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Nota di contenuto	Part I - Process-Spray Micro Scale - Elementary Processes at Phase Boundaries -- 1 Investigation of Elementary Processes of Non-Newtonian Droplets inside Spray Processes by Means of Direct Numerical Simulation -- 2 Interfacial engineering for the microencapsulation of lipophilic ingredients by spray-drying -- 3 Structure Formation within Spray Dried Droplets; Mathematical Modelling of Spray Polymerisation -- 4 Acoustic Levitation: A powerful tool to model Spray Processes -- 5 Movement and hydrodynamic instabilities of particle-laden liquid jets in the centrifugal field inuenced by a gas ow -- 6 Experimental Investigation and Modelling of Coalescence and Agglomeration for Spray Drying of Suspensions -- 7 Particle formation from gas enriched polymeric melts and polymeric solutions -- 8 A Real-Time Process Analysis System for the

Simultaneous Acquisition of Spray Characteristics -- Part II - Process-Spray Meso Scale - Process Analysis, Modeling and Scaling -- 9 Modeling and Simulation of Single Particle and Spray Drying of PVP- and Mannitol-Water in Hot Air -- 10 Droplet-Stream Freeze Drying for the Production of Protein-Formulations - From Simulation to Production -- 11 Correlations between suspension formulation, drying parameters, granule structure and mechanical properties of spray dried ceramic granules -- 12 Statistical Extinction Method for the Inline Monitoring of Particle Processes -- 13 Numerical Simulation of Monodispersed Droplet Generation in Nozzles -- 14 Spray drying tailored mannitol carrier particles for dry powder inhalation with differently shaped active pharmaceutical ingredients -- 15 Pulverisation of emulsions with supercritical CO2 -- 16 Superheated Atomization -- 17 Direct Numerical Simulations of shear-thinning liquid jets and droplets -- 18 Integral Process Modeling and Simulation for Solid-Particle-Forming Spray Processes -- Part III - Process-Spray Macro Scale - Process Function, Particle and Powder Properties -- 19 Hot gas atomization of complex liquids for powder production -- 20 Polymerization in sprays – Atomization and product design of reactive polymer solutions -- 21 Investigation on the usage of effervescent atomization for spraying and spray drying of rheological complex food liquids and on the resulting particle and product properties -- 22 Experimental evaluation and control of interaction of gas environment and rotary atomized spray for production of narrow particle size distribution -- 23 Processing of functional capsule powder particles based on multiple emulsions using a prilling process -- 24 Analysis of Mechanisms for PVP-Active-Agent Formulation as in supercritical Antisolvent Spray Process.

Sommario/riassunto

This book describes the latest research on producing functional particles using spray processes. The authors detail micro level elementary processes and phase boundaries, process analysis scaling and modeling, and macro level process functions and particle properties. They include numerical simulations and particulars of experiments for deriving process conditions for particle production.