Collaborating in Europe

Silicon based materials and new processing technologies for improved lithium-ion batteries (SINTBAT)

Principal Investigator: Dr Dhammika Widanalage
Horizon 2020 Industrial Leadership: NMBP
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The Project
According to the European Energy Storage Technology Development Roadmap towards 2030 (EASE/EEA) energy storage will be of the greatest importance for the European climate energy objectives. The SINTBAT project aims at the development of a cheap, energy efficient and effectively maintenance free lithium-ion based energy storage system offering in-service time of 20 to 25 years. The use of high-energy materials combined with a low cost, and environmentally benign, aqueous cathode manufacturing process will lead to a remarkable reduction in cell costs to 130€ per kWh. This will allow the development of a battery-based storage system at the very economical price of under 400€ per kWh (CAPEX) and will lower the OPEX down to less than 0.09€ per stored kWh over its 20 to 25 year (10,000 cycles) lifespan. The technical developments will be underpinned by the development of a roadmap as well as a good practice guide. To guarantee the highest possible impact for the European economy, the SINBAT consortium has set up an Industrial Advisory Board involving European battery material suppliers, cell manufacturers and end-users. This strong linkage between the SINTBAT consortium and relevant stakeholders in the European energy economy will ensure that battery-based energy storage systems become an economic and self-sustaining technology.

Other Participants
Varta Microbattery GmbH (Germany) Coordinator
Commissariat A L Energie Atomique Et Aux Energies Alternatives (France)

Dr Dhammika Widanalage's Views on the Importance of EU Funding
“The project could not have occurred without EU support. The research questions addressed by the SINTBAT project were very well aligned to the European Strategic Energy Technology Plan where the objective is to develop new battery technologies and reduce costs. This strategy was, in turn, reflected in the Horizon 2020 call to which the consortium responded. By contrast, there was no UK funding source which offered the same challenge or opportunities.

The SINTBAT project is based around the prelithiation of the battery’s negative electrode and the development of an aqueous cathode manufacturing process, which is considerably more cost-effective – by a factor of 10 – than the state of the art. Three of the non-UK consortium members have developed, and patented, the know-how to apply and further develop these innovations and SINTBAT brings together organisations which can achieve this. Such a capability is limited within UK and, therefore, the EU collaboration is vital for the project.”