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Descrizione fisica	1 online resource (367 p.)
Collana	Adhesion and Adhesives: Fundamental and Applied Aspects
Disciplina	621.381/046
Soggetti	Microelectronic packaging - Materials Adhesives Adhesive joints
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
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Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Cover; Title Page; Copyright Page; Contents; Preface; Acknowledgements; Part 1: Adhesion: Fundamentals and Measurement; 1 Study of Molecular Bonding or Adhesion by Inelastic Electron Tunneling Spectroscopy, with Special Reference to Microelectronics; 1.1 Introduction; 1.2 Principles of IETS; 1.2.1 General Overview; 1.2.2 Key Principles of Operation; 1.2.3 IET Spectrometer Design and Implementation; 1.2.4 IET Sample Preparation; 1.3 Application of IETS in Microelectronics; 1.4 Prospects; 1.5 Summary; References; 2 Adhesion Measurement of Thin Films and Coatings: Relevance to Microelectronics 2.1. Introduction2.2 Mechanical Methods; 2.2.1 Commonly Used Qualitative or Semi-quantitative Methods; 2.2.2 Quantitative Methods; 2.3 Laser Based Techniques; 2.3.1 Laser Induced Delamination (LID); 2.3.2 Laser Direct Ablation Induced De-adhesion; 2.3.3 Laser Spallation Technique; 2.4 Summary and Remarks; References; Part 2: Ways to Promote/Enhance Adhesion; 3 Tailoring of Interface/Interphase to Promote Metal-Polymer Adhesion; 3.1 Introduction; 3.1.1 Role of

Surface Energy for Metal-Polymer Adhesion; 3.1.2 Physical Effects Produced by Covalent Bonding of Metal to Polymer  
 3.1.3 Thermal Expansion Coefficients of Metals and Polymers  
 3.1.4 Differences Between Al-Polyolefin and Polyolefin-Al Laminates; 3.1.5 Types of Covalent Metal-Polymer Bonds; 3.1.6 Redox Reactions across the Metal-Polymer Interface; 3.1.7 Reactions of Transition Metals with Aromatic Polymers; 3.1.8 Loss in Anisotropic Orientation of Polymers Caused by Pretreatment or by Contact with Metals; 3.1.9 Combination of Plasma Pretreatment and Metal Deposition; 3.1.10 Thermodynamics;  
 3.2 New Concepts for Ideal Design of Metal-Polymer Interfaces with Covalently Bonded Flexible Spacer Molecules  
 3.2.1 Principal Functions of Spacers  
 3.2.2 Ways to Graft Spacer Molecules onto Polyolefin Surfaces; 3.2.3 Grafting of Spacer Molecules onto Monotype Functional Groups at the Polyolefin Surface for Realizing New Interface Design in Metal-Polymer Systems; 3.3 Situation at Al Oxide/Hydroxide Surfaces Using Aluminium as Substrate; 3.4. Adhesion Promotion by Non-specific Functionalization of Polyolefin Surfaces; 3.4.1 General; 3.4.2 Introduction of Functional Groups onto Polyolefin Surfaces; 3.4.3 Usual Pretreatment Processes and Their Advantages and Disadvantages  
 3.4.4 Use of Adhesion Promoting Layers Deposited by Plasma Polymerization  
 3.4.5 Use of Silanes and Siloxanes; 3.4.6 Other Methods;  
 3.5 Methods for Producing Monosort Functional Groups at Polyolefin Surfaces; 3.5.1 Oxygen Plasma and Wet-chemical Reduction of O-functional Groups to OH Groups; 3.5.2 Underwater Capillary Discharge Plasma or Glow Discharge Electrolysis (GDE); 3.5.3 Electrospray-Ionization Deposition of Ultra-thin Polymer Layers; 3.5.4 Allylamine Plasma Polymerization for Producing NH<sub>2</sub> Groups; 3.5.5 Allyl Alcohol Plasma Polymerization for Producing OH Groups  
 3.5.6 Acrylic Acid Plasma Polymerization for Producing COOH Groups

## Sommario/riassunto

This comprehensive book will provide both fundamental and applied aspects of adhesion pertaining to microelectronics in a single and easily accessible source. Among the topics to be covered include; Various theories or mechanisms of adhesion  
 Surface (physical or chemical) characterization of materials as it pertains to adhesion  
 Surface cleaning as it pertains to adhesion  
 Ways to improve adhesion  
 Unraveling of interfacial interactions using an array of pertinent techniques  
 Characterization of interfaces / interphases  
 Polymer-polymer adhesion  
 Metal-polymer adhesion (metallized polymers)  
 Polymer adhesion

2. Record Nr.	UNINA9910694178303321
Titolo	Digital content and enabling technology : satisfying the 21st century consumer : hearing before the Subcommittee on Commerce, Trade, and Consumer Protection of the Committee on Energy and Commerce, House of Representatives, One Hundred Ninth Congress, second session, March 29 and May 3, 2006
Descrizione fisica	1 online resource (iii, 133 p.) : ill
Soggetti	Fair use (Copyright) - United States Digital media - United States Copyright - Electronic information resources - United States Copyright - Sound recordings - United States Copyright - Video recordings - United States
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia