Wireless Sensors with Thermoharvesting Power

Project: CS-01-11
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Mutrees, Emerson, NL GUTS
Budget: 50 k€
Duration: 2011 - 2012

Objective:

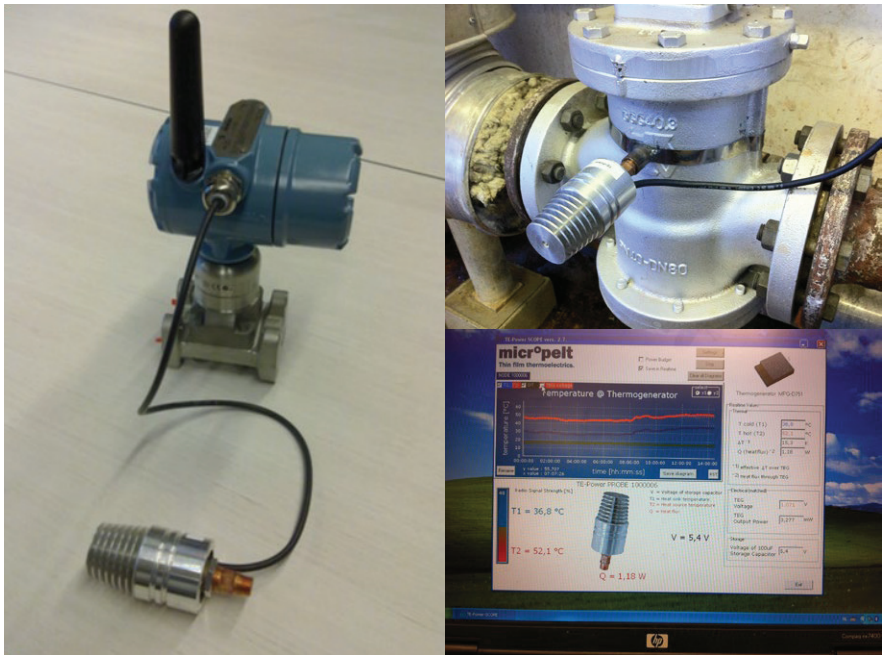
Demonstrate the ease of planning, installation and operation of SFWI.
Describe and quantify the value for process intensification and optimization, and asset management purposes.
Test long term reliability and response to seasonal and weather influences.

Motivation:

Flexibility in installing sensors additional at any place in existing process equipment for monitoring process and equipment parameters in an ATEX environment.
Self-sustaining Fully Wireless Instruments (SFWI) allow for lifetime maintenancefree operation in any place.

Project scope:

Based on test results identify more use cases and locations for SFWI applications with substantial, proven operational benefits.
Evaluate and quantify autonomous wireless sensor technology's value for chemical and process industries. Collect experience and advice for systematic deployment in industrial environments. In a joint effort via NL GUTS & ISPT, this technology has been tested a two chemical plants.



Maintenance-free Wireless Sensor System

Results:

Huntsman: 2 SFWI's installed & logged in sustainable operation since March 2012
Dishman: Harvesters under power loggin

Applicability:

SFWI configuration composed of Emerson wireless transmitters (p, T) with Micropelt thermoharvester and battery-backed power module. Demonstrate planning, deployment and operation in both indoor and outdoor retrofit installations across seasonal changes.

Project team

Complete long-term study at Huntsman. Add instruments to create full mesh network, demonstrate sustainable EH operation. Provide feedback to optimize power module Completion of this NL-Guts, ISPT project Atex certification of harvester.