Innovative polymers for next generation batteries

David Mecerreyes
Nerea Casado, Luca Porcarelli, Maria Forsyth, Nico Goujon
POLYMAT University of the Basque Country UPV/EHU ,Centro Joxe Mari Korta, Avenida Tolosa 72 Donostia-San Sebastian 20018 Spain
e-mail: david.mecerreyes@ehu.es

Lithium ion batteries are part of our modern life being present in daily used objects such as mobile phones, tablets, computers, watches, sport accessories, electric scooters or cars. The next generation batteries would need the development of innovative polymers that help to improve their performance in terms of power density, cyclability, raw materials availability, low weight, printability, flexibility, sustainability or security. In this presentation we will discuss our recent developments in the area of redox active and ionic conducting polymers.[1-4] This includes the development of innovative binders for electrodes, polymer electrolytes and redox polymers. All these new polymer developments are leading to new battery technologies such as metal-polymer batteries, organic batteries, polymer-air and redox-flow batteries which are expected to complement in the future the actual commercial batteries.

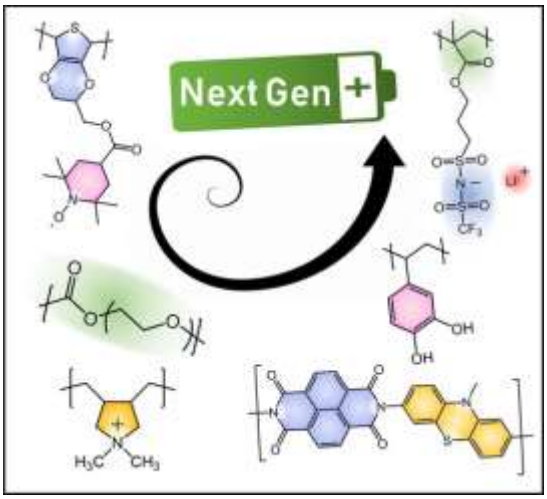

Figure 1: Scheme of some of the polymers will be discussed for application in emerging batteries

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