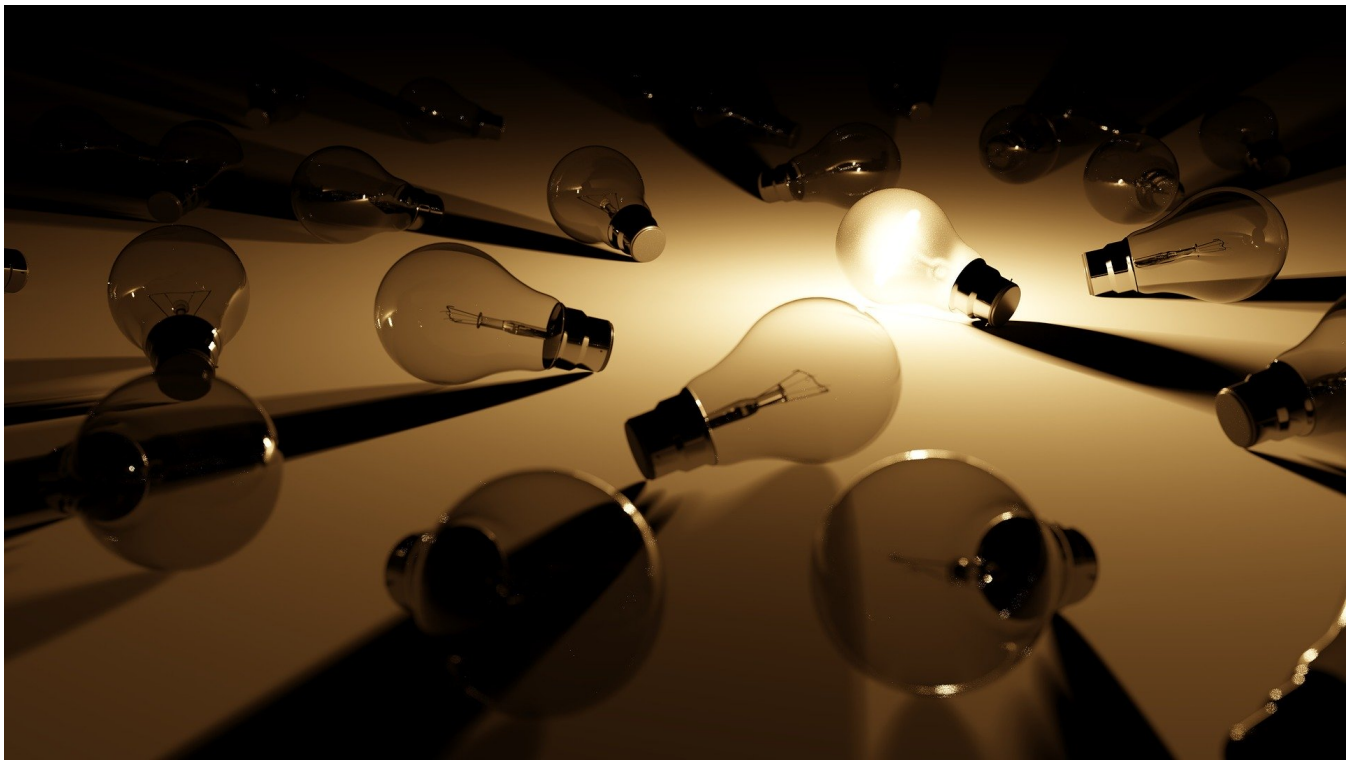
ECO-SunLight. High-efficiency, ecological and natural lighting

50 % lower power consumption, longer life, 100% recyclable and high quality lamp



Contact information

Address: ETSIS de Telecomunicación – UPM, Campus Sur, c/Nikola Tesla, s/n, 28031, Madrid
Phone number: 910671900
Website: etsist.upm.es
Email: juan.jimenez@upm.es

Technological Offers type

Technological solutions

Research and innovation areas

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

ODS

Available from: 2020

Where?

Signal and Communications Automation Group (SCAG)

Keywords: | lighting

Brief description of the technology solution and the added value it provides

This new lamp, as a research result achieved by the Group for Automation in Signals and Communications at Technical University of Madrid (UPM) in collaboration with other researchers at Rey Juan Carlos University, uses 50% less energy than current incandescent lamps and competes on efficiency with LED lighting, fluorescent and discharge lamps. It is able to faithfully reproduce more than 20 million colors, just like the sun, as, instead of concentrating light emission in narrow bands of the visible spectrum, it distributes its high power over the whole spectrum. In addition to this, lamp switch life is longer in terms of on/off cycle. It is 100% recyclable and it can be designed for any power rating.

Description of the technological base

Eco-SunLight solution is a new kind of incandescent lamp with minor energy losses and high power based on a tungsten filament's special geometry that is immersed in a gaseous iodine atmosphere. It is controlled by a small solid-state device that achieves a higher energy efficiency, more than double previous lamps efficiency.

This lamp competes on efficiency with current LED lighting, fluorescent and discharge lamps, but the latter ones show the disadvantage of concentrating its power in certain wavelengths, giving a false sense of brightness. Alternative solutions achieve energy savings emitting all their power in wavelengths and in such a suitable proportion so that human retina is more sensitive, which could harm the eyes in the long term. Instead, Eco-SunLight lamp is more natural and healthy as it distributes its light emission continuously throughout the visible spectrum, it doesn't have emission peaks and it is able to faithfully reproduce more than 20 million colors.

"UPM and URJC researchers have developed an ecological and "solar" lighting: a long life and low energy consumption light bulb"

Market demands

Energy efficiency

- High efficiency lamps, based on thermal emission.
- Quality lighting, with good color rendering, that doesn't damage eyesight.
- Small device, low interference and noise emission, low heat dissipation.
- Easy handling and replacement.

Sustainability

- Non-polluting and respectful environment low cost product.

"Eco-SunLight higlights are energy-efficient lighting (it duplicates incandescent lamps efficiency indeed), high quality, long-life and low cost production"

Competitive advantages

- Ignition lamp that duplicates the efficiency of the rest of the lamps based on incandescence.
- Possible substitute product for applications that requiere low power consumption but higher quality, ease of handling and a small size.
- More natural and "healthy" lighting, compared to alternative solutions, by distributing its light emission throughout the whole spectrum.
- 100% recyclable.
- Posible design to any kind of power rating.

- Over 20 million colors faithful reproduction.
- Possible substitute product of current incandescent lamps according to new regulations.
- Safe for the circuit in which it is used, particularly for switches.

Development stage

- Concept
- Research
- **Lab prototype**
- Industrial prototype
- Production

Contact

Contacto Eco-SunLight

Juan Jiménez, Diego Andina

e: juan.jimenez@upm.es, d.andina@upm.es

ETS Ingenieros de Telecomunicación – UPM

Contacto UPM

Área de Innovación, Comercialización y Creación de Empresas

Centro de Apoyo a la Innovación Tecnológica – UPM

e: innovacion.tecnologica@upm.es