Surface Acoustic Wave wireless sensors for High Operating Temperature environments

From 2009-10-01 to 2012-09-30, closed project | SAWHOT Website

Objective

Surface Acoustic Wave (SAW) technology has been applied for more than 20 years to develop sensors exhibiting unique capabilities with limited ageing effects resulting in long term stability properties. During the 90s, they have proved their capability to be wirelessly operated without any on-board power supply. In parallel, the long term development of advanced material, particularly in Russia, has yielded a new class of material, namely Langasite and its variant forms, that can be substituted to quartz and lithium niobate particularly when operating at high temperature. Our project will demonstrate wireless SAW sensors operating in an unprecedented temperature range. This sets extreme challenges to all parts of the sensor system since the developed wireless system will be suitable to operate in harsh environments. The great progress brought by the project takes advantage of a consortium involving complementary major academics and industrial actors of SAW-sensor-based systems capable to successfully face the challenges of implementing a whole system allowing for physical metrology in harsh conditions. The SAWHOT project consortium is set up on the basis of a bilateral Russian-European partnership generating a unique workforce cooperating within the FP7 framework to address this challenge. Finally, this project will bring on sustainable high-tech socio economic prospects: new markets and standards, improved cooperation between EU and Russian organizations.

Related information

Result In Brief
New high-temperature wireless industrial sensor

Report Summaries
Final Report Summary - SAWHOT (Surface acoustic wave wireless sensors for high operating temperature environments)
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Subjects

Coordination and Cooperation - Nanotechnology and Nanosciences

Last updated on 2017-05-29
Retrieved on 2019-06-24

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