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## Materials and product engineering

### Comparative experimental study on reactive crystallization of $\text{Ni}(\text{OH})_2$ in an airlift-loop and a stirred reactors<sup>☆</sup>

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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  $\text{Ni}(\text{OH})_2$  as a model reaction. The growth of  $\text{Ni}(\text{OH})_2$  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  $\text{Ni}(\text{OH})_2$  particles is analyzed. It is found that the  $\text{Ni}(\text{OH})_2$  particles prepared in an ALR have a better sphericity than those in a stirred tank and the growth of  $\text{Ni}(\text{OH})_2$  particle tap density mainly depends on the size of crystallites: the bigger the size of crystallites, the bigger

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