PHOTOVOLTAIC SOLAR ENERGY TEAM

RESEARCH, DEVELOPMENT AND INNOVATION

uja.
Universidad de Jaén

Grupo IDEA

(IDEA PV TEAM)

Last updated: April 2026

CEACTEMA
CENTRO DE ESTUDIOS AVANZADOS EN CIENCIAS DE LA TIERRA, ENERGÍA Y MEDIO AMBIENTE

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IDEA PV Research Team

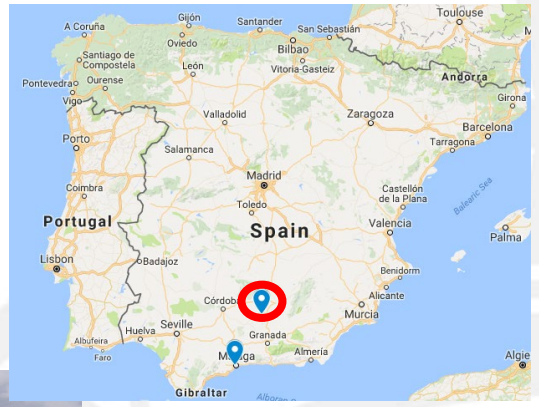
Services Offered

Engineering and Technical Assessment

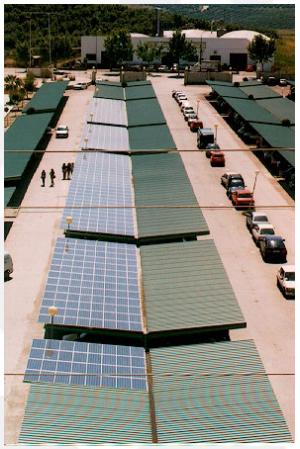
→ **Characterization, Evaluation and Quality control of PV modules and plants**

→ **Photovoltaic Design + Economic analysis**

- Infraestructure/Building Integration-Adaptation
- Distributed generation
- Self-Consumption
- PV plants (**Floating, Bifacial**)
- Rural Electrification











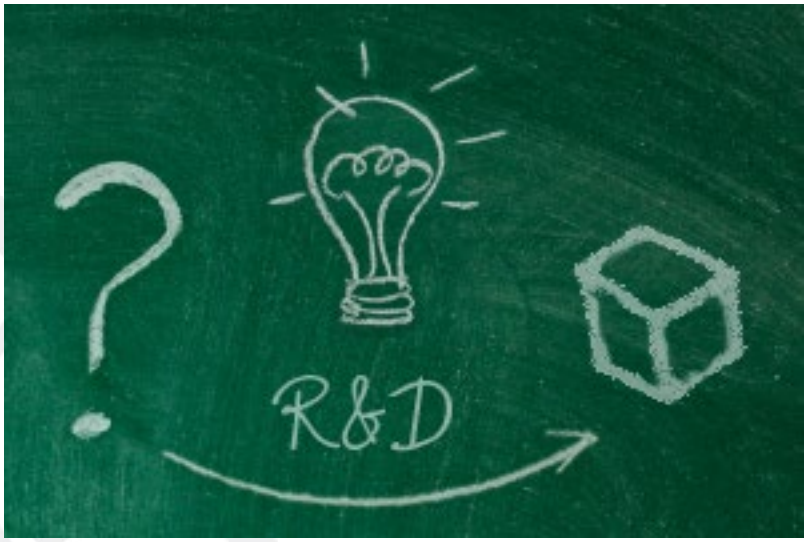


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R&D PROJECTS





CONSULTING SERVICES

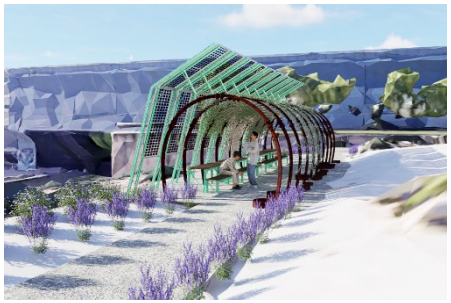
→ Characterization, Evaluation and QC of PV modules/systems

