Press release

The outstanding presence of IK4-TEKNIKER at the 2018 SolarPACES congress

The technology centre will participate in the lecture programme and have its own booth in the exhibition area.

(Eibar, Basque Country. 27 September, 2018).- From October 2 - 5, many leading scientific organisations, research centres and companies from all over the world will be gathering in the Moroccan city of Casablanca at the SolarPACES 2018 congress, the world's most important event for the concentration solar power (CSP) sector.

The congress, organised by the International Energy Agency, will be reaching its 24th edition and has become an event that every year attracts more than 500 researchers and representatives of the industry from nearly 40 countries.

IK4-TEKNIKER, that has been attending the event regularly since 2006, will have an outstanding presence thanks to its participation in the lecture programme and its own exhibition space from where it will showcase some of its most significant developments in the field of CSP.

An outstanding presence

The technology centre will give a presentation entitled “Integration of a non-immersion ultrasonic cleaning system in a solar concentrating field” describing the development of an ultrasonic low water consumption cleaning system (patented by the technology centre) that has been installed at heliostat field owned by CIEMAT (the solar platform in Almería).

The second paper, “SMARTCSP: The Industry 4.0 approach for an effective CSP cost reduction”, addresses the integration of processors, sensors and distributed and miniaturised components at CSP plants. This technology, related to Industry 4.0, will upgrade the degree of intelligence and autonomy of these plants to improve their performance and reduce costs. This new CSP plant concept will also optimise plant operation and maintenance.

The third presentation entitled "MOSAIC, a new CSP plant concept for the highest concentration ratios at the lowest cost", proposes a new solar thermal power station concept based on fixed spherical concentrators arranged in a Fresnel configuration. The preliminary results of this modular configuration will be presented at the congress which, as it significantly reduces the number of drives required, is linked to a major cost reduction potential.

All developments described in the second and third papers have been carried out jointly by IK4-TEKNIKER and the National Centre for Renewables (CENER).

Lastly, IK4-TEKNIKER will present results obtained in different research actions in the event's poster section.

Four demonstrators to improve solar plant efficiency

The technology centre will showcase four demonstrators in the exhibition area of the congress to display its capabilities in the field of solar concentration technologies.

Specifically, the technology centre will present the **ultrasonic cleaning system for solar panels**, to be be described in one of the lectures, that allows 100% mirror reflectivity to be recovered together with factory default values. This solution **uses up to 600 hundred times less water**, removes dust particles smaller than a micron and prevents scratching produced by conventional cleaning tools such as brushes.

The solution consists in an ultrasonic device that removes dirt adhered to the mirror's surface by sweeping. In contrast to other cleaning techniques currently in use such as pressurised water jets and brushing, the system performs much better and saves resources.

Watch the video

Another of the demonstrators features a solution used to **calibrate the heliostat field** that is a solar reflector consisting of one or several mirrors that change their position to track the movement of the sun and reflect solar light onto a fixed receptor. Proper operation is a key element to achieve plant efficiency.

Specifically, the CENER and IK4-TEKNIKER technology centres have devised a simultaneous calibration system for heliostats to simplify adjustment tasks and optimise solar thermal plant operations.

Watch the video

Thirdly, the technology centre will present a **sensor that helps to optimise energy efficiency at solar plants** by monitoring mirror soiling in real time.

“Weather conditions accumulate impurities and dirt on mirror surfaces and this worsens energy capture efficiency. "In order to overcome this problem, we have developed a very sensitive low-cost sensor to evaluate the degree of mirror soiling”, says an IK4-TEKNIKER researcher.

Finally, IK4-TEKNIKER will present its findings in terms of **selective coatings** at SolarPACES 2018 that can be customised to optimise absorption and emittancy in each application and temperature range.

Watch the video

Concerning IK4-TEKNIKER

With more than 35 years of experience in applied technology research that has been be transferred to companies, IK4-TEKNIKER has achieved a high degree of specialisation in four major areas (Advanced Manufacturing, Surface Engineering, Product Engineering and ICTs). This means that its cutting edge know-how has been made available to customers to meet their requirements.

Further information

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