

Synthesis of Silica coated CeO₂ particles by new one-step coating method modified by emulsion flame spray pyrolysis

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Surface coated particles to form encapsulated or core-shell structures have attracted lots of attention over many years because of novel properties such as improved physical and chemical properties that can be introduced for a broad range of application. Generally, there were many particle surface coating methods such as gas-phase coating method or liquid-phase coating method. However, in most coating methods, surface coating process go on after the preparation of core particles. In this study, we proposed new particle coating method modified by emulsion flame spray pyrolysis. The characteristic of that method is to happen to both the step of particle formation and the step of surface coating at once. We prepared silica coated CeO₂ particles using new one-step coating method. We investigated the morphology of particles and coating layer from TEM, SEM. And we also examined the change of surface charge from measurement of zeta potential.