→ Engineering and Technical Assessment

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PV Projects/Solutions

PV Integration Solutions



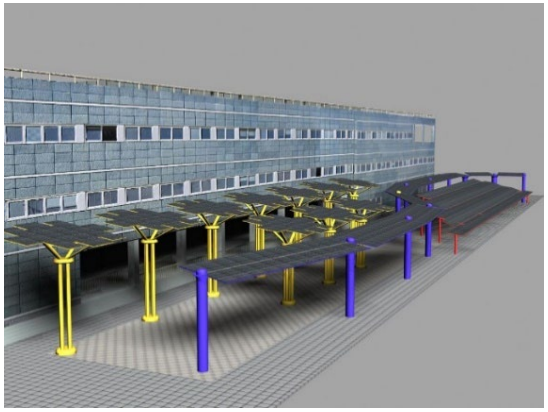


Mobilete Project

Construction of infrastructures conceived as biotechnological Smart-trees







Universol Project

Analysis of the PV potential of the campus and construction of representative impact projects



PV Projects/Solutions

PV Integration Solutions

CEFRABID Project



PV Projects/Solutions

Building PV Integration/Adaptation



Solar Decathlon Project



Modular Industrial Houses → Nearly Zero Energy Buildings





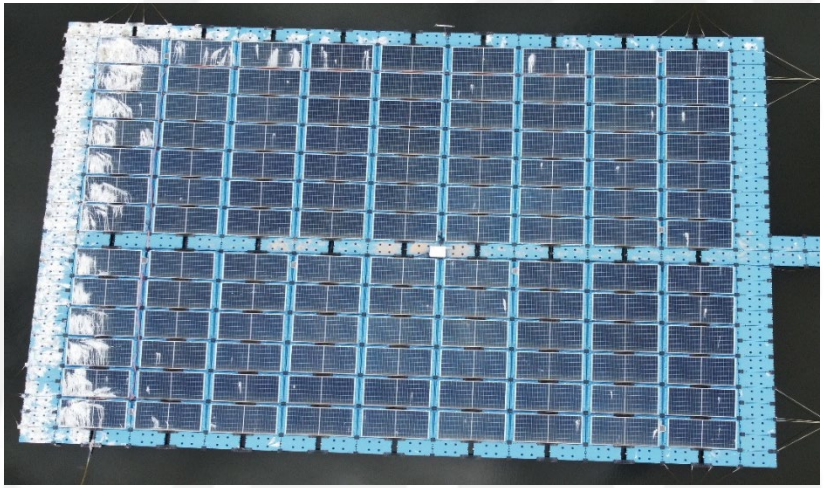


PV Projects/Solutions

Floating PV







- Analysis of the performance of floating PV systems
- Comparison with standard PV systems configurations
- Proposal of O&M tasks optimization

