



Newsletter October, 2021

The vision for BATTERY 2030+ is to invent the batteries of the future, providing European industry with disruptive technologies and a competitive edge across the full value chain, that will enable Europe to take the lead in battery science and technology.

This newsletter gives you an update on what's going on within the initiative. Enjoy your reading!



Länktext

A moment with Kristina Edström, Coordinator of BATTERY 2030+

Thank you for supporting the BATTERY 2030+ initiative and being a part of our battery community!

Going forward we have the **Battery Innovation days** starting November 23rd to look forward to! Many of the invited speakers are from the BATTERY 2030+ community, so you don't want to miss this. We also have two more BATTERY 2030+ Excellence Seminars planned. One on the 26th of October during the **Green Batteries Conference**. We invited Prof. Montserrat Casas who will be presenting "Sodium-ion as an alternative, sustainable battery technology" and Johan Söderbom presenting "Na-ion batteries and the battery market". There will also be a panel discussion "Will sodium-ion batteries be as successful as we hope? What do we need to accelerate the research?" The panelists consist of Prof. Stefano Passerin, Ass. Prof. William Brant, Dr Ouyang, Mr Herve Beuffe and Prof. Montserrat Casas. The second BATTERY 2030+ Excellence Seminars will take place on December 7th, more information on that seminar will be coming soon.

We are also planning on launching our brand new website in the near future so stay tuned!

Since our last newsletter, we have made all our deliveries to the Commission that was due in the end of August. Great work everybody! We are now going full speed ahead with the following commitments. Our BIG-MAP project had its bi-annual meeting on September 17th with over 90 people attending the event live in Denmark. September 30th we had the BATTERY 2030+ Roadmap workshop where we had

some fruitful discussions that will be incorporated in our future plans. We also had our annual BATTERY 2030+ meeting "Empowering green innovation", which is mentioned further down in this newsletter.

BATTERY 2030+ partook in Graphene Week 2021 on September 21st where I presented BATTERY 2030+ and how to reinvent the batteries of the future. October 13th Tanja Kallio and Tejs Vegge were invited to present in the FCAI Industry & Society Webinar: AI for the Battery Ecosystem. Marcel Meeus talked about BATTERY 2030+ and Recycling at the Green Batteries Conference on October 19th.

