

CEA-Leti and 5 Partners Collaborating On Self-powered Cardiac Pacemaker

Device Would Be Eight-Times Smaller than Current Models

GRENOBLE, France -- May 10, 2011 -- CEA-Leti and five partners are combining their expertise to develop a self-powered cardiac pacemaker eight times smaller than current models.

The Heart-Beat Scavenger (HBS) Consortium, which also includes the Sorin Group, TIMA, Cedrat Technologies, Tronics and EASII IC, is targeting an energy self-sufficient device that harvests mechanical energy from the movements of the heart, eliminating the need for batteries and post-implant surgeries to replace them.

A longer-term goal of the project is to reduce healthcare expenditures. Heart failure represents one of the biggest public-health costs today in Europe and the United States.

Technological advances in miniaturizing and cutting the power consumption of electronic components, as well as the advent of energy-harvesting devices, have opened the way to new self-powered implants that significantly improve patient comfort and lower cost, particularly by reducing the number of post-implant surgeries required. These devices constitute a new market for active implantable medical devices (AIMDs) for treating or diagnosing heart diseases.

Financed by the Minalogic competitive cluster in Grenoble, the HBS project goals include:

- Developing a self-powering pacemaker by harvesting the mechanical energy produced by the movements of the heart and eliminating the need for batteries that must be replaced every six to 10 years.
- Reducing the size of a cardiac pacemaker by a factor of eight, from 8 cm³ to 1 cm³. This reduction will make it possible to attach the pacemaker directly to the epicardium, eliminating the need for intravenous introduction of cardiac probes.

Leti is responsible for the mechanical energy-harvesting unit for the prototype, and for designing and creating its capacitance-conversion system. The Sorin Group is positioning itself in the AIMDs market in Europe and globally and hopes to create jobs in the Grenoble region.

About CEA-Leti

Leti is an institute of CEA, a French research-and-technology organization with activities in energy, IT, healthcare, defence and security. Leti is focused on creating value and innovation through technology transfer to its industrial partners. It specializes in nanotechnologies and their applications, from wireless devices and systems, to biology, healthcare and photonics. NEMS and MEMS are at the core of its activities. An anchor of the MINATEC campus, CEA-Leti operates 8,000-m² of state-of-the-art clean room space on 200mm and 300mm wafer platforms. It employs 1,400 scientists and engineers and hosts more than 190 Ph.D. students and 200 assignees from partner companies. CEA-Leti owns more than 1,700 patent families.

For more information, visit www.leti.fr.

Press Contacts

CEA-Leti

Thierry Bosc
+33 4 38 78 31 95
thierry.bosc@cea.fr

Agency

Amélie Ravier
+33 1 58 18 59 30
raviera@loomisgroup.com