



NEWSLETTER ISSUE 4

Welcome...

.... to the 4th issue of our NanoBat newsletter. With this issue we are completing our second project year and there is quite something to tell starting with a new publication and our new cooperation with the H2020 project NanoMECommons and closing with our brand-new video clip and the invitation to register for our 3rd NanoBat workshop. In between, you will meet Gabriela Ventura Silva, one of our youngest researchers in NanoBat, and we celebrate once again all the excellent women in the project. Enjoy the read!

High-Potential Test for Quality Control of Separator Defects in Battery Cell Production

The detection of defects of the battery separator membrane is essential for high-quality batteries. Optical quality control in cell production is unable to detect small defects like pinholes or particle contaminations. This can be fixed by high-potential tests to analyze the insulation performance of the separator layer. We present a study to identify separator defects on dry cell stacks via electric voltage stress and mechanical pressure. In addition, finite element modeling (FEM) is used to generate physical insights into the partial discharge by examining the defect structures and the corresponding electric fields, including topographical electrode roughness, impurity particles, and voids in the separator.



The publication is available here!.

Meet the people behind NanoBat – Gabriela Ventura Silva

Gabriela Ventura Silva is a research engineer and PhD candidate at the Institute of Machine Tools and Production Technology (IWF) at Technische Universität Braunschweig. Originally from São Paulo, Brazil, she came to Germany in 2017 for her master's studies in Industrial and Mechanical Engineering at TU Braunschweig. Currently, as a member of the team Smart Production of Sustainable Batteries and the Battery LabFactory Braunschweig, her research covers the use of simulation and data-based approaches to achieve a more material and energy-efficient battery production. She is one of the co-authors of our most recent publication “High-Potential Test for Quality Control of Separator Defects in Battery Cell Production” (see above). In addition to NanoBat, she is also involved in [Sim4Pro](#), a nationally-funded project developing a simulation-based Digitization Platform for battery manufacturing.



You will find Gabriela's profile at TU Braunschweig here.

Recap: Women in Science Day 2022

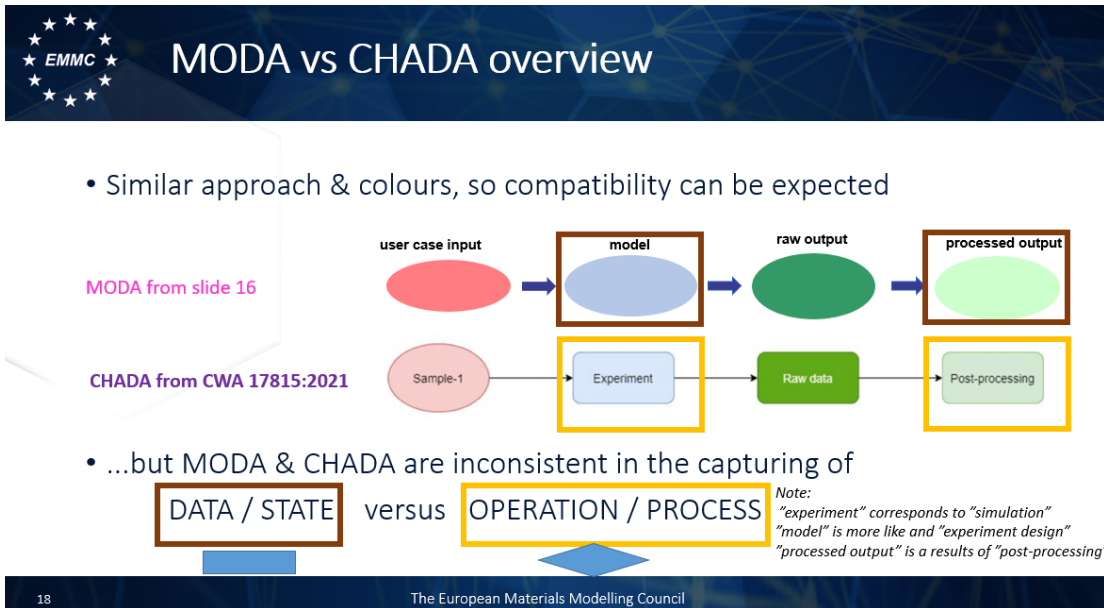
Since its implementation by UNESCO and UN-Women in 2016, every year on February 11, people across the globe celebrate “The International Day of Women and Girls in Science”. On this day, full and equal access to and participation in science is promoted for women and girls all over the world. This year we joined in with a dedicated Facebook campaign and honoured the amazing women that are part of our NanoBat consortium. We hope that we can set an example for young girls to enter careers in Science, Technology, Engineering and Mathematics (STEM) and show them that it’s not so difficult!



