

# APOLLON

Multi-APPrOach for high efficiency  
integrated and intELLigent  
cONcentrating PV modules (Systems)

## Start date and duration:

01/07/2008 – 5 years

## Total costs:

€ 11.739.385

## Total funding:

€ 8.258.783

## Main Partners:

**CESI RICERCA**

**AIXTRON**



Co-ordinator: **CESI RICERCA**

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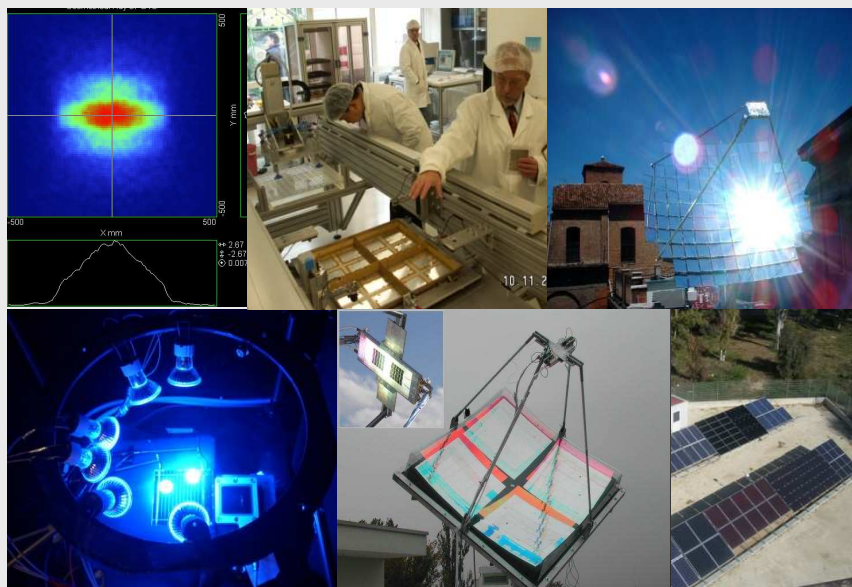


Seventh Research  
Framework Programme



# APOLLON

APOLLON project concerns the optimisation and development of Point focus and Mirror Based Spectra Splitting photovoltaic concentrating (CPV) systems (multi-approach). The different technology paths will be followed with due focalisation on the recognised critical issues in order to increase CPV efficiency, assure reliability, reduce cost and environmental impact. Multi-junction (MJ) solar cells will be manufactured by using new materials and deposition technologies, allowing to reach and even surpass the MJ solar cell efficiency target set in the European Strategic Research Agenda on Concentration Photovoltaics. Optimisation of Fresnel and Prismatic lens along with the development of new non-imaging, compact, high concentration, cell protecting optics will allow to get high optical efficiency and wide acceptance angles. New concepts will be applied for Mirror based spectra splitting systems which will eliminate the cooling needs. Both the optimised and the new technologies will be properly tested to get reliable long life time CPV systems. High Integration obtained with microelectronic and automotive light technologies for high throughput module assembly techniques, along with intelligent solutions for accurate, reliable, cost effective tracking and reduced mismatch losses will be addressed. Prototype systems will be developed for a full environmental and economical assessment finally leading to economically-attractive CPV. APOLLON consortium involves all the actors' chain, from Universities, Research Organisations, SMEs, Big Enterprises to End-Users.



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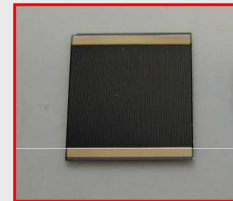
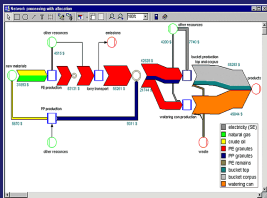
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The integrated platform for advanced  
Concentrating photovoltaics

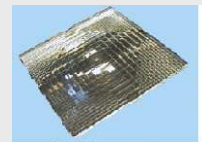
## Main foreseen results

- ◊ Development of a new MOCVD system and materials to increase cell efficiency and reduce cell cost;
- ◊ Development of new high efficiency optics with long-term stability and wide acceptance angle for high concentration suitable for cost effective mass production;
- ◊ Development of durable, low working temperature module, with high-throughput assembly technique;
- ◊ Development of intelligent tracking strategies;
- ◊ Set up of device and module calibration and characterisation methodologies;
- ◊ Environmental assessment of concentrating PV modules;



Development  
of a new  
MOCVD  
reactor

Development of  
advanced  
monolithic and  
discrete  
multijunction  
solar cells



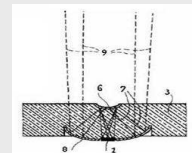
Development of  
testing  
methodologies,  
Environmental  
and economical  
assessment



Development of  
new optics



Target cost  
2 Euro/W



Development of  
tracking  
strategies for PF  
and DA CPV  
systems

Development of  
high throughput  
assembling  
techniques

