

Annual report for BASE – Batteries Sweden 2020

Batteries Sweden was launched on January 1, 2020. The grand kick-off February took place on ABB's premises in Västerås just before the Covid-19 outbreak. The event was a lunch-to-lunch event with representatives from all participating academic parties, companies as well as representatives from Vinnova. At the meeting, it was decided that this centre would adopt the name Batteries Sweden (BASE) with the logo presented in the header.



Figure: 1, Participants on the BASE kick-off in Västerås

Covid-19 made it difficult for us and especially for companies who needed to sign both the special Vinnova declaration required and the consortium agreement due to redundancies. However, by the summer we were able to get properly start with all papers signed.

The operational group, includes Kristina Edström, Uppsala University (chair), Daniel Brandell, Uppsala University (rapporteur), Patrik Johansson, Chalmers University, Göran Lindbergh, KTH and Maciej Wysocki, RISE, have met via Zoom about ten times. The group has i.e. proposed matters to the board such as workshops, processes on how to develop BASE further, and suggestions regarding new members.

The board have had 4 meetings, where they have made decisions in accordance with the proposals put forward by the operational group.

We have also conducted 3 electronic votes in the General Assembly to make the final decisions on new members for the centre.

We are grateful that so many different types of companies are showing interest in participating in BASE. We are currently waiting for Vinnova's approval of Talga, Percyroc, Gränges and Nortical, all of which have been approved by the different parties within BASE.



This means that we have been further strengthened on both the material and system side and are now spread across the whole battery value chain.

During the second half of 2020, 15 projects started, which are presented with the project manager's name below. Each project includes several parties from both companies and academia.

Project name	Project responsible
Non-flammable liquid electrolytes for safe batteries	Reza Younesi, UU
Graphite and graphene in battery electrodes	Maria Hahlin, UU
Fiber optic sensing for in-situ evaluation of lithium ion battery cells	Fredrik Björefors, UU
Multi-scale modelling: from SEI formation to cell level	Patrik Johansson, Chalmers
Operando characterization	Aleksandar Matic, Chalmers
Recycling technologies: achievable products and challenges related to impurities	Martina Petranikova, Chalmers
Polymer-based solid electrolytes	Mats Johansson, KTH
Printing techniques for composite electrodes	Rakel Wreland Lindström, KTH
Modelling and characterization for safety and ageing testing	Göran Lindbergh, KTH
Mechanical modelling and characterization of batteries	Peter Gudmundsson, KTH
Upscaling solid-state Li-battery processes and manufacturing technology	Maciej Wysocki, RISE
Improved methodology for characterization of heat release and emissions during thermal runaway	Kristoffer Fredin, Northvolt
Cross Cutting: Intervention of gender perspectives in BASE	Anita Hussénus, UU
Cross Cutting: Life Cycle Assessment	Magdalena Svanström, Chalmers

Communication efforts:

We have conducted the following workshops during 2020:

In total, more than 180 people have participated in our three events.

- October 23:** An informative meeting including reviews of the research in progress at the centre's academic parties and a presentation of new partners and "cross-cutting activities".
- November 10:** Included a review of the content of the projects for all participants within BASE, as well as a break-out session for more in-depth discussions.
- December 10:** Focused on solid-state batteries, with two invited international speakers covering both solid ceramic electrolytes and polymer electrolytes. The lectures were public, but the workshop also included an internal dialogue within BASE.

During 2020 a website was launched: www.batteriesweden.se

Our twitter account is named: @BaseSweden and has since December 10 126 followers.

In December we also sent out a Christmas card, which included the logos of all partners.

According to our communication plan we will during 2021 do more public events, but also continues to do more workshops and other happenings for the community.