Silicon Carbide and Related Materials 2005

ISBN(softcover): 978-0-87849-425-5 ISBN(eBook): 978-3-03813-053-6

Table of Contents

Chapter 2. SiC Epitaxial Growth

2.1 Homoepitaxial Growth

2.2 Heteropolytypic and Heteroepitaxial Growth

3. Physical Properties and Characterization

3.1 Extended Defects: Stacking Faults and Dislocations

3.2 Point Defects

3.3 Impurities

3.3.1 Shallow Donors and Acceptors, Hydrogen

3.3.2 Transition Metals and Rare Earths

3.4 Surfaces and Interfaces

3.5 Fundamental Properties

3.6 Wafer Mapping

Chapter 4. Porous SiC, SiC Nanoparticles and Nanowires

Chapter 5. Processing of SiC

5.1 Implantation and Doping of SiC

5.2 Contacts

5.2.1 Ohmic Contacts

5.2.2 Schottky Contacts

5.3 Oxides and Other Dielectrics

5.4 Chemical-Mechanical Polishing of SiC

5.5 Micromachining and MEMS

Chapter 6. SiC Devices

6.1 Overviews

6.2 Unipolar Devices

6.2.1 Schottky Diodes

6.2.2 JFETs and MESFETs

6.2.3 MOSFETs

6.3 Bipolar Devices

6.3.1 Diodes

6.3.2 Transistors and Thyristors

6.4 Sensors and Detectors

Chapter 7. III-Nitrides

7.1 Growth of III-Nitrides

7.2 Physical Properties and Characterization of III-Nitrides

7.3 III-Nitride Surfaces and Interfaces

7.4 III-Nitride Devices

Chapter 8. Related Materials