Statements from within NanoBat can be found on our Facebook account.

NanoMECommons workshop

On December 13, 2021, the H2020 project [NanoMECommons](#) held a virtual one-day Co-Creation Workshop on “Materials characterization challenges to support the industry transition in the digital era”. The aim of the workshop was to share knowledge and gain insight in the work performed in characterization NMBP projects and testbeds, thus establishing synergies. NanoBat was part of this Co-Creation Workshop contributing with two presentations.



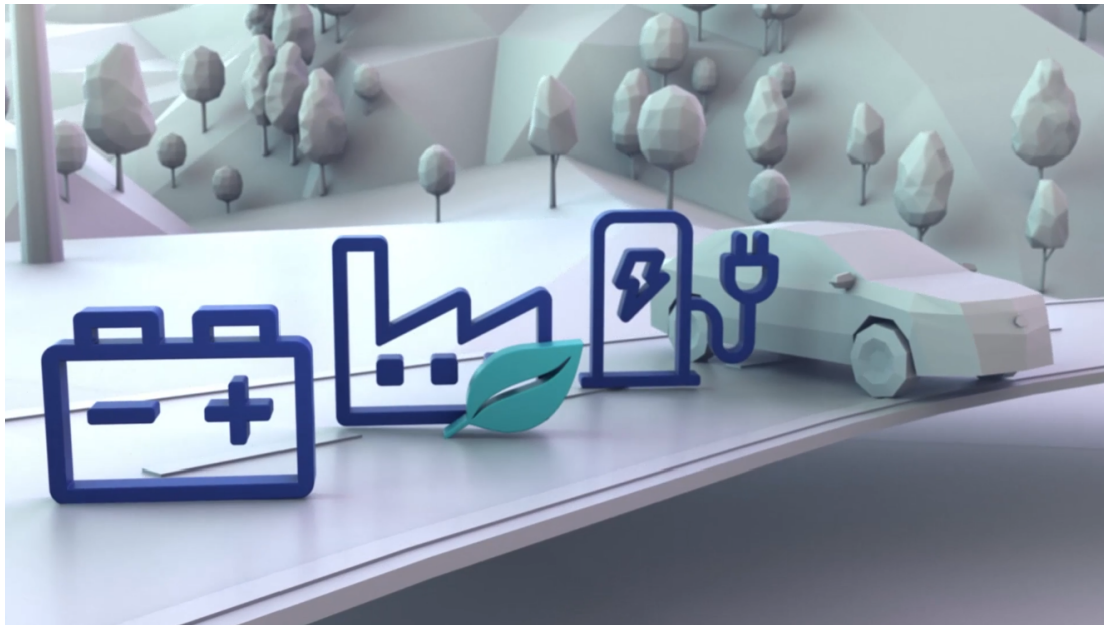
More information on the workshop is available on the NanoBat website.

Presentation: MODA and CHADA challenges and opportunities

Presentation: Advanced battery test methods and modelling approaches

NanoBat video clip

NanoBat has just released a brand-new animated video clip showcasing the process of developing the novel nanotechnology tool box for quality testing of Li-ion and beyond Lithium batteries. The short 3D animation makes the work of the 13-partner strong consortium more accessible to a wide audience in an entertaining way.



Our NanoBat clip is available here!

Upcoming Events

3rd NanoBat workshop: Advanced battery testing: From nano-electrochemistry to in-line tests and pilot lines

Throughout the project duration, NanoBat is organising workshops open to the scientific community.

The 3rd NanoBat workshop entitled “Advanced battery testing: From nano-electrochemistry to in-line tests and pilot lines” will take place virtually **on March 31, 2022**.

Electrochemical characterisation techniques from nano- to macroscale and transferring them to in-line and parallel testing is at the heart of NanoBat. In this workshop, we focus on two parts:

- Nano-electrochemistry tools and recent insights
- Advanced in-line tests in battery production: parallel cell testing & a fast separator test, and their integration in pilot lines

[Registration is still open!](#)

We hope that you enjoyed the 4th issue of our newsletter and look forward to continuing our exciting journey with you.

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