Synthesis of new electrodic material $Li_y MnO_x$/ C for lithium batteries : Chemical, Thermal and structural analysis

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In recent years, studies of lithium batteries have reached great importance for there height advantage of capacity, voltage and energy density.

A great variety of materials have been studied to meet new cathodic compounds in lithium batteries. Among them is the Li-Mn Oxides which have interesting energetic and charge discharge cycled properties [1].

We have synthesized $Li_y MnO_x$ /C under hydrothermal conditions.

By chemical analysis we have determined the Mn valence Oxygen and Li percentage.

T.G.A and D.T.A techniques allowed the calculus of the activation energy of deshydratation and deshydroxylation accordingly to [2] and the weight losses of the samples (Fig1,2) .

By X ray diffraction analysis is characterized this new cathodic material. The structure is mostly Ramsdellite and Birnessite which would make this Li-Mn oxide good candidate for the cathodic application of Li-metal rechargeable batteries.

References :
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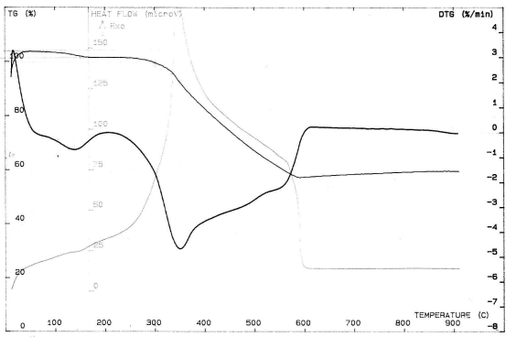

Fig1. T.G.A and D.T.A of Li MnOx / C

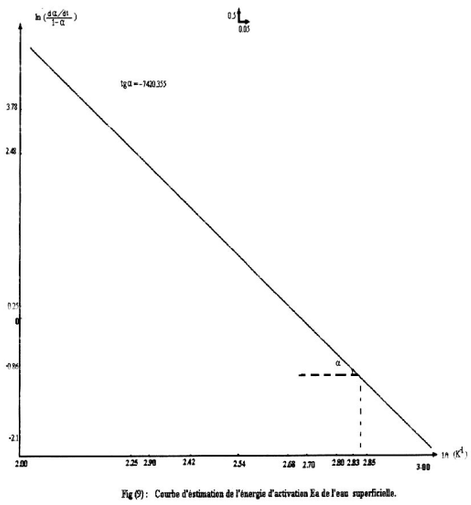

Fig (9) : Courbe d'estimation de l'énergie d'activation Ea de l'eau superficielle.

Fig.2 Graphical estimation of Li MnOx /C deshydratation activation energy