



1981-2006

At Isofotón, R+D is a strategic axis of growth. With its constant increase in potential, it contributes to generating knowledge, in a way which places this technology at the service of society.



6.3 R+D PROJECTS, AGREEMENTS, AND PROGRAMS

The variety of R+D activities carried out by Isofoton is reflected in the diversity of research projects in which it participates, both on national and international levels.

Over the course of 2006, various projects promoted by the Corporación Tecnológica de Andalucía (CTA) were put into action. The CTA is a private foundation promoted by the Andalusian Government whose objective is to promote the transfer of technological and scientific knowledge to the productive scheme and to Andalusian society, dedicating 84 million euros to this goal.

The following briefly describes the agreements of collaboration and research programs that stand out:



AREA ACRONYM DESCRIPTION

CRYSTALLINE SILICON TECHNOLOGY

NEMESIS Development and testing of new polymeric materials for the encapsulation of photovoltaic silicon modules.

CRYSTAL CLEAR Research and development of new processes and material, with the aim of increasing efficiency and of reducing production costs of crystalline silicon cells and modules to 1€/Wp by 2010.

BITHINK Development of an industrial process for manufacturing bifacial cells and modules with ultra-thin wafers.

FOXY Development of cells and modules on new solar silicon substrates, achieved through new processes of refining, purification, crystallization, and recycling.

PERFORMANCE Development of sturdy methods of measurement and shape to determine, in a reliable manner, the efficiency and lifespan of standard photovoltaic modules and new designs.

MICROSIL08 Design and industrialization of thin film silicon photovoltaic cells and introduction of amorphous films in devices with heterojunction amorphous crystalline structures.

CENTESIL Center of Silicon Technology.

DINTEL Design of industrial lines for manufacturing photovoltaic modules with crystalline silicon solar cells of large area and reduced thickness.

LARGE PV PLANTS Development of systems and improvements for large Grid-Connected PV power plants.

REVERSE OSMOSIS System of desalination of water through reverse osmosis.

ARFRISOL Bioclimatic architecture and solar cooling.

RURAL ELECT. Improvement of energetic service quality in PV Rural Electrification applications.

CONCEL Manufacturing of III-V solar cells under very high light concentration.

SAMCEL Automated system of measurement of solar microcells for the industrialization of the concentration module.

REALTRACK Manufacturing of a dual-axis solar tracking system for concentration systems.

FULLSPECTRUM New high technology concepts based on a better use of the solar spectrum.

TODAY Project for the mass industrialization and production of optical concentration systems through plastic injection molding techniques.

SOLARFRIO Development of an integral refrigeration system for single-family housing through Solar Energy, comprised of a thermal solar collector, absorption machine, distribution system, and associated calculation software.

APPLICATIONS OF PV SOLAR ENERGY

VERY HIGH CONCENTRATION SYSTEMS

THERMAL SOLAR ENERGY

PROGRAM PARTNERS/COLLABORATORS

PROFIT	Centro Tecnológico – Fundación Gaiker
Proyecto integrado FP6	ECN (NL); BPS (E); CNRS (F); DC (DE); DS (DE); Fraunhofer-ISE (DE); IMEC (BE); PW (F); REC (NO); Scanwafer (NO); Schott (DE); Shell (DE); UKON (DE); UPM (S); UU (NL)
Proyecto STREP FP6	TIM (S); FhG-ISE (DE); HCT (CH); USF (EEUU); FERRO (NL); CENER (S)
Proyecto STREP FP6	SINTEF (NO); ECN (NL); NTNU (NO); UKON (DE); UMIB (IT); DS (DE); FESIL (NO); PILLAR (UA); SUNERGY (NL); SCANARC (SE)
Proyecto integrado FP6	FhG-ISE (DE); EPIA; SSG (DE); PHX (DE); CONERGY (DE); RSS (DE); Scheuten (NL); Meteocontrol (DE); PSE (DE); CIEMAT (S); WrUT (PL); JRC (IT); TUV (DE); ECN (NL); CREST (UK); CEA (FR); SUPSI (CH); UNN (UK); ZSW (DE); Arsenal (AT); BGU (IL); TTU (EE); H2M (DE); SP (SE); PCCL (AT); Ecofys (NL); ITP (UK)
Proyecto Singular Estratégico (MEC)	UPC, UB, UPV, Centrolaser UPM, Ciemat, CENER, Ecotecnia S.Coop, Mondragon Assembly, Manufacturas Tarrida S.A.
Proyecto Singular Estratégico (MEC)	IES-UPM, DIQ-UCM, Técnicas Reunidas, DC Wafers
Parques Científicos y Tecnológicos (MEC)	Siemens
PROFIT/CDTI	IES, UNIA, UMA
PROFIT/CDTI	ITC, Veolia
Proyecto Singular Estratégico (MEC)	CIEMAT, Acciona, DRAGADOS, FCC , OHL, Atersa, Gamesa, Unisol, Universidad Almería , Universidad Oviedo
PROFIT	IES, USC, UNIA
Parques Científicos y Tecnológicos (MEC)	—————
CDTI/PROFIT	INDRA
CDTI/PROFIT	INSPIRA
Proyecto integrado FP6	IES-UPM (S); PSE (DE), FhG-ISE (DE), Ioffe PTI (RU); CEA-DETEN (F); RWE-SSP (DE); PUM (DE); PSI (CH), UG (UK); ICP-CSIC (S); ECN (NL), UU (NL), ICSMT (UK); FhG-IP (DE); Solaronix (CH); INSPIRA (S), JRC-IES (IT), UC (CY)
PROFIT	Wahl-Optoparts (DE)
Corporación Tecnológica de Andalucía	CIATESA

TOTAL INVESTMENTS FROM COLLABORATION AGREEMENTS AND RESEARCH PROGRAMS: 7 MILLION EUROS