

## B-2 Application of Nitride and Other Semiconductors

### Representative Organizer

Masaaki KUZUHARA (University of Fukui)

### Co-organizers

Tamotsu HASHIZUME (Hokkaido University)

Tetsu KACHI (Toyota Central Research and Development Labs., Inc.)

Akio WAKEJIMA (Nagoya Institute of Technology)

## Oral Session                      March 29 (Sun.)                      Room 2

### Electronic Device Processing and Characterization

Chair : Tetsuya Suemitsu (Tohoku University)

- 8:50    B2-I-01    **Plasma-Assisted Process for Next Generation Semiconductor Devices** [Invited Lecture]  
Shih-Chien Liu, Ting-En Hsieh, Edward Yi Chang  
*DEPARTMENT OF MATERIALS SCIENCE AND ENGINEERING, NATIONAL CHIAO TUNG UNIVERSITY*
- 9:20    B2-O-01    **Effects of Thermal Stability on Characteristics of InAlN/GaN Heterostructure Grown on Si**  
Arata Watanabe, Joseph Jesudass Freedman, Tatsuya Ito, Keita Inoue, Takashi Egawa  
*RESEARCH CENTER FOR NANO-DEVICE AND SYSTEM, NAGOYA INSTITUTE OF TECHNOLOGY*
- 9:35    B2-O-02    **Thick (>20 $\mu$ m) and High-Resistivity Carbon-Doped GaN-Buffer Layers Grown by MOVPE on n-Type GaN Substrates**  
Tomonobu Tsuchiya, Akihisa Terano, Kazuhiro Mochizuki  
*CENTRAL RESEARCH LABORATORY, HITACHI, LTD.*
- 9:50    B2-O-03    **Improvement of Crystalline Quality of GaN on Si by an AlInN Nucleation Layer**  
<sup>1</sup>Takanori Yagi, <sup>1</sup>Ryosuke Tanabe, <sup>1</sup>Hiroyuki Kobayashi, <sup>1</sup>Nobuhiko Sawaki, <sup>2</sup>Masashi Irie, <sup>2</sup>Yoshio Honda, <sup>2</sup>Hiroshi Amano  
*1 DEPARTMENT OF ELECTRICAL AND ELECTRONIC ENGINEERING, AICHI INSTITUTE OF TECHNOLOGY*  
*2 DEPARTMENT OF ELECTRONICS & AKASAKI RESEARCH CENTER, NAGOYA UNIVERSITY*
- 10:05    B2-O-04    **Optical Spectra and Yellow Luminescence in C Doped GaN**  
<sup>1</sup>Hiroyuki Kobayashi, <sup>1</sup>Nobuhiko Sawaki, <sup>2</sup>Kouhei Yamashita, <sup>2</sup>Toshiki Hikosaka, <sup>2</sup>Yoshio Honda, <sup>2</sup>Hiroshi Amano  
*1 DEPARTMENT OF ELECTRICAL AND ELECTRONIC ENGINEERING, AICHI INSTITUTE OF TECHNOLOGY*  
*2 DEPARTMENT OF ELECTRONICS & AKASAKI RESEARCH CENTER, NAGOYA UNIVERSITY*

### Electronic Devices

Chair : Akio Wakejima (Nagoya Institute of Technology)

- 15:50    B2-I-02    **A New Process Approach for Slant Field Plates in GaN-Based HEMTs** [Invited Lecture]  
<sup>1</sup>Tetsuya Suemitsu, <sup>1</sup>Kengo Kobayashi, <sup>1</sup>Shinya Hatakeyama, <sup>1</sup>Nana Yasukawa, <sup>1</sup>Tomohiro Yoshida, <sup>1</sup>Taiichi Otsuji, <sup>2</sup>Daniel Piedra, <sup>2</sup>Tomas Palacios  
*1 RESEARCH INSTITUTE OF ELECTRICAL COMMUNICATION, TOHOKU UNIVERSITY*  
*2 MICROSYSTEMS TECHNOLOGY LABORATORIES, MASSACHUSETTS INSTITUTE OF TECHNOLOGY*
- 16:20    B2-I-03    **Reliability and Parasitic Effects in Power GaN HEMTs** [Invited Lecture]  
Gaudenzio Meneghesso, Matteo Meneghini, Enrico Zanoni  
*DEPARTMENT OF INFORMATION ENGINEERING, UNIVERSITY OF PADOVA*
- 16:50    B2-O-05    **Effect of Annealing and Temperature on the Performance of Self-Aligned Gate AlGaIn/GaN HFETs**  
<sup>1,2</sup>Jiaqi Zhang, <sup>1,2</sup>Qingpeng Wang, <sup>1</sup>Kazuya Kawaharada, <sup>2</sup>Huichao Zhu, <sup>1</sup>Jinping Ao  
*1 INSTITUTE OF TECHNOLOGY AND SCIENCE, THE UNIVERSITY OF TOKUSHIMA*  
*2 SCHOOL OF ELECTRONIC SCIENCE AND TECHNOLOGY, DALIAN UNIVERSITY OF TECHNOLOGY*

- 17:05 B2-O-06 **Effect of O<sub>2</sub> Plasma Exposure on Dynamic On-Resistance in AlGaN/GaN HEMTs**  
Yoshiki Sakaida, Satoshi Yoshida, Joel Asubar, Hirokuni Tokuda, Masaaki Kuzuhara  
*GRADUATE SCHOOL OF ENGINEERING, UNIVERSITY OF FUKUI*
- 17:20 B2-O-07 **Graphene Transistors Fabricated by Transfer-Free Process via Agglomeration Phenomena of Catalytic Nickel Film**  
<sup>1,2</sup>Masaya Mizuno, <sup>1,2</sup>Takashi Egawa, <sup>1,2</sup>Toshiharu Kubo, <sup>1,2</sup>Makoto Miyoshi, <sup>1,2</sup>Tetsuo Soga  
*1 RESEARCH CENTER FOR NANO-DEVICE AND SYSTEM, NAGOYA INSTITUTE OF TECHNOLOGY*  
*2 DEPARTMENT OF FRONTIER MATERIALS, NAGOYA INSTITUTE OF TECHNOLOGY*
- 17:35 B2-O-08L **Large Reduction of Gate Leakage Current in GaN HEMTs by Suppressing Formation of Cap/Barrier Interface Defects**  
Atsushi Yamada, Junji Kotani, Tetsuro Ishiguro, Shuichi Tomabechi, Norikazu Nakamura, Taisuke Iwai  
*FUJITSU LABORATORIES LTD.*