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Titolo	Istoria dell'immagine di S.Maria di Pozzano, e fondazione dell'antica e nuova chiesa e convento de' frati Minimi nella città di Castellammare di Stabia scritta dal p. Serafino de' Ruggieri dello stesso ordine. E dedicata alla medesima città
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Nota di contenuto	Industrial Crystallization Process Monitoring and Control; Contents; Preface; Scope of the Book; List of Contributors; 1 Characterization of Crystal Size Distribution; 1.1 Introduction; 1.2 Particle Size Distribution; 1.3 Particle Size Distribution Moments; 1.4 Particle Size Distribution Characterization on the Basis of Mass Distribution; References; 2 Forward Light Scattering; 2.1 Introduction; 2.2 Principles of Laser Diffraction; 2.3 Scatter Theory; 2.3.1 Generalized Lorenz-Mie Theory; 2.3.2 Anomalous Diffraction; 2.3.3 Fraunhofer Diffraction; 2.4 Deconvolution 2.4.1 Direct Inversion Using the Nonnegativity Constraint 2.4.2 Philips Twomey Inversion Method; 2.4.3 Iterative Methods; 2.5 The Effects of Shape; 2.6 Multiple Scattering; 2.7 Application of Laser Diffraction for

Monitoring and Control of Industrial Crystallization Processes; 2.8 Conclusions; References; Further Reading; 3 Focused Beam Reflectance Measurement; 3.1 Measurement Principle; 3.2 Application Examples; 3.2.1 Solubility and Metastable Zone Width (MSZW); 3.2.2 Seed Effectiveness; 3.2.3 Polymorph Transformations; 3.2.4 Effect of Different Impurity Levels; 3.2.5 Nucleation Kinetics 3.2.6 Improved Downstream Processing 3.2.7 Process Control; 3.3 Advantages and Limitations; References; 4 Turbidimetry for the Estimation of Crystal Average Size; 4.1 Introduction; 4.2 Determination of Average Particle Size from Specific Turbidity; 4.3 Procedure to Evaluate Average Crystal Size by Turbidimetry for a High Solid Slurry Concentration; 4.4 Conclusion; References; Further Reading; 5 Imaging; 5.1 Introduction; 5.2 Literature Overview; 5.3 The Sensor Design; 5.3.1 Optics and Illumination; 5.3.2 The Camera System and the Resolution; 5.3.3 Image Analysis; 5.3.4 Statistics 5.4 Application of In Situ Imaging for Monitoring Crystallization Processes 5.4.1 Example 1; 5.4.2 Example 2; 5.5 Conclusions; References; Further Reading; 6 Turbidimetry and Nephelometry; 6.1 Introduction; 6.2 Measurement of Nucleation and Solubility Points; 6.3 The Developed Turbidimetric and Nephelometric Instruments; 6.4 The Examined Systems; 6.5 Obtained Results; References; 7 Speed of Sound; 7.1 Introduction; 7.2 In-Process Ultrasound Measurement; 7.3 Determining Solubility and Metastable Zone Width; 7.4 Measuring Crystal Growth Rates; 7.5 Detecting Phase Transitions with Ultrasound References 8 In-Line Process Refractometer for Concentration Measurement in Sugar Crystallizers; 8.1 Introduction; 8.2 Measurement Principle; 8.3 In-Line Instrument Features and Benefits; 8.3.1 Accuracy; 8.3.2 Concentration Determination; 8.3.3 Process Temperature Compensation Factor; 8.3.4 Process Sensor; 8.4 Features and Benefits; 8.5 Example of Application in the Crystallization; 8.5.1 Seeding Point and Supersaturation Control in Sugar Vacuum Pan; 8.6 Conclusion; References; 9 ATR-FTIR Spectroscopy; 9.1 Introduction; 9.2 Calibration; 9.3 Speciation Monitoring; 9.4 Co-Crystal Formation 9.5 Solubility Measurement

Sommario/riassunto

Crystallization is an important technique for separation and purification of substances as well as for product design in chemical, pharmaceutical and biotechnological process industries. This ready reference and handbook draws on research work and industrial practice of a large group of experts in the various areas of industrial crystallization processes, capturing the essence of current trends, the markets, design tools and technologies in this key field. Along the way, it outlines trouble free production, provides laboratory controls, analyses case studies and discusses new ch
