

**Qualification Of Carbon-Coated Lithium Iron  
Phosphate As Cathode Material For  
Power Assist Hybrid Vehicles**

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**Presentation Abstract**

First introduced by Padhy and Goodenough<sup>(1)</sup> as a potential cathode material for Lithium batteries, Lithium Iron Phosphate has been through many improvements since then, one of the major ones being the addition of a Carbon Nano-Painting on its surface to enhance its electronic conductivity<sup>(2)</sup>.

Based on the commercial potential of such a material, Phostech Lithium was founded in 2001 to commercialize LiFePO<sub>4</sub> and other phosphate-based cathodes, with the goal of replacing LiCoO<sub>2</sub> as the cathode material for main existing markets for Lithium-Ion batteries, namely: cellular phones and laptop computers.

The potential for low cost as well as the exceptional intrinsic stability, ruggedness and safety of LiFePO<sub>4</sub> and LiFePO<sub>4</sub>-based cells allow to plan use of this material in large size Lithium-ion batteries.

Batteries containing carbon-coated LiFePO<sub>4</sub> material from Phostech lithium have been evaluated following the procedure described in the FreedomCar Battery test manual<sup>(3)</sup>. We will show that Li-ion batteries containing LiFePO<sub>4</sub> can meet the requirements for power assist hybrid vehicles.

[1] A.K. Padhi, K. S. Nanjundaswamy and J.B. Goodenough, J. Electrochem. Soc., 144, 1188 (1997)

[2] N. Ravet, J. B. Goodenough, S. Besner, M. Simoneau, P. Hovington, and M. Armand, Abstract N°127, 196<sup>th</sup> ECS Meeting, Honolulu, HW, October 17-22 (1999)

[3] FreedomCAR Battery Test Manual For Power-Assist Hybrid Vehicles, INEEL, october 2003