ICNS 15
Malmö, Sweden 2025

PROGRAM BOOKLET

ICNS 15
Malmö, Sweden 2025

15th International Conference on Nitride Semiconductors

WELCOME TO ICNS – 15

On behalf of the Conference Chairs and committee members, we are thrilled to welcome you to Malmö, Sweden for the 15th International Conference on Nitride Semiconductors (ICNS-15). This special edition marks 30 years of ICNS, a global journey that began in 1995 and continues to unite the brightest minds in the nitride semiconductor community.

ICNS-15 will be a celebration of innovation, discovery, and connection—featuring world-class research, dynamic discussions, and an inspiring cultural program in collaboration with the Malmö Academy of Music. Join us in honoring the past, shaping the future, and sharing unforgettable moments in one of Scandinavia's most vibrant cities. We extend our heartfelt thanks to all **sponsors, exhibitors, committee members, plenary and invited speakers,** for contributing to the success of ICNS-15.

VANYA DARAKCHIEVA, LUND UNIVERSITY

ICNS-15 Highlights

Welcome Reception
Sunday, July 6, 18:00 - 20:00
Join us for a Welcome Reception to kick off an exciting ICNS-15 conference!

Program
The **ICNS-15** brings together researchers from **37 countries**, to share their latest breakthroughs, exchange ideas, and drive forward the field of **nitride semiconductors**. We mark the **30th anniversary** of ICNS, with an exciting and diverse program featuring **770 presentations**, including **plenary, invited, and contributed talks**, as well as **poster sessions, rump sessions, late-news** & **special topic sessions**.

Akasaki Memorial Award and Lecture
Monday, July 7, 09:00
Professor **Asif Khan** has been named the inaugural recipient of the Isamu Akasaki Memorial Award for his groundbreaking innovations in MOCVD, polarization-engineered electronics, and deep-UV LED technology.

Plenary Sessions
Do not miss the eight plenary session talks on *Monday*, *Wednesday* and *Friday*.

Industrial Session
Monday, July 7, 11:00 - 12:20
Learn how SMEs and industry leaders are driving innovation in nitride technologies with insights into emerging trends, commercialization, and the future.

Poster Sessions
Don't miss the **poster sessions** on Monday, Tuesday, and Thursday—a perfect chance to dive deep into cutting-edge research, chat with authors, and enjoy complimentary **food & drinks**, open to all attendees!

Exhibit
Be sure to visit the ICNS-15 **exhibitors**. Discover the latest products and services tailored to your interests! Don't forget to join the **Exhibitor Quiz** for your chance to win **exciting prizes**!

Rump Sessions
Tuesday, July 8, 19:00 - 20:30
Join us for three exciting Rump Sessions on the challenges and future of **kV Nitride Power Devices, Novel Materials & Concepts** and **microLEDs.**

Excursions
Wednesday, July 9, 13:00 - 17:00
A variety of engaging **half-day tours** ranging from canal cruises and historic castle visits to cutting-edge tech (Axis) and science facilities (MAX IV).

Special Focus – Nitrides Go Weld
Thursday, July 10, 16:00 - 17:30
Curious about the future of nitride semiconductors? Don't miss the bold and forward-looking **ICNS-15 special session "Nitrides Go Wild"**, featuring visionary insights from leading minds in the field!

Gala Diner
Thursday, July 10, 18:30 – 00:00
We are thrilled to invite you to an unforgettable **Gala Dinner at Slagthuset** — an evening of elegance, exquisite dining, and exceptional company. Join us as we celebrate in one of Malmö's most iconic venues.

Young Researcher Awards
Best Student and **Outstanding Poster Awards** recognize exceptional research, compelling presentations, and promising contributions to the **nitride semiconductor field**.

Special Focus – Innovation and Breakthrough
Friday, July 11, 16:00 - 18:00
You're invited to a special session honoring **Lars Samuelson**, a pioneering nanoscience visionary, followed by a mingle. **Open to all ICNS-15 attendees.**

Publication
Conference manuscripts for ICNS-15 can be submitted to **Applied Physics Letters**, **Journal of Applied Physics**, or **AIP Advances**. Accepted manuscripts will be collated in a joint Special-Topic Collection on **Frontiers in Nitride Semiconductors Research**.

Program booklet

15th International Conference on Nitride Semiconductors (ICNS-15)
Malmö, Sweden, July 6 – 11, 2025

ICNS 15
Malmö, Sweden 2025

Dear Colleague,

We warmly welcome to you to the International Conference on Nitride Semiconductors - ICNS-15 in the beautiful city of Malmö in Sweden from July 6 – 11, 2025.

This 15th edition of the conference celebrates 30 years of ICNS history. The first conference in 1995 was a combination of the Topical Workshop on III-V Nitrides held in Nagoya, Japan and the MRS Intl Symposium on Gallium Nitride and Related Materials held in Boston, USA, and it was followed by thirteen conferences held in Tokushima, Japan (ICNS-2, 1997); Montpellier, France (ICNS-3, 1999); Denver, USA (ICNS-4, 2001); Nara, Japan (ICNS-5, 2003); Bremen, Germany (ICNS-6, 2005); Las Vegas, USA (ICNS-7, 2007); Jeju, Korea (ICNS-8, 2009); Glasgow, UK (ICNS-9, 2011); Washington DC, USA (ICNS-10, 2013); Beijing, China (ICNS-11 2015); Strasbourg, France (ICNS-12, 2017); Bellevue, USA (ICNS-13, 2019) and Fukuoka, Japan (ICNS-14, 2023).

During ICNS-15 in Malmö, Sweden you will hear about the lates updates in the fields of III-nitride material growth, physics and characterization, optical devices and electronic devices in plenary sessions, parallel topical sessions, poster sessions, and evening rump sessions. You are given the opportunity to interact with the industrial exhibitors and mingle with the conference participants at the welcome reception, conference dinner, and excursions. For the social program, the organizers are collaborating across disciplines with the Malmö Academy of Music, which is part of Lund University. The program will include performances by teachers and students from the Malmö Academy of Music, led by Assoc. Prof. Elisabeth Melander. Take all the opportunities you are given at ICNS-15 to connect with old friends as well as meeting new future collaboration partners and colleagues!

We hope that ICNS-15 will be a stimulating environment to all participants and encourage lively discussions that can lead to new innovative ideas and collaborations that will boost III-nitrides research and contribute to a better society. We also wish you a great stay in Malmö and hope that you have a chance to explore what this beautiful city has to offer.

As the organizers of ICNS-15, we welcome you to enjoy this exciting event!

Best Regards,

Tadek Suski, *Honorary Chair*
Vanya Darakchieva, **Piotr Perlin** and **Lars Samuelson**, *Conference Chairs*
Åsa Haglund, *Program Chair*; **Izabella Grzegory**, **Filip Tuomisto** and **Oliver Ambacher**, *Program Co-chairs*
Gerda Rentschler, *Local Organizing Committee Chair*

In memoriam

He Made the World a Brighter Place

Bo Monemar

24.01.1942 – 31.05.2025

We dedicate this conference to the Loving Memory of Professor Bo Monemar

With deep sorrow, we share the passing of Professor Bo Monemar, a towering figure in semiconductor research and a beloved colleague, who left us at the age of 83.

Bo's legacy is etched into the very fabric of gallium nitride and semiconductor research. With over 700 scientific publications and more than 15,000 citations, his contributions have shaped the field and inspired generations. His pioneering work, often in close collaboration with Nobel laureates, remains foundational, serving as a lasting guide for scientists around the world.

But beyond his extraordinary intellect and achievements, Bo will be remembered for his unwavering dedication, quiet wisdom, and generous spirit. Even after retirement, he continued to mentor, advise, and support the community he helped build, always with humility and warmth.

We mourn the loss of not just a brilliant scientist, but a kind friend and an irreplaceable part of our lives. His impact will endure, not only in the pages of journals, but in the hearts of those who had the privilege to know and learn from him.

Bio: Bo Monemar, born in 1942 in southeast Sweden, earned his PhD from Lund University in 1971. He became Professor of Materials Science at Linköping University in 1983, where he built a leading research environment in semiconductors. Honored with honorary doctorates from Nagoya University (2006) and Meijo University (2013) for his collaborations with Nobel laureates Isamu Akasaki and Hiroshi Amano, Bo's influential work continues to serve as foundational literature in semiconductor physics.

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Isamu Akasaki Memorial Award

To mark the 30 year anniversary of ICNS history, the chairs of ICNS-15 introduce the Isamu Akasaki Memorial Award and Lecture.

To recognize outstanding individuals in the area of III Nitride semiconductors research and innovation. The award is given to a member of our community who has made pioneering, life-long contributions to the developments, applications, and/or dissemination/education in the field of III-Nitride semiconductors. The lecture may reflect the winner's life-time achievements and inspire future generations of scientists and educators in the fields of III-Nitride Semiconductors.

Professor Asif Khan Named Inaugural Recipient of the Isamu Akasaki Memorial Award and Lecture

Professor Asif Khan, Distinguished Professor at the University of South Carolina, has been selected as the inaugural recipient of the **Isamu Akasaki Memorial Award and Lecture**, sponsored by Toyoda Gosei. This prestigious honor recognizes his pioneering and lifelong contributions to the field of III-nitride semiconductor technology.

Professor Khan's groundbreaking achievements include the development of low-pressure metalorganic chemical vapor deposition (MOCVD) of AlGaN, and the invention of polarization-engineered electronics. His seminal work led to the first demonstration of a polarization-induced two-dimensional electron gas (2DEG), the creation of the first GaN high-electron-mobility transistor (HEMT), and the realization of high-performance AlGaN-based deep ultraviolet LEDs.

These innovations have profoundly influenced both the scientific understanding and commercial advancement of III-nitride semiconductors, cementing Professor Khan's legacy as a visionary in the field.

Bio: Professor Khan is a Carolina Distinguished Professor in the department of Electrical Engineering at the University of South Carolina (UofSC). Prior to joining UofSC in 1997, he worked at Honeywell Research Center (1979-1984), Minnesota Manufacturing and Mining Company (3M) (1984-1986), and APA Optics (1987-1997). He obtained his PhD from MIT in 1979. From 1980 till now his research has focused on the development of III-Nitride Materials, and Electronic/Optoelectronic

Devices. Prof. Khan's research groups over the past 45 years have been pioneers in the development of III-Nitride Electronics and Optoelectronics. They were the first to demonstrate all the key building blocks for GaN power and rf-electronics including the GaN-AlGaN high Electron Mobility Transistor (HEMT), which is now been commercialized by major industries for Electric Vehicles and other control applications. His research group at South Carolina was also the first to fabricate milliwatt power AlGaN Multiple Quantum Well UVC LEDs.

He was a founding member of SETI and Nitek Inc., two small South Carolina businesses which produced and commercialized these UVC LEDs. More recently Prof. Khan's research group has focused on the development of Extreme Bandgap AlGaN channel HEMTs for high voltage/high-power electronics. Prof. Khan received the inaugural IEEE Les Eastman Award in 2020, South Carolina Governor's Award of Excellence in Science and Technology (2015), the best research paper awards of the Japanese Society of Applied Physics (2004 and 2006), DARPA SUVOS Award for UVC LEDs (2003), and is a Fellow of IEEE since 2006. He has published over 420 research papers and holds over 50 US/International patents.

Plenary speakers

Igor Aharonovich
University of Technology Sydney, Sydney, Australia

Topic: “Quantum Technologies with Hexagonal Boron Nitride”

Igor Aharonovich is an award-winning scientist working on cutting edge research into quantum sources that can generate, encode and distribute quantum information. A Professor in the School of Mathematical and Physical Sciences at UTS, Igor investigates optically active defects in solids, with the aim of identifying a new generation of ultra-bright solid state quantum emitters.

