

1. Record Nr.	UNINA9911006867503321
Autore	Mattox D. M
Titolo	Handbook of physical vapor deposition (PVD) processing : film formation, adhesion, surface preparation and contamination control // by Donald M. Mattox
Pubbl/distr/stampa	Westwood, NJ, : Noyes Publications, c1998
ISBN	9786612002755 1-282-00275-9 1-282-00276-7 0-8155-1763-7 1-59124-079-4
Descrizione fisica	1 online resource (947 p.)
Disciplina	671.735
Soggetti	Vapor-plating Metals - Finishing
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Front Cover; Handbook of Physical Vapor Deposition (PVD) Processing: Film Formation, Adhesion, Surface Preparation and Contamination Control; Copyright Page; Dedication; Table of Contents; Chapter 1. Introduction; 1.1 SURFACE ENGINEERING; 1.2 THIN FILM PROCESSING; 1.3 PROCESS DOCUMENTATION; 1.4 SAFETY AND ENVIRONMENTAL CONCERNS; 1.5 UNITS; 1.6 SUMMARY; FURTHER READING; REFERENCES; Chapter 2. Substrate ("Real") Surfaces and Surface Modification; 2.1 INTRODUCTION; 2.2 MATERIALS AND FABRICATION; 2.3 ATOMIC STRUCTURE AND ATOM-PARTICLE INTERACTIONS 2.4 CHARACTERIZATION OF SURFACES AND NEAR-SURFACE REGIONS 2.5 BULK PROPERTIES; 2.6 MODIFICATION OF SUBSTRATE SURFACES; 2.7 SUMMARY; FURTHER READING; REFERENCES; Chapter 3. The Low-Pressure Gas and Vacuum Processing Environment; 3.1 INTRODUCTION; 3.2 GASES AND VAPORS; 3.3 GAS-SURFACE INTERACTIONS; 3.4 VACUUM ENVIRONMENT; 3.5 VACUUM PROCESSING SYSTEMS; 3.6 VACUUM PUMPING; 3.7 VACUUM AND PLASMA COMPATIBLE MATERIALS; 3.8 ASSEMBLY; 3.9 EVALUATING VACUUM SYSTEM PERFORMANCE; 3.10

PURCHASING A VACUUM SYSTEM FOR PVD PROCESSING; 3.11 CLEANING OF VACUUM SURFACES; 3.12 SYSTEM-RELATED CONTAMINATION 3.13 PROCESS-RELATED CONTAMINATION 3.14 TREATMENT OF SPECIFIC MATERIALS; 3.15 SAFETY ASPECTS OF VACUUM TECHNOLOGY; 3.16 SUMMARY; FURTHER READING; REFERENCES; Chapter 4. The Low-Pressure Plasma Processing Environment; 4.1 INTRODUCTION; 4.2 THE PLASMA; 4.3 PLASMA-SURFACE INTERACTIONS; 4.4 CONFIGURATIONS FOR GENERATING PLASMAS; 4.5 ION AND PLASMA SOURCES; 4.6 PLASMA PROCESSING SYSTEMS; 4.7 PLASMA-RELATED CONTAMINATION; 4.8 SOME SAFETY ASPECTS OF PLASMA PROCESSING; 4.9 SUMMARY; FURTHER READING; REFERENCES; Chapter 5. Vacuum Evaporation and Vacuum Deposition; 5.1 INTRODUCTION 5.2 THERMAL VAPORIZATION 5.3 THERMAL VAPORIZATION SOURCES; 5.4 TRANSPORT OF VAPORIZED MATERIAL; 5.5 CONDENSATION OF VAPORIZED MATERIAL; 5.6 MATERIALS FOR EVAPORATION; 5.7 VACUUM DEPOSITION CONFIGURATIONS; 5.8 PROCESS MONITORING AND CONTROL; 5.9 CONTAMINATION FROM THE VAPORIZATION SOURCE; 5.10 ADVANTAGES AND DISADVANTAGES OF VACUUM DEPOSITION; 5.11 SOME APPLICATIONS OF VACUUM DEPOSITION; 5.12 GAS EVAPORATION AND ULTRAFINE PARTICLES; 5.13 OTHER PROCESSES; 5.14 SUMMARY; FURTHER READING; REFERENCES; Chapter 6. Physical Sputtering and Sputter Deposition (Sputtering; 6.1 INTRODUCTION 6.2 PHYSICAL SPUTTERING 6.3 SPUTTERING CONFIGURATIONS; 6.4 TRANSPORT OF THE SPUTTER-VAPORIZED SPECIES; 6.5 CONDENSATION OF SPUTTERED SPECIES; 6.6 SPUTTER DEPOSITION GEOMETRIES; 6.7 TARGETS AND TARGET MATERIALS; 6.8 PROCESS MONITORING AND CONTROL; 6.9 CONTAMINATION DUE TO SPUTTERING; 6.10 ADVANTAGES AND DISADVANTAGES OF SPUTTER DEPOSITION; 6.11 SOME APPLICATIONS OF SPUTTER DEPOSITION; 6.12 SUMMARY; FURTHER READING; REFERENCES; Chapter 7. Arc Vapor Deposition; 7.1 INTRODUCTION; 7.2 ARCS; 7.3 ARC SOURCE CONFIGURATIONS; 7.4 REACTIVE ARC DEPOSITION; 7.5 ARC MATERIALS 7.6 ARC VAPOR DEPOSITION SYSTEM

Sommario/riassunto

This book covers all aspects of physical vapor deposition (PVD) process technology from the characterizing and preparing the substrate material, through deposition processing and film characterization, to post-deposition processing. The emphasis of the book is on the aspects of the process flow that are critical to economical deposition of films that can meet the required performance specifications. The book covers subjects seldom treated in the literature: substrate characterization, adhesion, cleaning and the processing. The book also covers the widely discussed subjects of vacuum te