GaN Marathon 2026

JUNE 7TH – 10TH 2026, FLORENCE, ITALY

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Conference Program

Sunday 7th June 2026

14:00–18:00
Registration Opening

Short Courses – Only for Registered Attendees

14:35–14:45
Short Courses Opening

14:45–15:45
Patrick Fay (University of Notre Dame)
Impact Ionization in Nitrides Semiconductors

15:45–16:45
Stefano Leone (Fraunhofer IAF, Epitaly)
Expanding the Boundaries of Nitride Epitaxy: From Carbon-Free Growth to Functional Doping and Novel Alloys

17:00–18:00
Debdeep Jena (Cornell University)
Polarization Doping in Nitrides: Advantages and Perspectives

Monday 8th June 2026

09:00–09:30
Matteo Meneghini (University of Padova, General Chair)
Conference opening

8A. Innovation on III-N device fabrication and characterization

09:30–10:00
KN01 – Hiroshi Amano (Nagoya University)
Fundamental challenges in realizing Ultrawide-bandgap AlGaN heterostructures (Keynote)

10:00–10:30
KN02 – Umesh Mishra (UCSB)
The many faces of GaN (Keynote)

10:30–10:50
IN19 – Nicolas Grandjean (EPFL)
Non-radiative recombination in InGaN/GaN quantum wells: dislocations versus point defects (Invited Talk)

10:50–11:00
CR28 – Jonas Lähnemann (Paul-Drude-Institut für Festkörperelektronik)
The UV-C challenge: Insights from spatio- and time-resolved cathodoluminescence spectroscopy

11:00–11:10
OP03 – Rintaro Kobayashi (Meijo University)
Growth-Temperature Dependence and Physical Origin of Optical Gain in AlGaN-Based UV-B Laser Diodes

8B. Advanced research in III-Nitrides (including ASPIRE session)

11:30–11:40
CR37 – Manuel Fregolent (Università degli Studi di Padova)
Development and characterization of p-channel FETs on low-doped p-GaN with advanced Ohmic contacts (ASPIRE Talk)

11:40–12:00
IN15 – Tomas Palacios (MIT)
GaN Technologies to Enable Back-Side Power Delivery (ASPIRE Invited Talk)

12:00–12:20
IN21 – Martin Kuball (Bristol University)
Pathways for > 3 kV power devices: Opportunities in AlGaN and Gallium Oxide (ASPIRE Invited Talk)

12:20–12:40
IN09 – Matteo Meneghini (Università degli Studi di Padova)
Impact Ionization in GaN HEMTs: Experimental Analysis and Reliability Implications (ASPIRE Invited Talk)

12:40–13:00
IN20 – Srabanti Chowdhury (Stanford University)
GaN power electronics for new applications (ASPIRE Invited Talk)

13:00–13:20
IS01 – Kolja Haberland (LayTec AG)
Connected metrology - in-situ and ex-situ metrology during front-end fabrication of GaN based vertical and lateral transistor structures (Invited Talk)

8C. Novel/optimized material properties and device structures

14:20–14:30
GF03 – Enrico Brusaterra (Ferdinand Braun Institut)
Vertical GaN Trench MOSFETs Under Dynamic Switching Stress

14:30–14:50
IN04 – Stefano Leone (Fraunhofer IAF; Epitaly)
Beyond Conventional MOCVD: precursor chemistry unlocks next-generation nitrides HEMTs (Invited Talk)

14:50–15:10
IN12 – Simon Fichtner (University Kiel)
Spontaneous Polarization and Ferroelectricity in III-N Semiconductors (Invited Talk)

15:10–15:20
GF23 – Hiroshi Amano (Nagoya University)
High-Gain AlGaN/InGaN DHBTs Enabled by Mg/GaN Annealing-induced Suppression of Surface Recombination

15:20–15:40
IN13 – Åsa Haglund (Chalmers University)
Are photonic crystal surface emitting lasers perfect lasers or lasers for perfectionists? (Invited Talk)