Maki Kushimoto
Nagoya University, Nagoya, Japan

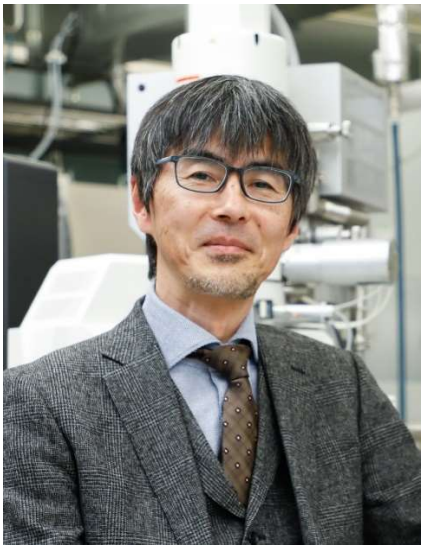
Topic: “Deep Ultraviolet Edge-Emitting Lasers: Progress and Prospects”

Dr. Maki Kushimoto received her Ph.D. in 2016 from the Department of Electronics and Information Systems, Graduate School of Engineering, Nagoya University. She specializes in crystal growth, optical characterization, and device development of nitride semiconductors, with a particular focus on deep-ultraviolet (DUV) light-emitting devices. Her notable achievements include the first demonstration of room-temperature continuous-wave lasing in AlGaN-based DUV laser diodes, which has significantly advanced the field. Currently, she is working on improving the performance of DUV semiconductor lasers for applications such as sterilization, sensing, and laser processing. She has served as an Assistant Professor from 2016, a Lecturer from 2022, and is currently an Associate Professor at the same institution since September 2024.

Michał Boćkowski
Institute of High-Pressure Physics of the Polish Academy of Sciences, Warsaw, Poland

Topic: “Cracking the Code of GaN Crystal Growth: Advances, Challenges and the Road Ahead”

Michał Boćkowski earned his M.Sc. Eng. in Solid State Physics from Warsaw University of Technology (1989), Ph.D. from University of Montpellier II (1995), and D.Sc. from the Institute of Physics, Polish Academy of Sciences (2013). He was awarded the title of Professor by the President of Poland in 2021. Since 1989, he has been with the Institute of High Pressure Physics, Polish Academy of Sciences, and is currently the Chief Director. He is also a professor at Nagoya University’s CIRFE within IMaSS and Fellow of the Japan Soc. of Applied Physics (JSAP). Boćkowski ranks in the top 2% of researchers and has led numerous international projects. His main research interests are nitride semiconductors, material processing, and crystal growth.



Tetsuya Takeuchi
Meijo University, Nagoya, Japan

Topic: “Developments and Prospects of GaN-based VCSELs”.

Tetsuya Takeuchi is a professor in Dep. of Materials Science and Engineering, Meijo University. His main research area is optoelectronic devices, such as LEDs and lasers, leveraged with MOVPE growth. He is one of the pioneers to investigate optical properties of GaInN QWs with the piezoelectric polarization charges and propose a growth of non-(0001) orientated substrates. He also demonstrated the first GaInN-based tunnel junction and the first GaN-based VCSEL with the n-type conducting AlInN/GaN DBR. He recently received JSAP Compound Semiconductor Electronics Achievement Award. Currently, he is working on developments of in-situ monitoring of MOVPE growth, tunnel junctions, polarization doping, AlGaN-based DUV LEDs and GaN-based VCSELs.

Tomás Palacios
Massachusetts Institute of Technology, Boston, USA

Topic: “III-Nitride Electronics for the AI Revolution”

Tomás Palacios is the Clarence J. LeBel Professor of Electrical Engineering, and the director of the Microsystems Technology Laboratories (MTL) at MIT. He received his PhD from the University of California - Santa Barbara in 2006, and his undergraduate degree in Telecommunication Engineering from the Polytechnical University of Madrid, Spain, in 2001. His work on novel semiconductor devices has been recognized with multiple awards including the Presidential Early Career Award for Scientists and Engineers, the 2012 and 2019 IEEE George Smith Award, and the NSF, ONR, and DARPA Young Faculty Awards, among many others. Prof. Palacios has authored over 500 contributions in international journals and conferences, and he is a Fellow of IEEE.

Ulrich Steegmüller
ams OSRAM, Regensburg, Germany

Topic: "Nitride micro-LEDs for Digital Light"

Dr. Ulrich Steegmueller is the Senior Vice President R&D and CTO of Opto Semiconductors, a business unit of ams OSRAM, and leading manufacturer of opto-electronic components to serve automotive, industrial and consumer industries. He has over 25 years of extensive technical and leadership experience in LED and Laser technology and product development. Previously he served as Senior Director for the Microsoft Quantum Computing program, and as Chief Development Officer for Aledia, a Micro-LED Startup. He received his Ph.D in Physical Chemistry from University Göttingen in 1997, and his Diploma in Physics from University Stuttgart in 1993.

Xinqiang Wang
Peking University, Beijing, China

Topic: "Epitaxy of transferrable III-nitrides on two-dimensional materials"

Dr. Xinqiang Wang is a Professor at School of Physics and State Key Laboratory of Artificial Microstructure and Mesoscopic Physics at Peking University, specializing in condensed matter physics and semiconductor materials and devices. His research focuses on the development of III-nitride-based semiconductor materials and devices, including the epitaxial growth of III-nitride materials and quantum structures, ultraviolet and visible light-emitting diodes (LEDs) and micro-LEDs, as well as novel ferroelectric devices. He has published over 300 peer-reviewed articles, holds several patents, and has received numerous awards in China for his contributions to the field.

Zlatko Sitar
NC State University, Raleigh, USA

Topic: "AlN – The Extreme Bandgap Semiconductor"

Zlatko Sitar is a Kobe Steel distinguished Professor of Materials Science and Engineering, Physics, and Electrical Engineering at NCSU. His research is concerned with bulk and thin film growth, characterization, property control, and device development in wide and extreme bandgap semiconductors. He has developed, patented, and commercialized a process for growth of AlN crystals. To complement the wafer technology, he has developed kinetically controlled epitaxial growth processes on single crystalline AlN and GaN wafers, which are the basis for high-efficiency, UVC LEDs, LDs, and APDs, and next generation of high-voltage and high-power devices. Based on his research, he founded HexaTech, Inc., and Adroit Materials, Inc. His research has resulted in 90+ Ph.D. theses and 450+ journal publications.

Invited speakers

Topic I: Growth

Hiroshi Amano
Nagoya University
Low-cost Epitaxial Growth and Device Processing Technologies for Early Social Implementations of GaN-based Devices

Robert Bondokov
Crystal IS
The development and characterization of 100 mm AlN semiconductor substrates

Rafael Dalmau
HexaTech Inc.
Control of Surface Morphology and Polarity of N-Polar AlN Films Grown on AlN Bulk Substrates

James Edgar
Kansas State University
Bulk Crystal Growth of Hexagonal Boron Nitride from Molten Metal Solutions

Mitsuru Funato
Kyoto University
Growth integration of InGaN-based full visible LEDs

Guangxu Ju
Peking University
In-Situ Synchrotron X-ray Studies of (In)GaN Growth Dynamics during MOVPE.

Shota Kaneki
Sumitomo Chemical Co., Ltd.
Production-ready, high-quality GaN on GaN epitaxy by QF-HVPE up to 6”

Pawel Kempisty
Institute of High Pressure Physics PAS
Ab initio thermodynamics of III-nitride semiconductor surfaces: Improving the accuracy of predictions under growth conditions

Jong Kyu Kim
Pohang University of Science and Technology (POSTECH)
Growth of hexagonal boron nitrides on non-catalytic substrates by MOCVD and their applications

Yoshinao Kumagai
Tokyo University of Agriculture and Technology
High-speed HVPE growth of AlN homoepitaxial layers for AlN wafer fabrication

Pierce Lonergan
Cornell University
Indium Surfactant Assisted Molecular Beam Epitaxy Growth of AlScN

Hideto Miyake
Mie University
Deep-UV LEDs Fabricated on Face-to-Face Annealed Sputter-Deposited AlN Templates

Takafumi Odani
Mitsubishi Chemical Corporation
Impact of Dopants on the Mechanical Properties and Wafering - Behavior of GaN substrates

Eli Zoghlin
Johns Hopkins University
Growth of hexagonal BN crystals by traveling-solvent floating zone

Topic II: Physics and Characterization

Anthony J Bennett
Cardiff University
Non-classical photon emission from point-like emitters in Aluminum Nitride

Guillaume Cassabois
Montpellier University
The carbon dimer in boron nitride

Aurelien David
Google
Disorder and the luminescence of InGaN emitters

Yingying Lin
Nagoya University
Study of Beryllium Acceptor States in Aluminum Nitride via Cathodoluminescence Analysis

Eva Monroy
CEA
GaN nanowires: research and application

Akihira Munakata
University of Tokyo
Determination of the band splitting and hole effective mass of GaN from valence-band structure observed by angle-resolved photoemission spectroscopy

Rachel Oliver
University of Cambridge
The role of dislocations in etching porous GaN

Michael Schnedler
Forschungszentrum Jülich GmbH
Fermi level pinning at nitride semiconductor surfaces and interfaces

Henryk Turski
Institute of High Pressure Physics PAS
Using both faces of bulk GaN substrates for functional devices

Akira Uedono
University of Tsukuba
Annealing behaviors of vacancies and their impact on dopant activation in ion-implanted GaN studied by positron annihilation

Chris Van de Walle
University of California, Santa Barbara
First-principles description of ferroelectric nitrides

Ping Wang
Peking University
Unveiling Interfacial Dead Layer in Ferroelectric ScAlN/GaN Heterostructures

H. Grace Xing
Cornell University
Fluke or Myth: A Hole Mobility of 1500 cm2/Vs in GaN (though at 4 K)

Andriy Zakutayev
National Renewable Energy Laboratory
Nitride materials with unconventional structures and semiconducting properties

Ewelina Zdanowicz
Wroclaw University of Science and Technology
Electromodulation spectroscopy of built-in electric fields in hybrid III-N heterostructures

Topic III: Optical devices

Ryan Anderson
BluGlass Ltd.
Embedded grating DFB laser diodes and Amplifiers.

