

Evaluation of Particle Settling in Flow Chamber

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Abstract : Abstract— The investigation of fluids containing particles or filaments includes a category of complex fluids and is vital in both theory and application. The forecast of particle behaviors plays a significant role in the existing technology as well as future technology. This paper focuses on the prediction of the particle behavior through the investigation of the particle disentrainment from a pipe on a horizontal air stream. This allows for examining the influence of the particle physical properties on its behavior when falling on horizontal air stream. This investigation was conducted on a device located at the University of Greenwich's Medway Campus. Two materials were selected to carry out this study: Salt and Glass Beads particles. The shape of the Slat particles is cubic where the shape of the Glass Beads is almost spherical. The outcome from the experimental work were presented in terms of distance travelled by the particles according to their diameters as After that, the particles sizes were measured using Laser Diffraction device and used to determine the drag coefficient and the settling velocity.

Keywords : flow experiment, drag coefficient, Particle Settling, Flow Chamber

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