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# Numerical study on flow behavior of ultrafine powders in conical spouted bed with coarse particles

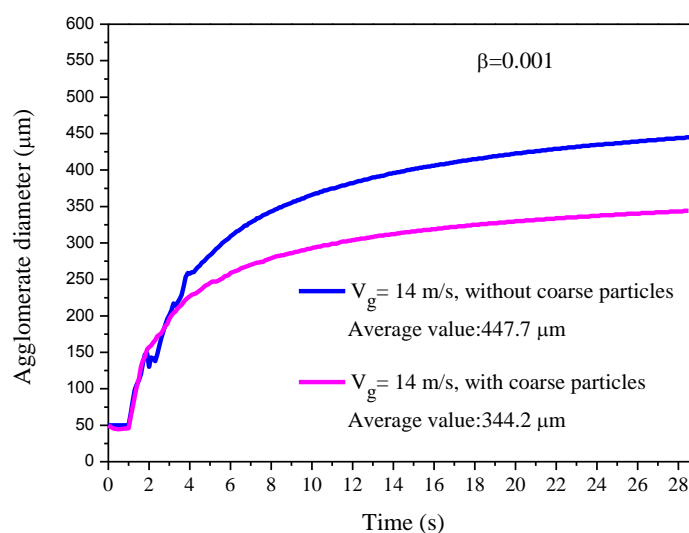
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Graphical Abstract



Variation of agglomerate diameter with coarse particles

Highlights

- The binary mixture model for ultrafine powders with adding coarse particles are developed for first time.
- Fluidization of ultrafine particles is significantly improved by adding coarse particles.
- Agglomerate diameter decreases linearly with the increase of diameter or mass fraction of coarse particles.

**Abstract:** Fluidization of ultrafine particles differ significantly and stable spouting is difficult to achieve. However, the stability of a spouted bed

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