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ISBN	1-5090-2893-5
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Soggetti	Telecommunication systems Telecommunication - Technological innovations
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Sommario/riassunto	Annotation EuCNC 2016 will be the 25th edition of a successful series of a technical and scientific conference open to the world research community, sponsored by the European Commission, in the area of Telecommunications EuCNC 2016 is open to the world research community and has a focus that ranges from the physical layer to all types of supported applications It aims at showcasing the results of the consecutive programmes on R&D and projects co financed by European programmes, as well as presenting the latest developments in this area Particular focus will be on 5G technologies The conference motto is The Dawn of 5G It includes technical sessions, posters, business panels, tutorials, workshops, and keynotes.

2.

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Titolo	Hermeticity testing of MEMS and microelectronic packages / / Suzanne Costello, Marc P.Y. Desmulliez
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Collana	Integrated microsystems series
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Soggetti	Microelectromechanical systems Microelectronics Microelectromechanical systems - Testing Microelectronics - Testing
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Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Preface; References; Part 1 Introduction to Hermetic Package; 1 The Evolution of Packages, Their Sealing Methods, and Modes of Fabrication ; 1.1 Introduction; 1.2 The Evolution of Microelectronics and MEMS Packages; 1.3 MEMS Sealing Techniques and Mode Package Fabrication; 1.3.1 Materials; 1.3.2 Sealing Techniques; 1.4 Summary of MEMS Packaging Materials and Techniques; References; 2 Assembly, Packaging, and Environmentally Induced Failures in MEMS; 2.1 Introduction; 2.2 Particle Contamination ; 2.3 Thermomechanical Constraints; 2.3.1 Thermomechanical Constraints in Di. 2.3.2 Thermomechanical Constraints in Pa2.3.3 Thermomechanical Constraints in Wa; 2.3.4 Thermomechanical Constraints in Fl; 2.4 Moisture and Gas Absorption; 2.4.1 Moisture Absorption; 2.4.2 Barrier Coatings: A Protection Aga; 2.4.3 Outgassing; 2.5 Conclusions: Reliability Demonstration and Accelerated Testing; References; 3 Packaging Requirements for Hermeticity; 3.1 The Need for Hermeticity in MEMS and; 3.2 Balancing Maximum Permissive Leak Ra; References; 4 The Different Types of Leaks in MEMS and Microelectronics Packaging; 4.1 Introduction; 4.2 Leak Channels or Capillary Leaks.

4.3 Permeation4.4 Outgassing; 4.5 Conclusion; References; Part 2 Traditional Hermeticity Test Techniques and Standards; 5 Ex Situ Hermeticity Test Methods; 5.1 Introduction; 5.2 Fine Leak Tests; 5.2.1 Helium Fine Leak Test; 5.2.2 Radioisotope Leak Detection Method; 5.3 Gross Leak Tests; 5.3.1 Fluorocarbon Liquid and Vapor Gross Leak Detection; 5.3.2 Gross Bubble Test; 5.3.3 Weight Gain; 5.3.4 Dye Penetrant Gross Leak Test; 5.4 Combinational Tests; 5.4.1 Optical Fine/Gross Leak Detection ; 5.4.2 Cumulative Helium Leak Detection (CHLD) Method; References.
6 The History of Hermeticity Standards MIL-STD-883 T.M. 1014 and MIL-STD-750 T.M. 10716.1 Introduction: The First Hermeticity Tests; 6.2 The Introduction of the Military Standards; 6.3 The First Problems with Traditional Hermeticity Tests and Standards; 6.4 Military Standard Revisions; 6.5 Summary; References; Part 3 Limitations of Existing Hermeticity Test Methods in Low Volume Packages; 7 Permeation; 7.1 Introduction; 7.2 Mathematics of Permeation; 7.3 Limitations of the Packaging Material; 7.4 Conclusions; References; 8 Outgassing and Residual Gas Analysis (RGA); 8.1 Outgassing.
8.2 Residual Gas AnalysisReferences; 9 Low-Cavity Volume Capillary Leak Limitatations; 9.1 Limitations of the Helium Fine Leak Test Method; 9.1.1 Volume Limitations; 9.1.2 Minimum Detectable Leak Rate; References; Part 4 Novel Methods of Leak Detection; 10 Q-Factor Monitoring of Resonant Microstructures as a Hermeticity Measurement Method; 10.1 Introduction; 10.2 Lumped Element Modeling of a Microresonator; 10.3 Definitions and Measurement Methods of the Quality Factor Q; 10.3.1 Definition in Terms of Stored Energy; 10.3.2 Definition in Terms of Bandwidth.

Sommario/riassunto

Packaging of microelectronics has been developing since the invention of the transistor in 1947. With the increasing complexity and decreasing size of the die, packaging requirements have continued to change. A step change in package requirements came with the introduction of the Micro-Electro-Mechanical System (MEMS) whereby interactions with the external environment are, in some cases, required. This resource is a rapid, definitive reference on hermetic packaging for the MEMS and microelectronics industry, giving practical guidance on traditional and newly developed test methods. This book in.