

[WeA2] Polarity-Engineered Epitaxy

Session Date	July 15 (Wed.), 2026
Session Time	13:30–15:15
Session Room	Room A (Baekrok Hall A, 1F)
Session Chairs	Prof. Ryota Akaike (Mie University, Japan) Prof. Arnab Bhattacharya (Tata Institute of Fundamental Research, India)

[WeA2-1] [Invited]

13:30–14:00

AlN-based Field-Effect Transistors Enabled by Polarization-Engineered Structures

Masanobu Hiroki, NTT Inc., Japan

[WeA2-2]

14:00–14:15

Suppression of Mn Segregation in N-Polar GaN on Mn-Doped GaN Substrates

Shigeki Yoshida, Maui Hino, Isao Makabe, Kozo Makiyama, Junji Kotani, and Ken Nakata, Sumitomo Electric Industries, Ltd., Japan

[WeA2-3]

14:15–14:30

Metalorganic Vapor Phase Epitaxy of N-Polar GaN on Ga-Polar GaN

Kazuhisa Ikeda¹, Masahiro Uemukai², Tomoyuki Tanikawa³, Ryuji Katayama², and Atsushi Kobayashi¹,
¹Tokyo University of Science, Japan, ²The University of Osaka, Japan, ³Meijo University, Japan

[WeA2-4]

14:30–14:45

Polarity-Guided Epitaxy of h-BN on AlN Using MOVPE for 2D–3D Integration

Yuning Wang¹, Ryota Akaike¹, Kosuke Takagi¹, Tomohiro Tamano¹, Hiroki Yasunaga¹, Wentao Zhang^{2,3}, Ke Xu^{2,4,5}, and Hideto Miyake¹, ¹Mie University, Japan, ²Chinese Academy of Sciences, China, ³University of Science and Technology of China, ⁴Suzhou Nanowin Science and Technology Co., Ltd., China, ⁵Jiangsu Institute of Advanced Semiconductors, China

[WeA2-5]

14:45–15:00

Fabrication of Polarity-Inverted AlN Structure Using Oxidation Processes

Tomohiro Tamano¹, Ryota Akaike¹, Hiroki Yasunaga¹, Zentaro Akase², Shigetaka Tomiya², and Hideto Miyake¹, ¹Mie University, Japan, ²Nara Institute of Science and Technology, Japan

[WeA2-6]

15:00–15:15

High-Quality N-Polar GaN Growth on Silicon for Fully-Vertical GaN-on-Si Power Devices

Pineda Padilla, A., Veux, G., Barbier, F., Guy, K., Plaza Argüello, D., Vergnaud, C., Dussaigne, A., Dupont, F., and Charles, M., CEA-Leti, France