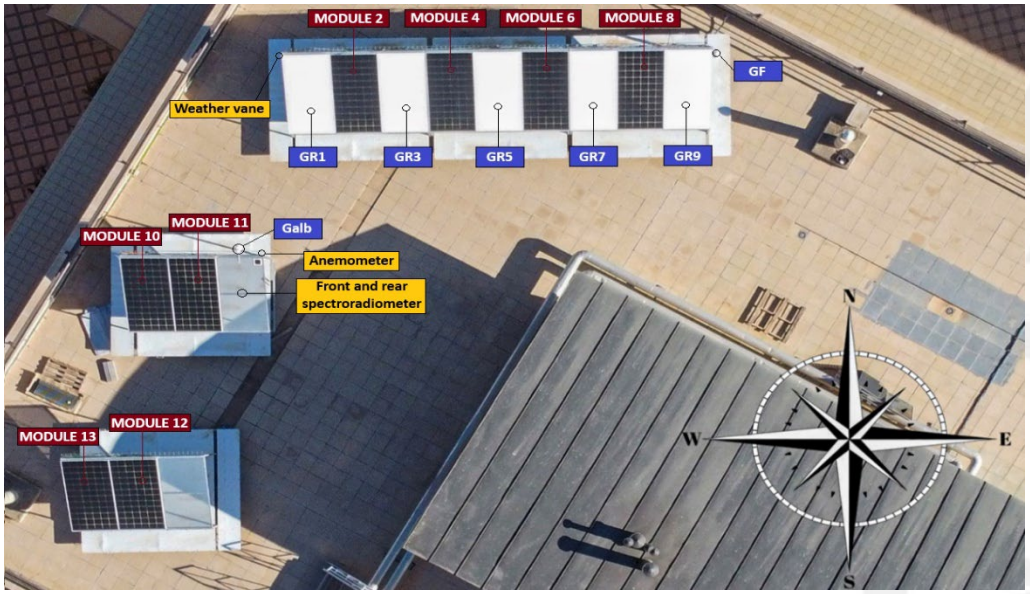
PV Projects/Solutions

Bifacial PV

Demo BIFV Project



- PV design optimization with bifacial modules
- Characterization of bifacial PV systems



Vertical PV Project



PV Projects/Solutions

PV plant analysis



Analysis of the influence of the terrain slope in the performance of large PV plants

PV Projects/Solutions

Other technologies

Perovskite



Flexible PV



- Outdoors Characterization
- PLR / degradation Analysis

PV Projects/Solutions

Smart Photolive

Junta de Andalucía
Consejería de Agricultura, Pesca, Agua y Desarrollo Rural

Unión Europea
Fondo Europeo Agrícola de Desarrollo Rural
Europa invierte en las zonas rurales

eip-agri
AGRICULTURE & INNOVATION



Application of artificial intelligence in oil and energy cooperatives

PV Projects/Solutions

Sahara Project

Rural PV Projects













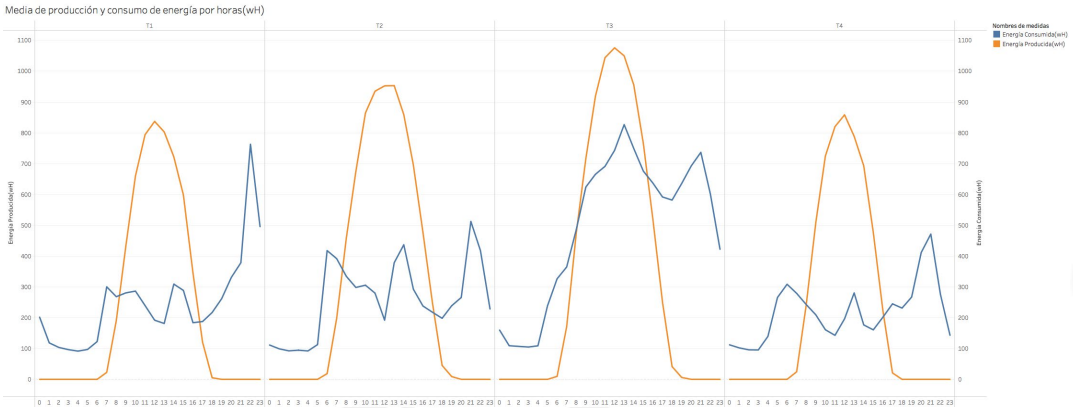
Consulting Services

PV Engineering Design

Teaching Innovation Project @ Local School



PV Self-Consumption Optimisation



PV team + Data Mining Team

LABS AND EQUIPMENT





Labs and Equipment

International Testing Sites (Collaborattive projects)

→ Grid-connected PV System in Tacna (Perú)



→ Grid-connected Thin-Film System in Lima (Perú)



→ BIFACIAL Grid-connected PV System in Lima (Perú)



