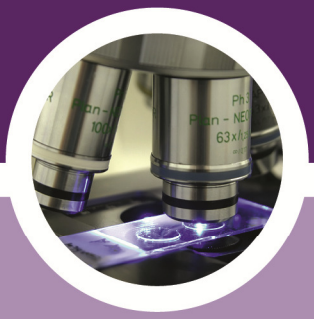

Smart magnetoresistive wattmeter for power consumption monitoring

VNIVERSITAT DE VALÈNCIA

R&D RESULT

Patent

Knowledge Area

- Electronic technology. Installations and networks
- Signal processing
- Sensor technology
- Electronic instrumentation

Collaboration

- Technology available for licensing
- Other collaborations

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201128R-Ramirez, D.

Device and smart measurement system for electric power by magnetoresistance

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Background: Currently, the home user and companies know their electricity consumption by the invoice provided by their supplier. In it, the electric power consumption can be estimated or delivered by meter-readings with periodic samples. The information provided in the invoice does not let the user discriminate the source of consumption (elevators, air conditioning, refrigerator, induction plates, etc.), so the user can't control or optimize the power consumption. Existing wattmeters have problems with self-heating and have unfriendly human interfaces, therefore, there is a need for wattmeter with high sensitivity and low self-heating that allow a simple and instant access to energy consumption or electricity generation knowledge.

The invention: Researchers from Universitat de València and Instituto INESC-Microsistemas e Nanotecnologias have developed an electric power smart measurement system based in magnetoresistance technology. The system allows a simple consultation of the power delivered to a load or the electricity generated by a source or mains only using smartphones or if necessary, measuring individual appliances consumption with distributed measurement network nodes. The developed wattmeters are more sensitive and have less self-heating than current devices in the market due to the use of magnetoresistance technology.

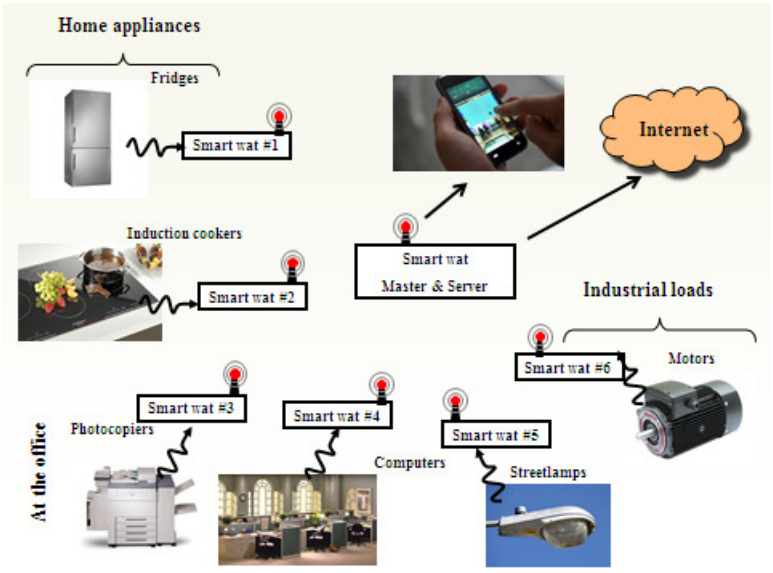
Applications: The main application of the technology is monitoring power consumption in several environments such as:

- Industrial: motors, lights, heaters, etc.
- Household consumption by sensing appliances, heating, etc.
- In offices: computers, lighting and air conditioning, etc.

The measurement device can also be used in association with control systems, so the control system works depending on the measured power values, in fields such as automotive (electric car), robotics, remote sensing, multimedia hardware or bioengineering.

Advantages: The new wattmeter has the following advantages:

- Improved sensitivity
- Low self-heating
- Low power consumption, because of the fewer components and the use of a lower voltage.
- Easy and instant consultation by smartphones.



Scheme of a measurement system

OTRI oficina de transferència de resultats d'investigació

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