

Foreword

A Basics

A1 Basics of Quantum Mechanics and Solid State Physics
H Lüth

A2 Ballistic Transport through Nanostructures
von Delft

A3 Theory of Tunneling Spectroscopy
D. Pfannkuche

A4 Spin Dependent Transport
S. Blügel

A5 Quantum Computing and Communication
Th. Schäpers

B Analysis

B 1 Scanning Tunneling Microscopy and Spectroscopy
P Ebert

B2 Principle of High-Resolution Atomic Force Microscopy
E Gießibl

B3 High resolution transmission electron microscopy
A. Thust

B4 Spatially Resolved Electron Energy Loss Spectroscopy
J Mayer

C Technology

C1 Non-optical Lithography
C Sotomayor-Torres

C2 Layer Deposition I: Physical Vapor Deposition
A. Förster

C3 Layer Deposition II: Chemical Vapor Deposition
H. Hardtdegen

C4 Layer Deposition III: Langmuir-Blodgett Films
R. Zorn

C5 Formation of nanostructures by self-organization I: Self -assembly of nanostructures at surfaces
B. Voigtländer

C6 Formation of nanostructures by self-organization II: Synthesis and Self-Assembly of nanoparticles
U. Simon, M Homberger

C7 Formation of nanostructures by self-organization III: Chemical Self -assembly approach to nanoscale architectures
S. Karthäuser

C8 Scanning Probe Manipulation Techniques
G. Meyer

C9 Nanostructures and their manipulation at solid/liquid interfaces - An electrochemical approach
Th. Wandlowski

D Concepts for Nanoelectronic Devices

D 1 Design Complexity of Future Integrated Circuits
T No11

D2 Metallic Nanowires
K Takayanagi

D3 Semiconductor Spintronics
B. Beschoten

D4 Scaling Effects of Nanostructured Memories
R Waser

D5 Resonant Tunneling Barrier Systems
M Indlekofer

D6 Single Electron Devices
J Weis

D7 Single Electron Tunnelling Circuits
J Hoeckstra

D8 Carbon Nanotube Electronics
J Appenzeller

D9 Molecular Electronics
M Mayor; H. Weber