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Labs and Equipment

Outdoors Lab



→ **2 axis Sun-tracker**

- Long-term outdoor monitoring

- Angular losses and shading studies

→ **Fixed-Structures**

- Characterization of different technologies

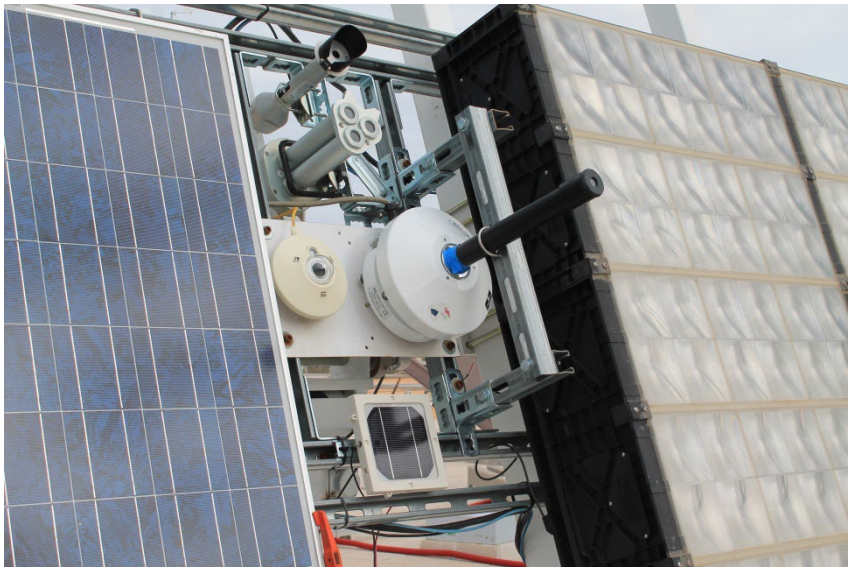
- Ageing degradation





Labs and Equipment

Outdoors Lab





→ **Meteorological Stations**

- Pyrheliometers
- Albedometers
- Spectral Band Pyrheliometer
- Pyranometers (Global Horizontal, Global Tilted and Diffuse)
- Spectroradiometers
- Ambient Temperature, Wind, Humidity and Pressure

Labs and Equipment

Field Measurement Equipment







- Power Quality and Energy Analyzer
- Wattmeter (3-phase)
- Earth Ground Tester
- Insulation Tester



