

# NOVEL INDIVIDUALIZED, HOMOGENEOUS AND ADJUSTABLE LIGHTING SYSTEM FOR ANIMALS



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## ABSTRACT

The Neurobiology of the Visual System and Therapy of Neurodegenerative Diseases (NEUROVIS) research group at the University of Alicante has developed a comprehensive lighting system for housed animals that can be self-regulated in an individualized and automated way, depending on the specific lighting conditions of the space or module in which each animal is located.

The system consists of a programmable controller, illuminance sensors, dimmable power supplies and LED strips. It is suitable for different installations, being especially interesting in animal experimentation units, particularly in vision and blindness studies.

Companies interested in the commercial exploitation of this technology are sought.

## TECHNOLOGY ADVANTAGES AND INNOVATIVE ASPECTS

### ADVANTAGES OF TECHNOLOGY

The main advantages of the developed lighting system are the following:

- It provides **homogeneous, individualized and adjustable** lighting, allowing to adjust the intensity or type of light to the needs of each species, strain, individual or circumstance.
- The **illumination**, being distributed homogeneously in each cage or cabin, **does not depend on the location of each individual**, since they will all be at the same distance from the light source.
- It provides **adequate lighting conditions** for every need and avoids **lighting differences between individuals**.
- Its use allows **optimizing the process of breeding and maintenance of animals**, minimizing the level of stress, and optimizing visual function, circadian rhythms, and other key factors for the health and aging of the animals.

### INNOVATIVE ASPECTS OF THE TECHNOLOGY

The main innovative aspect of this technology lies in the fact that the novel and original connection and arrangement of elements already available gives the lighting system properties that do not exist in current lighting systems, which represent a qualitative improvement in the lighting of housed animals, responding to needs that have not been met to date.

## MARKET APPLICATIONS

This lighting system has been specially designed to be installed in animal houses, stables, farms or similar facilities.

It is suitable for different facilities, rooms or animal housing equipment, but it is especially interesting in **animal experimentation units** and,

particularly, if they carry out studies related to **vision and blindness**.

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#### COLLABORATION SOUGHT

Types of agreements sought for **commercial exploitation**:

- Patent license agreements.
- R&D projects of the technology to adapt it to the customer's needs.
- Consulting services.
- Etc.

Type of companies sought:

- Manufacturers of equipment for animal facilities.
  - Manufacturers of animal research equipment.
  - Manufacturers of luminaires, mainly oriented to animal research.
  - Manufacturers of tools for the veterinary, biotechnology and biomedical sectors.
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