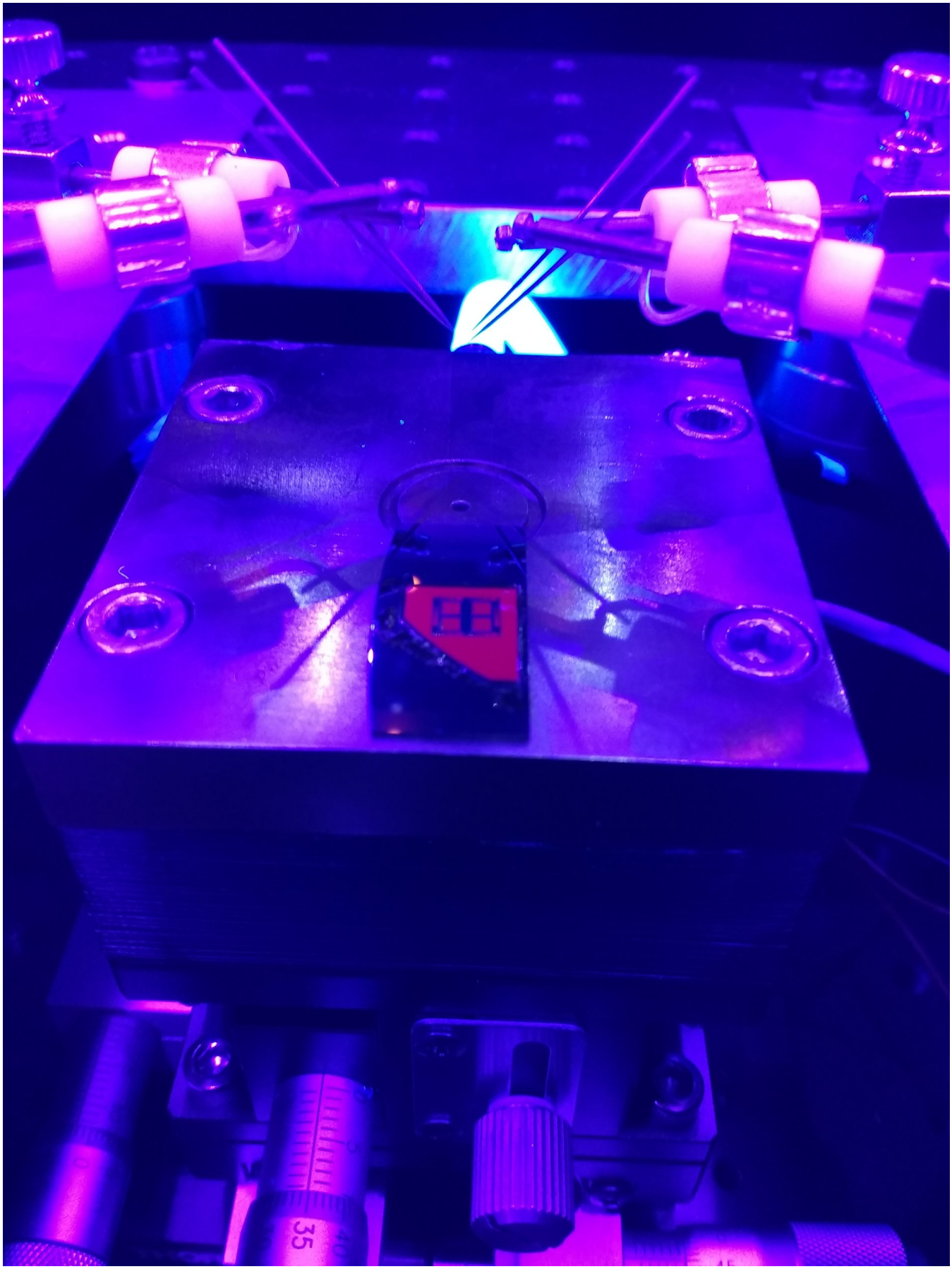
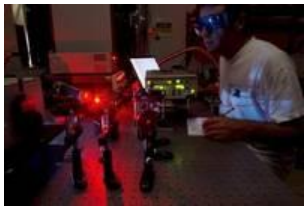
SEMICONDUCTOR MATERIALS AND SOLAR CELLS CHARACTERIZATION SERVICE

The laboratory has several conventional techniques and home-made developments to identify the structural and optoelectronic characterization of materials, semiconductor devices and solar cells.





Nº Registro: 270

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Technological Offers type

Technological scientific services

Research and innovation areas

- Climate, Energy and Mobility
- Industry, Materials and Circular Economy

ODS

Available from: 2009

Where?