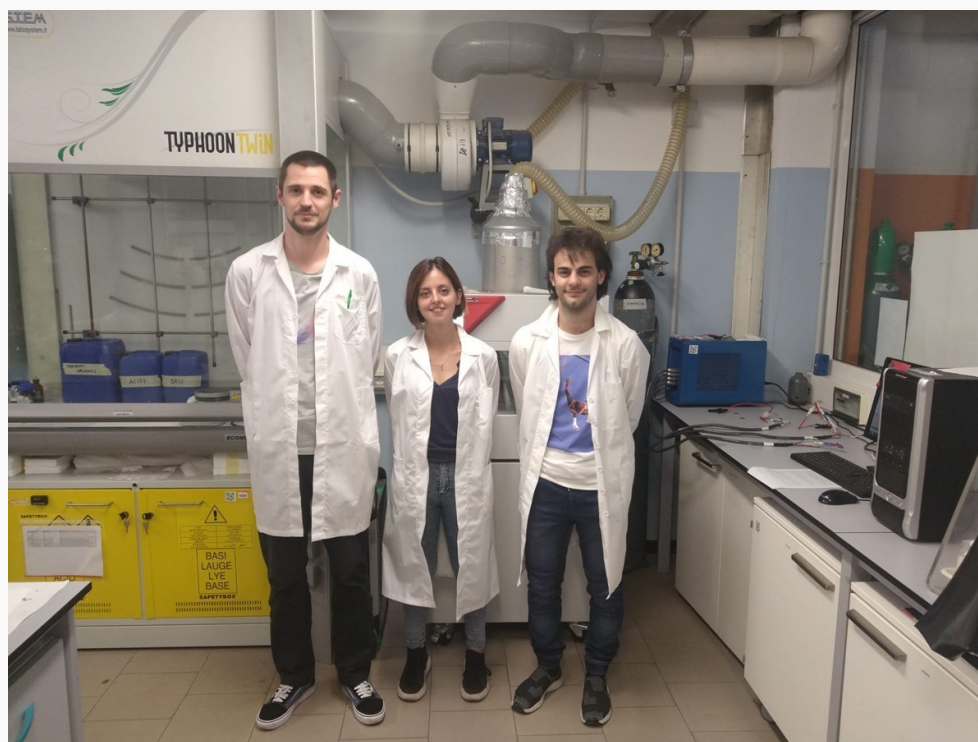
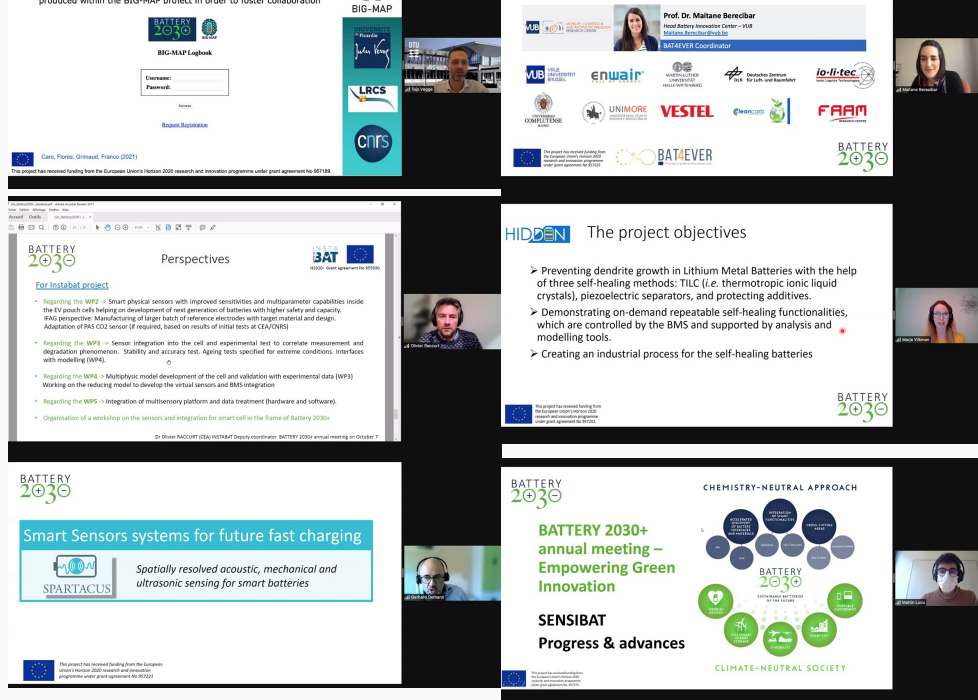
In this Newsletter we present a short article about the Sensibat project, we hope you enjoy it. In our next issue of the newsletter we will be focusing on the Bat4Ever project.

The image shows a promotional poster for the BATTERY 2030+ Annual Meeting. The poster has a dark blue background with green and white text. It includes the title "ANNUAL MEETING Empowering green innovation", the date "7 OCT 2021 | 10:00 AM - 4.30 PM CET", and the status "REGISTRATION IS OPEN!". It also features the European Union flag and a text box stating: "This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 957213." To the right is a circular logo for "SUSTAINABLE ENERGY WEEK SUSTAINABLE ENERGY DAY ORGANISER #EUSEW2021". Below the poster are two presentation slides. The left slide is titled "Latest progresses of batteries and future plan for next 5 years in China" by Hong Li, from the Institute of Physics, CAS, Beijing. The right slide is titled "Recent progress in lithium metal batteries – Enabled by electrolyte design and pressure control" by Y. Shirley Meng, from the University of California San Diego.

BATTERY 2030+ Annual meeting, empowering green innovation!

