

# PULSELiON

## Newsletter #4 – September 2024

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 April 2025. Do you want to stay informed about the latest PULSELiON news in the meanwhile? Please stay tuned via our website [www.project-pulseion.eu](http://www.project-pulseion.eu), or follow us on [LinkedIn](#) and [X](#).

### WHAT IS NEW?

#### MILESTONE 4 ACHIEVED: NMC sulfide cathode by wet processing

Milestone 4 has been achieved! Partners from PULSELiON progress toward the final full cell chemistry manufacturing of the NMC cathode electrode by wet processing.

The results are reported in Deliverable D3.2, which is the outcome of Task 3.3 within the Work Package 3 and has been submitted in August 2024. In this task, NMC cathode electrode was manufactured by wet-processing under different carbon, NMC active material, sulfide and polymer binder ratio after studying the compatibility of all of them.

Wet-manufactured NMC cathodes displayed promising electrochemical results, laying the background for the upscaling of NMC cathode at large scale and the good progress of the PULSELiON project.

#### RESULT

Deliverable D3.2:  
Report on  
NMC-sulfide cathode  
by wet processing



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 Funded by  
the European Union  
GA no. 101069686

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**MILESTONE 4  
ACHIEVED**

The completion of Milestone 4 has been the result of dedicated teamwork, commitment, and the collective expertise of all those partners involved in work package 3. Congratulations to the team for this great achievement! Soon, the public summary report of deliverable D3.2 will be published on our website and announced via our social media channels.

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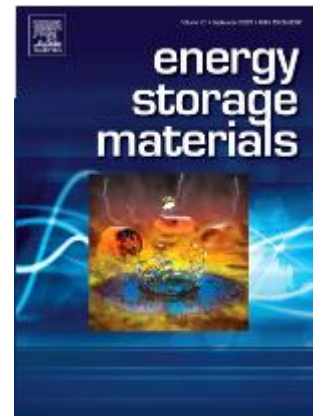
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## 2 OPEN ACCESS PUBLICATIONS were published in the last period

Since the publication of the last newsletter, the researchers within the PULSELiON project have been very active in disseminating the innovations in our project. In the last newsletter, we announced that already 7 open access publications were published. And yet, another 2 new open access publications, that acknowledge funding by the project PULSELiON, have been published between April 2024 and September 2024. This brings the total number of open access publications to 9. Furthermore, more publications have been submitted to different journals and their approval and publication is pending.

We are proud to share the titles of the newly achieved publications:

- 8th publication – journal article “Simulating Solid-State Battery Cathode Manufacturing via Wet-Processing with Resolved Active Material Geometries” in the Energy Storage Materials journal. This version is available online since 30 August 2024 and currently in press.
- 9th publication – journal article “Enhanced Porous Electrode Theory Based Electrochemical Model for Higher Fidelity Modelling and Deciphering of the EIS Spectra”, which has been published in the Journal of The Electrochemical Society on 27 August 2024



The social media campaign to introduce these publications is ongoing. And soon the published articles can also be found on our website: <https://project-pulselion.eu/results/>

## Interview video with Anwar Ahniyaz and Andy Schena

We have recently interviewed the project coordinator Anwar Ahniyaz (RISE Research Institutes of Sweden) and specialist Andy Schena (Avesta Battery & Energy Engineering (ABEE)).



Check out this [interview video on our website](#), to learn more about our project PULSELiON and the battery technologies behind. Also you will get to see the research and development facilities of ABEE in Belgium. In the project, ABEE is focussing on small and large scale manufacturing of the PULSELiON cell.

### WHAT IS NEXT?

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

#### ACHIEVE CRUCIAL MILESTONE 5:

##### High Li-ion conducting sulfide electrolyte thin films

In coming December (project month 28), project PULSELiON will achieve a crucial milestone: under lead of CICE, High Li-ion conducting sulfide electrolyte thin films will be available from Work Package 3. To verify this milestone, EIS results and cycling performance of full cells will be assessed. We will present this milestone in our next newsletter and on our website and social channels

#### ACHIEVE MILESTONE 6:

##### PLD process (equipment capabilities and targets) upscaled

A next milestone will be achieved in March 2025 (project month 31), when the PLD process (equipment capabilities and targets) are upscaled under lead of ABEE in Work Package 4. The milestone will be verified through Validation of the quality and performance of roll-format anode components in coin cells. Also this milestone will be presented in our next newsletter and on our website and social channels.

