Electron-accepting materials for environmentally friendly organic photovoltaics

Organic Electronics Group

**Background and challenges**

- Solar photovoltaic technology enables the fabrication of light-weight, semi-transparent, and flexible large-area devices by low cost methods as rol-to-rol and ink-jet printing techniques.
- Organic photovoltaic devices face several challenges to become a viable energy technology, in particular efficiency values, presently at the maximum of 13%, and device stability should be improved. Furthermore, the device fabrication involves toxic solvents, related to the restricted solubility of organic materials.

**Description and main innovation**

- New organic materials to perform as active layer in photovoltaic (PV) devices and that can be processed from solution, as inks, using environmentally friendly solvents.

**New Photo-active Materials**

Polymers with Increased solubility in hydrophobic/polar solvents

**Achievements**

**Photovoltaic Devices Fabrication and Characterization**

- Application of all the new synthesized materials in OPV cells employing active layers processed from environmentally friendly solvents such as Anisole and Ethanol.

**Work in progress**