



Laboratoire **Roberval**
Unité de recherche en mécanique

SEMINAIRE ROBERVAL **Jeudi 17 Novembre 2016 à 14h30, Salle H224**

SAW Sensors for applications in difficult and/or harsh environment

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Abstract

Surface Acoustic Wave (SAW) sensors are robust, small and completely passive elements that can be remotely interrogated. As they do not require any embedded electronics, they can operate in harsh or difficult environment. Some SAW configurations also make it possible to identify the sensor directly from its RF signature. The resulting SAW Tags can therefore provide identification (ID) and, for instance, temperature or pressure information simultaneously. It is also possible to interrogate several sensors at the same time. In this talk, we will present the developments that have been made at CTR (Carinthian Tech Research) in the field of SAW Sensors over the last 15 years. The CTR SAW Tags will be described as well as the simulation models and read-out technology we use to design and operate the sensors. Several examples of industrial applications will be presented and discussed, ranging from high temperature measurements in the steel industry to implantable sensors for intra-cranial pressure monitoring. New concepts for low pressure (SAW Pirani) and very high temperature (SAW Hybrid) sensors will also be introduced.