

## 固体粒子層の流動化特性に及ぼす重力の影響

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### **Effect of Gravity-level on Fluidization Characteristics of a Bed of Solid Particles**

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#### **Abstract**

Fluidized bed has been widely used in many processes of petroleum, chemical and electric-power industries. In the bed, solid particles are fluidized by the flow of gas or/and liquid. The flow patterns in the bed are strongly affected by gravity-levels against drag forces. Minimum velocity for fluidization is one of the basic hydrodynamic characteristics of the bed. The behavior of a fluidized bed under various gravity-levels was observed using our high-gravity generator ( $1\sim 10 g_0$ ). The effect of gravity-level on minimum fluidization velocity of a two-dimensional gas-solid fluidized bed was investigated. The experimental results were compared with previous works under normal gravity-level. For some kinds of particles categorized in group-A of the Geldart map under normal gravity-level, the values of minimum fluidization velocity approached those of minimum bubbling fluidization velocity as gravity level was higher. The experimental data of minimum fluidization velocity versus gravity-level ( $4.8 < Ar < 875$ ) was in good agreement with the correlations which have been proposed for the data under normal gravity-level.