15:40–16:00
IN07 – Motoaki Iwaya (Meijo University)
AlGaN UV-B Laser Diodes for Industrial Applications (Invited Talk)

16:00–16:20
IN14 – Mitsuru Funato (Kyoto University)
Blue to red micro-LEDs (Invited Talk)

8D. Industrial perspective and advanced characterization

16:40–17:00
IN09 – Shigefusa Chichibu (Tohoku University)
Causes and countermeasures for the operation-induced power degradation issues (Invited Talk)

17:00–17:20
IN03 – Ulrich Schwarz (TU Chemnitz)
Far-field and mode prediction in photonic crystal surface emitting lasers (Invited Talk)

17:20–17:30
OP12 – Sven Gerhard (ams OSRAM)
Next-Gen high-power blue and green GaN lasers

17:30–17:50
IS06 – Ferdinando Iucolano (STMicroelectronics)
Impact of a C-related Buffer traps on 650V GaN HEMTs (Invited Talk)

17:50–18:10
IS05 – Nicola Modolo (Infineon Technologies Austria AG)
From Regression Analysis in GaN HEMTs towards Voltage Proliferation (Invited Talk)

18:10–18:30
IS03 – Raoul Joly (Beneq)
Impact of Atomic Layer Deposition Surface Passivation (Invited Talk)

Tuesday 9th June 2026

9A. Exploiting III-N properties for improved performance and reliability 1

08:30–08:40
OP13 – Francesco Piva (Università degli Studi di Padova)
Origin of the positive ageing in 265 nm UV-C LEDs and its TCAD modeling

08:40–09:00
IN18 – Tim Wernicke (TU Berlin)
TBD (Invited Talk)

09:00–09:20
IN17 – Maki Kushimoto (Nagoya University)
Operational Characteristics of AlGaN Deep-Ultraviolet Laser Diodes on Bulk AlN Substrates (Invited Talk)

09:20–09:40
IS07 – Thomas Filz (ams OSRAM)
µLED-applications in automotive, visualization and communication (Invited Talk)

09:40–10:00
IN23 – Debdeep Jena (Cornell University)
TBD (ASPIRE Invited Talk)

10:00–10:10
GF16 – Yidi Yin (University of Bristol)
Temperature dependent electrical characteristics of ultrawide bandgap high Al-content AlGaN electronics (ASPIRE Talk)

10:10–10:20
CR40 – Ambra Maria Vianello (Università degli Studi di Padova)
Characterization and Modeling of Vertical Diodes with AlGaN-Based p-type Distributed Polarization Doping (ASPIRE Talk)

10:20–10:30
GF26 – Yingying Lin (Nagoya University)

Study of Beryllium Acceptor States in Aluminum Nitride Through Cathodoluminescence Analysis (ASPIRE Talk)

10:30–10:40
GF20 – Yu-Hsin Cindy Chen (Cornell University)
Enhancement-mode AlN/GaN/AlN HEMTs (ASPIRE Talk)

9B. High efficiency/high frequency devices and modeling

11:00–11:10
MS13 – Pierpaolo Palestri (University of Modena and Reggio Emilia)
Modeling AlGaN/GaN HEMTs degradation due to hot carrier injection in the passivation layer

11:10–11:30
IN16 – Elison Matioli (EPFL)
Leading edge roadmap for GaN devices (Invited Talk)

11:30–11:50
IN06 – Nadine Collaert (Imec)
RF GaN Today: Maturity, Momentum, and What Comes Next (Invited Talk)

11:50–12:00
CR09 – Nicolò Zagni (University of Modena and Reggio Emilia)
Dispersion Effects in 0.25µm GaN RF HEMTs Integrating Ultra-Thin InGaN Back-Barrier

12:00–12:20
IN08 – Chris Van de Walle (UCSB)
Role of defects and impurities in efficiency and degradation of nitride devices (Invited Talk)

