Fluidization Of Fine Powders

This book will be mainly devoted to demonstrate the rich phenomenology exhibited by fine powders when they are fluidized by a gas flow. Fine powder cohesiveness leads to poor flowability, clumping, difficulty in fluidizing, irregular avalanching behavior, etc. Despite all the inconveniences, fine powder processes pervade the chemical, pharmaceutical, agricultural and mining industries among others. The author in this book analyzes the mechanism by which interparticle adhesive forces are reduced by means of surface additives. Different techniques have been developed in the last years to assist fluidization by helping the gas flow to mobilize and break cohesive aggregates, which help to homogenize fluidization. As reviewed in this book, the use of these techniques may have a relevant impact on novel processes based on fluidized beds of fine powder and with relevant applications on leading edge technologies such as Atomic Layer Deposition on nanoparticles and CO2 capture by gas-fluidized beds of adsorbent powders. The study of fluidized beds has a marked interdisciplinary character. This book is thus intended for academic and industrial researchers in applied physics, mechanical, chemical, and environmental engineering, who are interested in the special characteristics of fine powders. EAN/ISBN : 9789400755871 Publisher(s): Springer, Berlin, Springer Netherlands Format: ePub/PDF Author(s): Valverde Milln, Jos Manuel

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