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# Greenet



The network of Horizon Europe  
Cluster 5 National Contact Point.

## Sodium ion batteries for next generation energy storage (general title)

Areas covered: Cross sectoral solutions for the energy transition



*The GREENET project has received funding from the EU Horizon Europe programme under Grant Agreement No 101069604*



# Project overview

- Project proposal title: Not finalized
- Topic to be addressed: Sodium ion batteries with solid electrolytes
- Project description: Batteries are becoming an unavoidable and essential part of our lives. The optimization of battery operation and diagnostics is of imminent importance and requires versatile and robust approaches that span multiple time and spatial scales and that allow physical insight and ease of feedback. We propose a unified battery characterization and diagnostics and focuses on Na ion batteries with solid electrolytes.
- The consortium will focus on a combinative approach of experimental methods, modelling and simulation and data analysis to develop Na ion batteries from earth abundant materials.
- Current consortium: University of Oulu, Finland (consortium leader), LUT University, Finland (Partner), Chalmers institute of technology, Sweden (Partner)
- Profile of the partners sought: Seeking partners for data analysis part who has expertise in battery modelling and/or largescale data analysis for materials



- The methodology brings new information provided by Resonant Inelastic X-ray Scattering and Positron Annihilation Spectroscopy combined with electrochemical impedance spectroscopy, X-ray spectroscopy and other advanced experimental and computational characterization techniques via Artificial Intelligence methods. By fusing the traditional Equivalent Circuit Models to the state-of-the-art density functional theory simulations and sophisticated experiments, we will be integrating atomistic insight and spectroscopic data, resulting in a practical tool to analyze battery operation.
- Expected TRL: 1-5
- Experience: The SUsChem department (Coordinator) is a pioneer in battery research such as Lithium-ion batteries with existing EU projects, Academy of Finland projects and Business Finland projects. Recently the department secured M-era.net funding to work on Sodium ion batteries.