Comparative experimental study on reactive crystallization of $Ni(OH)_2$ in an airlift-loop and a stirred reactors

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Materials and product engineering

Comparative experimental study on reactive crystallization of $Ni(OH)_2$ in an airlift-loop and a stirred reactors☆

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Abstract: The objective of this work is to study the reactive crystallization in an airlift-loop reactor (ALR) using the precipitation of $Ni(OH)_2$ as a model reaction. The growth of $Ni(OH)_2$ particles in an ALR and a stirred tank was quantified by scanning electronic microscope (SEM), X-ray diffraction (XRD), laser particle analyzer, tap densitometer and optical microscope, and the growth process of $Ni(OH)_2$ particles is analyzed. It is found that the $Ni(OH)_2$ particles prepared in an ALR have a better sphericity than those in a stirred tank and the growth of $Ni(OH)_2$ particle tap density mainly depends on the size of crystallites: the bigger the size of crystallites, the bigger

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