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Nota di contenuto	Front Cover; Plastics Failure: Analysis and Prevention; Copyright Page; Contents; Preface; Chapter 1. Failure Mechanisms; Plastics Failure Due to Oxidative Degradation in Processing and Service; Durability Study of Conductive Copper Traces Within Polyimide Based Substrates; Fatigue Behavior of Discontinuous Glass Fiber Reinforced Polypropylene; Ductile Failure and Delayed Necking in Polyethylene; Chapter 2. Processing and Assembly; The Role of a Heat Affected Zone (HAZ) on Mechanical Properties in Thermally Welded Low Density Polyethylene Blown Film Effects of Processing Conditions on the Failure Mode of an Aliphatic Polyketone TerpolymerOrientation Effects on the Weldability of Polypropylene Strapping Tape; Joint Performance of Mechanical Fasteners under Dynamic Load-Self-Tapping Screws in Comparison with Threaded Inserts in Brass and Plastic; Defect Cost Analysis; Chapter 3. Environmental Effects; Environmental Stress Cracking (ESC) of ABS (II); Residual Stress Development in Marine Coatings Under Simulated Service Conditions; Estimation of Long-term Properties of Epoxies in Body Fluids

Mechanical Performance of Polyamides with Influence of Moisture and Temperature - Accurate Evaluation and Better Understanding Temperature-Moisture-Mechanical Response of Vinyl Ester Resin and Pultruded Vinyl Ester/E-Glass Laminated Composites; Freeze-thaw Durability of Composites for Civil Infrastructure; Chapter 4. Morphology and Fractography; Fractography of ABS; Fractography of Metals and Plastics; Crack Propagation in Continuous Glass Fiber/Polypropylene Composites: Matrix Microstructure Effect; Fracture Behavior of Polypropylene Modified with Metallocene Catalyzed Polyolefin Morphology and Mechanical Behavior of Polypropylene Hot Plate Welds The Influence of Morphology on the Impact Performance of an Impact Modified PP/PS Alloy; Morphological Study of Fatigue Induced Damage in Semi-crystalline Polymers; Chapter 5. Modeling of Failures and Failure processes; Failure Analysis Models for Polyacetal Molded Fittings in Plumbing Systems; Progressive Failure Analysis of Fiber Composite Structures; Calculating Thermally Induced Stresses Using a Nonlinear Viscoelastic Material Model Evaluation of a Yield Criteria and Energy Absorbing Mechanisms of Rubber Modified Epoxies in Multiaxial Stress States Chapter 6. Design and Life Prediction; Shelf Life Failure Prediction Considerations for Irradiated Polypropylene Medical Devices; Determining Etch Compensation Factors for Printed Circuit Boards; Activation Energies of Polymer Degradation; Estimation of Time-temperature-collectives at Describing Ageing of Polymer Materials; Chapter 7. Test Methods; Standard Test Procedures for Relevant Material Properties for Structural Analysis Factors Affecting Variation in Gardner Impact Testing

Sommario/riassunto

This book contains analysis of reasons that cause products to fail. General methods of product failure evaluation give powerful tools in product improvement. Such methods, discussed in the book, include practical risk analysis, failure mode and effect analysis, preliminary hazard analysis, progressive failure analysis, fault tree analysis, mean time between failures, Wohler curves, finite element analysis, cohesive zone model, crack propagation kinetics, time-temperature collectives, quantitative characterization of fatigue damage, and fracture maps. Methods of failure analysis are cri
