

锂离子电池电极材料加工中的粉体技术

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摘要: 介绍了锂离子电池电极材料加工中的粉体技术, 讨论了不同电极材料在锂离子电池中的应用, 详细论述了正极材料 LiCoO_2 和负极材料天然石墨的粒径以及负极材料的形状对锂离子电池性能的影响。锂离子电池的充放电容量随着 LiCoO_2 和天然石墨粒径的减小而增加, 天然石墨的球形化处理能提高负极的填充密度, 进一步提高锂离子电池的体积比容量和循环性能; 此外, 适当的碾压工艺以及多种电极材料的混合使用也能提高锂离子电池的性能。

关键词: 碳纳米管; 贮氢材料; 锂离子电池电极; 催化剂

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Powder technologies for processing electrode materials of Li-ion battery

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Abstract: Powder technologies used in the preparation of electrode materials of Li-ion battery (LIB) were introduced. The applications of different electrode materials in LIB were given. The influence of particle size of positive material, LiCoO_2 and negative material, natural graphite, and the morphology of the negative material on the charge/discharge capacity, recycling capability and security of LIB were discussed. The charge/discharge capacity of LIB increased with the decrease of the size of LiCoO_2 and natural graphite. Theglomeration of natural graphite could increase the packing density of negative electrode and further to improve the specific capacity per volume unit and recycling capability. In addition, the performance of the LIB could also be advanced by proper pressed or mixed of several electrode materials.

Key words: Li-ion battery; powder technology; particle size; glomeration