Silicon and New Concepts for Solar Cells Solar Energy Institute

Files

Download additional documentation (pdf)

Keywords: | caracterización | célula solar | fotovoltaica | optoelectrónica | semiconductores

SEMICONDUCTOR MATERIALS AND SOLAR CELLS CHARACTERIZATION SERVICE

Structural and optoelectronic characterization service for semiconductors and solar cells

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Descripción de los servicios que se ofrecen

Capabilities

- Determination of semiconductor gap by photoreflectance
- Characterization of the quantum efficiency of novel solar cells
- Capability to obtain the current-voltage characteristics of solarcells in dark and in illumination conditions, up to concentrations

of 2500x and at low temperatures
- Study of the behavior of novel semiconductors and devices under concentration up to 10.000x. This test can be performed at low temperatures
- Performance of FTIR tests in order to determine the optical absorption coefficient of photovoltaic materials mainly in the infrared
- Undertaking of DLTS measurements to study semiconductor defects
- Measurement of photoluminescence and electroluminescence of materials and solar cells
- Capability to determine roughness of the semiconductor surface

See the attachment to know more about the specifications of our tests.

Needs and applications covered

There is currently a great deal of research and manufacturing activity for new materials with improved properties. However, in order to validate them as useful electrical devices, it is necessary to have laboratories that have the capacity and capablity to characterize the devices. The Solar Energy Institute through the infrastructure IBLAB makes all its experience in the characterization of solar cells available to third parties, including consultancy services.

Sectors

Semiconductor materials in the photovoltaic, micro and nanoelectronics, optoelectronics industries. Energy, space and electronic sectors.

Cutting-edge characteristisc

The Solar Energy Institute is one of the oldest centers in the world exploring the potential of photovoltaic solar energy. All the experience and know-how acquired by our researchers and technicians through hundreds of research projects is put at the service of third parties to facilitate the advancement of R&D developments in teams that do not have the infrastructures or companies that require R&D services. Our laboratory has been ISO9001 certified since 2009. We are a laboratory belonging to the Network of Laboratories of the Community of Madrid.

Previous references

IBLAB is offering their technological services since 2009. We have collaborated with national and international companies and research centers, offering our services both as private service or taking part of research consortium as technological infrastructure used by the research groups.

Where we are

Instituto de Energía Solar. Sede: Moncloa.

Avenida Complutense 40. 28040 Madrid. España.

Service Application

Due to the nature of the service, the equipment and the rooms of chemical chambers and clean rooms that are used, it is necessary to carry out in-depth training and have extensive experience in this field. It requires technical personnel who are in charge of the maintenance and tuning of the equipment. Therefore, although the service may be required by any interested person, it may only be performed by our own personnel. Please contact the person in charge of the service if you are interested in our services.

UPM Rates	
94,32€	Low Temperature Caracterization (He-Cryostat)

31,99€	Low Temperature Caracterization (He-Cryostat). Extra-hour
170,19€	Photoreflectance
42,37€	Photoreflectance. Extra-hour
212,30€	Quantum Efficiency
69,81€	Quantum Efficiency. Extra-hour
57,22€	Current-Voltage
68,96€	Current-Voltage. Extra-hour
108,26€	Concentration
68,99€	Concentration. Extra-hour
108,26€	FTIR
68,99€	FTIR. Extra-hour
103,54€	DLTS
69,17€	DLTS. Extra-hour
34,13€	High resolution optical images
31,93€	High resolution optical images. Extra-hour
173,02€	Photoluminiscence/ Electroluminiscence
69,22€	Photoluminiscence/ Electroluminiscence. Extra-hour
43,55€	Stylus Profiler
42,41€	Stylus Profiler. Extra-hour
50,00€	Management of the service (regardless the number of tests)
	External Rates
117,90€	Low Temperature Caracterization (He-Cryostat)

39,99€	Low Temperature Caracterization (He-Cryostat). Extra-hour
212,74€	Photoreflectance
52,97€	Photoreflectance. Extra-hour
265,38€	Quantum Efficiency
87,26€	Quantum Efficiency. Extra-hour
71,53€	Current-Voltage
86,20€	Current-Voltage. Extra-hour
135,33€	Concentration
86,24€	Concentration. Extra-hour
135,33€	FTIR
86,24€	FTIR. Extra-hour
129,42€	DLTS
86,46€	DLTS. Extra-hour
42,67€	High resolution optical images
39,92€	High resolution optical images. Extra-hour
216,27€	Photoluminiscence/ Electroluminiscence
86,52€	Photoluminiscence/ Electroluminiscence. Extra-hour
54,44€	Stylus Profiler
53,01€	Stylus Profiler. Extra-hour
50,00€	Management of the service (regardless the number of tests)