Energy storage in hybrid organic-inorganic materials hexacyanoferrate-doped polypyrrole as cathode in reversible lithium cells - DTU Orbit (27/12/2018)

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A study of the hybrid organic-inorganic hexacyanoferrate-polypyrrole material as a cathode in rechargeable lithium cells is reported as part of a series of functional hybrid materials that represent a new concept in energy storage. The effect of synthesis temperatures of the hybrid in the specific capacity obtained from the cell is discussed. However specific capacities are obtained for materials synthesized at lower temperatures (0 degrees C). The preparation method of the electrodes is also a parameter of great importance: thin film cathodes made with poly(vinylidene fluoride) as a binder and Super P carbon as conducting additive show higher specific capacities than powder cathodes. These materials present modest specific capacities of up to 69 Ah/kg but withstand repeated cycles of charge/discharge with no loss of capacity, even with an initial gain during the first 60 cycles. (C) 2000 The Electrochemical Society. S0013-4651(00)04-075-1. All rights reserved.

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