1. Record Nr. UNINA9910830394203321 Autore Steigerwald Joseph M **Titolo** Chemical mechanical planarization of microelectronic materials [[electronic resource] /] / Joseph M. Steigerwald, Shyam P. Murarka, Ronald J. Gutmann Weinheim,: Wiley-VCH, 2004 Pubbl/distr/stampa **ISBN** 1-281-84314-8 9786611843144 3-527-61774-4 3-527-61775-2 Descrizione fisica 1 online resource (339 p.) Altri autori (Persone) MurarkaS. P GutmannRonald J Disciplina 621.3815 621.38152 Microelectronics - Materials Soggetti Grinding and polishing Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Description based upon print version of record. Note generali Nota di bibliografia Includes bibliographical references and index. Nota di contenuto Chemical Mechanical Planarization of Microelectronic Materials: CONTENTS; Preface; 1 Chemical Mechanical Planarization - An Introduction; 1.1 Introduction; 1.2 Applications; 1.3 The CMP Process; 1.4 CMP Tools; 1.5 Process Integration; 1.6 Conclusion and Book Outline; References; 2 Historical Motivations for CMP; 2.1 Advanced Metallization Schemes; 2.1.1 Interconnect Delay Impact on Performance: 2.1.2 Methods of Reducing Interconnect Delay: 2.1.3 Planarity Requirements for Multilevel Metallization; 2.2 Planarization Schemes; 2.2.1 Smoothing and Local Planarization; 2.2.2 Global **Planarization** 2.3 CMP Planarization 2.3.1 Advantages of CMP; 2.3.2 Disadvantages of CMP; 2.3.3 The Challenge of CMP; References; 3 CMP Variables and Manipulations; 3.1 Output Variables; 3.2 Input Variables; References; 4

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Sommario/riassunto

Chemical Mechanical Planarization (CMP) plays an important role in today's microelectronics industry. With its ability to achieve global planarization, its universality (material insensitivity), its applicability to multimaterial surfaces, and its relative cost-effectiveness, CMP is the ideal planarizing medium for the interlayered dielectrics and metal films used in silicon integrated circuit fabrication. But although the past decade has seen unprecedented research and development into CMP, there has been no single-source reference to this rapidly emerging technology-until now. Chemica