

# Accepted Manuscript

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PII: S0032-5910(18)30718-6  
DOI: doi:[10.1016/j.powtec.2018.08.080](https://doi.org/10.1016/j.powtec.2018.08.080)  
Reference: PTEC 13665  
To appear in: *Powder Technology*  
Received date: 16 March 2018  
Revised date: 22 August 2018  
Accepted date: 30 August 2018

Please cite this article as: Hideki Takeuchi, Ziliang Wang, C. Jim Lim, John R. Grace , Hydrodynamic characteristics of sawdust in a pulsed slot-rectangular spouted bed. *Ptec* (2018), doi:[10.1016/j.powtec.2018.08.080](https://doi.org/10.1016/j.powtec.2018.08.080)

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## Hydrodynamic characteristics of sawdust in a pulsed slot-rectangular spouted bed

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### Abstract

The effects of the pulsation frequency and slot dimensions on the hydrodynamic characteristics and the particle motion of sawdust of mean diameter 1.29 mm were investigated in a pulsed slot-rectangular spouted bed. Pulsation frequencies ranged from 1 to 5 Hz. The pulsed gas flow helped to mobilize the sawdust particles, regardless of the slot dimensions and initial bed height. The fountain height depended more on the slot dimensions than on the pulsation frequency. The time-average bed pressure drop increased with increasing pulsation frequency, while the maximum bed pressure drop was higher for low pulsation frequencies than for high frequency. A slot fully spanning the column thickness and a 3 Hz pulsation frequency were optimal conditions for spouting of sawdust particles without inert particles.

**Keywords:** Hydrodynamics; Sawdust; Pulsations; Spouted bed; Slot

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