

PULSELiON

Newsletter #2 – October 2023

In this newsletter, you will learn more about the project PULSELiON latest activities and the activities to come. The next newsletter will be published in May 2024. Do you want stay informed about the latest PULSELiON news in the meanwhile? Please stay tuned via our website www.project-pulseion.eu, or follow us on [LinkedIn](#) and [Twitter](#).

ABOUT PROJECT PULSELiON:

Project PULSELiON has the ambition to develop a manufacturing process for Generations 4a – 4b solid-state batteries, while improving the battery energy density (450-475 Wh/Kg and 1300-1450 Wh/L), costs and safety. The main innovation in project PULSELiON is bringing Pulsed Laser Deposition (PLD) based solid-state battery manufacturing technology from TRL3 to TRL6. The results of PULSELiON will help increase global competitiveness of the European battery ecosystem, increase safety of batteries, decrease battery production costs, and improve battery recyclability. PULSELiON is a Horizon Europe project bringing together a multidisciplinary consortium of 15 partners from 10 countries.

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PULsed Laser depoSiTion tEchnology for soLiD State battery manufacturing supported by digitalizatiON

WHAT IS NEW?

MILESTONE 2 ACHIEVED: delivery of D2.1: cell specifications and testing protocols

Project PULSELiON has achieved its first Milestone on 30 August this year, with the delivery of deliverable D2.1. Deliverable 2.1 starts from battery cell specifications for different automotive applications and defines a tentative cell design. This cell design has been evaluated by performing a modelling exercise to predict the tentative battery cell performance associated.



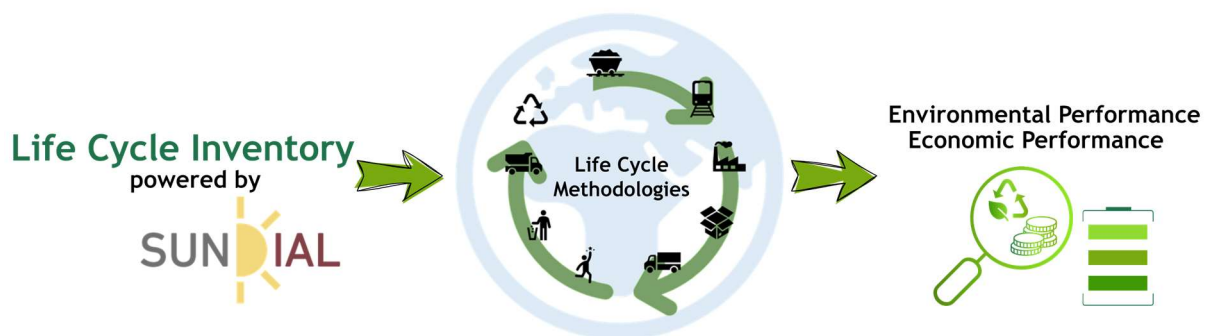
D2.1 confirms that the PULSELiON technology could be able to meet the targeted energy density, reaching a value of > 450 Wh/kg and > 1200 Wh/L. Also from functional point of view, D2.1 confirms that the current requirements for automotive application of the PULSELiON technology. D2.1 establishes the testing protocols that will be applied to verify the achievement of the proposed cell performance targets on the prototype cells that will be developed in project PULSELiON. The public summary of the report can be found on our project website www.project-pulseion.eu/results.

MILESTONE 7 ACHIEVED: delivery of D5.1: safe handling & testing protocols

Also, Milestone number 7 was achieved: the safe handling & testing protocols are established for project PULSELiON, with the delivery of deliverable D5.1: the Safe Handling & Testing Protocol Report. This report includes safe handling protocols at the material and cell levels and describes cell testing protocols under normal and abusive conditions. These protocols must allow cells to be tested under normal and abusive conditions in complete safety, thanks to the information associated with the hazardousness of certain components. The public summary of the report can be found on our project website www.project-pulseion.eu/results

MILESTONE 9 ACHIEVED: the Digital Data Platform of INEGI is launched

Yes, it were busy times in project PULSELiON last summer, as also Milestone number 9 was achieved. A matured Digital Data Platform (DDP) – the SUNDIAL platform, was launched, and implemented by our partner INEGI. The data platform will serve as a database for our developers to collect data regarding the battery mass, energy and cost flows that occur in the production processes. This data will serve as feedstock for the environmental and cost analysis. The completion of Milestone 9 has been the result of dedicated teamwork, commitment and the collective expertise of all consortium members. This has been evidenced by a SUNDIAL workshop organised by INEGI on 14 July 2023 and by the delivery of the manual for the use of the SUNDIAL platform in project PULSELiON to the project partners.