Shigefusa Chichibu
Tohoku University
Causes and countermeasures for the operation-induced power degradation issues in 275-nm-band AlGaN-based MQW LEDs

Nicolas Grandjean
École polytechnique fédérale de Lausanne (EPFL)
Origin of non-radiative point defects in InGaN/GaN quantum wells

Kentaro Hayashi
Sony Semiconductor Solutions Corporations
Addressable 2D Array of GaN-based VCSELs with Curved Mirrors

Motoaki Iwaya
Meijo University
Low-Threshold Current (~25 mA) AlGaN-Based UV-B Laser Diodes Utilizing Refractive Index Waveguide Structures on Lattice-Relaxed AlGaN

Anna Kafar
Institute of High Pressure Physics PAS
Nitride edge emitters on 3D shaped GaN - adjustable properties and smart integration options

Ryuji Katayama
Osaka University
Far-UV Second Harmonic Generation from AlGaN-based Waveguide

Youichi Kawakami
Kyoto University
Radiative and non-radiative recombination mechanisms in red-emitting InGaN quantum wells

Fernando B. Naranjo
University of Alcala
Enhancing the efficiency in solar cells based on AlInN/a-Si/Si(100) Heterojunction Solar Cells: impact of AlInN Layer Thickness and Al Content

Susumu Noda
Kyoto University
Recent progress in photonic-crystal surface-emitting lasers (PCSELs)

Siddharth Rajan
The Ohio State University
Interband AlGaN Tunnel Junctions for Ultraviolet Emitters

Jim Speck
UC Santa Barbara
Quantitative analysis of leakage current in III-nitride micro-light-emitting diodes

Tim Wernicke
TU Berlin
Growth and analysis of UVC LEDs

Topic IV: Electronic devices

Elaheh Ahmadi
University of California Los Angeles (UCLA)
Development of N-polar GaN HEMTs fabricated on MBE-grown epi-structures on low dislocation GaN substrate

Srabanti Chowdhury
Stanford University
GaN diamond integration

William Alan Doolittle
Georgia Institute of Technology
The Status of AlN Electronics and Optoelectronics Including the Important Role of Alternative Synthesis

Simon Fichtner
Kiel University
Ferroelectricity for a New Perspective on III-N Semiconductors

Hakan Cankat Gur
EPFL
Enhanced RF Performance of mmWave GaN HEMTs via Displacement Field Coupling with fMAX=430 GHz

James Hwang
Cornell University
Heterogeneous Integrated Sub-THz Transceiver Front End

Ryoma Kaneko
Toshiba Corporation

Leakage Current Suppression by Reducing Embedded Grains in GaN-on-Si Wafers for Improving Reliability of Power Devices

Martin Kuball
University of Bristol
Thermal management efforts for GaN electronic devices

Kouei Kubota
University of Tokyo
Scattering Mechanism of 2DEG in ScAlN/GaN Heterostructures Grown by Plasma-Assisted Molecular Beam Epitaxy

Gabriel Petrus Lansbergen
Infineon Technologies Austria AG
Elevating Reliability Standards: Advanced Methodologies for HV GaN Power Devices and Systems

Zilan Li
ZIENER Semiconductor Co., Ltd.
Demonstration of novel vertical GaN-on-Si High Electron Mobility Transistors

Farid Medjdoub
CNRS-IEMN
Advancing RF GaN HEMT Technology: Innovations in Buffer Engineering for Enhanced Performance and Robustness

Geok Ing Ng
Nanyang Technological University
RF GaN-on-Si for Future 5G/6G Communications

Fabrizio Roccaforte
Consiglio Nazionale delle Ricerche – Istituto per la Microelettronica e Microsistemi
Wide Band Gap Pilot Line: challenges and opportunities for the next generation of semiconductor technologies

Jun Suda
Nagoya University
GaN-on-GaN Devices for Next Generation Electronics

Zheng Wu
The Hong Kong University of Science and Technology
Enhanced Spreading of Photon-Generated Holes by Double-Channel Structre in p-GaN Gate Double-Channel HEMT to Suppress Back-Gating Effect

Enrico Zanoni
University of Padova
Device scaling and reliability of RF GaN HEMTs

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15th International Conference on Nitride Semiconductors (ICNS-15)
Malmö, Sweden, July 6 – 11, 2025

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Floor plan of the exhibition

ICNS 15
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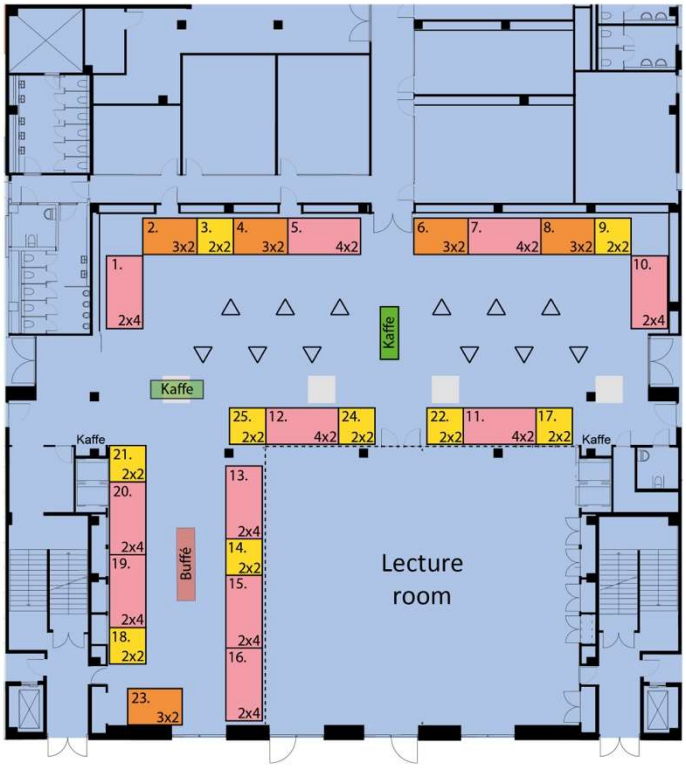
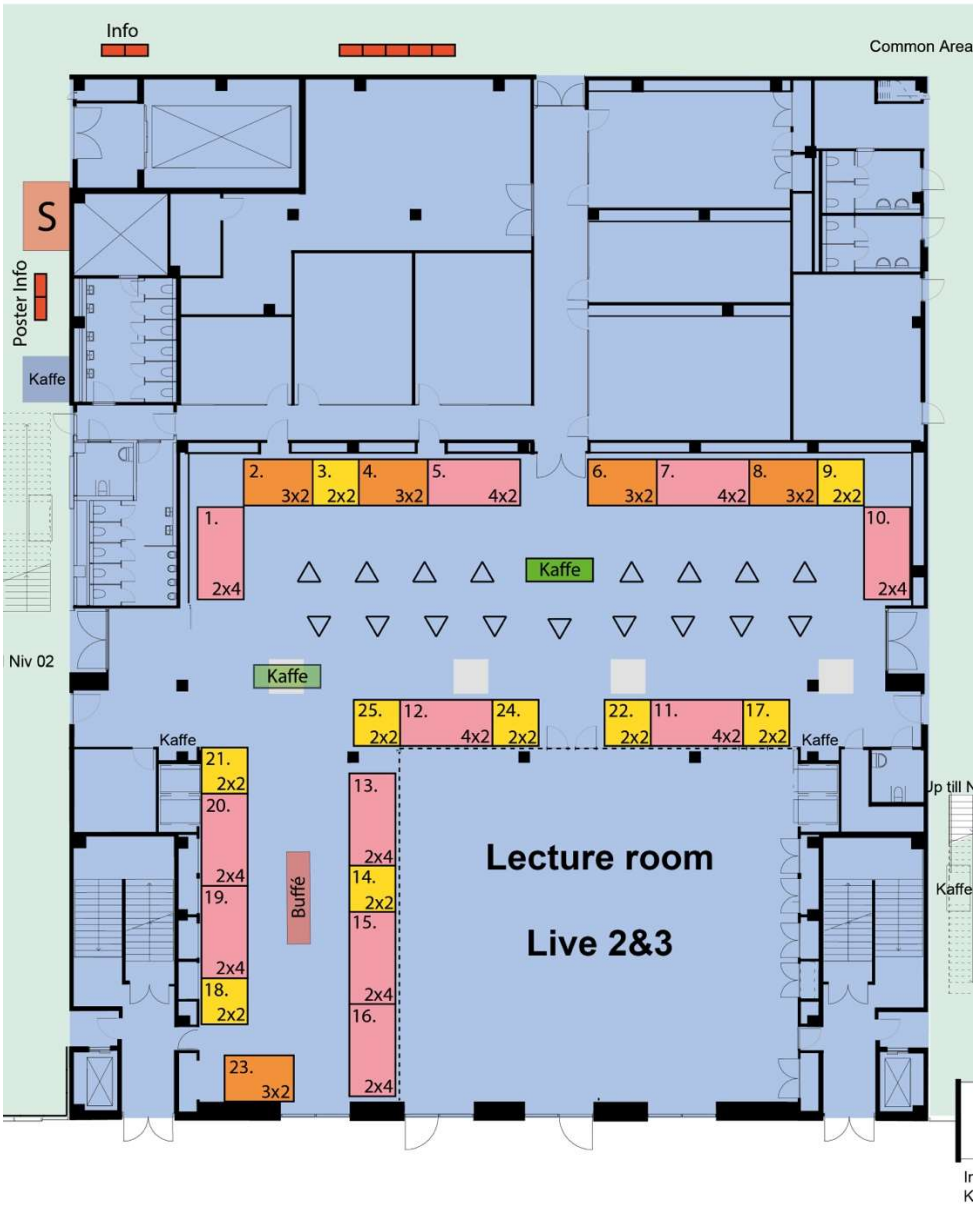
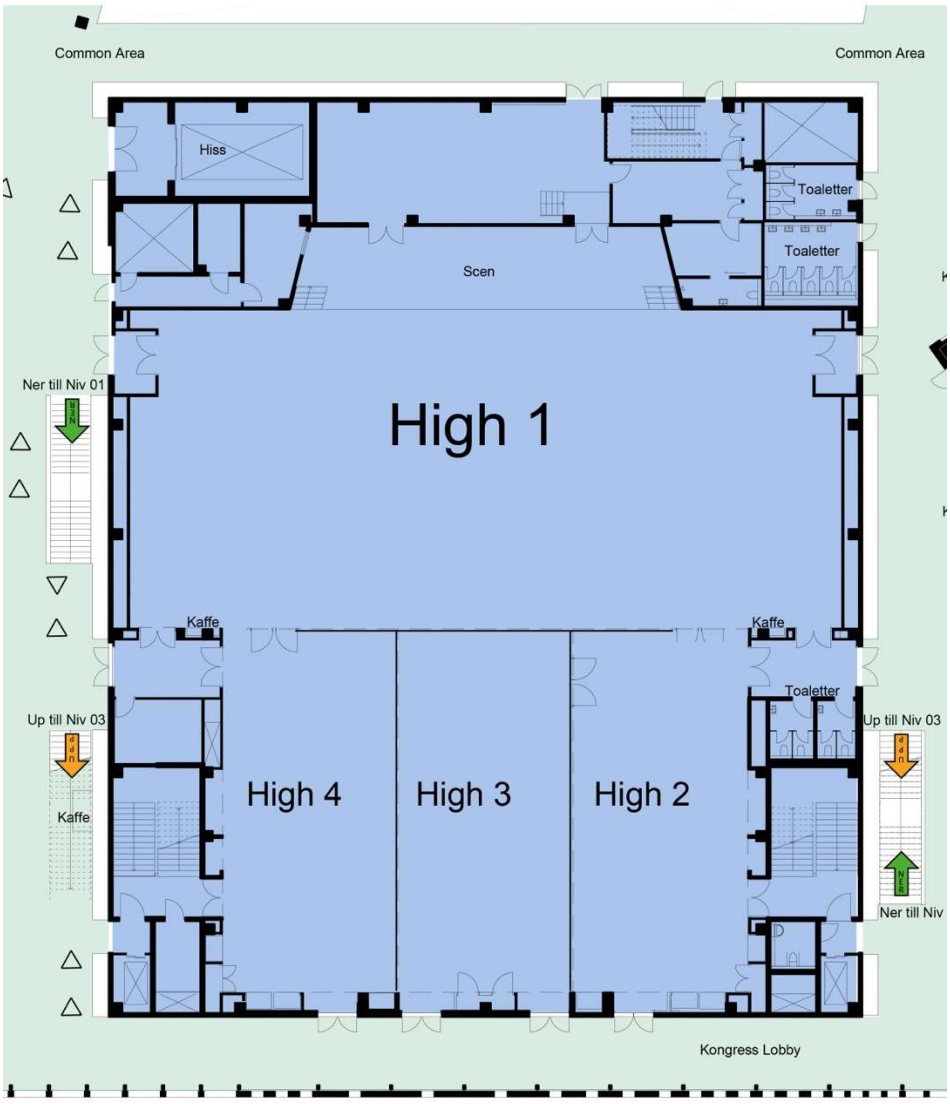


