PROCEEDINGS OF SPIE

SPIDigitalLibrary.org/conference-proceedings-of-spie

Front Matter: Volume 10303

, "Front Matter: Volume 10303," Proc. SPIE 10303, Gallium-Nitride-based Technologies: A Critical Review, 1030301 (28 August 2002); doi: 10.1117/12.2285212

SPIE.

Event: Symposium on Integrated Optoelectronic Devices, 2002, San Jose, California, United States

Contents

vii *Conference Committee*

EPITAXIAL GROWTH TECHNIQUES FOR WIDE-BANDGAP NITRIDES

- 1 **Growth of wide-bandgap nitride semiconductors by MBE**
T. D. Moustakas, Boston Univ. (USA)
- 47 **MOCVD growth of wide-bandgap nitride semiconductors**
S. Sakai, Tokushima Univ. (Japan); T. Wang, H. X. Wang, Nitride Semiconductors Co., Ltd. (Japan); J. Bai, Tokushima Univ. (Japan)

EXTENDED DEFECTS AND DEGRADATION MECHANISMS

- 77 **Degradation mechanisms in group-III nitride devices**
D. L. Barton, Sandia National Labs. (USA); M. Osinski, CHTM/Univ. of New Mexico (USA)

SUBSTRATES FOR GROWTH OF LOW-DEFECT-DENSITY WIDE-BANDGAP GROUP-III NITRIDES

- 101 **Optoelectronic devices built on bulk GaN substrates**
P. Perlin, I. Grzegory, M. Leszczyński, P. Prystawko, R. Czernecki, G. Nowak, P. Wisniewski, L. Dmowski, H. Teisseyre, E. Litwin-Staszewska, T. Suski, M. Boćkowski, B. Łuczniak, G. Franssen, S. Porowski, High Pressure Research Ctr. UNIPRESS (Poland)
- 112 **Epitaxial lateral overgrowth and other approaches for low-defect-density GaN/sapphire**
P. Gibart, B. Beaumont, Ctr. de Recherches sur l'Hétéroépitaxie et ses Applications/CNRS (France)

ADVANCED PROCESSING AND LEDs

- 140 **Advanced processing of group-III nitrides**
S. J. Pearton, F. Ren, B. P. Gila, C. R. Abernathy, Univ. of Florida (USA)

Gallium-Nitride-based Technologies: A Critical Review, edited by Marek Osinski,
Proc. of SPIE Vol. 10303 (Vol. CR83), 1030301 · © (2002) 2017 SPIE
CCC code: 0277-786X/17/\$18 · doi: 10.1117/12.2285212

WIDE-BANDGAP LASERS

- 165 **Optical gain in wide-bandgap group-III nitrides**
A. Hangleiter, Technische Univ. Braunschweig (Germany)
- 194 **Wide-bandgap group-III nitride lasers**
T. Mukai, S. Nagahama, T. Yanamoto, M. Sano, Nichia Corp. (Japan)

DILUTE NITRIDES

- 219 **Electronic structure of nitrogen-doped GaAs and GaP**
A. J. Mascarenhas, Y. Zhang, National Renewable Energy Lab. (USA)

NITRIDE VCSELs AND PHOTODETECTORS

- 238 **Long- and short-wavelength VCSELs**
T. Miyamoto, K. Iga, F. Koyama, Tokyo Institute of Technology (Japan)
- 261 **Back-illuminated solar-blind $\text{Al}_x\text{Ga}_{1-x}\text{N}$ *p-i-n* photodiodes**
J. C. Campbell, C. J. Collins, M. M. Wong, U. Chowdhury, R. D. Dupuis,
Univ. of Texas at Austin (USA)

Conference Committee

Conference Chair

Marek Osiński, CHTM/University of New Mexico (USA)

Session Chairs

Epitaxial Growth Techniques for Wide-Bandgap Nitrides

James S. Speck, University of California/Santa Barbara (USA)

Extended Defects and Degradation Mechanisms

Theodore D. Moustakas, Boston University (USA)

Substrates for Growth of Low-Defect-Density Wide-Bandgap Group-III Nitrides

Shiro Sakai, University of Tokushima (Japan)

Advanced Processing and LEDs

Takashi Mukai, Nichia Corporation (Japan)

Wide-Bandgap Lasers

Piotr Perlin, High Pressure Research Center UNIPRESS (Poland)

Dilute Nitrides

John F. Klem, Sandia National Laboratories (USA)

Nitride VCSELs and Photodetectors

Pierre Gibart, Centre de Recherches sur l'Hétéroépitaxie
et ses Applications/CNRS (France)