

M.ERA-NET

Project partners search form

Contract Person Details	
Name: Dr. Vinodkumar Etacheri	
Position: Electrochemistry Group Leader	
Phone: +34 91 549 34 22	Email: vinodkumar.etacheri@imdea.org

Organization Details:			
Name: IMDEA Materials Institute			
Country: Spain		Website: http://www.materiales.imdea.org/	
Type of Organization:	<input type="checkbox"/> SME	<input type="checkbox"/> Large Company	<input type="checkbox"/> University
	<input checked="" type="checkbox"/> Research Inst.	<input type="checkbox"/> Administration	<input type="checkbox"/> Other (specify):
Number of Employees:	<input type="checkbox"/> < 10	<input type="checkbox"/> 11-50	<input type="checkbox"/> 51-100
	<input checked="" type="checkbox"/> 101-250	<input type="checkbox"/> > 250	

Project Details	
Project Title	Pseudocapacitive Hybrid Electrode Materials for Fast-Charging High-Capacity Li-Ion Batteries
Call Topic	Multifunctional materials
Abstract	The proposed project address several drawbacks of the current generation of Li-ion batteries based on graphite anodes. Newly developed hybrid anodes will combine the advantages of faradaic and non-faradaic type Li-ion storage to facilitate high specific capacity, charge-discharge rates and improved safety.
Description of the Project idea:	
<p>The proposed idea involves tailored designing of high-capacity and fast-charging pseudocapacitive anode materials for next-generation Li-ion batteries. We intend to improve the energy and power density by incorporating faradaic and non-faradaic type of Li-ion storage mechanism in a single electrode microstructure. The developed anode material will be initially investigated in Li-ion half-cell followed by full-cell configurations containing newly developed fast charging organic-inorganic hybrid cathodes. This study will also involve systematic investigation of the effect of surface films (effect of electrolyte compositions on SEI formation) on the pseudocapacitive Li-ion storage mechanism of the developed anode material. The final goal of the proposed project is the scale-up of the developed materials/battery technology and their commercialization.</p>	

Partners already involved in the consortium

- IMDEA Materials Institute - Spain
- Technion - Israel
- DGIST - South Korea

Partners sought to complete the consortium

We are searching partners (R&D institutes, industries and universities) to join the consortium and perform the following tasks.

- Fabrication of organic-inorganic hybrid cathode materials.
- Investigating the surface chemistry of Li-ion battery electrodes.
- Scale-up and commercialization of the developed battery technology.