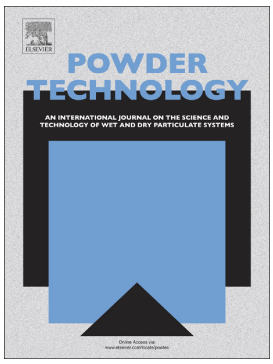

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PII: S0032-5910(18)30721-6
DOI: doi:10.1016/j.powtec.2018.08.083
Reference: PTEC 13668

To appear in: *Powder Technology*

Received date: 5 May 2018
Revised date: 24 August 2018
Accepted date: 30 August 2018

Please cite this article as: Huibin Xu, Wenqi Zhong, Yingjuan Shao, Aibing Yu , Experimental study on mixing behaviors of wet particles in a bubbling fluidized bed. Ptec (2018), doi:10.1016/j.powtec.2018.08.083

Experimental study on mixing behaviors of wet particles in a bubbling fluidized bed

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Abstract

Mixing behavior of binary particles with different densities in a wet fluidized bed has been experimentally investigated in this work. Some important hydrodynamic characteristics during mixing, such as the minimum fluidization velocity, flow pattern, and flotsam particle distribution are measured. The differences between dry and wet particles are systematically compared. It is found that the minimum fluidization velocity U_{mf} of wet particles is higher than that of dry particles due to the liquid bridge force between particles. U_{mf} reaches its maximum when the liquid saturation S=0.1, and then decreases, and does not change much when the liquid saturation in the region of S=0.2~0.3. Liquid addition can bring two opposite effects on the mixing of a binary