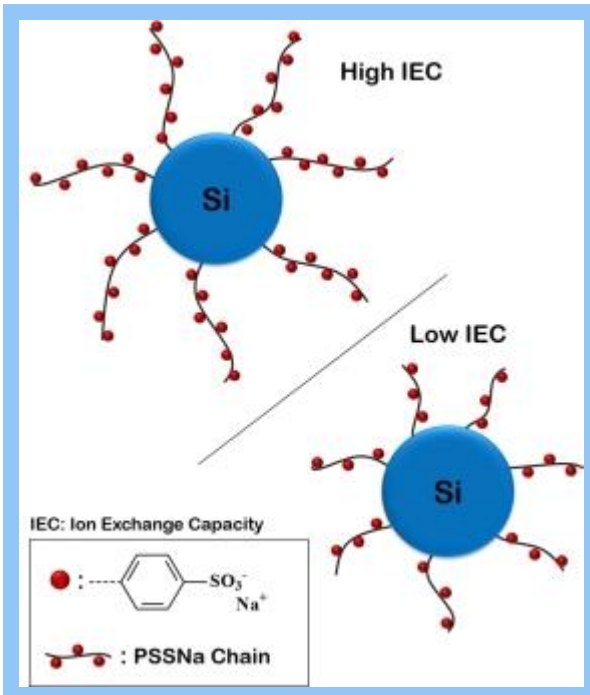
This message contains graphics. If you do not see the graphics, click here to view

FUNCTIONAL POLYMERS FOR ENERGY APPLICATIONS



SPECIFIC POLYMERS is developing **polymers and materials of interest in energy applications** such as **fuell cells, batteries or organic photovoltaics**. In more than 8 years, SP has acquired a strong experience in the synthesis of polymers and materials bearing specific moieties allowing ionic or electronic conduction.

POLYSTYRENESULFONIC ACID GRAFTED SILICA PARTICLES FOR FUEL CELLS MEMBRANES



For more than 5 years, SPECIFIC POLYMERS and CEA-Le Ripault are working in close collaboration in order to develop **composite fuel cells membrane (PEMFC).**

Targeted membranes are prepared by inserting **poly(sodium 4-styrenesulfonate) grafted silica particles (Si-PSSNa)** dispersed in PVDF-HFP polymer matrix. Si-PSSNa hybrid particles ensure the proton conduction in the fuel cell membrane.

Si-PSSNa particles are synthesized by ATRP controlled radical polymerization of sodium 4-styrenesulfonate on functionalized silica particles. Thus, each **silica particles are coated with PSSNa polymer chain brush.**

Ion Exchange capacity (IEC) can thus be tuned during the ATRP polymerization process by mastering the polymer chains molecular weight.

SPECIFIC POLYMERS
produce and sell
Si-PSSNa particles
(from grams to hundred grams)

CLICK HERE TO GET A QUOTE FOR 1G, 10G or 100G

RELATED SCIENTIFIC ARTICLES

Composite fuel cell membranes based on inert polymer matrix and proton-conducting hybrid silica particles
F. Niepceron, et al., J. Membr. Sci., 338(2009) 100-110

An efficent solid acid catalyst: Poly-p-styrenesulfonic acid supported on SBA-15 via surface-initiated ATRP
L. Congming et al., Mircopor. Mesopor. Mater. 123 (2009) 228-233

TOWARD VARIOUS FIELDS OF APPLICATION

Si-PSSNa particles are mostly used for the implementation of PEMFC membranes. Nevetheless, such funcitonal particles bring interesting properties in **other applications** such as water purifications by cation exchange processes (desalination, PEUF process), organic electronic (OFETs), chemical catalyst or sensors (humidity, glucose).

CONTACT US

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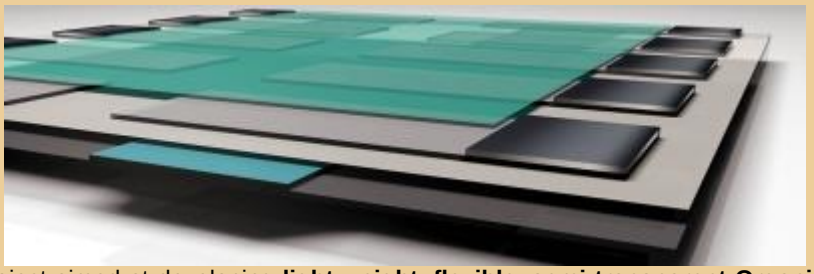
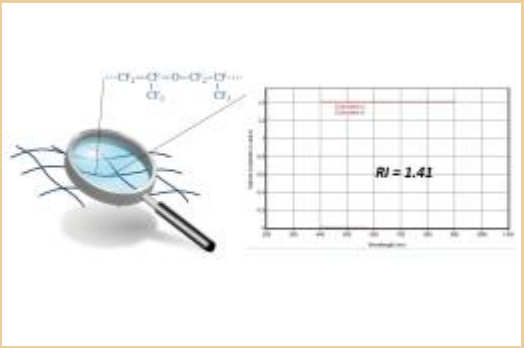
ORGANIC PHOTOVOLTAICS (OPV) – SOLPROCEL EU PROJECT



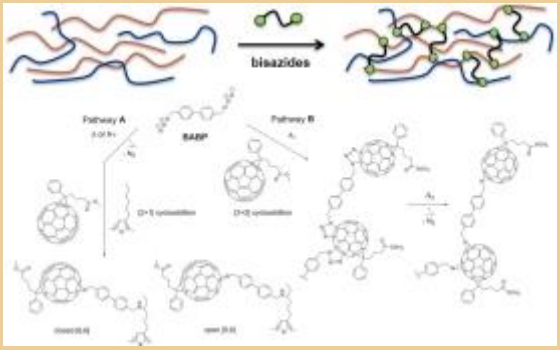
SOLPROCEL project aimed at developing **light weight, flexible, semi-transparent Organic Photovoltaics (OPV)** which exhibit **sensitivity to low light levels** and can be process in a roll-to-roll application. Such organic solar cells could find application in **building integrated energy production** technology. SOLPROCEL project started in 2013 and ended in November 2016. Within this project, SPECIFIC POLYMERS developed **low refractive-index UV-crosslinkable thin layers** and **bisazides crosslinking agents** for the stabilization of Polymer-Fullerene absorber layer.

