



[Electronic Materials / Semiconductors]

Covers optical, mechanical, electrical, and thermal processes in nitrides and properties of semiconductors in detail.

Handbook of Nitride Semiconductors and Devices

Hadis Morkoc

GaN(窒化ガリウム)と関連した合成物とデバイスは今最も注目される研究分野の1つである。そして、デバイス同様に窒化物の特性、テクノロジーと科学を収録した包括的なハンドブックが必要である。本書は光学、機械、電気、サーマルプロセス分野における窒化物と半導体の特性を詳細に収録している。

特 長

Treats the fundamentals, technology, and nanotechnology of nitride semiconductors with a clarity and depth not found elsewhere

Covers optical, mechanical, electrical, and thermal processes in nitrides

Presents GaN FETs and issues unique to them with pinpoint accuracy

Includes magnetic properties of dilute magnetic semiconductors

Features an extensive reference section

対象 Electrical Engineers, Semiconductor Physicists, Chemical Engineers, Physical Chemists, Materials Scientists, Solid State Physicists, Libraries at University Institutes, Libraries at Universities

Volume I: Materials Properties, Physics and Growth

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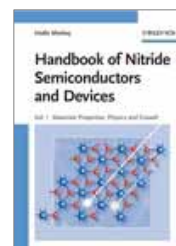
From Contents:

I. General Properties of Nitrides

II. Electronic Band Structure and Polarization Effects

III. Growth and Growth Methods of Nitride Semiconductors

IV. Extended Defects, Point Defects, Role of Hydrogen, Doping including Transition Metals



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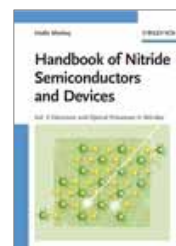
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II. Determination of Impurity and Carrier Concentrations

III. Carrier Transport in Semiconductors

IV. The p n Junction

V. Optical Processes in Semiconductors and Optical Properties of Nitride Semiconductors and Heterostructures



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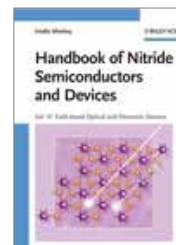
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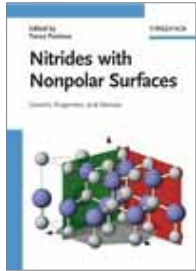
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Nitrides with Nonpolar Surfaces: Growth, Properties, and Devices

Tanya Paskova, University of Bremen, Germany



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Nitride Semiconductor Devices: Principles and Simulation

窒化物半導体電力デバイス

Joachim Piprek: NUSOD Institute, USA



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Since the breakthrough demonstration of GaN-based laser diodes by Shuji Nakamura one decade ago, the field of GaN-based semiconductor devices has experienced a tremendous growth worldwide. Thus far, most research focused on nitride material properties and technology. As material properties and device fabrication become more predictable, device design and simulation is gaining increasing attention. Similar developments are known from other semiconductors (Si, GaAs, InP) where computer simulation is now an important part of device design and analysis.