9C. Innovation on Wide and Ultra Wide Bandgap Devices

13:20–13:30
MS14 – Jia Wang (Nagoya University)
Thickness-Dependent Thermal Annealing of Magnesium on Gallium Nitride: Mechanisms on Barrier Modulation and Carrier Transport (ASPIRE Talk)

13:30–13:50
IN22 – Huili Grace Xing (Cornell University)
AlN XHEMTS-a new kid on the block (ASPIRE Invited Talk)

13:50–14:10
IN11 – Siddharth Rajan (Ohio State University)
High-Performance Ultra-Wide Bandgap AlGaN Transistors (Invited Talk)

14:10–14:20
CR13 – Luca Mazzone (EPFL)
A 3.9 kV GaN-on-Si Polarization Superjunction SBD with Low Specific On-Resistance and Repeatable OFF-State up to 150 ℃

14:20–14:30
CR39 – Agnieszka Corley-Wiciak (European Synchrotron Radiation Facility)
Operando and multimodal X-ray microscopy of strain and electromechanical coupling in GaN-on-Si HEMTS

14:30–14:40
RF03 – Hakan Cankat Gur (EPFL)
Displacement-Field-Enhanced GaN HEMTs with IT/IMAX 220/420 GHz for Efficient Amplification at W-Band and Beyond

Wednesday 10th June 2026

10A. Exploiting III-N properties for improved performance and reliability 2 (including ASPIRE session)

09:00–09:10
CR02 – Minyeong Kim (University of Bristol)
Post-Etch H_3PO_4 Surface Treatment for Reliability Enhancement in β-Ga_2O_3 Trench Schottky Barrier Diodes (ASPIRE Talk)

09:10–09:20
GF36 – Jimy Encomendero (Cornell University)
Resonant Tunneling Transport in GaN/AlN Multiple Barrier Heterostructures (ASPIRE Talk)

09:20–09:30
GF14 – Aias Asteris (Cornell University)
High Mobility Multiple-Channel AlScN/GaN Heterostructures (ASPIRE Talk)

09:30–09:50
IN02 – Samuel Graham (University of Maryland)
Thermal Management of AlGaN UWBG Devices for Next-Generation RF Applications (ASPIRE Invited Talk)

09:50–10:10
IN01 – Tetsuo Narita (Toyota Central R&D Labs., Inc.)
Control of Positive and Negative Bias Instability in GaN MOSFETs Using Crystalline AlN Interfacial Layer Technology (Invited Talk)

10:10–10:30
IN05 – Patrick Fay (University of Notre Dame)
Impact Ionization in Ultra-Wide Band Gap III-Ns: Measurement and Device Implications (Invited Talk)

10B. Optimizing and exploiting material properties for advanced reliability

10:50–11:00
OP05 – Pierce Lonergan (Cornell University)
AlScN as an Electron Blocking Layer in Blue Light-Emitting Diodes: A First Look (ASPIRE Talk)

11:00–11:20
IS04 – Kazutada Ikenaga (Taiyo Nippon Sanso)
Enhancing Nitride Epitaxy Through Integrated MOCVD Technology (Invited Talk)

11:20–11:40
IS02 – Thorsten Zweipfennig (Aixtron SE)
Enabling GaN HEMT manufacturing on 300 mm Si substrates (Invited Talk)

11:40–12:00
IN10 – Enrico Zanoni (Università degli Studi di Padova)
Scaling of GaN HEMTs for microwave and millimeter-wave applications: deep level effects and reliability (Invited Talk)

12:00–12:20
IS08 – Tania Hemakumara (Oxford Instruments)
Innovative Plasma Processing Solutions for High Volume Manufacturing of GaN devices (Invited Talk)

12:20–12:30
GF34 – Yuji Zhao (Rice University)
Selective Area Diamond Growth on GaN for Thermal Management of High Power Devices

12:30–13:00
Matteo Meneghini (Università degli Studi di Padova, General Chair)
Conference closure