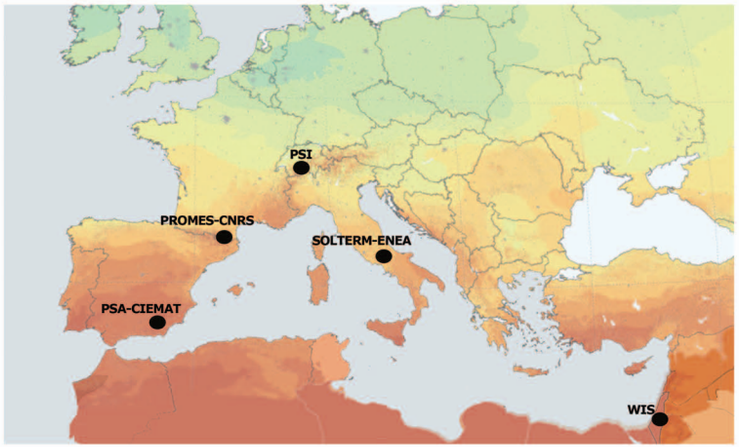
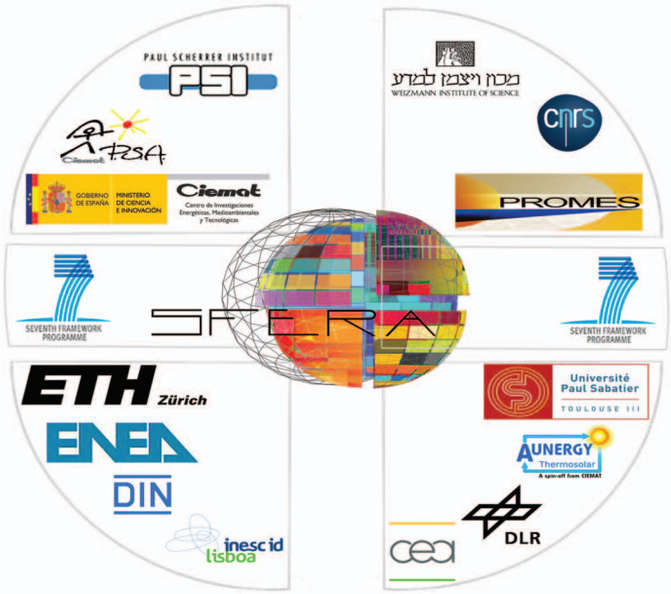
Location of the facilities



Other SFERA Activities

Networking addresses training (students, engineers …), dissemination of knowledge, development of standardization approaches, and internal and external communication.

Joint Research Activities target actions that may improve the services offer to users of the solar facilities via, for example, realistic simulations of the concentrating optics, a better control of flux and temperature at focus of concentrating systems, the achievement of ultra-high concentration, the establishment of methods to perform component durability predictions and to characterize storage technology and materials.



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SFERA

Solar Facilities for the European Research Area

SEVENTH FRAMEWORK PROGRAMME

Welcome to the CSP world

The SFERA Project

The EU-funded project SFERA aims at boosting scientific collaboration among the leading European research institutions in solar concentrating systems. It offers to European research and industry access to the best research and test infrastructures, and to high level training. SFERA creates a virtual European CSP laboratory.

The project incorporates the following activities:

Access to facilities

Researchers are encouraged to propose projects that should be implemented in five of the state-of-the-art concentrating solar facilities located in Spain, France, Italy, Israel and Switzerland. Travel and subsistence are covered by the project.

Networking

Training courses, workshops, meetings and communication actions are part of this activity.

Joint Research Activities

The main objective of these JRA is to improve the quality and service of the existing infrastructure.

Access to facilities

Unique opportunities are offered to researchers for having access to the largest set of concentrating solar systems in the world. A wide domain of research is open in Physics and Chemistry from materials science to process engineering. For example:

- Concentrating optics
- Solar thermal electricity generation
- Solar production of benign chemical energy carriers
- Storage of solar energy
- Solar water treatment
- Properties of materials at high temperature
- Research in basic phenomena and nano-material production processes
- Knowledge-based high-added-value material synthesis: ceramics, glass, etc.
- High-flux photochemistry and photo-physics
- Basic knowledge of materials behaviour and aging under extreme conditions

Plataforma Solar de Almeria, Spain (PSA-CIEMAT)

PSA is offering access to the following facilities: Central receiver system (CRS, tower with a north filed of heliostats, 200-350 kW), solar furnaces (60 kW and 5 kW), dish-Stirling modules, parabolic trough facilities, and desalination and photo-detox benches.

Process, Materials and Solar Energy lab., France (PROMES-CNRS)

Nearly all PROMES-CNRS solar facilities are offered for access: 12 Solar furnaces (from 1 kW to 1000 kW, concentration up to 15 000 suns), central receiver facility (up to 400 kW) and a dish-Stirling module. Solar furnaces are equipped with experimental vessels.

Paul Scherrer Institute, Switzerland (PSI)

The solar facilities offered for solar research at PSI are: one 40 kW solar furnace (5000 suns) and a high-flux solar simulator (50 kW radiative flux up to 11 MW/m2).

Weizmann Institute of Science, Israel (WIS)

WIS solar facilities are based on a solar tower (CRS) equipped with 4 vertical experimental levels and a 500 kW beam-down facility. Access is offered for experiments at 100 kW and 2 MW scale.

Progecto Solare Termodinamico, Italy (SOLTERM-ENEA)

ENEA facilities address all aspects of molten salt technology from material compatibility tests to high temperature thermal tests. Two loops are offered for access: a molten salt dynamic corrosion loop (MOSE) and a parabolic trough loop (PCS) that operates up to 550°C.