# Newsletter Issue #4

As the project moves into its final phase, we're excited to share the latest milestones, events, and research developments. This issue highlights our growing visibility across Europe — from key presentations at LOPEC, MEDICA, and the RMIS Workshop to our strong presence at the Innovation & Networking Days on Supercapacitors.

We also launched a new video interview series with project coordinator Athanasios Masouras and continued our spotlight on young researchers, featuring interviews with Melika Hassanzadeh and Riccardo Rocca.

On the research front, EMPHASIS partners published new findings on electrode performance, circuit modeling, and sustainable materials for supercapacitors — showing just how much progress has been made.

We hope you enjoy this update and continue to follow us as we head into the final stretch of the project!

## New video interview series

As EMPHASIS moves into its final phase, project coordinator Athanasios Masouras (Pleione Energy) shares key updates in a new video interview. He talks about progress in materials, smart textiles, and electromobility — and what's next for real-world applications.

Watch the video here.

## Meet the team

### Interview series with young researchers

Our interview series continues, giving young researchers the opportunity to tell us about their tasks in the project and share their experiences.

In our latest interview, we introduce **Melika Hassanzadeh,** a PhD student at INRIM. She's working on improving the accuracy in determining SC parameters — a key part of the project's goals.

Read the full Interview here.

## Meet Riccardo Rocca

The EMPHASIS interview series continues! This time, we spoke with Riccardo Rocca from CRF about his work on the project and what sparked his interest in science.

Read Riccardo's interview here.

## EMPHASIS joins the Graphene Flagship

EMPHASIS has been approved as a Partnering Project within the Graphene Flagship, one of Europe's major research initiatives focused on graphene and related materials. This new partnership opens doors for collaboration and deeper involvement in cutting-edge research.

Alessandro Cultrera from INRIM also joined Graphene Week 2024 in Prague, where he presented work on conductivity mapping in thin-film materials using Electrical Resistance Tomography.


Read the article on our website.

## Events

### EMPHASIS at RMIS 2024 Workshop

Dorela Hoxha from PLEIONE presented EMPHASIS at the RMIS 2024 Workshop in Ispra, Italy. She shared the project's work on next-gen supercapacitors and connected with other Horizon Europe projects like HEDASupercap.


Find more here.

## UNIWU at E-MRS 2024

David Muller from UNIWU presented a poster at the E-MRS Fall Meeting in Warsaw, showcasing research on high-voltage electrolytes for supercapacitors. His work focused on cyanofluoroborate-based ionic liquids and doped cellulose fibers as carbon electrode precursors.

Find more information here.

## Born GmbH Presented EMPHASIS at MEDICA 2024

At MEDICA 2024 in Düsseldorf, Born GmbH highlighted the EMPHASIS project and its work on integrating energy storage into smart textiles. The team explored how these innovations could shape the future of wearable medical tech.


You will find more about the event here.

## EMPHASIS Progress Meeting in Würzburg

Project partners gathered in Würzburg on December 3–4 for the 3rd EMPHASIS Progress Meeting, hosted by the University of Würzburg. The two-day event included a visit to Fraunhofer IISB's battery facilities and focused on aligning plans as the project enters its final year.

Read more here.

## EMPHASIS at Innovation & Networking Days on Supercapacitators

EMPHASIS took part in the Innovation & Networking Days at Friedrich Schiller University Jena, contributing to expert panels and technical sessions on materials, sustainability, and the future of supercapacitors.

Highlights included talks from partners at Würzburg, Solvionic, Wood K plus, and a project overview by coordinator Nasos Masouras. The event brought together researchers, industry, and EU representatives to strengthen collaboration across Horizon Europe projects.

Watch the highlights of the event here.

## EMPHASIS Featured at LOPEC 2025

Michael Schneider (BORN GmbH) represented EMPHASIS at LOPEC 2025 in Munich, the leading event for flexible and printed electronics. His presentation highlighted the project's innovations in sustainable energy storage and its role in shaping future tech applications.


Find more about LOPEC 2025 here.

# Publications

## New Publication: Supercapacitor Capacity and Circuit Analysis

In collaboration with the MetSuperCap consortium, EMPHASIS has published a new paper exploring how supercapacitor capacity changes with charging voltage and time. The study proposes a more accurate method for evaluating circuit parameters, moving beyond conventional standards.

Read the full publication.

## Canoe Develops Biobased Carbon Fibers for Supercapacitators

As part of EMPHASIS, Canoe has created cellulose-based carbon fiber precursors for use in supercapacitor electrodes. These sustainable fibers, later converted into activated carbon by Wood K Plus, aim to replace conventional materials and boost energy efficiency in high-power applications.

Read the article here.

## Electrode Structure Matters: Findings from Latest Study

In collaboration with the DigiCell consortium, EMPHASIS has published a new paper in *Energies (MDPI)*. The study explores how electrode structure affects ion transport in carbon-based supercapacitors using ionic liquid electrolytes, with insights from impedance spectroscopy and FEM simulations.

Read the publication here.

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