Room map – floor 1



Room map – floor 2



Program Overview

	Sun July 6	Mon July 7	Tue July 8	Wed July 9	Thu July 10	Fri July 11
8.00-8.30				Plenary 2		
8.30-9.00		Opening	Parallel Sessions		Parallel Sessions	Parallel Sessions
9.00-9.30		Akasaki Award		Plenary 3		
9.30-10.00				Coffee Break		
10.00-10.30		Plenary 1	Coffee Break	Plenary 4	Coffee Break	Coffee Break
10.30-11.00		Coffee Break	Parallel Sessions		Parallel Sessions	Plenary 5
11.00-11.30		Parallel Sessions		Parallel Sessions		Plenary 6
11.30-12.00						
12.00-12.30		Lunch	Lunch	Lunch	Lunch	Lunch
12.30-13.00						
13.00-13.30				Excursions		Plenary 7
13.30-14.00		Parallel Sessions	Parallel Sessions		Parallel Sessions	Plenary 8
14.05-14.30						
14.30-15.00						Closing
15.00-15.30		Coffee Break	Coffee Break		Coffee Break and Poster session	
15.30-16.00	Registration	Parallel Sessions	Parallel Sessions			
16.00-16.30					Parallel Sessions	
16.30-17.00						
17.00-17.30		Poster Session	Poster Session			
17.30-18.00						
18.00-18.30	Welcome reception					
18.30-19.00						
19.00-19.30		Women, Diversity, Inclusion	Rump Sessions		Gala Dinner	
19.30-20.00						
20.00-20.30						
20.30-21.00						
21.00-00.00						

Program

Oral Presentations

Program of ICNS-15

Monday 7th July

Lobby	High 1		
8:00 – 8:30	8:30 – 9:00	9:00 – 9:50	9:50 – 10:30
Registration	**Opening**	Plenary 1 (Akasaki Memorial Award): **Asif Khan**	Plenary 2: **Igor Aharonovich** Quantum Technologies with Hexagonal Boron Nitride

	High 1	High 2	High 3	High 4	Live 2 & 3
	ED: Radio Frequency Devices 1 (Mobile Communication)	**OD: VCSELs**	**Industrial Session**	**GR: Boron Nitride crystals and applications**	**PC: Novel nitrides & deep UV**
11:00	ED-Mon-1 **Geok Ing Ng** RF GaN-on-Si for Future 5G/6G Communications	OD-Mon-1 **Kentaro Hayashi** Addressable 2D Array of GaN-based VCSELs with Curved Mirrors	**Gregory Mills** On The Current State of PVT-AlN Commercial Production **Ehsan Mohseni** Centralized Bulk Precursor Delivery by Means of Direct Liquid Injection **Christian Geng** Innovation in GaN **Ashutosh Kumar** Advancing Gallium Nitride Research: ProNano's Role in Academic & Industrial Innovation **Anders Lundskog** Recent development of QUANFine with back barrier **Ronny Kirste** Enabling Next-Generation Devices with Ultra-High-Quality AlN and AlGaN Epitaxy **Zsolt Szekrényes** Advancing GaN Metrology: Powerful Solutions for GaN Characterization **Reza Jafari** Atomic Layer Etching for next generation semiconductor devices	GR-Mon-B1 **James Edgar** Bulk Crystal Growth of Hexagonal Boron Nitride from Molten Metal Solutions	PC-Mon-1 **Andriy Zakutayev** Nitride materials with unconventional structures and semiconducting properties
11:15					
11:30	ED-Mon-2 **Siyu Liu** High-Performance Ka-band AlN/GaN MIS-HEMTs with Ultra-Low Noise Characteristics for Next-Generation Communication Systems	OD-Mon-2 **Naoki Shibahara** In-plane distribution and high wall-plug efficiency of GaN-based vertical-cavity surface-emitting lasers		GR-Mon-B2 **Sergei V. Novikov** High-temperature MBE of hBN: single-photon emitters, lateral heterostructures and use of isotopically enriched boron.	PC-Mon-2 **Jakob Höpfner** Emission characteristics and carrier injection of far-UVC light emitting diodes with emission wavelength between 218 nm and 242 nm
11:45	ED-Mon-3 **Matthew Charles** Ultra low RF losses of 0.14 dB/mm at 30 GHz on GaN on silicon wafers	OD-Mon-3 **Lakshminarayan Sharma** Design of Single-Mode and Polarization stable 450 nm Vertical Cavity Surface Emitting Laser (VCSEL) with Surface Relief and Sub-Wavelength Grating		GR-Mon-B3 **Izabella Grzegory** Conditions for hBN crystallization at high N2 pressure	PC-Mon-3 **Felix Nippert** Free and bound excitons in AlN
12:00	ED-Mon-4 **Pradyot Yadav** Au-Free 3D-Heterogeneous Integration of mmWave GaN-on-Si Dielets with Si CMOS and Glass Interposer for 5G NR FR2 Amplifiers	OD-Mon-4 **Frederik Lüßmann** Distributed Bragg reflectors with porous GaN: Reconsidering the effective medium approximations		GR-Mon-B4 **Henrik Pedersen** The Detrimental Effect of Carbon on Epitaxial Boron Nitride Films	PC-Mon-4 **Kagiso Loeto** High-Resolution Cathodoluminescence Imaging of AlGaN Deep-UV Quantum Wells
	Lunch (12:15 – 13:30)				
	ED: Radio Frequency Devices 2 (Enhanced Performance)	**OD: Advanced lasers**	**GR: Bulk GaN and AlGaN**	**GR: BN and novel nitrides with B**	**PC: Heterostructures and implantation**
13:30	ED-Mon-5 **FARID MEDJDOUB** Advancing RF GaN HEMT Technology: Innovations in Buffer Engineering for Enhanced Performance and Robustness	OD-Mon-5 **Susumu Noda** Recent progress in GaN photonic-crystal surface-emitting lasers (PCSELs)	GR-Mon-A1 **Shota Kaneki** Production-ready, high-quality GaN on GaN epitaxy by QF-HVPE up to 6”	GR-Mon_B5 **Jong Kyu Kim** Growth of hexagonal boron nitrides on non-catalytic substrates by MOCVD and their applications	PC-Mon-8 **Kensuke Sumida** Ultra-high-pressure annealing with a carbon capping layer for activation of Mg ion-implanted GaN
13:45					PC-Mon-9 **Jia Wang** Magnesium Intercalation in Gallium Nitride With Different Polarities
14:00	ED-Mon-6 **Adrien Bidaud** Buffer engineering to boost the blocking voltage of GaN High Electron Mobility Transistors on sapphire	OD-Mon-6 **Dogukan Apaydin** Understanding losses and mode selection in finite-sized ultraviolet-C photonic-crystal surface-emitting lasers	GR-Mon-A2 **Tomasz Sochacki** Perspectives on the Growth of $Al_xGa_{1-x}N$ Alloy by the Ammonothermal Method	GR-Mon-B6 **Siddha Pimputkar** Ammonothermal Growth of Rhombohedral Boron Nitride	PC-Mon-6 **Verena Kowallik** Determination of optical losses in AlGaN-based UVC multimode waveguides
14:15	ED-Mon-7 **Ashley Goodnight** High Temperature Modeling of GaN HEMTs for RF Amplifier Design at 500°C	OD-Mon-7 **Moritz Riedel** Losses in deep-UV Photonic Crystal Surface Emitting Lasers: finite-size coupled-wave theory simulations versus semi-analytical approximation	GR-Mon-A3 **Shigeyoshi Usami** Effect of temperature on high-speed growth of GaN using oxide vapor phase epitaxy	GR-Mon-B7 **Kazuhiko Hara** Formation of layered polytypes during the thin film growth of boron nitride by chemical vapor deposition using boron trichloride as a boron source	PC-Mon-7 **Kohei Shima** Impacts of ultra-high-pressure annealing on undoped and ion-implanted GaN studied by photoluminescence measurements
14:30	ED-Mon-8 **Jing Yuan** High-Power Si-Based AlN/GaN MISHEMTs with Composite Al2O3/SiNx layer for Millimeter-Wave Applications: Achieving 7.8 W/mm Power Output	OD-Mon-8 **Akihiko Kikuchi** Proposal of a Novel Low-Refractive-Index Double-Layer Structure Formed by Electrochemical Etching Applicable to GaN Photonic Crystals	GR-Mon_A4 **Arianna Jaroszynska** The challenges of AlGaN growth in Halide Vapor Phase Epitaxy	GR-Mon-B8 **Ken Shiraishi** High-quality lattice-matched AlBN ferroelectric layers on SiC grown by rf reactive sputtering	PC-Mon-5 **Ewelina Zdanowicz** Electromodulation spectroscopy of built-in electric fields in hybrid III-N heterostructures
14:45	ED-Mon-9 **Hao Lu** High Power Linearity AlN/GaN/InGaN Coupling-Channel High Electron Mobility Transistors at 30 GHz	OD-Mon-9 **Tomasz Fąs** Room temperature lasing from a bound state in the continuum confined in a GaN subwavelength grating	GR-Mon-A5 **Tomoki Tashiro** Suppression of Polycrystals During GaN Crystal Growth in Na-flux Method under the Higher Temperature and the Higher Nitrogen Pressure Conditions	GR-Mon-B9 **Ryota Maeda** First epitaxial growth of cubic boron scandium nitride (c-BScN)	
	Coffee Break (15:00 – 15:30)				

