

FAST-SMART: FAST AND NANO-ENABLED SMART MATERIALS, STRUCTURES AND SYSTEMS FOR ENERGY HARVESTING

PROJECT OBJECTIVE

The overall objective of the project is to develop high-quality nano-structured materials, nano-manufacturing technologies and innovative product designs to meet challenges on both quality and cost issues, and to deliver novel but also economically viable approaches of harvesting, storing and using energy concerning kinetic/mechanical, solar and thermal energy harvesting.

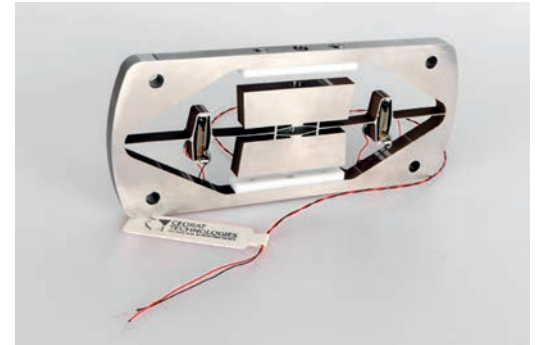


Fig. 1: Bistable energy recuperator

FAST-SMART proposal is highly ambitious since it addresses several challenges relating to transforming rare elements free/less smart materials into robust energy harvesting structures and systems with competitive costs and high operational reliability which are currently difficult to achieve. The effort will result in disruptive methods and technologies that are truly beyond the state of the art, and hence, help to place Europe in a polar position in this strongly competitive field of research and business.

CEDRAT TECHNOLOGIES CONTRIBUTION

CEDRAT TECHNOLOGIES aims at developing a robust, scalable and versatile energy harvester for harsh environment such as railway applications. These energy harvesters combine an advanced nonlinear electromechanical structure with an Amplified Piezoelectric Actuators (APA®) from CTEC.

Although initially designed for actuation, APA transducers are particularly well suited for energy recovery, due to their robustness and good electromechanical characteristics (high coupling factor).

This APA® will be associated to a patented bistable structure in order to increase the bandwidth of the harvester.

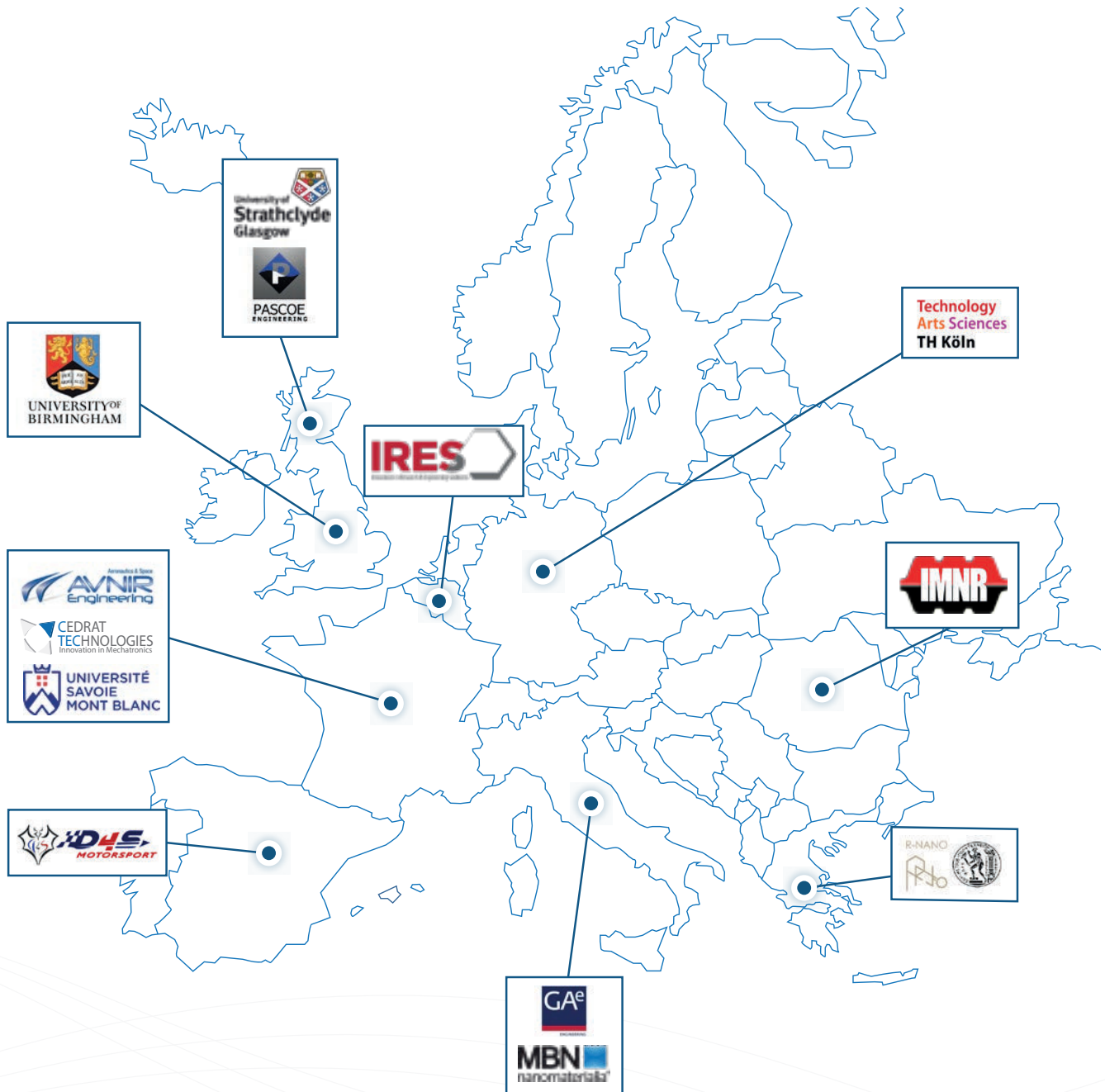
It is expected that Energy harvesting systems have a huge impact on the proliferation of IoT where human accessibility is limited.



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PARTNERS PRESENTATION



More information on [Fast-Smart website](#)



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