

<Editorial>

1 Editor's Preface

<Review Papers>

3 Analysis and Modeling of Non-Spherical Particle Motion in a Gas Flow





Drag model for rotating spheroid

Smart powder

processing without

heat assistance

(with glow discharge)

Dry processing

Attrition-type mill

• Wet processing

High energy planetary ball mill

Coal dispersion Spheroid dispersion in experiment in simulation

è 🛞

→ DDS device, catalyst etc.

Bulk

material

Assembling +> 8

Bonding

Nanoparticle Synthesis

Synthesis

Bonding

Deposition to

Nanoparticle

morphology control

synthesis

Particle bonding and disassembling

substrate

Hiroaki Watanabe and Wei Zhang

14 Smart Powder Processing for Excellent Advanced Materials and Its Applications



29 Interfacial Engineering of Particulate & Surfactant Systems for Enhanced Performance in Industrial Applications



Jiaqi Dong and Brij M. Moudgil

50 Comminution and Classification as Important Process Steps for the Circular Production of Lithium Batteries

Arno Kwade, Marcel Möller, Jannes Müller, Jutta Hesselbach, Sabrina Zellmer, Stefan Doose, Julian Mayer, Peter Michalowski, Malcolm Powell and Sandra Breitung-Faes





 0°

-dispersed water drop-

3.0 **Recent Research Trend in Powder Process** MA (Sm-Fe-N Technology for High-Performance Rare-2.5 Reduction diffusion (Sm-Fe-N) **Earth Permanent Magnets** MA (Nd-Fe-B) Coercivity (MA/m) 2.0 HDDR (Nd-Fe-B) 1.5 . Melt spinnin (Nd-Fe-B) HDDR 1.0 Pulverization (Sm-Fe-N) (Sm-Fe-N) Overnitriding (Nd-Fe-B) 0.5 Kenta Takagi, Yusuke Hirayama, 0.0 Shusuke Okada, Akihide Hosokawa 10 0.01 0.11 Grain size (µm) and Wataru Yamaguchi **Morphology Control of Transition Metal** (a)**Oxides by Liquid-Phase Process and Their Material Development**

(a)

Shu Yin and Takuya Hasegawa

109 Cellulose Nanofibrils Pulverized from Biomass Resources: Past, Present, and Future Perspectives



 165° (b)

Tetsuo Kondo

74

94

124 Functionalized Graphitic Carbon Nitrides for Photocatalytic H₂O₂ Production: Desired Properties Leading to Rational Catalyst Design



Zhengyuan Teng, Wenan Cai and Teruhisa Ohno

Contents



Kiet Le Anh Cao, Ferry Iskandar, Eishi Tanabe and Takashi Ogi

Contents

KONA Powder and Particle Journal No. 40 (2023)

<Original Research Papers>



mall-Scale Batch Ball Mill/ Pilot-Scale Continuous Ball Mill

Austin

Model

SCALE-UP

. Kotake-Kanda

Model

Ecevit Bilgili

262 A Hybrid PBM-DEM Model of High-Pressure Grinding Rolls Applied to Iron Ore Pellet Feed Pressing



Victor A. Rodriguez, Túlio M. Campos, Gabriel K.P. Barrios, Gilvandro Bueno and Luís Marcelo Tavares



<Information Articles>

277 The 54th Symposium on Powder Technology and Special Lecture for the 30th Anniversary of the Establishment of HPTF



279 The KONA Award 2021



Selected research achievements for the KONA Award 2021 (Awardee: Prof. Dr. Wolfgang Peukert): Particle based product innovations by understanding and controlling particle interactions.



Selected research achievements for the KONA Award 2021 (Awardee: Prof. Dr. Shuji Matsusaka): Advanced characterization of fine particles and the development of novel powder handling systems.