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AN ANALYSIS OF THE MINI-TABLET FLUIDIZED BED COATING PROCESS

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HIGHLIGHTS

- 2, 2.5 and 3 mm diameter mini-tablets were coated in two fluidized bed coaters
- Cycle times of mini-tablets were measured with a photoluminescent system
- Effect of cycle time variability on the coating variability was between 5 and 28 %
- Particle volume fraction was determined using transmittance measurements

ABSTRACT

Mini-tablets with diameters of 2.0, 2.5, and 3.0 mm are coated in two different lab-scale fluidized bed coaters equipped with a Wurster draft tube. The main focus of the research is to evaluate the inter-particle coating variability, and to assess the contribution of cycle time variation. Cycle times are measured using a photoluminescent tracer with a detector mounted on the top of the draft tube. The number of passes variability is represented from 5 to 28% of the total coating variability. Additionally, transmittance measurements at the top of the Wurster draft tube are performed in order to assess the inter-particle sheltering effects. Transmittance results are correlated to the amount of coating deposited per single pass of the spray zone and are converted to solids volume fractions. The dynamics of the transmittance signal further reveal the persistence of a particle arrangement within the draft tube of the two different coaters. The gathered results give insight into the different performance of two fluidized bed coaters in terms of inter-particle coating variability.

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