Program of ICNS-15

Monday 7th July

	High 1	High 2	High 3	High 4	Live 2 & 3
	ED: Radio Frequency Devices 3 (Enhanced Performance)	**OD: Red LEDs**	**GR: Bulk AlN**	**GR: GaN substrates - growth and processing**	**PC: Band structure, phonons**
15:30	ED-Mon-10 **Hakan Cankat Gür** Enhanced RF Performance of mmWave GaN HEMTs via Displacement Field Coupling with fMAX=430 GHz	OD-Mon-10 **Yoichi Kawakami** Radiative and non-radiative recombination mechanisms in red-emitting InGaN quantum wells	GR-Mon-A6 **Robert T. Bondokov** The development and characterization of 100 mm AlN semiconductor substrates	GR-Mon-B10 **Takafumi Odani** Impact of Dopants on the Mechanical Properties and Wafering Behavior of GaN substrates.	PC-Mon-10 **Akihira Munakata** Determination of the band splitting and hole effective mass of GaN from valence-band structure observed by angle-resolved photoemission spectroscopy
15:45					
16:00	ED-Mon-11 **Joshua Park** Impact of Gate Dielectric and Recess on Gate Modulation in Self-Aligned p-Channel GaN Transistors	OD-Mon-11 **Zetian Mi** High Efficiency, Narrow Linewidth, High Color Purity Red Micro-LEDs	GR-Mon-A7 **Katie R. Gann** Broad Characterization of Bulk AlN Substrates and Propagation into Epi Properties	GR-Mon-B11 **Haoran Qie** In situ TBCl Etching: A Robust Strategy toward Defect-Free GaN Regrowth Interfaces	PC-Mon-11 **Tao Wang** Phonon structure in Nitride semiconductor
16:15	ED-Mon-12 **Issei Sasaki** Origin of Local Barrier Height Lowering in AlN Schottky Barrier Diodes	OD-Mon-12 **Vincent Rienzi** Efficient and Spectrally Stable c-Plane Red III-Nitride Light Emitting Diodes	GR-Mon-A8 **Lea Lacomblez** Al0.15Ga0.85N compliant microdisks: an innovative template unlocking AlGaN growth across the entire aluminium composition range	GR-Mon-B12 **Uiho Choi** Buffer-less growth of GaN on foreign substrates: Towards vertically-conducting heterostructures and heterojunction devices	PC-Mon-12 **Yoshihiro Ishitani** Pump and probe Raman scattering analysis of phonon dynamics dominating carrier dynamics in III-nitride heterostructures including quantum wells
16:30	ED-Mon-13 **Yusuke Wakamoto** Comprehensive Study on Velocity-Field Characteristics of 2DEG in AlGaN/GaN Heterostructures	OD-Mon-13 **Lisa Rullik** Pyramidal microLEDs Delivering RGB in Single Materials Systems	GR-Mon-A9 **Thomas Straubinger** Efficient Diameter Enlargement of Bulk AlN	GR-Mon-B13 **Byeongchan So** Bowing Engineering of AlGaN Drift Layers on GaN substrates for Vertical Power Devices	PC-Mon-13 **Ettore Coccato** Photonic Atom Probe analysis of AlGaN multilayer structures for UV lasers
16:45	ED-Mon-14 **Liubou Padzialioshkina** Processing and Characterization of N-polar GaN/AlGaN Heterostructure Field-Effect Transistors Grown on 200 mm Sapphire Substrates	OD-Mon-14 **Yimeng Sang** High-temperature performance of InGaN-based red micro-light-emitting diodes using an epitaxial tunnel junction contact	GR-Mon-A10 **Sven Besendörfer** Improving the quality of PVT-grown AlN-crystals by utilizing a seed recovery process	GR-Mon-B14 **Irene Manglano** Clavero Fabrication of Cost-Effective GaN Templates with Low Density of Dislocations by Epitaxial Lateral Overgrowth	PC-Mon-14 **Maud Nemoz** Unveiling compliance effects of Al0.15Ga0.85N microdisks by X-ray diffraction
17:00 ~ 19:00	**Poster Session 1**				
19:00 ~ 20:30	**Women in Nitrides – diversity and inclusion**				

Program of ICNS-15

Tuesday 8th July

	High 1	High 2	High 3	High 4	Live 2 & 3
	ED: Radio Frequency Devices 4 (Enhanced Performance)	**PC: Defects and processing**	**PC: Nanowires**	**OD: UV LEDs**	**GR: Epitaxy for devices**
8:30	ED-Tue-1 **James Hwang** Heterogeneous Integrated Sub-THz Transceiver Front End	PC-Tue-A1 **Akira Uedono** Annealing behaviors of vacancies and their impact on dopant activation in ion-implanted GaN studied by positron annihilation	PC-Tue-B1 **Eva Monroy** Ultraviolet Photodetection with GaN Nanowires: Advances in Fabrication, Architectures, and Performance	OD-Tue-1 **Siddharth Rajan*** Interband AlGaN Tunnel Junctions for Ultraviolet Light Emitting Diodes and Lasers	GR-Tue-1 **Hiroshi Amano** Low-cost Epitaxial Growth and Device Processing Technologies for Early Social Implementations of GaN-based Devices
9:00	ED-Tue-2 **Wei Yan** Terahertz detector based on side-gate AlGaN/GaN HEMT for resonant and non-resonant detection	PC-Tue-A2 **Masato Oda** Stable structures of (VGaVN)n defects in bulk GaN	PC-Tue-B2 **Christophe Durand** Deep UV-C down to 225 nm from core-shell AlN pillar arrays	OD-Tue-2 **Pierre-Marie Coulon** UVA to far UVC AlGaN quantum well growth on AlGaN micropallets for ultraviolet microdevices applications	GR-Tue-2 **Sondre Michler** Epitaxy of > 7 µm thick GaN drift layers on Si (111) for fully vertical power devices
9:15	ED-Tue-3 **Mohamed Aniss Mebarki** GaN-HEMTs for Low-Noise Applications at Cryogenic Temperatures: Effects of Gate Length Scaling	PC-Tue-A3 **Christopher Dawe** Electrically active defects in dilute AlxGa1-xN films	PC-Tue-B3 **Krishnendu Sarkar** Investigation of InGaN buffer layer inclusion in InGaN/GaN Nanowire Superlattice: A way towards high efficiency red light emission	OD-Tue-3 **Honglin Gong** A Comprehensive Study on Optical Polarization, Stress Relaxation, and Failure Mechanisms in AlGaN-Based UVC LEDs	GR-Tue-3 **Seiji Mita** Growth of low carbon GaN:Si
9:30	ED-Tue-4 **Umang Singh** NbN gated AlGaN/GaN Schottky Gate HEMT on (0001) 4H-SiC for high power applications: Improved DC Performance and Threshold Voltage Stability	PC-Tue-A4 **Zakariae M'QADDME** Doping Characterization of Selectively Grown GaN PN Diodes: A Cathodoluminescence and Electrical Measurement Study	PC-Tue-B4 **Amadéo Vibert** The origin of multiple maxima of efficiency in InGaN-GaN nanowires single quantum well light-emitting-diodes	OD-Tue-4 M. **Nawaz Sharif** Experimental and Theoretical Insights into the Relaxed or Strained 230 nm far-UVC LEDs as a Function of Quantum-Well Numbers	GR-Tue-4 **Chihiro Nishiwaki** Controlling Mg doping profile in vertical GaN p–n junction diode grown by halide vapor phase epitaxy with n/p-separated nozzles
9:45	ED-Tue-5 **Ragnar Ferrand - Drake Del Castillo** GaN Varactor with linear C(V) realized through F plasma treatment	PC-Tue-A5 **Tomoyuki Tanikawa** Defect characterization of monolithically stacked green/blue InGaN light-emitting diode structure using multiphoton-excitation photoluminescence	PC-Tue-B5 **Joel Eymery** Multimodal Micro-Laue XEOL Analysis of Light-Emitting Core-Shell Nitride Micro-Wires	OD-Tue-5 **Jean Paul Salvestrini** Layer transferred UV emitting hBN/AlGaN heterostructures	GR-Tue-5 **Simona Torrengo** 1200 V lateral GaN MOS-High Electron Mobility Transistors on 200 mm silicon wafers
	Coffee Break (10:00 – 10:30)				
	ED: Radio Frequency Devices 5 (Enhanced Performance)	**PC: Acceptors in nitrides**	**PC: Ferroelectric nitrides**	**GR: InGaN for full visible LEDs**	**OD: Far-UVC LEDs: size-dependence and polarization doping**
10:30	ED-Tue-6 **Enrico Zanoni** Device scaling and reliability of RF GaN HEMTs	PC-Tue-A6 **Yingying Lin** Study of Beryllium Acceptor States in Aluminum Nitride via Cathodoluminescence Analysis	PC-Tue-B6 **Chris Van de Walle** First-principles description of ferroelectric nitrides	GR-Tue-6 **Yoshinobu Matsuda** Growth integration of InGaN-based full visible LEDs	OD-Tue-6 **Tim Wernicke** Growth of UVC LEDs and lasers
11:00	ED-Tue-7 **Tomás Palacios** Impact of Buffer Removal on Current Collapse and Performance of Scaled RF GaN HEMTs	PC-Tue-A7 **Denis Demchenko** The BeGa-ON-BeGa complex as the shallowest acceptor in GaN	PC-Tue-B7 **Jona Grümbel** Phonons, Born effective charges, and band gaps of wz-(Sc,Al)N alloys (0 ≤ Sc ≤ 30%) grown on AlN/Si by molecular beam epitaxy	GR-Tue-7 **Amélie Dussaigne** Red emitting full InGaN micro-light emitting diodes grown on GaN mesas on Si substrate for monolithic Red-Green-Blue micro-displays	OD-Tue-7 **Gwenole JACOPIN** Size-Dependent Efficiency in UVB and Far-UVC µLEDs probed by Cathodoluminescence
11:15	ED-Tue-8 **Mei Wu** Electro-thermal Co-design of GaN-on-GaN HEMTs Achieved by Stepped-Carbon Doped Buffer for RF Applications	PC-Tue-A8 **Michael Reshchikov** Passivation of Be and C acceptors in GaN by hydrogen	PC-Tue-B8 Filip Tuomisto Identification of scandium vacancies in scandium nitride single crystals	GR-Tue-8 **Huaide Zhang** Growth of Highly Relaxed (In,Ga)N Pseudo-Substrates with a Smooth Surface by a Continuous Three-Step Protocol without Ex-situ Patterning	OD-Tue-8 **Tim Kolbe** Effect of thickness and composition gradient in the polarization doping layer of 226 nm far-UVC light emitting diodes
11:30	ED-Tue-9 **Badal Mondal** Impact of carrier density and mobility interplay on the intrinsic performance of Al-rich (Al,Ga)N-channel high-electron-mobility transistors	PC-Tue-A9 **Nishita Sinha** Exploring Diffusion for Selective-Area Current Blocking Layers in Gallium Nitride Using Magnesium-Doped Spin on Glass-Based Technique	PC-Tue-B9 **Hikaru Sasaki** X-ray Spectroscopic Characterization of Surface Oxidation of ScAlN Thin Films Grown by Sputtering on GaN	GR-Tue-9 **Jörg Schörmann** AlScN pseudo-substrates for lattice matched InGaN epitaxy	OD-Tue-9 **Yuma Yamaguchi** A 265 nm Deep-Ultraviolet Micro-Light-Emitting Diode Array with Emission Areas of Less than 10 µm in Diameter
11:45	ED-Tue-10 **Riccardo Fraccaroli** Experimental Demonstration of Avalanche operation in lateral normally-off 100 V GaN HEMTs	PC-Tue-A10 **Viktor Rindert** New insights into Mn3+ in GaN from high-frequency/high-field EPR	PC-Tue-B10 **Duc Van Dinh** Electrical properties of CrN layers grown on AlN templates with different surface orientations by plasma-assisted molecular beam epitaxy	GR-Tue-10 **Keitaro Ikejiri** Advanced High-Flow-Velocity Horizontal MOCVD Technology for Nitride Semiconductor Growth	OD-Tue-10 **Jens Rass** Far-UVC micro LED arrays for efficient light extraction and fiber coupling
	Lunch (12:00 – 13:30)				

