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Towards Efficient Energy Storage Materials: Lithium Intercalation/Organic Electrodes to Polymer Electrolytes—A Road Map

Devaraj Shanmukaraj,[1,z] Pierre Ranque,[1] Hicham Ben Youcef,[2] Teofilo Rojo,[1] Philippe Poizot,[3] Sylvie Grugeon,[4,5] Stephane Laruelle,[4,5] and Dominique Guyomard[3,*]

[1] *Centre for Cooperative Research on Alternative Energies (CIC energiGUNE), Basque Research and Technology Alliance (BRTA), Alava Technology Park, 01510 Vitoria-Gasteiz, Spain*
[2] *Mohammed VI Polytechnic University, 43150 Ben Guerir, Morocco*
[3] *Université de Nantes, CNRS, Institut des Matériaux Jean Rouxel, IMN, F-44000 Nantes, France*
[4] *Laboratoire de Réactivité et Chimie des Solides, CNRS UMR 7314, Université de Picardie Jules Verne, 80039 Amiens, France*
[5] *Réseau sur le Stockage Electrochimique de l'Energie, CNRS RS2E FR3459, France*

Abstract

Green energy harvesting (solar and wind) and storage along with electrification of transport sector could bring about a major transformation in the CO_2 emission levels that we are currently experiencing. Lithium ion batteries provide an efficient energy storage system to realize this goal. The key developments in Li-ion battery technology starting from solid solution electrodes, intercalation electrodes, conversion electrodes, organic electrodes, and polymer electrolytes with a major focus on the contribution of Michel Armand, an eminent scientist who at a young age saw the future of energy storage, have been elaborated. Moreover, the direction of research that seems interesting to pursue for realizing our goals has also been outlined.

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