

Engineers devise a revolutionary system to detect faults in industrial motors

LOCATION: Huelva

LENGTH: 2'24"

SUMMARY: A research team at the University of Huelva from the Study of Electronic and Mechatronic Systems group has devised a wireless system through a software that allows the real time detection of critical faults in motors, measuring parameters such as temperature increase, vibrations or variations in the electricity supply and peaks of tension. The device saves time and resources: using a Wi-Fi connection, through a smartphone or laptop, it allows you to see the condition of the motors without needing to send out specialists.

VTR:

A research team from the University of Huelva has devised an innovative wireless system to detect faults in industrial motors through a Smartphone or laptop. The prototype is the result of more than three years of research.

Juan Antonio Gómez Galán
Responsible for Electronic and
Mechatronic Systems at UHU

"What has been developed is an energy-efficient wireless system which detects faults in motors. Its main feature is that it combines the measurement of several parameters in order to increase reliability when detecting faults."

Jonathan Medina
Doctoral student at UHU

"The system itself has three fundamental variables: vibrations, current and the temperature in the motor housing."

Juan Antonio Gómez Galán
Responsible for Electronic and
Mechatronic Systems at UHU

"In this way, as we have more information, we are more successful in detecting, in this case, defects in the motor."

The device, designed to prevent irreversible damage, should also save time and resources.

Juan Antonio Gómez Galán
Responsible for Electronic and
Mechatronic Systems at UHU

"The different nodes that are in each motor can go into sleep mode, that's to say that they read the data and they go into sleep mode – they remain in a low-power state, and levels of energy consumption are practically inexistant. Then, that information goes to a coordinating node, and from there it is sent to the company's central offices."

Jonathan Medina
Doctoral student at UHU

"First, the alert reaches a base station, which could be a computer, and this would send out a message to a mobile phone. At that point, the operator would receive a message, and would go to the motor and see what is happening."

The motors can be anything from simple electricity generators to sophisticated conveyor belts used in the food sector. Researchers have already carried out several field tests with very satisfactory results.

Juan Antonio Gómez Galán
Responsible for Electronic and
Mechatronic Systems at UHU

"The product itself is finished, that's to say, we have reached the final stage; we have characterised all those parameters which we had originally set out, we have even carried out both trials in the laboratory and real tests in a company. We have made a network for seven motors in a star-like configuration. But it could easily be extended to a larger number of motors."



Large factories will benefit from this new device. A quick and economical way of detecting faults in expensive industrial equipment.

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