Program of ICNS-15

Tuesday 8th July

	High 1	High 2	High 3	High 4	Live 2 & 3
	ED: Power Electronics 1 (Enhanced Performance)	**PC: Extended defects**	**PC: Ferroelectric heterostructures**	**GR: InGaN**	**OD: Degradation in UVC LEDs**
13:30	ED-Tue-11 W. **Alan Doolittle*** The Status of AlN Electronics and Optoelectronics Including the Important Role of Alternative Synthesis	PC-Tue-A11 **Rachel Oliver*** The role of dislocations in etching porous GaN	PC-Tue-B11 **Ping Wang*** Unveiling Interfacial Dead Layer in Ferroelectric ScAlN/GaN Heterostructures	GR-Tue-11 **Guangxu Ju*** In-Situ Synchrotron X-ray Studies of (In)GaN Growth Dynamics during OMVPE	OD-Tue-11 **Shigefusa CHICHIBU*** Improved device lifetime of 275-nm-band AlGaN MQW LEDs by decelerating the degradation of carrier injection efficiency
14:00	ED-Tue-12 **Giulio Baratella** GaN 650 V single-reference p-GaN bidirectional switch	PC-Tue-A12 **Jonas Lähnemann** Dislocation correlations in GaN epitaxial films revealed by high-resolution electron backscatter diffraction	PC-Tue-B12 **Baishakhi Mazumder** Nanoscale Insights Into MBE-Grown Al0.66Sc0.34N Heterostructures for Enhanced Ferroelectric Applications	GR-Tue-12 **Rodrigo De Vasconcellos Lourenço** Native defect diffusion in III-nitrides: understanding thermal degradation and non-radiative recombination in GaInN/GaN quantum well structures	OD-Tue-12 **Jan Ruschel** Differentiation between semiconductor- and package-related degradation of hermetically sealed far-UVC LEDs
14:15	ED-Tue-13 **Yanlin Wu** A 650 V GaN Monolithic Integration Platform Featuring Low Capacitance and High-Performance Passive Components	PC-Tue-A13 **Edwin Supple** Dislocation Charge Density Quantification using Precessed STEM Differential Phase Contrast	PC-Tue-B13 **Niklas Wolff** Unveiling the evolution of ferroelectric domains in AlScN/GaN-based heterostructures	GR-Tue-13 **Yoshinobu Matsuda** Suppressing surface defects on red InGaN quantum wells by using vicinal GaN (0001) surfaces	OD-Tue-13 **Ryota Akaike** Performance and Reliability of Far-UVC LEDs with DH-structure on Low-dislocation AlN Templates
14:30	ED-Tue-14* **Hridibrata Pal** High Al-content AlGaN channel HEMTs with high current density	PC-Tue-A14 **Domenik Spallek** Local strain introduced by single threading dislocations in GaN studied by electron backscatter diffraction and cathodoluminescence spectroscopy	PC-Tue-B14 **Georg Schönweger** Ferroelectricity in AlN/GaN heterostructures	GR-Tue-14 **Anna Toschi** Migration process of defects from high-temperature GaN buffer into InGaN/GaN quantum wells	OD-Tue-14 **Matteo Buffolo** Positive and negative ageing of AlGaN-based UVC LEDs: experimental analysis, interpretation and modeling
14:45	ED-Tue-15 **Patrick Darmawi-Iskandar** Self-Aligned p-GaN-Gate HEMTs with Regrown Contacts and an All-Refractory CMOS Compatible Metallization for Low-Voltage Power Converters	PC-Tue-A15 **Cosmin Romanitan** The interplay in extended and point defects in BGaN epilayers grown on SiC	PC-Tue-B15 **Vallery Stanishev** Terahertz Optical Hall effect in AlScN/GaN and AlYN/GaN HEMT structures	GR-Tue-15 **Michael Carter** MOCVD Growth of GaN/InN/GaN Quantum Wells	OD-Tue-15 **Leo J. Schowalter** Degradation of far-ultraviolet light emitting diodes on AlN substrate
	Coffee Break(15:00 – 15:30)				
	ED: Power Electronics 2 (Reliability)	**PC: LEDs and advanced spectroscopy**	**OD: Novel devices**	**GR: Growth mechanisms and models**	**OD: UV Lasers and LEDs with enhanced carrier injection**
15:30	ED-Tue-16 **Gabriel Lansbergen*** Elevating Reliability Standards: Advanced Methodologies for HV GaN Power Devices and Systems	PC-Tue-A16 **Henryk Turski*** Using both faces of bulk GaN substrates for functional devices	OD-Tue-16B **Ryuji Katayama*** Far-Ultraviolet Second Harmonic Generation from AlGaN-based Waveguides	GR-Tue-16 **Pawel Kempisty*** Ab initio thermodynamics of III-nitride semiconductor surfaces: Improving the accuracy of predictions under growth conditions	OD-Tue-16A **Motoaki Iwaya*** Low-Threshold Current (~25 mA) AlGaN-Based UV-B Laser Diodes Utilizing Refractive Index Waveguide Structures on Lattice-Relaxed AlGaN
16:00	ED-Tue-17 **Amirhossein Esteghamat** 2.7kV Enhancement-Mode GaN-on-Si Multichannel Tri-gate junction HEMT using SiO2/p-doped NiO as gate oxide	PC-Tue-A17 **Peng CHEN** Cavity Plasmon: Enhanced Luminescence Effect on InGaN Light Emitting Diodes	OD-Tue-17B **Shahzeb Malik** Enhancement of the non-linear optical coefficient in the strained-layer superlattice structure via piezoelectric polarization in far-UV SHG.	GR-Tue-17 **Ettore Coccato** MBE growth of ultra-thin GaN/AlN quantum wells for cathodoluminescent UV lamps	OD-Tue-17A **Takumu Saito** Optimizing Heterointerfaces for Enhanced Carrier Injection Efficiency in AlGaN-based UV-B Laser Diodes
16:15	ED-Tue-18 **John Niroula** Monolithic Optical Cascode GaN HEMT for High Voltage Switching Applications	PC-Tue-A18 **Jürgen Christen** Impact of p-n junction built-in and polarization field on carrier injection into InGaN/GaN quantum wells: a nano-cathodoluminescence investigation	OD-Tue-18B **Ke Jiang*** Nonvolatile and reconfigurable two-terminal electro-optic duplex memristor based on III-nitride semiconductors	GR-Tue-18 **Akira Yoshikawa** Improvement of 2DEG Properties in Pseudomorphic AlN/GaN/AlN heterostructures grown by Metal-Organic Vapor Phase Epitaxy	OD-Tue-18A **Frank Bertram** Nanoscopic Insights into the Structural and Optical Properties of a Far-UVC-LED: Detailed Characterization of Carrier Capture in Active Region
16:30	ED-Tue-19 **Xigen LI** Study on Threshold Voltage Control of Power GaN-MIS Devices Using Floating Gate Structure	PC-Tue-A19 **Hideto Miyake** Potential of AlN films deposited on annealed AlN/Al2O3 templates for high-temperature devices	OD-Tue-19B **Roberto Hernandez** Flexible and stretchable UV-LEDs based on core-shell GaN/AlGaN nanowires	GR-Tue-19 **Alexis Papamichail** How does diffusion impact high-Al content AlGaN barriers in MOCVD-grown GaN HEMTs?	OD-Tue-19A **Marcel Schilling** Precise determination of the charge concentration in linearly graded AlGaN distributed polarization doped layers of 233 nm light emitting diodes
16:45	ED-Tue-20 **John Niroula** Rhenium-Based Refractory Schottky-Gated AlGaN/GaN HEMTs with Record Ion/Ioff at 500C	PC-Tue-A20 **Anders Gustafsson** Defects in Submicron-Sized Platelets For Use as Micro-Light-Emitting-Diodes Studied by Hyperspectral Cathodoluminescence Imaging	OD-Tue-20B **Chia-Yen Huang** Monolithically-integrated GaN metasurface collimator mosaic for miro-light-emitting diodes	GR-Tue-20 **Mikhail Rudinsky** Limitations of distributed polarization doping using in AlGaN-based deep-ultraviolet laser diode structures by their cracking during growth	OD-Tue-20A **Muhammad Ajmal Khan** Polarisation Assisted n-AlGaN Electron Injection Layer in 229 nm far-UVC LEDs for Hole Blocking and Current Density Enhancement
17:00 ~ 19:00	**Poster Session 2**				
19:00 ~ 20:30	**Rump Session Topic 1**			**Rump Session Topic 2**	**Rump Session - microLEDs for displays and other applications**

Program of ICNS-15

Wednesday 9th July

	High 1	High 2	High 3	High 4	Live 2 & 3
8:00	Plenary 3: **Michal Bockowski** Cracking the Code of GaN Crystal Growth: Advances, Challenges, and the Road Ahead				
8:40	Plenary 4: **Xinqiang Wang** Epitaxy of Transferrable III-Nitrides on Two-Dimensional Materials				
	Coffee Break (9:20 – 9:50)				
9:50	Plenary 5: **Maki Kushimoto** Deep Ultraviolet Edge-Emitting Lasers: Progress and Prospects				
	Short break (10:30 – 10:40)				
	GR: Novel nitrides-new approaches	**OD: Detectors**	**ED: Power Electronics 3 (Reliability)**	**ED: Novel Electronic Devices 1 (Materials)**	**PC: hBN**
10:40	GR-Wed-1 **Eli Zoghlin*** Growth of hexagonal BN crystals by traveling-solvent floating zone	OD-Wed-1 **Fernando B. Naranjo** Enhancing the efficiency in solar cells based on AlInN/a-Si/Si(100) Heterojunction Solar Cells: impact of AlInN Layer Thickness and Al Content	ED-Wed-A1 **Ryoma Kaneko** Leakage Current Suppression by Reducing Embedded Grains in GaN-on-Si Wafers for Improving Reliability of Power Devices	ED-Wed-B1 **Srabanti Chowdhury** Diamond and GaN Integration: Top-Side to All-Around Approaches	PC-Wed-1 **Guillaume Cassabois** The carbon dimer in boron nitride
11:10	GR-Wed-2* **Karolina Peret** Above band gap illumination during III-nitrides growth by plasma-assisted molecular beam epitaxy	OD-Wed-2 **Russell Dupuis** The Influence of GaN Substrates on the Performances of GaN-based Ultraviolet Avalanche Photodetectors	ED-Wed-A2 **Masamichi Akazawa** Suppression of hole injection into near-interface traps by inserting AlN interfacial layer between AlSiO and GaN	ED-Wed-B2 **Naoteru Shigekawa** Suppressed self-heating effects in GaN HEMTs on polycrystalline diamond layers synthesized on backplates	PC-Wed-2 **Kohei Shima** Cathodoluminescence spectroscopy of layered-structure BN thin films grown by metalorganic vapor phase epitaxy using tris(dimethylamino)borane
11:25	GR-Wed-3 **Xu Yang** A New Member in III-Nitride Family: Wurtzite Aluminium Arsenide Nitride	OD-Wed-3 **Tongbo Wei** Wrinkle-Free Hexagonal Boron Nitride for Flexible Deep-Ultraviolet Photodetectors	ED-Wed-A3 **Akihiro Hayasaka** Suppression of current collapse in N-polar GaN HEMTs with polarization-charge-controlled recess gate structures	ED-Wed-B3 **Katie R. Gann** High Al content AlGaN channel high electron mobility transistors with top-side diamond integration for thermal management	PC-Wed-3 **William Stenlund** Searching for Point Defects in Cubic Boron Nitride
11:40	GR-Wed-4* **Niloofar Afshar** Exploring yttrium aluminum nitride: growth, characterization, and insights into its physical properties	OD-Wed-4 **Ronny Kirste** AlGaN based detectors for the UVC and VUV spectral region	ED-Wed-A4 **Hiroko Iguchi** Minimization of Negative Bias Instability in GaN-based MOSFETs by Inserting Thinner AlN Interlayer at AlSiO/p-type GaN Interface	ED-Wed-B4 **Keith Chang** Diamond p-Type Lateral Schottky Barrier Diodes with High Breakdown Voltage (4612 V at 0.01 mA/mm)	PC-Wed-4 **Shigefusa CHICHIBU** Cathodoluminescence studies of layered-structure BN epilayers grown by chemical vapor deposition using carbon-free molecules
	Lunch (12:00 – 12:45)				
	Excursions (12:45 – 18:30)				