MILESTONE 10 ACHIEVED: delivery of D7.2: SSB recycling process flow design

The last Milestone that was achieved over the last period is Milestone 10: the delivery of deliverable D7.2, which contains the flow design for a recycling process for the PULSELiON Solid-State Batteries (SSBs). The public summary of the report can be found on our project website www.project-pulseion.eu/results

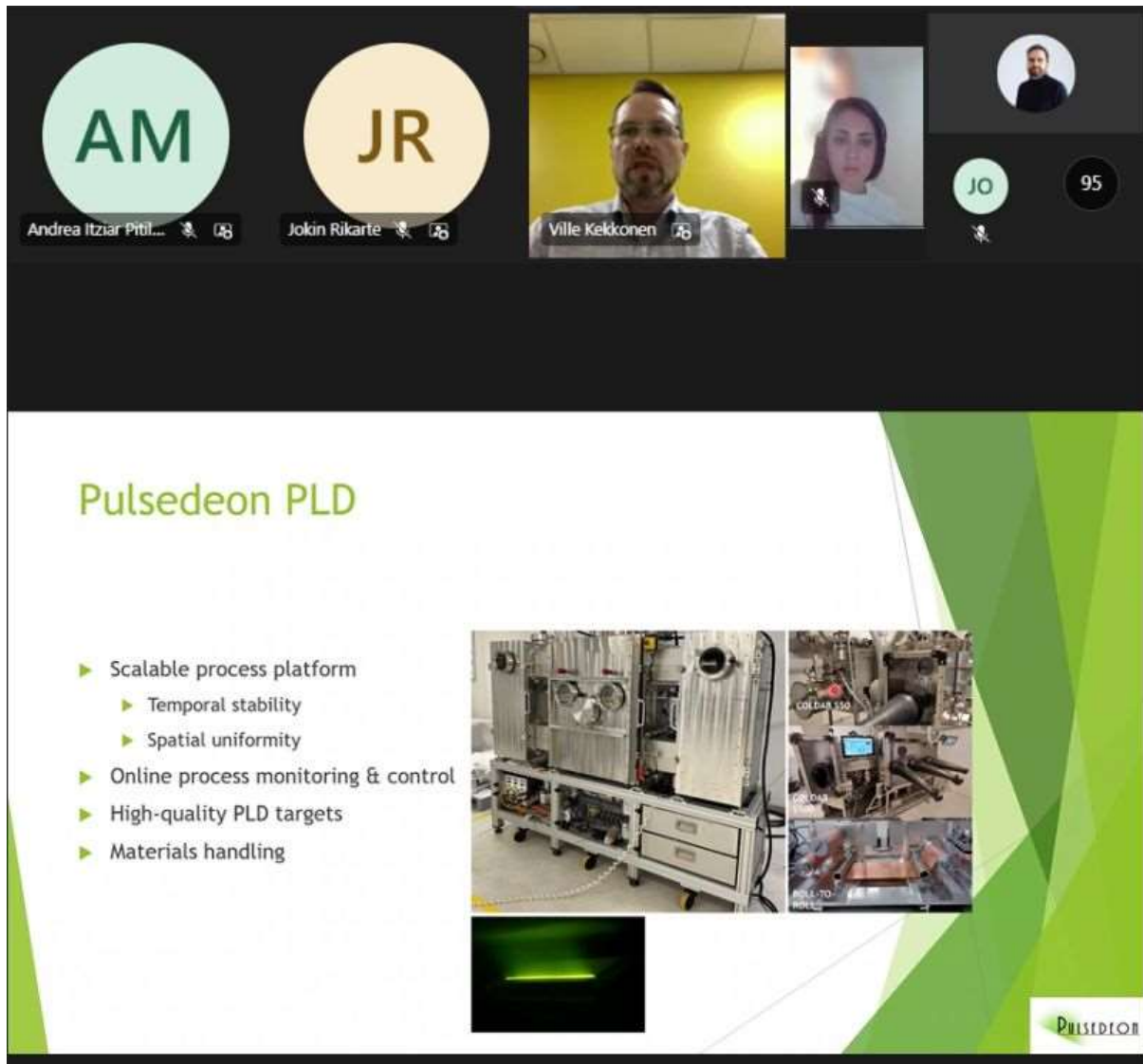


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SOLID4B cluster webinar on last 26 June

PULSELiON is part of the SOLID4B cluster, together with projects SPINMATE, ADVAGEN, AM4BAT, SOLiD, SEATBELT, and HIDDEN. By working together, these projects can converge their resources and expertise to accelerate progress in the field of Solid State Batteries. On last 26 June, the SOLID4B cluster organised an electrifying webinar, where our specialist Ville Kekkonen of PULSELiON presented their Pulsed Laser Deposition (PLD) technology, which is a key technology within project PULSELiON.