HIGHLIGHTED TECHNOLOGIES AND PRODUCTS

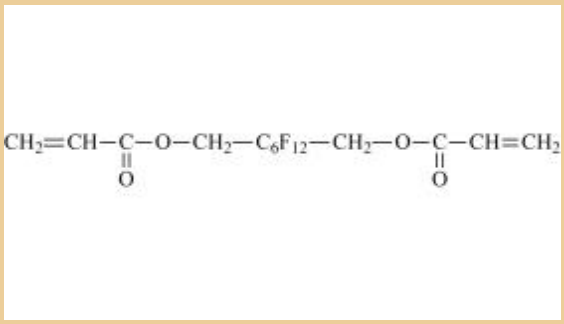
Low-RI UV-crosslinkable layers were built out of the three following acrylate fluoro monomers. Optimal thin polymer layer exhibited a refractive index of 1.34.



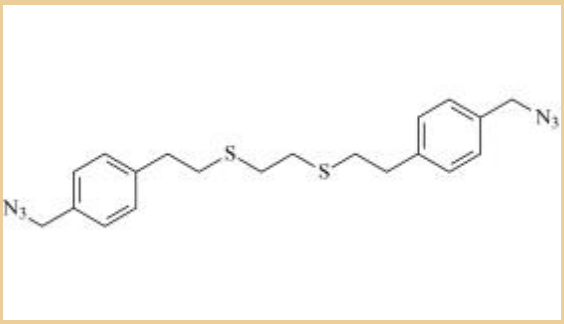
Bisazides crosslinking agents enabled to crosslinked the absorber polymers/fullerne layer OPV active layers by reaction between azide groups and double bonds.



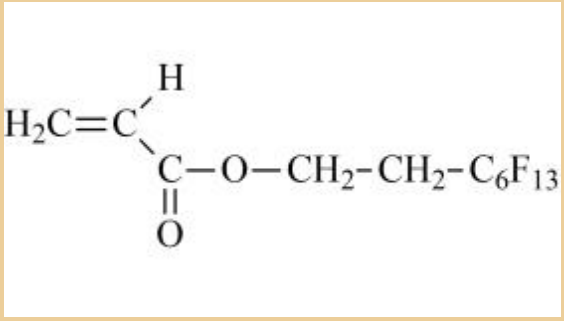
L.Derue, et al., Adv. Mat. 2014,26, 5831 -5838



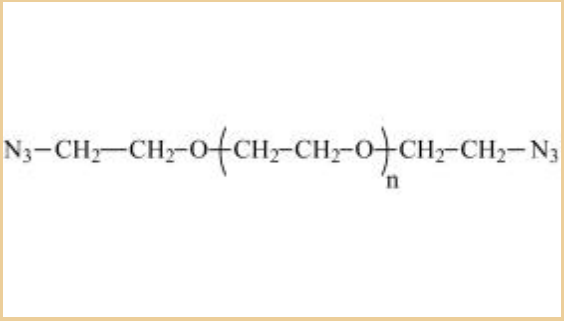
SP-60-0-002
Bis Acrylate Dodecafluorooctane



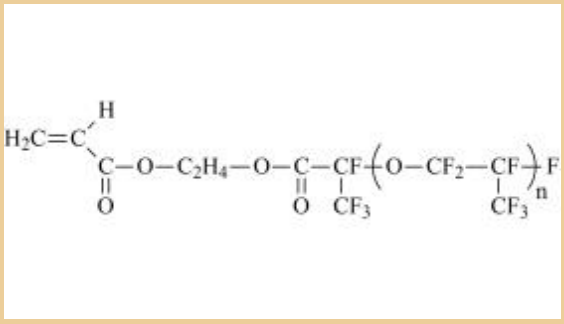
SP-3-04-002
Thioethane Bis EthylBenzyl Azide



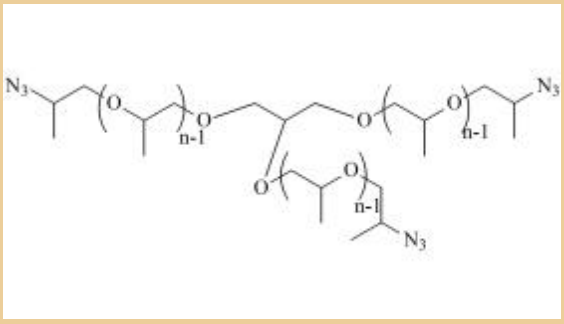
SP-49-007
Tridecafluorooctyl Acrylate



SP-1P-4-002
Polyethylene glycole bisazides



SP-0P4-7-002
poly(HFPO) Acrylate



SP-1P-4-007
Polypropylene glycole triazides

For more information, do not hesitate to contact us
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CATALOG

FLYER

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