Polymer electrode material for energy storage

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Polymer material, as a rather new member in energy storage family, has attracted much attention and efforts because of its special property in many aspects comparing with other inorganic electrode material.[1,2] In our recent study, different polymer material has been investigated and used for lithium/sodium secondary battery and even all-organic battery. Owned to the optimized molecular structure, the polymer with quinone moiety increased from about 190mAh/g for previous polyanthraquinone sulfide [3] to more than 250mAh/g for the latest poly(1,4-anthraquinone). In addition, the film-forming property of this polymer phase endows it with a possible application in membrane battery. Another recent study was focused on the application of polymer electrode material in some new energy storage system, such as aqueous Li^+ battery and magnesium battery.It was found that the aqueous Li+ battery with polymer anode showed a greatly improved electrochemical performance than previously reported analogues due to its high reaction reversibility, very suitable working voltage, as well as its extremely stable polymer framework. Generally, polymer electrode material, with diversified structure, has promising prospective in energy storage.

Reference:
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