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UNIVERSITAT POLITÈCNICA DE CATALUNYA

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# New device for laboratory animal telemetry

**A new implantable telemetry system for monitoring laboratory animals has been patented and developed. The device allows long term studies without any restriction on the positioning of the animal inside the cage. Partners to further develop the device and/or to establish commercial agreements along with technical cooperation are sought.**

## The Challenge

The monitoring of physiological parameters of animals tested in laboratory is relevant for a lot of different kind of researchs. There are many implantable devices for animals with various purposes such as muscle stimulation, automatic dispensing of drugs and measurement of biological parameters. Most of them use a radio frequency energy for transmitting both data and power. A small battery inside the implant provides power to the system, but it limits their lifespan. There are systems that allow to power the implant with a external link, but in these inventions the energy transfer is point by point and extremely focused on a small space area, causing severe restrictions on positioning and orientation. The present technology consists on a system for generating a maximal uniform magnetic field in an area as large as the application needs, allowing the animal that carries the implant to move freely inside the cage.

## The Technology

The present invention relates to a modular system to power an electronic device through a magnetic field. The equipment comprises one or more sensors for measuring physiological variables, a microcontroller, a RF transmitter, a parallel resonant tank circuit and a temporary energy storage module. The system that provides energy through the magnetic field to power the implant is housed below the animal's cage. It is modular and it can be extended to fit all the surface of the animal cage. This new technology allows long term studies (in which the use of batteries are discarded), while the animal moves freely in its cage without any restrictions. The system also allows to remove the animal from the area of generation of magnetic field for some limited periods of time.

## Innovative advantages

- The system allows the measurement and transmission of physiological data of an animal which moves freely in its cage for a long period of time.
- No restrictions on positioning and orientation.
- The animal can develop its habitual physical activity without causing any physiological changes that could affect their development, behavior, and the data obtained.
- No battery is required allowing to monitor and record the data during all the animal's lifetime. The energy storing device inside the implant allows to work for a certain period of time outside the animal cage
- Small size. The implant can be inserted in the abdominal cavity of small laboratory animals

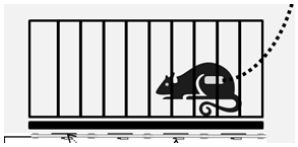
## Current stage of development

Prototype available ready to use.

## Apllications and Target Market

- This technology is useful for measure and send information of different biological parameters in laboratory animals for example in drug research an development studies.
- It could be of interest for companies devoted to animal telemetry devices.

**An electronic device implantable in laboratory animals for data monitoring**



**The system is powered by a magnetic field and no battery is required.**

**The device can measure and send information during all the animal's lifetime**

**Business Opportunity**
Technology available for licensing with technical cooperation

**Patent Status**
PCT patent application

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