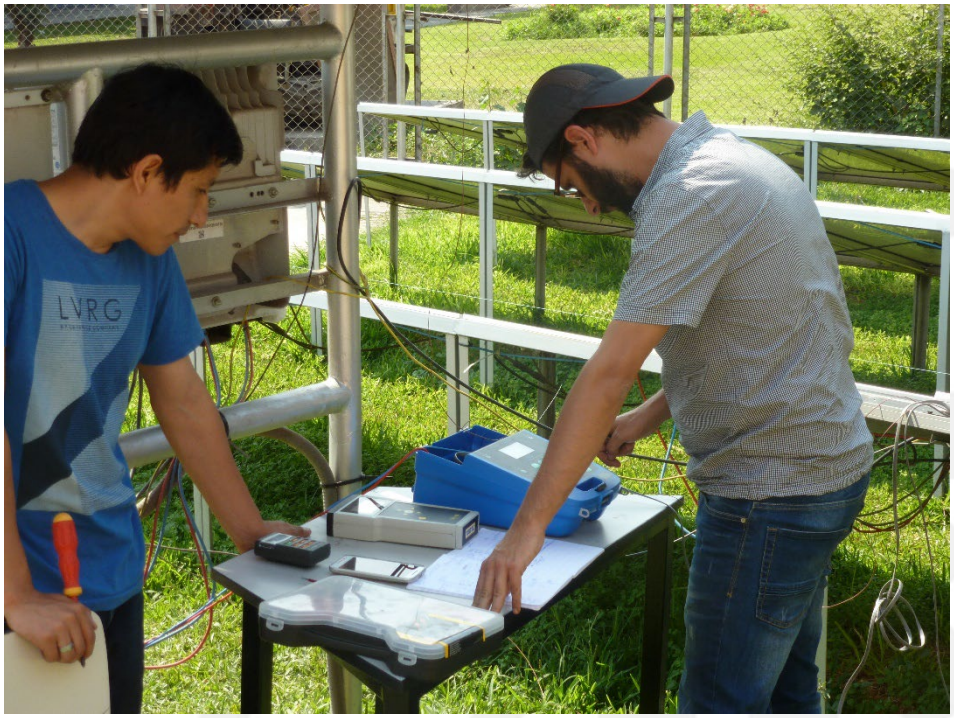
Labs and Equipment

Field Measurement Equipment









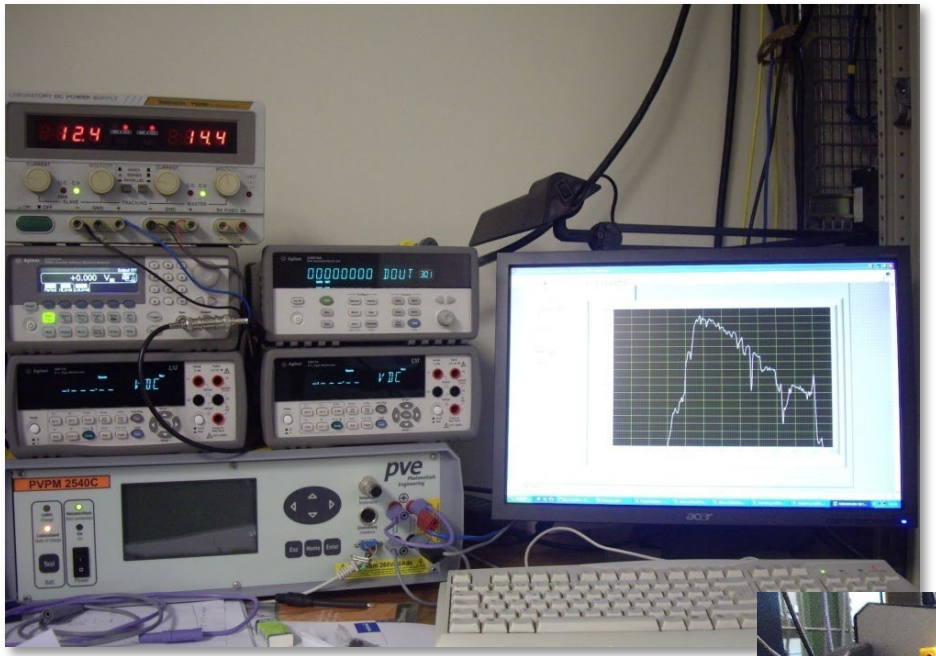


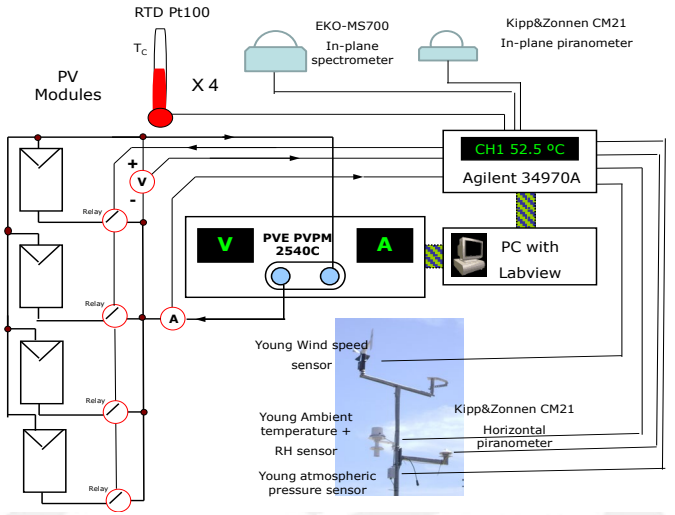
- Portable Commercial PV Analyzers I-V curve tracers (Electronic load)

