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Nota di contenuto	COATING AND DRYING DEFECTS; CONTENTS; Preface; Preface to the First Edition; About the Authors; 1 Introduction; 2 Troubleshooting or Problem-Solving Procedure; Basic Troubleshooting Principles; Detect the Defect; Define the Defect or Problem; Name the Defect; Problem Statement; Collect and Analyze Additional Data; Process Information; General Process Information; Analytical Data; Standard Operating Procedures; Analyze the Data and Identify Potential Causes of Problem; Eliminate the Problem; Document the Results; Use Results to Prevent Reoccurrence; References 3 Coater and Defect Analytical ToolsOverview of Analytical Tools; Analytical Methods to Characterize Defects; Defect Test Procedures; Video Enhanced Microscopy; Surface Characterization Techniques; Coater Characterization Instruments; Data Loggers; Rheological Measurements; Surface Properties; On-Line Characterization Systems; On-Line Inspection Systems; On-Line Coating Weight Measurement; On-Line Viscosity; Data Analysis Techniques; Keeping Current; References; 4 Problems Associated with Feed Preparation; Dirt and

Other Particulates; Filtration; Agglomerates; Bubbles
Poor Cross-Web Uniformity In-Line Mixers; Temperature Control; Flow Control for Down-Web Uniformity; Feeding the Coating Liquid; Flow Control; Magnetic Flow Meters; Ultrasonic Meters; Coriolis Meters; References; 5 Problems Associated with Roll Coating and Related Processes; Coating Methods; Control of Coating Weight; Ribbing; Ribbing in Forward Roll Coating; Ribbing and Cascade (or Herringbone or Seashore) in Reverse Roll Coating; Gravure Coating; Streaks and Bands in Roll Coating; Chatter in Roll Coating; Sagging; References; 6 Problems in Slot, Extrusion, Slide, and Curtain Coating
Description of Coating Methods Limits of Coatability; The Window of Coatability; Slide Coating; Vortices and Eddies; Slot Coating; Extrusion Coating; Curtain Coating; Effect of Surface Roughness on the Limits of Coatability; Instabilities in Premetered Coating; Chatter; Ribbing; Neck-in; Scalloped Edges; Edge Beads and Heavy Edges; Waves in Slide and in Curtain Coating; Streaks and Bands in Premetered Coating; References; 7 Coating Problems Associated with Coating Die Design; Cross-Web Uniformity; Temperature Control; Corrections to the Coating Die
Internals
Die Internal Pressures and Spreading Extrusion Dies; Wall Shear Stress Control and Residence Time Control; References; 8 Surface Tension Driven Defects; Surfactants; Surface Tension Effects in Coating; Surface Tension Driven Defects; Convection or Benard Cells; Craters; Fat Edges or Picture Framing; Nonuniform Edges in Multilayer Coatings; Dewetting and Crawling; Adhesive Failure and Delamination; Nonuniform Base Surface Energies; References; 9 Problems Associated with Static Electricity; Formation of Charges; Electrostatic Fields; Surface Resistivity; Measurement of Static Charges
Removal of Charges

Sommario/riassunto

A practical guide for ensuring a defect-free coating and drying process For professionals in the coating and drying industry, the world is a demanding place. New, technically complex products such as fuel cell membranes, thin film batteries, solar cells, and RFID chips require coatings of extreme precision. With the bar raised so high, understanding how to troubleshoot and eliminate defects on a coating line is an essential skill for all personnel. Coating and Drying Defects, Second Edition provides manufacturing and quality control personnel, equipment operators and supervis
