Sub-micro MoO_3 Particles Prepared by Reaction-precipitation Crystallization

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Abstract

Molybdenum trioxide particles with 300-500nm was prepared by reaction-precipitation, a cheaper wet process compared to vapor condensation and hydrothermal methods. The solution of ammonium heptamolybdate was acidified by acetic acid and the reactants concentration, acidification speed and reaction temperature were controlled to create proper nucleation-growth conditions. After above reaction-precipitation crystallization, the intermediate product with the structure similar to coral was obtained. Then this precursor was calcined at 500-600℃, the dispersed MoO_3 particles were produced. No surfactant was needed and the product can be used as the feed of ultrafine and nano molybdenum metal powders.