

Conductive surface modification of LiFePO₄ for lithium ion batteries

Disclosure Number

201102772

Technology Summary

Electrical energy storage systems have attracted significant attention within the past few decades due to the sustained interest in alternative energy sources which stems from the gradual depletion of oil resources around the world. From this point of view, the development of clean and highly efficient energy storage systems is becoming an even more urgent need. As an electrochemical energy storage device, rechargeable lithium batteries have been the dominant power sources for portable electronic devices because they exhibit the highest energy density achievable among secondary batteries. As an alternative to LiCoO₂ cathodes, LiFePO₄ has many advantages: it is environmentally benign, inexpensive, and thermally stable in the charged state. The invention provides a process to obtain LiFePO₄ with a rod-like morphology, and a modified surface for high rate-capability with good cycling performance.

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