#### Researchers invited to pitch at the Exclusive BEPA Brokerage Event 2024

[BEPA](#) organises an [exclusive BEPA Brokerage Event](#) on November 28 afternoon in Barcelona (on-site only). The event will gather various stakeholders from the European battery R&I and industry ecosystem and provide opportunity to share and discover technologies and innovations developed by start-ups and researchers in Europe. A total of 20 pitches will be delivered throughout the afternoon, from 10 start-ups and 10 researchers. **Researchers that are interested to pitch are kindly invited to directly contact [Timothé Perruchoud of BEPA](#).**

Coffee breaks and a cocktail reception will also give way for networking and further exchanges to solidify opportunities. The audience will be made up of industry players, VCs, investors, research organisations, and other stakeholders.



You are welcome to the Hotel Barcelo Sants from 13:00 for lunch before the start of the pitches at 14:00. Each pitch will be 10 minutes long with a short Q&A to follow. There will be two separate sessions simultaneously, with startups on one side and researchers on the other.

#### Next General Assembly meeting in November

On November 13<sup>th</sup>, our consortium work package leaders and key specialist will gather again in the 5<sup>th</sup> General Assembly meeting. Our specialist from 15 countries all over Europe will gather digitally to present and discuss the project progress and next steps. Also our next live general assembly has been scheduled, which will be kindly hosted by CICE in Spain on 2 and 3 April 2025.

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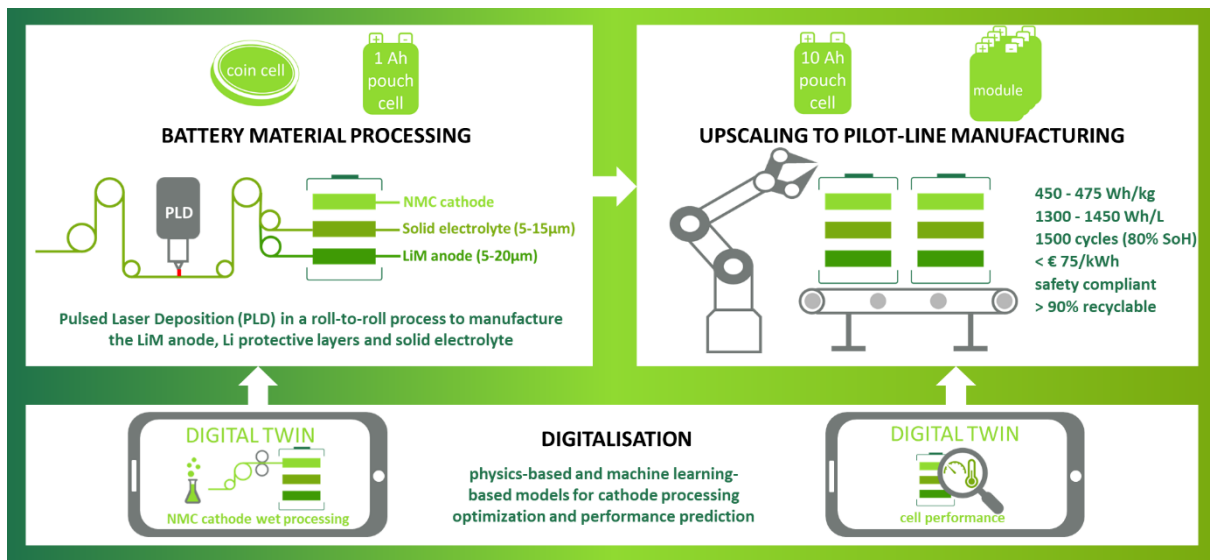
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## ABOUT PROJECT PULSELiON:

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.

# PULSELiON

## PULsed Laser depoSition tEchnology for soLid State battery manufacturing supported by digitalization



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Project PULSELiON has received funding from the European Union's Horizon Europe research and innovation programme under grant agreement No. 101069686 (PULSELiON). Views and opinions expressed are those of the author(s) only and do not necessarily reflect those of the European Union or CINEA. Neither the European Union nor the granting authority can be held responsible for them.



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PULSELiON – GA no. 101069686