

2022 - 2026



ADVAGEN

Development of advanced next generation solid-state batteries for electromobility applications

NEWSLETTER #3 - MAY 2024

ADVAGEN is a Horizon Europe project gathering 14 partners from 9 European countries. It aims at developing, manufacturing and validating the most performant, stable and safe 10Ah solid-state pouch cells by developing novel materials for each of the parts that constitute a battery (i.e., the electrolyte, anode and cathode). In particular, an innovative hybrid oxide-sulfide ceramic electrolyte to be integrated with a lithium metal anode and a high Ni-rich content-based cathode.

In this newsletter, you will learn more about the ADVAGEN latest activities, as well as the ones to come.

Willing to know more about ADVAGEN and its latest developments? Visit our website and follow us on LinkedIn and Twitter!



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WHAT IS NEW?

• LATEST EVENTS

• 4th Consortium Meeting and 1st Review Meeting:

In April 2024 took place ADVAGEN's 4th Consortium Meeting (April 23rd and 24th) and 1st Review Meeting (April 25th), within ABEE's HQ in Ninove, Belgium. This location was ideal as it allowed the partners to visit their new pilot line facilities for large pouch cell manufacturing and cell assembly.



• ABEE Li-Metal coater instrument



Outer shot of the Li-metal coater in ABEE's pilot line.

ABEE received and optimised the Li-Metal coater instrument which will be leveraged for both ADVAGEN and SPINMATE projects. The optimisation took in considerations the discussions held within a workshop covering the optimisation process for Li-Metal instrument, in collaboration with COMAU (SPINMATE partner and ADVAGEN's AB member).

• Technical achievement: increased yield in spray pyrolysis of NMC811

After experimenting with organic additives to the precursor solution mix the yield from spray pyrolysis has been increased from 60% to consistently achieving yields of 80-85%.

Losses primarily occurred due to powder accumulation in the furnace over time and fines bypassing the collection setup. To address this, modifications like using high-temperature filter bags or electrofiltering are suggested for continuous large-scale production, with potential for recycling accumulated powder in the furnace.

WHAT IS NEW?

• SOLID4B CLUSTER'S WOKSHOPS

SOLID4B



ADVAGEN

AM4BAT HIDDEN

PULSELION



SOLID



Going solid for safer batteries

- **Solid State Li-Metal batteries towards a circular economy: Potential vs. Challenges.** (Dec. 2023)

Several ADVAGEN's partners gathered to attend and share ADVAGEN's insights about **recycling challenges for next generation SSB** (Javier Mayorga, ABEE) and **sustainable SSB** - a cornerstone for a bright European future (Luis Miguel Oliveira, INEGI).

- **Scaling-up high-energy-density solid-state batteries: a lab to pilot perspective.** (Apr. 2024)

Experts gathered to discuss the upscale of high-energy-density SSB up to pilot scale in ABEE's facilities (Belgium) where ADVAGEN's partners enlightened us on different topics:

- **Challenges in the upscaling production of SSB: instruments and process point of view**, Andy Schena (ABEE).
- **SSB manufacturing: challenges and opportunities**, Daniela Fontana (COMAU, Advisory Board).
- **Interactive session** led by Anish Patil (TechConcepts) to garner **stakeholder perspective on the EU battery sector**.

During this interactive session, Mentimeter was used as an online interactive session facilitation tool, while the audience were asked questions about various plans, acts, regulations to understand their perspective along the following lines.

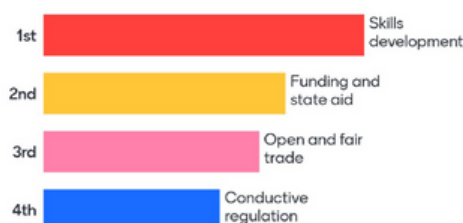
- Whether these laws/acts complement or contradict each other?
- Are they confusing or conducive?
- What "measures" or "incentives" are the most critical to be achieve the objectives of the Green Deal Industrial Plan.

Snapshot of a few results:

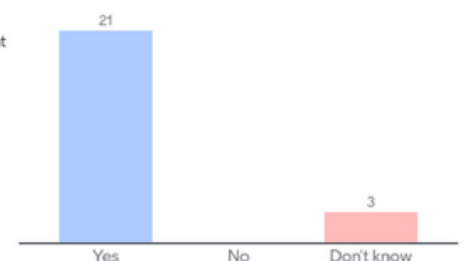


Workshop organised in April 2024

How would you rank the 4 pillars of the Green Deal Industrial Plan in order of RELEVANCE



Will the European battery passport help in achieving the objectives of the Battery regulation/Green Deal Industrial Plan



WHAT IS NEXT?

- **UPCOMING SCIENTIFIC ARTICLES**

Resulting from all the activities performed during the 1st Reporting Period, scientific articles are in preparation and will be published in the coming months. Notably, regarding modeling and characterisation activities, as well as about the electrochemistry of hybrid electrolytes based cells.

Abstracts will be shared on ADVAGEN's LinkedIn page, so stay tuned!

- **NEXT CONSORTIUM MEETING**

The 5th ADVAGEN Consortium Meeting will be held in September 2024. Members of the Advisory Board will be invited, and a workshop will be organised regarding the definition of preliminary exploitation strategies of Key Exploitable Results (led by TechConcepts).

Stay tuned for more updates and insights in our next newsletter, scheduled for November 2024. In the meantime, feel free to reach out with any questions or to learn more about ADVAGEN!

