

Organic Spintronics leads a consortium on thin film photovoltaics supported by the Italian Ministry of Industry (MAP).

Within the national program *Industria 2015*, the Ministry MAP launched an initiative on energy saving research and development with the mission to boost the Italian high technology industry. Organic Spintronics is the principal contractor of a wide consortium entitled FLEXSOLAR on thin film PV which includes two CNR Institutes (ISMN and IMM of Bologna), the Technion University (Israel), an Italian SME, Siena Solar Nanotech (2SN), two medium size Italian industries, Advanced Technology Solutions e MI Welding Technology and a large multinational, KME.

The FLEXSOLAR consortium is among thirty projects which have been selected out of eighty six proposals. The total allowable costs of the project reaches twelve million euros in three years. An important recognition for OS which classifies among the most dynamic research based high tech companies in Italy. A high profile which is proved also by the prestigious recognition received recently by OS; the 2008 European Frost & Sullivan Technology Innovation Award.

The goal of FLEXSOLAR is to develop an innovative technology for the fabrication of II-VI semiconductors thin film PV on flexible substrates which is based on the innovative Pulsed Plasma Deposition (PPD) technique developed by OS and transferred to 2SN for the II-VI semiconductor fabrication. The aim is to reach sustainability in two ways: a thin film PV fabrication costs that match grid parity and an environmentally friendly II-VI semiconductors fabrication platform. The project duration is three years.

Sustainability is in line with the European Union research policy effort on renewable energies.

Silicon based PV is the dominant player now but the material cost is determined by the energy required to make it; a close circle that prevents silicon based technologies to reach grid parity. The internationally recognized future for PV is in thin films, the so called Gen II PV. In thin film PV few millionths of centimetre of materials are sufficient to absorb sun light and transform it into electricity. OS and 2SN have already shown laboratory efficiency of 10% (AM 1.5) of CdTe cells on glass and are now working on flexible metal substrates.

The international challenge resides in the technology to make good quality thin films with sustainable costs and safety. OS is dedicated to develop a Reel to Reel all PPD based thin film fabrication equipment for 2SN. The other industrial partners in FLEXSOLAR contribute to complete the expertise required to develop the fabrication platform.