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Abstract
In this article, cerium oxide powder with fluorite structure is formed by the traditional process of precipitation and calcinations at the temperature above 400oC. Nano-grade cerium oxide powder is prepared by the method of precipitation cerium sulfate with urea and aging. According to the experimental results, the precipitate of urea and cerium sulfate is amorphous. The precipitate is transferred to the nano grade cerium oxide with fluorite structure after aging at 100 oC for 5 hours. Adding urea to cerium sulfate and adding ammonia to cerium nitrate, respectively can obtain the well crystalline octahedron and narrow distribution particle size. Two
kinds of ceria slurries one is formed by cerium sulfate and urea, another is formed by cerium nitrate and ammonia hydroxide are examined by polishing test. The removal rate of the product of cerium sulfate and urea is about 116 U+C5/min and the removal rate of product of cerium nitrate and ammonia hydroxide is about 93 U+C5/min.
Advisory Committee Ming-Shyong Tsai - advisor

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