Program of ICNS-15

Thursday 10th July

	High 1	High 2	High 3	High 4	Live 2 & 3
	GR: AlN - wafers and homoepitaxy	**OD: Visible and THz lasers**	**ED: Novel Electronic Devices 2 (Materials)**	**ED: Thermal Management and Reliability**	**PC: Charge carriers and mobility**
8:30	GR-Thu-1 **Yoshinao Kumagai** High-speed HVPE growth of AlN homoepitaxial layers for AlN wafer fabrication	OD-Thu-1 **Ryan Anderson** Embedded grating DFB laser diodes and amplifiers	ED-Thu-A1 **Simon Fichtner** Ferroelectricity for a New Perspective on III-N Semiconductors	ED-Thu-B1 **Martin Kuball** Thermal management efforts for GaN electronic devices	PC-Thu-1 H. **Grace Xing** Fluke or Myth: A Hole Mobility of 1500 cm2/Vs in GaN (though at 4 K)
9:00	GR-Thu-2 **Pramod Reddy** Compensation control in Si doped AlN grown on single crystal AlN substrate	OD-Thu-2 **Feifan Xu** Low-Threshold and Single-Mode DFB Lasers through Feedback Matching Strategy	ED-Thu-A2 **Mingyun Yuan** Piezoelectric (Al,Sc)N thin films grown by molecular-beam-epitaxy as a platform for surface-acoustic-wave generation	ED-Thu-B2 **Manuel Fregolent** Improved High-Temperature/High-Voltage Reliability of p-GaN/AlGaN/GaN HEMTs Through Gate Hole Injection	PC-Thu-2 **Nerijus Armakavicius** Terahertz to mid-infrared Optical Hall effect for probing electronic properties of group-III nitride materials and device heterostructures
9:15	GR-Thu-3 **Arianna Jaroszynska** Analyzing the influence of hydrogen on AlGaN layer growth by Halide Vapor Phase Epitaxy	OD-Thu-3 **Meixin FENG** Narrow-linewidth GaN-based laser diodes with high-order gratings	ED-Thu-A3 **Takuya Maeda** Enhancement of 2DEG Density by Sputtering Regrowth of ScAlN on AlGaN/AlN/GaN Heterostructure	ED-Thu-B3 **Jun-Hyeok Yim** Enhanced Heat Dissipation of p-GaN/AlGaN/GaN HFET with Boron Nitride Passivation	PC-Thu-3 **Chuan Chang** Shedding light on GaN's valence bands using high-mobility holes
9:30	GR-Thu-4 **Tariq Jamil** Pulsed MOCVD Doping and Compensation in Si-AlN over bulk AlN Substrates	OD-Thu-4 **Julian Kassmann** Distributed-Feedback Laser Diodes Using Absorptive Chromium Gratings	ED-Thu-A4 **Yvon Cordier** Demonstration of ScAlN/GaN RF HEMTs on silicon substrate	ED-Thu-B4 **Patrick Fay** High Power Load Pull Characterization of Scaled Gallium Nitride High Electron Mobility Transistors in D-band	PC-Thu-4 **Nishant Patel** Synchrotron Scanning Photoelectron Microscopy of Polarization-doped AlGaN/GaN Heterostructures
9:45	GR-Thu-5 **Ravikiran Lingaparthi** Coherently grown AlN/GaN HEMT heterostructures on AlN buffer on SiC substrate with a mobility exceeding 600 cm2/V.s	OD-Thu-5 **Koki Yabe** Above Room Temperature Optical Gain in 3-15 THz Range GaN/AlGaN Quantum-Cascade Laser obtained by NEGF Analysis	ED-Thu-A5 **Jiajia Yao** Ferroelectric Modulation in (Sc)AlN RF Transistors via Superlattice Barrier Engineering Epitaxied by MBE	ED-Thu-B5 **Do-Hyeong Yeo** Temperature Stability of Al-rich AlGaN HFET	PC-Thu-5 **Hao Lee** Analyzing carrier energy relaxation and transport under high field from DFT calculations and Monte Carlo simulations
	Coffee Break (10:00 – 10:30)				
	GR: N-polar AlN and structures	**OD: Visible lasers**	**ED: Novel Electronic Devices 3 (Materials)**	**ED: Vertical Power Devices 1 (Materials)**	**PC: Alloy disorder**
10:30	GR-Thu-6 **Rafael Dalmau** Control of Surface Morphology and Polarity of N-Polar AlN Films Grown on AlN Bulk Substrates	OD-Thu-6 **Anna Kafar** Nitride edge emitters on 3D shaped GaN - adjustable properties and smart integration options	ED-Thu-A6 **Kouei Kubota** Scattering Mechanism of 2DEG in ScAlN/GaN Heterostructures Grown by Plasma-Assisted Molecular Beam Epitaxy	ED-Thu-B6 **Jun Suda** GaN-on-GaN Devices for Next Generation Electronics	PC-Thu-6 **Aurelien David** Disorder and the luminescence of InGaN emitters
11:00	GR-Thu-7 **Fabrice Semond** N-polar GaN epilayers grown by molecular beam epitaxy on silicon substrates using an hybrid AlN/NbN buffer layer	OD-Thu-7 **Marta Sawicka** Air- and porous-claddings for blue laser diodes	ED-Thu-A7* **Xin Feng** E-Mode GaN/AlGaN p-MOSFETs with IDS＞110 mA/mm Enhanced by Tunnel Junction S/D Contacts	ED-Thu-B7 **David Plaza Arguello** 805 V Breakdown Voltage, 3.5 mΩcm² specific Ron, GaN-on-Si Pseudo-Vertical p-n diode grown by localized epitaxy	PC-Thu-7 **Aidan Campbell** Multimicroscopy study of charge carrier dynamics in highly uniform (In,Ga)N layers
11:15	GR-Thu-8 **YongJin Cho** Low contact resistivity of N-polar p++-GaN enabled by N-rich conditions in plasma-assisted molecular-beam epitaxy	OD-Thu-8 **Antonino Castiglia** Blue laser diodes with active-passive waveguides for improved facet stability against catastrophic damage	ED-Thu-A8 **Siyu Liu** Ultra-Wide Threshold Voltage Tuning Achieving E-Mode AlN/GaN-on-Si HEMTs Enabled by Passivation Engineering on 1.3 nm Ultra-Thin Barrier	ED-Thu-B8 **Yoshinao Miura** Electrical properties of fully vertical AlGaN/SiC p–n diodes at specific Al compositions to reduce the hetero interfacial potential barrier	PC-Thu-8 **Conny Becht** Occurrence of hot carrier emission in photoluminescence spectra of wide blue InGaN quantum wells grown by molecular beam epitaxy
11:30	GR-Thu-9 **Itsuki Furuhashi** N-polar AlN/GaN high electron mobility transistor grown by MOVPE on sapphire	OD-Thu-9 **Jannina Tepaß** Dynamical investigation of stacked multi-junction laser diodes interconnected by tunnel junctions	ED-Thu-A9 **Okhyun Nam** Epitaxy of AlGaN channel HEMT for extreme environmental electronics : challenges and solutions	ED-Thu-B9 **Chao Liu** 1.5 kV Fully-Vertical GaN-on-Si Power MOSFETs	PC-Thu-9 **Philipp M. John** Strain-free growth and structural evolution of (Al,Sc)N nanowires: New insights into composition-dependent alloy fluctuations
11:45	GR-Thu-10 **Pengfei Shao** High-density two-dimensional hole gases on the GaN/AlGaN/GaN platform enabled by heterostructure band engineering	OD-Thu-10 **Johannes Enslin** GaN-based violet laser diodes utilizing (In)GaN underlayers	ED-Thu-A10 **Xin Feng** Enhanced InAlN/GaN MISHEMTs based on digital wet etching process of gate-recess	ED-Thu-B10 **Nami Kusunoki** Anomalous Output Characteristics in GaN Vertical Trench MOSFETs under Large Drain Voltage	PC-Thu-10 **Alexandra Ibanez** Influence of alloy disorder effects on the anisotropy of emission diagrams in AlxGa1-xN alloys, quantum wells and multiple quantum wells
	Lunch (12:00 – 13:30)				