The screenshot shows a Zoom meeting interface. At the top, there are several participant windows. On the left, there are two circular icons labeled 'AM' and 'JR' with names 'Andrea Itziar Piti...' and 'Jokin Rikarte' below them. In the center, a larger window shows Ville Kekkonen. To his right, there is a smaller window showing a woman. Further right, there are two more circular icons labeled 'JO' and '95' with names 'JO' and '95' below them. Below the participant windows is a presentation slide titled 'Pulsedeon PLD'. The slide contains a bulleted list of features: Scalable process platform (Temporal stability, Spatial uniformity), Online process monitoring & control, High-quality PLD targets, and Materials handling. To the right of the text are three images: a large industrial machine, a smaller machine labeled 'SOLID4B 150', and a close-up of a laser beam hitting a target. At the bottom of the slide is a small image of a green laser beam and the PULSELiON logo.

Next to Ville representing our project PULSELiON, the esteemed lineup of expert speakers included representatives from SPINMATE, HE ADVAGEN, AM4BAT Project, SOLiD Project, Project SEATBELT, HIDDEN Project and BEPA - Batteries European Partnership Association. These brilliant minds shared their groundbreaking insights, cutting-edge research, and remarkable achievements in the field of battery technology. Curious for the activities of the SOLID4B cluster? Please follow [the SOLID4B cluster on LinkedIn](#).

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WHAT IS NEXT?

PULSELiON will of course continue its activities. In the next issue of the newsletter, we hope to present new progress. The main developments in the coming period will be:

Contribution to the BEPA 2-yearly report

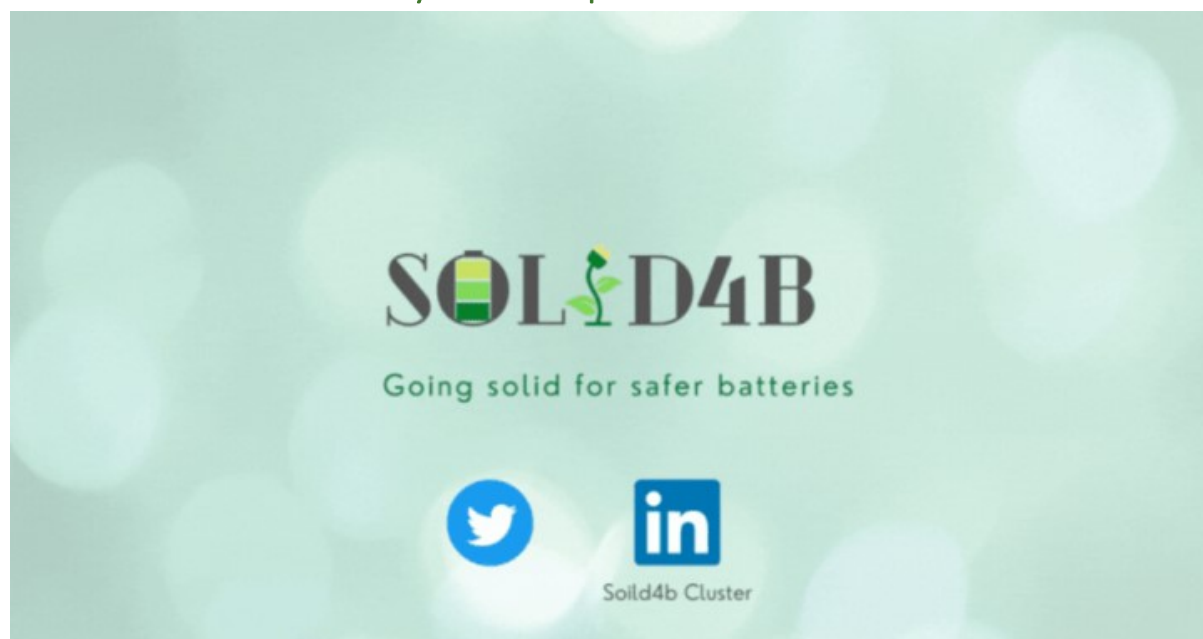
Every two years [BEPA](#), the Batteries European Partnership Association, reports the progress of the battery development projects of the BATT4EU partnership. Also project PULSELiON will be sending in their contributions for this report, so that BEPA can start the report drafting in November.



ACHIEVE MILESTONE 3: Stable Li-metal thin film anode

In March next year, project PULSELiON will achieve its next milestone: a stable Li metal thin film anode will be achieved. To verify this Milestone, electrochemical testing and post-mortem analysis of lab-scale cells will be performed. We will present this milestone in our next newsletter and on our website and social channels

SOLID4B cluster half-day workshop in December



A next half-day workshop is planned to be scheduled in December. Most probably it will be a hybrid meeting, with live participants gathering in Liege (Belgium), and digitally connected participant. The

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draft agenda already indicates this will be another electrifying event. More details about this upcoming event will follow soon on our social media channels.

Launch of the project concept video

PULSELiON partner TechConcepts is currently developing the project concept animation video. The video will be an accessible presentation of the motivation for the PULSELiON project and its objectives. The video will soon be launched via our social media channels and project website www.project-pulseion.eu. So stay tuned!



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