

碳纳米管在电池工业中的潜在应用

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摘要: 介绍了碳纳米管的结构, 叙述了碳纳米管在电池领域的潜在应用。碳纳米管是一种极具发展前途的贮氢材料, 它具有较高的贮氢量, 能够反复进行吸贮氢和释放氢的可逆过程; 作为锂离子电极材料, 碳纳米管具有高于石墨的嵌锂容量和良好的循环性能; 在碳纳米管上沉积贵金属制成燃料电池的催化剂能减少贵金属的用量, 降低催化剂的颗粒尺寸和提高催化剂的性能。

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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Potential applications of carbon nanotubes in battery industry

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Abstract: The structure of carbon nanotubes was introduced briefly. The potential applications of carbon nanotubes were described. Carbon nanotubes were prospective hydrogen-storage material, which could absorb/adsorb a large quantity of hydrogen and did the reversible adsorption/absorption process repeatedly. As electrode material for Li-ion battery, carbon nanotubes had a higher lithium capacity than graphite and performed good cycle performance. The catalyst of fuel cell, prepared by depositing noble metal on carbon nanotubes, could decrease the mass of noble metal, reduce the size of catalyst and improve the catalyst performance.

Key words: carbon nanotubes; hydrogen-storage material; electrode of Li-ion battery; catalyst

电池杂志

BATTERY BIMONTHLY