Edito

Happy New Year!

2018 has come to an end...and what a year it’s been for the EnSO project!

✧ Great technical advances: new generation of AMES prototypes manufactured and delivered to end users
✧ Strong synergies between all involved partners,
✧ Active participation in conferences, scientific events and exhibitions,
✧ Release of new publications and patents,
✧ Increased presence on social media (Twitter, LinkedIn, etc.)

The project is in full gear now and ready to take on its final year!

2019 is key for EnSO to ensure maximum outreach and impact of the project’s results. All efforts will be made towards boosting communication and dissemination activities and speeding up exploitation.

The entire EnSO Team wishes you all the best for the New Year! We look forward to seeing you at our next events and sharing our latest advances with you!

Raphaël SALOT, EnSO Project Coordinator
New use case: Building heating system monitoring

Led by IMA, this newly added use case aims to develop a wireless temperature monitoring of a building central heating system components as pipes, boilers and radiators. This information is important for good heat distribution and heating system efficiency. The temperature difference between the heating system element and surrounding space can produce enough energy to operate a monitoring device without a battery. For periods with lack of energy the battery will be integrated, too. The system consists of three parts: the sensor, the data collector connected to the Internet and cloud visualization application.

EnSO PhD students invited to present their work at GA Meeting

EnSO PhD students were invited to present their work at EnSO General Meeting in Maastricht on Sept 20th:

Soufiane El Oualid, Université de Lorraine: “Three-dimensional finite-element simulation of a flexible µ-TEG based on bismuth telluride”

Camille Justeau, Université de Tours: “Development and optimization of an industrial hydrothermal synthesis of ZnO nanowires for nanogenerator applications”

Annie-Kim Landry, CEA: “Novel highly ionically conductive solid electrolyte for lithium-ion microbatteries”

Korina Hartmann, Université de Liège: “Silica-based thin film solid-state electrolytes for Lithium-ion microbatteries”

Chellda Exantus, Université de Liège: “Li7La3Zr2O12/LiCoO2 - Cathode for All-Solid-State Batteries”

EnSO actively involved in communication & dissemination activities to maximize results understanding and uptake

- Participation in 40+ EU and international conferences, scientific events and exhibitions.
- Contribution to Higher Education activities and Scientific Knowledge: 2 Exchange Programs for University Studies
- Increased synergies with other European Projects: VICINITY, InSCOPE and more to come!
- Clustering activities: OE-A competition, AIOTI, IERC
- NEW Posters, leaflets
What’s on the horizon for 2019?

EnSO: organizer of a Scientific Symposium at the E-MRS Spring 2019 conference

Members of EnSO [CEA-LETI Grenoble, CNM-CSIC and TNO Eindhoven] will hold a symposium on “Advanced materials, components & processes for integrated autonomous micro-power sources” at the EMRS Spring Meeting 2019 on May 27-31, 2019 in Nice, France.

This symposium will focus on new material developments & material processing related to micropower sources, their design and integration on shapeable substrates. Combinations of energy harvesting and energy storage micro-devices open the way to optimized, possibly ‘perpetual’, energy supply.

Meet us there!

Contribute actively to standardization committees!

EnSO makes a point in contributing to standards and regulations. The project is represented in several technical standardization committees and working groups such as IEC TC47/WG7: Semiconductor devices for energy conversion and transfer, or IEC TC119 and IEC TC91. These Committees will help detect and formalize the standardization process on the new results obtained. ‘Standardization culture’ will also be disseminated to Higher Education.

Boost Communication/Dissemination!

 moz Submit proposal to the next Common Dissemination Booster call.
 moz Represent the project at distinguished EU/international scientific conferences and workshops.
 moz Release new videos of use cases, focusing on latest outcomes

Speed up exploitation!

In 2019, specific actions will be taken to ensure efficient exploitation of the developments performed within EnSO. Data will be provided for each use case, explaining the business model of the involved partner, the product developed and how it compares to existing products, market data. Interviews of companies (use-case partners) within and beyond the EnSO scope will be led by Blumorpho to understand the strategy implemented. A session dedicated to “Exploitation of Results” will be organized at the Project’s next Review Meeting with ECSEL JU representatives.
Hello Steve! Before we discuss your technical role in EnSO, could you tell us a bit about yourself and the city where you live/work?

Steve Martin: Of course! I have been working in Grenoble for several years but since I prefer the countryside over the city, I have decided to live in St Marcelin, a small town about 50 kms away from Grenoble. I like to be out in the nature, climb mountains and play basketball. St Marcelin is a very nice little town which I highly recommend visiting! It is also well known for its cheese and walnuts!

Sounds lovely! I will definitely come and visit!

In EnSO you are in charge of WP2 whose main goal is to develop and demonstrate very high capacity and very high density, low profile, shapeable, long lifetime, rechargeable micro battery product family. Could you tell us more about your role, what you do, how you interact with the other partners?

S.M: OK! WP2 focuses on the production of micro-batteries for the AMES. As a WP Leader, I manage the internal development. We develop two kinds of generations of batteries in EnSO. I am also in charge of the interactions with other WPs, mainly WP4, 5.

What are the challenges of generating micro-batteries? How are they charged?

SM: There are different challenges, depending on the generation of micro-batteries. For Generation 2 micro-batteries, the biggest challenge is to produce micro-batteries at very low cost. We therefore develop special processes, i.e. high-throughput processes. The challenge for Generation 3 micro-batteries lies in their size. They are indeed very very small, only a few millimeters square, and we need to use processes coming from the microelectronics. The biggest challenge here is to proceed with the integration of these very small components. As we aim to produce full autonomous components, micro-batteries should be charged by energy harvesters such as solar cells, piezoelectric or thermoelectric harvesting devices. The batteries are also compatible with other harvesters.

Very nice! What is your experience with European projects, and EnSO in particular? What are, you think, the positive outcomes of participating in EU projects?

S.M: I have already been involved in many European projects and I can say EnSO is a very good project. To me, one of its major strengths is that it involves many end-users, which is important to us since knowing the market’s needs and expectations helps us better orientate our research and produce the right batteries. Being involved in EU projects provides many opportunities such as reaching out to people beyond your usual network. For example, we have developed a very good collaboration with the University of Liège. At the end of EnSO, we will even replace our own materials with theirs since they have shown higher performance.

Read the full story on the EnSO website.