As you all know our annual meeting took place the 7th of October. We are so excited over the number of registrations since we had nearly 600 people register for this online event. We had interesting presentations from each project accompanied by a Menti quiz where two winners walked away with Godiva gift cards. Bo Normark and Ilka von Dalwigk from EBA250 gave an update about the European Battery Market and Industry. Aymard de Touzalin from EC DG-CONNECT presented the vision for the future from the EU commission. We also managed to kick off our planned series for the BATTERY 2030+ Excellence Seminars with two amazing speakers. First out was Prof. Hong Li from the Chinese Academy of Science presenting the latest progress on batteries and China's next 5 year plan on this topic. Second out, Prof. Shirley Meng from University of California San Diego presenting recent progress in lithium metal batteries - enabled by electrolyte design and pressure control. We hope to record all of our Excellence Seminars and share them on YouTube. Last but not least, we would like to acknowledge Philippe Jacques who did an excellent job being the moderator.





SENSIBAT sensors will make it possible to follow chemical and electrochemical reactions “in vivo” - directly inside a battery cell during operation. Based on advanced sensing technologies, built into the battery cells, one has a much better ability to track the exact state of the battery and detect dysfunctional components, compared to outside sensing devices. With Sensibat devices the aim is to provide a more accurate control and diagnose early stages of battery failure, thermal runaway, and unwanted side reactions leading to early ageing.

Even the best battery will eventually fail. Electrolyte degradation, dendritic growth, metal dissolution, and changes in materials structure degenerate the battery over time. External factors such as extreme temperatures, mechanical stress, excessive power during operation also acts detrimentally on battery performance. New ways need to be found to increase safety and lifetime particularly in critical applications. Sensibat, led by Ikerlan in Spain, is one of the projects within Battery 2030+. The project incorporates smart sensing functionalities into battery cells with the goals of improving battery control, increasing lifetime, lowering the cost per kWh stored, and reduce the environmental footprint.

"Improved understanding about the nature and timing of internal battery processes enables faster and more accurate control of the individual cells in a battery system during operation. These functions will be included in the BMS", says Dr. Mattin Lucu, project leader, Sensibat.

Sensors that can measure multiple parameters at various locations within a cell are of special interest. The developed integrated sensors will be able to measure the temperature and pressure at different locations inside the battery cells. Additionally, they will provide information about the impedance of the different components of the cells (cathode and anode) at different frequencies, via Electrochemical Impedance Spectroscopy (EIS). Sensibat's technology will be developed for Li NMC battery types but can further on be transferred to serve other battery chemistry types.

Together with Instabat and Spartacus, the Sensibat project directly contributes to the Battery2030+ goals oriented to integrate smart functionalities in batteries. The developed sensing technologies could trigger self-healing mechanisms developed in the Bat4ever and Hidden projects. Additionally, the data provided by internal sensors could be systematically exploited to increase the understanding on different interfaces inside the cell (BIG project) and feed the AI models used for material discovery in the Material Acceleration Platform (MAP project).

The Sensibat project aims to

Develop required battery cell sensor technology. Integrate it into 1Ah and 5Ah pouch battery cells. Incorporate the 5 Ah cells in a 24V battery module with BMS. Utilise the data to develop state estimation functions. Several state (SOC/SOH/SOE/SOP) estimation algorithms will be improved, better forecasting algorithms and novel safety concepts (SOS) will be created. Cost-benefit analysis for the batteries with sensors as well as a recycling study of the cells.

Eva Regårdh

Read our latest news

Keep up to date with the latest news from BATTERY 2030+ and other battery related topics. [Read more...](#)



BATTERY YOUNG RESEARCH AWARD

Are you a recent **PhD graduate** and completed a doctorate thesis on **Battery Energy Storage**?

