Media Release

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TREASORES EU research project led by Empa

Searching for the ultimate low-priced solar cell

The EU research project, "TREASORES", got under way on 1 November. The 14 project partners will receive some nine million euros over the next three years for the development of favourably priced production technologies for large-scale organic electronics, for example for light panels and solar cells. TREASORES is being led by Frank Nüesch, Head of Empa's "functional polymers" department.

To kick off the project, which is part of the 7th EU Framework Programme, 37 scientists from the 14 institutions participating in TREASORES met at Empa in Dübendorf on 20 and 21 November. These included academic institutions, research institutes, multi-national companies and SMEs. Their task over the next three years will be to continue developing production technologies that will enable large-scale organic electronics to be produced at a significantly lower cost

Photovoltaic panels and organic light sources are basically produced piece by piece at the moment and, in addition to this, the carrier material for the active organic layer is mostly made of glass, which makes the panel stiff, heavy and thus difficult to handle. At some time in the future, the plan is to make photovoltaic or light elements using the so-called "roll-to-roll" procedure. Thereby, a flexible carrier material made of inexpensive plastic is uncoiled from rolls and furnished practically "ad infinitum" with organically active layers that have a paint and polymer base. The finished sheets can also be rolled up again.

This production process is already being used in laboratories and on a small scale in industry, but is, however, still quite some way from being ready for large-scale industrial production. The high speed of production and the base materials, which are cheap compared with the silicon that is usually used today, will make it possible to produce significantly cheaper photovoltaic elements than thus far.

However, it is well known that the devil is in the detail: we still do not have conductive, transparent and flexible substrates that are compatible with the "roll-to-roll" process. The polymer foils used today are coated with a conductive metal oxide using a process that requires a high energy input. And, this conductive layer becomes perishable after frequent bending.

Project Partners

- Empa (CH), project management, research
- Amanuensis GmbH (CH), consulting
- Sefar AG (CH), industry
- Technical University of Dresden (D), academic institution
- NPL Management Ltd. (GB), research
- Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung E.V. (D), research
- University of Valencia (E), university institution
- Osram AG (D), industry
- Canatu Oy (FIN), industry
- Aalto-Korkeakoulusaatio (FIN), university institution
- Associan – Centro de Investigacion Cooperativa en Nanociencias – CIC nanoGUNE (E), research
- Amcor Flexibles Kreuzlingen AG (CH), industry
- Rowo Coating Gesellschaft für Beschichtung MBH (D), industry
- Eight19 Ltd (GB), industry

The Seventh EU Framework Programme (FP7)

The EU's framework programmes were proposed by the European Commission and approved by the European Council and Parliament in accordance with the co-decision procedure. Framework programmes have been implemented since 1984 and have hitherto been set up for periods of five years each. For the first time, FP7 has a duration of seven years (2007-2013) and has a total budget of 54 billion euros.

Further information

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Kick-off-meeting at Empa: The “TREASORS” project members met at the end of November at Empa in Dübendorf.

Text and images in electronic form available at: redaktion@empa.ch