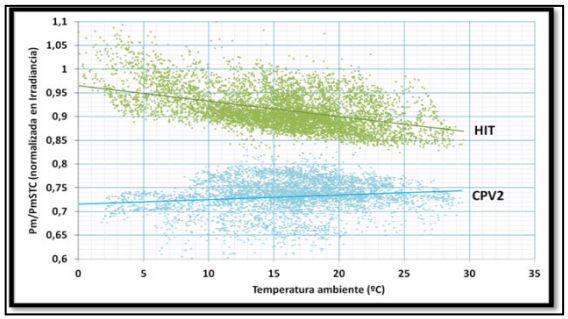
- Portable PV Analyzers I-V curve tracers (Capacitive load) → *On demand designs*

Labs and Equipment

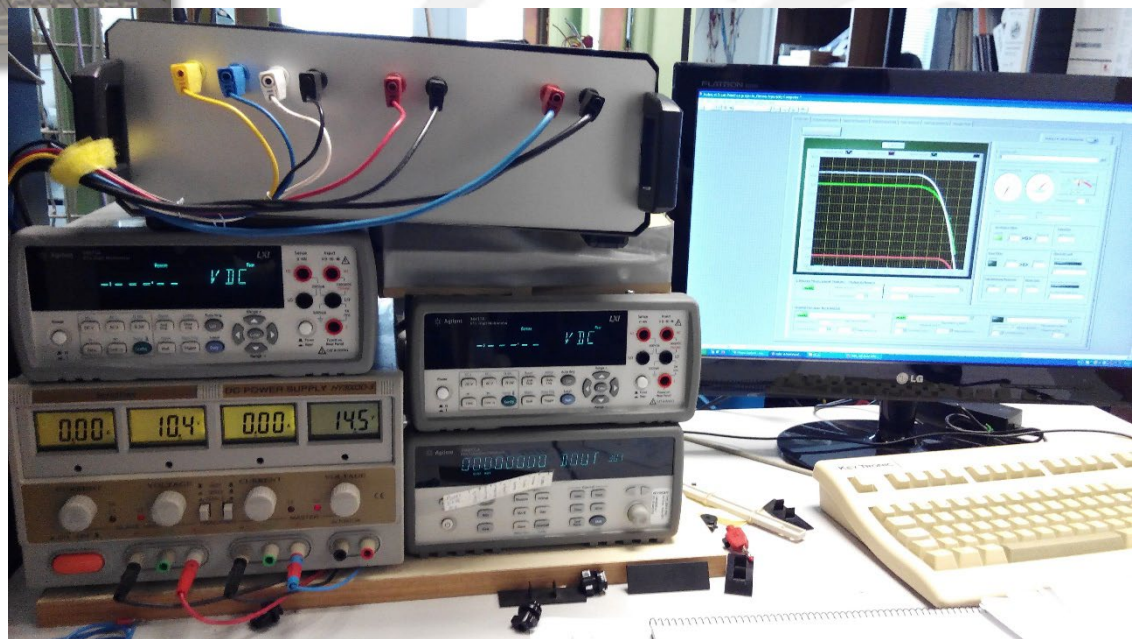
Field Measurement Equipment







- I-V curve automatic measurement procedure



TRAINING


COACHING
TEACHING
KNOWLEDGE
TRAINING
SKILLS
EXPERIENCE
LEARN
DEVELOPMENT


KNOWLEDGE
EDUCATION
GOAL
SKILLS
TRAINING
PERSONAL
PROFESSIONAL
COMPETENCIES
RESULT
JOB
TEACHING
IMPROVEMENT
CONTENT
FEEDBACK
SOFTWARE
SCHOOL
PRACTICAL
VOCATIONAL
CAPABILITY
PERFORMANCE
DEVELOPMENT
SPECIFIC
ACQUISITION
QUALIFICATION
CAPACITY

Training

Online and onsite Master Degree courses

- Master in Renewable Energies

- **Master in Technology of Solar Photovoltaic Systems (online)**

Training Courses (on demand)



National Engineering University (Lima, Peru)



Lublin University of Technology (Poland)

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MORE INFO:

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