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TREASORES

Transparent Electrodes for large Area, Large Scale
Production of Organic Optoelectronic Devices



Co-funded by the
European Union



FP7 Project 314068



Objective

- **Cheaper** organic optoelectronics by enabling **large-scale** production
 - For **large area** light sources and solar cells
 - Using **roll-to-roll** (R2R) processing (like newspaper printing)
 - Using **low temperatures** ($< 180^{\circ}\text{C}$)



Intermediate Goals

- To produce transparent, conductive, flexible barrier foils by exploring:
 - 4 kinds of electrode
 - 3 kinds of barrier/substrate
 - 2 kinds of encapsulation

Targets for R2R

- + • More efficient devices than 2012 state-of-the-art (OLED, OLEC, OPV)
- + • Encapsulation webspeed > 1 m / minute
- + • Production volume $\gg 100$ m²
- + • Individual devices $> 10 \times 10$ cm
- + • Substrates cheaper than ITO/PET

Benefits/Impact

- No need to use indium tin oxide
 - Cheaper, no supply problems
- Energy efficient processing
- Flexible materials imply:
 - Barrier layers and electrodes compatible with R2R production
 - High throughput, easy scale-up
 - Potential new markets for large area and flexible devices



The consortium

- 5 countries: CH, DE, ES, FI, UK
- **Manufacturing** partners: Amcor, Sefar, Osram, Rowo Coatings, Canatu, Eight19
- Other **companies**: Amanuensis, NPL
- **Academic** partners: Empa, Fraunhofer Society, Technical University of Dresden, University of Valencia, NanoGUNE, University of Aalto



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