

Synthesis of ultrafine zinc-silicon oxide particles by the flame spray pyrolysis

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Aqueous solution of zinc nitrate and TEOS (tetraethylorthosilicate) was atomized into the flame made by the combustion of fuel gas and oxygen to prepare particles. The characteristics of product particles were investigated to differentiate flame spray pyrolysis of supporting flame from flame spray pyrolysis of self-sustaining flame. SEM, TEM, XRD and HR-TEM analysis was conducted on product of flame spray pyrolysis of supporting flame and compared with the results of the conventional spray pyrolysis and flame spray pyrolysis of self-sustaining flame.