Submit your thesis - including an abstract outlining the key aims and conclusions and a 1.30-minute-video that best explains your dissertation - to **win €1000** and **present your work at the #BatteryInnovationDays!**

ELIGIBILITY CRITERIAS

Candidates applying for the Battery Young Research Award must:

- ✓ Have successfully delivered their thesis between July 2019 and July 2021;
- ✓ have successfully delivered their thesis to a European Research Institute; or
- ✓ be a European student who delivered their thesis to a University outside the EU

Submissions deadline is 28th October, 23:59 CEST

APPLY HERE! 

BATTERY INNOVATION DAYS

SCAN ME

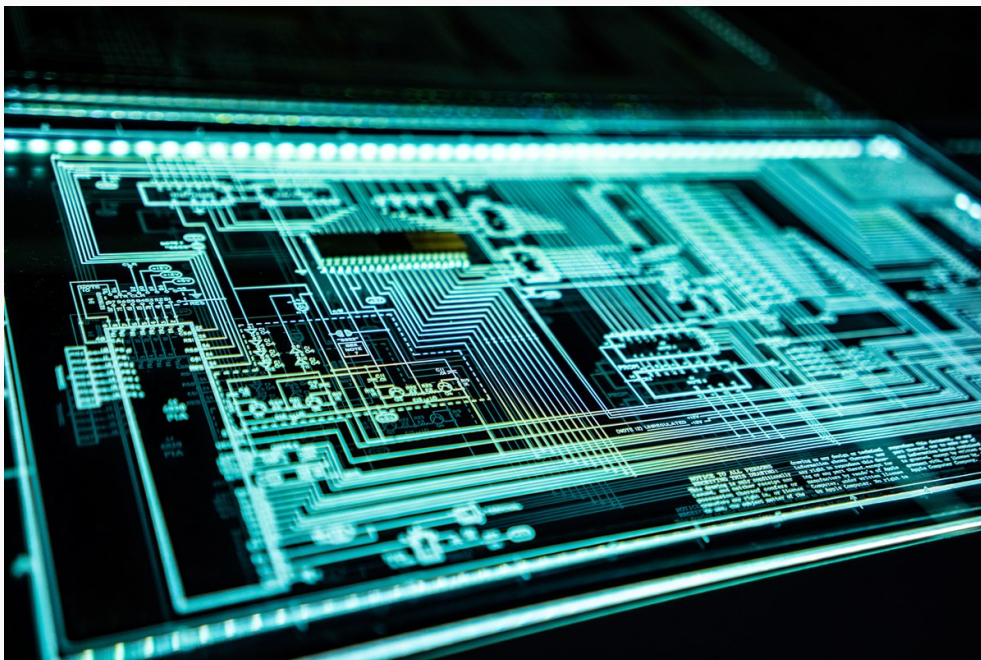
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Phd graduate with a thesis on Battery Energy Storage look here! Do not miss out on the opportunity to apply for this prestigious award. Apply [here...](#)



Please Endorse,

Research and data management memorandum. Modern research data management (RDM) and consortium-wide standards are key to efficient collaboration across large-scale research initiatives. Learn more about what we do and endorse our Memorandum on RDM and standards [here...](#)

Do not miss out...

Battery Innovation Days

On 23-24-25 November 2021, the 1st edition of the annual conference on battery Research and Innovation, the Battery Innovation Days, will take place online. Battery 2030+ is co-organising this event together with BEPA, Batteries Europe and IPCEI.

[Register here..](#)

The Battery show Europe

30 November – 2 December 2021

Looking to develop your knowledge and take away practical insights from key players and thought leaders across the advanced battery and H/EV supply chain? Look no further.

[Register here..](#)

EuChems workshop

The European Chemical Society, EuChemS, is organising the webinar ‘The Lithium Element – Enabler of the Energy Transition’, which will be held on Wednesday 1 December 2021, from 10:00 to 16:30 CET.

[Register here..](#)

Green Batteries Conference last seminar October 26th. GBC is dedicated to providing a look at the entire battery value chain, from raw materials to current and future cell and system technologies, operation and maintenance, end-of-life, reuse, recycling - reprocessing of battery components, functional materials, and the political and regulatory framework

[Register here..](#)

BATTERY