LiON-HD project to improve lithium ion batteries

A national project was started in Spain to significantly improve the energy density, cost and sustainability of lithium-ion (Li-ion) batteries. Batteries with such improved parameters are highly sought-after in the growing electric vehicle (EV) industry.

Project LiOn-HD brings together 9 research centers and 8 companies to investigate advanced active and inactive materials and their synergic combinations for the different components of the electrochemical cell.

The role of Graphenea in the consortium is to investigate graphene oxide (GO) materials in both the anode and the cathode, and the potential synergies between GO and other advanced materials available in the consortium, such as metallic sulfurs and carbons. Our aim is to increase the cyclability performance of new silicon-based batteries with high energy densities.

The project is funded by the Centre for Technological and Industrial Development's (CDTI) Missions Programme, the flagship of the institution aimed at financing large strategic R&D initiatives in Spain, promoted by business groups in collaboration with technology centres, research bodies and universities. LiOn-HD was selected for financing as result of the first ever Missions Programme call for proposals.

The consortium is led by Silicio Ferrosolar, with participation of Química del Nalón, NANOKER, RIMSA, ABCRLabs, GRAPHENEA, CUANTUM and Hi-IBERIA. The research centers involved in the project are CETIM, CIDETEC, University of La Coruña, University of Santiago, University of Alicante, Autónoma de Barcelona, Centro de Investigación en Nanomateriales y Nanotecnología (CINN), Instituto de Ciencia de Materiales de Madrid (ICMM) and Instituto de Ciencia de Materiales de Barcelona (ICMAB).

Image: Pictorial representation of project LiOn-HD. The target improvements over conventional Li-ion batteries is shown on the left: 20% increase of energy density, 15% cost reduction, and 20% reduction of CO_2 emissions.

Este proyecto ha sido subvencionado por el Centro para el Desarrollo Tecnológico Industrial (CDTI) en el marco de la convocatoria para el año 2019 del Programa MISIONES (EXP – 00133395 / MIG-20201021. Misión 2) y cuenta el apoyo del Ministerio de Ciencia e Innovación.