

1. Record Nr.	UNINA9910955477803321
Titolo	Molecular beam epitaxy : from research to mass production / / edited by Mohamed Henini
Pubbl/distr/stampa	Amsterdam, : Elsevier, c2012
ISBN	9781283734264 1283734265 9780123918598 0123918596
Edizione	[1st ed.]
Descrizione fisica	1 online resource (745 p.)
Altri autori (Persone)	HeniniMohamed
Disciplina	621.3815 621.38152 621.381
Soggetti	Molecular beam epitaxy Optoelectronic devices - Materials Semiconductors - Materials
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; Molecular Beam Epitaxy: From research to mass production; Copyright; Contents; Preface; Contributors; Chapter 1 - Molecular beam epitaxy: fundamentals, historical background and future prospects; 1.1 INTRODUCTION; 1.2 BASICS OF MBE; 1.3 THE TECHNOLOGY OF MBE; 1.4 DIAGNOSTIC TECHNIQUES AVAILABLE IN MBE SYSTEMS; 1.5 THE PHYSICS OF MBE; 1.6 HISTORICAL BACKGROUND; 1.7 FUTURE PROSPECTS; 1.8 CONCLUSIONS; REFERENCES; Chapter 2 - Molecular beam epitaxy in the ultra-vacuum of space: present and near future; 2.1 INTRODUCTION; 2.2 WAKE SHIELD FACILITY; 2.3 SHIELD; 2.4 CURRENT STATUS 2.5 CONCLUSIONS REFERENCES; Chapter 3 - Growth of semiconductor nanowires by molecular beam epitaxy; 3.1 INTRODUCTION; 3.2 NANOWIRES GROWN BY MOLECULAR BEAM EPITAXY: AN OVERVIEW; 3.3 GROWTH DYNAMICS: MODELS AND EXPERIMENTAL STUDIES; 3.4 CHARACTERISATION AND STRUCTURAL COMPLEXITY; 3.5 OPTICAL PROPERTIES; 3.6 MBE-GROWN NANOWIRE DEVICES: FROM

FUNDAMENTALS TO APPLICATIONS; 3.7 CONCLUSIONS; REFERENCES; Chapter 4 - Droplet epitaxy of nanostructures; 4.1 INTRODUCTION; 4.2 DROPLET EPITAXY; 4.3 DROPLET DEPOSITION; 4.4 NANOSTRUCTURE FORMATION; 4.5 CAPPING AND POST-GROWTH ANNEALING PROCEDURES
4.6 PULSED DROPLET EPITAXYACKNOWLEDGEMENTS; REFERENCES; Chapter 5 - Migration-enhanced epitaxy for low-dimensional structures; 5.1 INTRODUCTION; 5.2 AREA SELECTIVE EPITAXY BY MEE; 5.3 POLAR DIAGRAM OF THE GROWTH RATE OF III-V COMPOUND SEMICONDUCTORS; 5.4 FORMATION OF CRYSTAL FACETS AT THE BOUNDARIES OF MICROSTRUCTURES; 5.5 AREA SELECTIVE GROWTH ON (001) GAAS SUBSTRATE BY MEE USING AS4 AND AS2; 5.6 AREA SELECTIVE GROWTH ON (111)B GAAS SUBSTRATE BY MEE; 5.7 SUMMARY; ACKNOWLEDGEMENTS; REFERENCES; Chapter 6 - MBE growth of high-mobility 2DEG; 6.1 INTRODUCTION; 6.2 HIGH-MOBILITY MBE SYSTEM
Chapter 10 - Effect of antimony coverage on InAs/GaAs (001) heteroepitaxy

Sommario/riassunto

This multi-contributor handbook discusses Molecular Beam Epitaxy (MBE), an epitaxial deposition technique which involves laying down layers of materials with atomic thicknesses on to substrates. It summarizes MBE research and application in epitaxial growth with close discussion and a 'how to' on processing molecular or atomic beams that occur on a surface of a heated crystalline substrate in a vacuum. MBE has expanded in importance over the past thirty years (in terms of unique authors, papers and conferences) from a pure research domain into commercial applications (prototype devi
