



DEPHOTEX

Development of Photovoltaic Textiles based on novel Fibres

Abstract

The goal of the project is **to research and develop photovoltaic cells** in order **to get flexible photovoltaic textiles based on novel fibres**, which will allow converting solar radiation into energy. Photovoltaic solar energy conversion is being widely studied as one of the sources of renewable energy with major application potential, being considered a real alternative to fossil fuels. Since the development of the first photovoltaic cells, solar energy is being an object of continuous research, focused on improving the energy efficiency as well as the structure of photovoltaic cells.

The latest innovations on photovoltaic technology have allowed obtaining flexible solar cells, which offer a wide range of possibilities, mainly in wearable applications that need autonomous systems. The present project is in line with these innovations and the target is to research the development of flexible and textile based solar cells to obtain photovoltaic textiles. These offer a range of useful applications, e.g. in a variety of consumer application sectors, including home and architecture textiles, sports, leisure, clothing and the automotive industry. Some applications envisioned are solar tents and parasols with the capability of energy generation.

The fundamental **research topic** of the **project** is **the development of novel fibres with conductive properties as substrate for the flexible photovoltaic cells**. After this has been achieved, the project will focus on the research and deposition of different layers that will compose the structure of a flexible photovoltaic cell. In this context as well organic as inorganic active materials will be studied.

The **main technological innovation** is **based on the development of a wearable and flexible energy source directly on textile products**. Fabrics with the capability of generating clean, usable and wearable energy thanks to their sun exposure, offer a great added value.

There are 15 partners from 7 different European countries (Belgium, Czech Republic, Germany, Italy, Portugal, Spain and Switzerland) involved, combining two very different worlds, namely textile and photovoltaics. Besides Centexbel there is one more Belgian partner involved, namely Nanocyl, a Manufacturer of carbon nanotubes <http://www.nanocyl.com/>

More information on the project can be found on the Dephotex website <http://www.dephotex.com/>

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