عنوان مقاله:

A Numerical Scheme for Heat Transfer in Conical Fluidized bed

محل انتشار:

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خلاصه مقاله:

In the present study, a numerical simulation of heat transfer and hydrodynamic characteristics in conical fluidized bed reactor were investigated. A two-fluid Eulerian-Eulerian multiphase model applied by Kinetic Theory for Granular Flow (KTGF) was used to phase of particles in reactor. Average heat transfer coefficient compared by penetration theory, Maximum heat transfer coefficient and maximum pressure drop were evaluated by experimental data and other models. As a results, the size of particles should not be very small and not also be very large. By choosing particle small size, although sand temperature and heat transfer coefficient enhanced, but cost processing increased. On the other hand, by choosing the large size of particle total energy increased and may be acquired the sustainable system, yet pressure drop increased and may not be economical sustainable. To design an optimal system, it is necessary to balance between energy, pressure drop and cost based on particles size in the fluidized bed system processes.

کلمات کلیدی:

fluidized bed, particle size, heat transfer coefficient, pressure drop