Fine-sized cathode particles with high capacity prepared by spray pysolysis

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Nano-sized precursor particles with uniform morphology and narrow size distribution were prepared by large-scale spray pyrolysis from spray solution with additives. The as-prepared particles with porous and thin wall structure turned to nano-sized particles with regular morphology at high post-treatment temperature. Cathode particles were prepared by solid-state reaction method using the nano-sized precursor particles. The characteristics of nano-sized cathode particles prepared by solid state reaction method were compared with those of the commercial product. The cathode particles had slightly aggregated morphology and narrow size distribution even without milling process. Nano-sized precursor particles with regular morphology and narrow size distribution enabled the preparation of the cathode particles with fine size and regular morphology in the solid state reaction method. The fine-sized cathode particles prepared by solid state reaction method using nano-sized precursor particles had good discharge capacities and cycle properties compared with those of the commercial product.