Program of ICNS-15

Thursday 10th July

	High 1	High 2	High 3	High 4	Live 2 & 3
	GR: AlN and Al ternaries for devices	**OD: Micro LEDs 1**	**ED: Novel Electronic Devices 4 (Devices)**	**ED: Vertical Power Devices 2 (Devices)**	**PC: Single Photon Emitters and non-classical photons**
13:30	GR-Thu-11 **Hideto Miyake** Deep-UV LEDs Fabricated on Face-to-Face Annealed Sputter-Deposited AlN Templates	OD-Thu-11 **James Speck** Quantitative analysis of leakage current in III-nitride micro-light-emitting diodes	ED-Thu-A11 **Elaheh Ahmadi** Development of N-polar GaN HEMTs fabricated on MBE-grown epi-structures on low dislocation GaN substrate	ED-Thu-B11 **Zilan Li** Demonstration of novel vertical GaN-on-Si High Electron Mobility Transistors	PC-Thu-11 **Anthony J Bennett** Non-classical photon emission from point-like emitters in Aluminum Nitride
14:00	GR-Thu-12 **Rachid Driad** Magnetron sputter epitaxy of AlScN gate dielectric on AlGaN/GaN high electron mobility transistors	OD-Thu-12 **Jens Kibgies** MicroLED array with electrically decoupled LED cells for optical neuromorphic computing	ED-Thu-A12 **Wenbo Ye** Neutral Beam Etching: A Pathway to High-performance E-mode Recessed-Gate GaN MOSHEMTs for Power and RF Applications	ED-Thu-B12 **Hongkeng Zhu** Vertically Stacked GaN HEMT and SBD on Double-Channel Heterostructure for Enhanced Third-Quadrant Performance	PC-Thu-12 **Krzysztof Korona** Ultraviolet Emitting Color Centers in Hexagonal and Rhombohedral Boron Nitride
14:15	GR-Thu-13 **Emine Kaynar** Sputter epitaxy of TixAl1-xN over the whole compositional range	OD-Thu-13 **Yimeng Sang** GaN-based flexible active-matrix micro-LED displays	ED-Thu-A13 **Adamantia Logotheti** Fabrication of AlGaN FinFET devices in the a-plane direction	ED-Thu-B13 **Kazuki Kitagawa** Breakdown Voltage Analysis of Vertical GaN p-n Junction Diodes with Junction Termination Extension Formed by Channeled Mg Implantation	PC-Thu-13 **Agata Kaminska** High-pressure study of ultraviolet color centers in various polytypes of boron nitride
14:30	GR-Thu-14 **Pietro Pampili** Barrier–channel intermixing and 2DEG degradation in Al-rich Al(Ga)N/AlGaN HEMTs	OD-Thu-14 **Simon Litschgi** Study of carrier diffusion and potential fluctuations in InGaN/GaN quantum wells and their impact on the performance of micro-LEDs	ED-Thu-A14 **Navya Sri Garigapati** Electrical characterization of AlGaN fully vertical FinFETs on Ammono substrate	ED-Thu-B14 **Tohru Oka** Estimations of acceptor concentration and fixed charge densities in the trench of vertical GaN trench MOSFETs	PC-Thu-14 **Alexandros Bampis** Depth control of room temperature single-photon emitters in gallium nitride epilayers
14:45	GR-Thu-15 **Teresa Duarte** AlScN/GaN multichannel structures grown by metal-organic chemical vapour deposition	OD-Thu-15 **Martin Berg** A Bottom-Up InGaN Technology for Ultra-High Brightness red, green, and blue MicroLEDs	ED-Thu-A15 **Andrew Binder** FatTrench Channel Mobility Extraction Technique for Trench MOSFETs	ED-Thu-B15 **Zhongyunshen Zhu** Design of High-Current-Density, Unintentionally Doped Fully Vertical AlN Power Transistors	PC-Thu-15 **Yong-Hoon Cho** High-purity Single-photon Emitters and Sub-micron Light Emitting Diodes with Group III-Nitride Semiconductors via Nanoscale Focus Pinspot Technique
	Coffee Break and Poster Session 3 (15:00 – 16:00)				
	Special Focus: Nitrides go Wild	**OD: Micro LEDs 2**	**Late News 1**	**Late News 2**	**Late News 3**
16:00	**Zetian Mi** The Soft Side of Hard Materials: Ferroelectricity in Wide-Bandgap Nitrides	OD-Thu-16 **Ying-Tsang (Falcon) Liu** Tantium MicroLED: Enabling Scalable, High-Efficiency Solutions for Emerging Displays	**Naoteru Shigekawa** Characteristics of GaN HEMTs on 2-inch polycrystalline diamond substrates fabricated using the surface-activated bonding technologies	**Chandrashekhar Savant** Self-Activated Epitaxial Growth of Cubic AlScN Films from Molecular Nitrogen Without Plasma	**Mohamed Yassine** Giant polarization effects in wurtzite, zincblende, and rocksalt-based heterostructures: From theory to reality
16:15	**Nicolas Grandjean** Single photon emitter for quantum optics and communication		**Nicolas Delpuech** N-Polar High Electron Mobility Transistor (HEMT) on Silicon Substrate with Very Low Resistivity Ohmic Contacts	**Vineeta Muthuraj** High mobility quaternary AlScGaN thin films grown by metalorganic chemical vapor deposition	**Stanislaw Krukowski** Bonding of tetrahedral and hexagonal nitrides – ab initio picture
16:30	**Elison Matioli** Multichannel technologies for efficient GaN power devices	OD-Thu-17 **Dominik Meyer** Progress in MOCVD Technology for Micro-LED Mass Production	**Tetsuya Suemitsu** Polarization interface charge model to calculate threshold voltage of AlGaN/GaN HEMTs	**Ching-Lien Hsiao** Magnetron sputter epitaxy of polar, semipolar, and nonpolar GaN thin films	**Niraj Kumar Singh** Experimental and DFT study of doped CrN thin films for thermoelectric applications
16:45	**James Speck** Re-examining the efficiency limits of visible LED	OD-Thu-18 **Gwenole JACOPIN** Influence of the radiative lifetime on surface recombination in InGaN/GaN µ-LEDs	**Navya Sri Garigapati** Gate Metal Resistance Thermometry on Fully vertical AlGaN FinFETs	**Michael Wang** Increasing light extraction efficiency for UV LEDs with a low coverage p-GaN hole injection layer	**Takashi Murayama** Impact of Mg-threading screw dislocation complexes on electrical characteristics of GaN p–n junction diodes fabricated by thermal Mg diffusion
17:00	**Chris Van de Walle** Nonlinear optical and dielectric properties of novel nitride alloys	OD-Thu-19 **Stefan Wolter** Evaluation of the sidewall quality of InGaN micro-LEDs for different etching conditions and sidewall treatments based on cathodoluminescence behavior	**Huaxing Jiang** Vertical GaN-on-GaN Trench MOSFETs with Enhanced ON and OFF-state Performance	**Michael Wang** 10.4% External Quantum Efficiency 294 nm UV LEDs at 20 A/cm^2 with a Fully Transparent Tunnel Junction	**Cedric Corley-Wiciak** Operando Strain Microscopy in GaN/Si High Electron Mobility Transistors with Nanosecond Time Resolution
17:15	**Debdeep Jena** Nitrides for new quantum technologies	OD-Thu-20 **Taiki Ono** Full color emission from single InGaN-based polyhedral microstructures suitable for micro-LED displays	**Weiguo Hu** Piezotronics effect and GaN power devices	**Anda Cheng** Full-color monolithic InGaN micro-LEDs with true red emission connected by tunnel junctions	**Martin Magnuson** Tuning Structure and Electronic Properties in Epitaxial $Sc_{1-x}W_xN_y$ Thin Films on MgO(001): A Pathway to Engineered Nitride Materials
18:30 ~ 0:00	**Gala Dinner at Slagthuset**				

Program of ICNS-15

Friday 11th July

	High 1	High 2	High 3	High 4	Live 2 & 3
	PC: Microscopy and dislocations	**OD: Visible LEDs: defects and tunnel junctions**	**ED: Novel Electronic Devices 5 (Devices)**	**ED: Pilot lines and critical processes**	**GR: Novel Nitrides with Sc**
8:30	PC-Fri-1 Michael Schnedler* Fermi level pinning at nitride semiconductor surfaces and interfaces	OD-Fri-1 Nicolas Grandjean* Origin of non-radiative point defects in InGaN/GaN quantum wells	EF-Fri-A1 Zheng Wu* Enhanced Spreading of Photon-Generated Holes by Double-Channel Structre in p-GaN Gate Double-Channel HEMT to Suppress Back-Gating Effect	ED-Fri-B1 Fabrizio Roccaforte* Wide Band Gap Pilot Line: challenges and opportunities for the next generation of semiconductor technologies	GR-Fri-1 Pierce Lonergan* Indium Surfactant Assisted Molecular Beam Epitaxy Growth of AlScN
9:00	PC-Fri-2 Konstantin Wein Nano-scale electron-beam-induced-current analysis of an electron-blocking layer and tunnel junction via scanning transmission electron microscopy	OD-Fri-2 Huai-Chin Huang Influence of Tail States distribution on Carrier Injection in RGB InGaN MQW LEDs including V-defects and Random Alloy fluctuations	ED-Fri-A2 Gillian Micale Nanosheet Double-gate AlGaN/GaN Transistors Design and Fabrication	ED-Fri-B2 Claudio Canizares Initial Pilot Line of 300mm GaN on Silicon HEMT Devices by Infineon	GR-Fri-2 Atsushi Kobayashi Sputter Epitaxy of ScAlN Films on MOCVD-Grown GaN HEMT Structures
9:15	PC-Fri-3 Ben Thornley Characterisation of porous gallium nitride via volumetric focussed ion beam scanning electron microscope tomography	OD-Fri-3 Carlo De Santi V-pits and trench defects in GaN-based optoelectronic devices: Extensive characterization and modeling	ED-Fri-A3 Takao Kozaka Al-rich AlGaN multi-channel nanowire transistors with d-AlGaN regrown contacts prepared via pulsed sputtering	ED-Fri-B3 Tetsuo Narita Formation of deep and gradual GaN p-n junctions for edge termination using channeled Mg/N-ions implantation and ultrahigh pressure annealing	GR-Fri-3 Arnaud Le Febvrier Impact of strain on thermoelectric properties of ScN films grown by high-power impulse magnetron sputtering
9:30	PC-Fri-4 Han Yang Climb or Glide? — Revealing the Atomistic Dynamics of Threading Edge Dislocations in GaN	OD-Fri-4 Christoph Berger Bicolor cascaded GaN-based LEDs with GaN:Mg/GaN:Ge tunnel junctions	ED-Fri-A4 Zetian Mi UWBG Ferroelectric ScAlN/AlGaN High-Electron Mobility Transistor	ED-Fri-B4 Tariq Jamil High Field Performance of Si-doped n-AlN Layers grown using Pulsed MOCVD	GR-Fre-4 Yvon Cordier Optimization of the interfaces of ScAlN/GaN HEMTs grown by ammonia-source MBE for high-power high-frequency applications
9:45	PC-Fri-5 Roland Weingärtner Impact of Dislocations on Leakage Currents of GaN-on-GaN pn-Diodes: A Statistical Approach Comparing X-Ray Topography with Electrical Characteristics	OD-Fri-5 Markus Pristovsek Understanding the inner state of InGaN-based micro-LEDs	ED-Fri-A5 Douglas Yoder Acoustically Actuated Scalable Wide Bandgap III-Nitride Switch	ED-Fri-B5 Yuki Ichikawa Unified explanation of bias dependence of threshold voltage shift under positive bias stress in GaN planer MOSFETs with SiO2 gate dielectric	GR-Fri-5 Ulrich Bläß Self-organised ordering of scandium into monolayers of aluminum nitride and its implication for materials growth and AlScN based semiconductor devices
	Coffee Break (10:00 – 10:30)				
10:30	Plenary 6: **Zlatko Sitar** AlN – The Extreme Bandgap Semiconductor				
11:10	Plenary 7: **Ulrich Steegmüller** Nitride micro-LEDs for Digital Light				
	Lunch (11:50 – 13:10)				
13:10	Plenary 8: **Tetsuya Takeuchi** Developments and Prospects of GaN-based VCSELs				
13:50	Plenary 9: **Tomás Palacios** III-Nitride Electronics in the Era of Artificial Intelligence				
14:30	**Award Ceremony and Closing**				

Special Focus – Innovation and Breakthrough

Friday, July 11, 16:00 - 18:00

You're invited to a special session honoring **Lars Samuelson**, a pioneering nanoscience visionary, followed by a mingle. **Open to all ICNS-15 attendees.**

Program

Poster Presentations

Poster Session 1

Monday July 7, 17:00 – 19:00

Growth

Abstract number	Title	Presenter
GR-Mon-P2	3D CFD Investigation of the Effects of Baffle Geometry and Autoclave Size on Convective Transport and GaN Crystal Growth in Ammonothermal Processes	Michal Bockowski
GR-Mon-P16	53 µm stress-free GaN grown on ceramics-AlN integrated substrates by MOCVD with simple AlN buffer	Junkang Wu
GR-Mon-P18	A growth diagram of AlN epilayers grown by plasma-assisted molecular beam epitaxy	Pengfei Shao
GR-Mon-P22	A New Method of Aluminiumization to Realize High-Quality of AlN Template on C-plane Sapphire	Amina Yasin
GR-Mon-P23	A novel approach to grow thick relaxed crack free Al0.5Ga0.5N on GaN for ultraviolet microdevices	Pierre-Marie Coulon
GR-Mon-P19	AlGaN buffer layers grown on sapphire substrates	Jan Batysta
GR-Mon-P20	AlN/AlGaN/AlN Double Heterostructures: Towards AlGaN Channel High-Electron Mobility Transistors (HEMTs)	Nishita Sinha
GR-Mon-P21	Analysis of the surface morphology of AlN and AlGaN grown on AlN bulk substrates with high off-cut angles up to 0.5°	Sarina Graupeter
GR-Mon-P24	Controllable Step-Flow Growth of High-Quality Si-Doped AlN by Low-Temperature MOCVD	Huangshu Zhang
GR-Mon-P25	Controlling Polarity of AlN/Si(111) over 200 mm by Magnetron Sputter Epitaxy Using a Double Ring Magnetron	Valentin Garbe
GR-Mon-P1	Convective Transport and Supersaturation Distribution in Ammonothermal GaN Crystallization: A CFD Analysis	Michal Bockowski
GR-Mon-P26	Crystalline Quality Improvement of Low-Al Content AlGaN via Micropatterning and Coalescence	Vitaly Zubialevich
GR-Mon-P27	Epitaxial Strain Reconfiguration of AlGaN Multiple Heterojunctions for High-responsivity High-speed UV Detection	Hao Jiang
GR-Mon-P3	Evolution of V-Pits in GaN Grown by Na flux Method	Tao Zhang
GR-Mon-P4	Extremely small trap concentrations in quartz-free hydride vapor phase epitaxy-grown n-type GaN confirmed by capacitance transient spectroscopy	Yusuke Hirayama
GR-Mon-P5	Fabricating Damage-Free Surface for Crystal Growth on Seed GaN Crystal Grown by Na-flux Method Using PEC Etching with Bias Voltage Application	Tatsuya Fukagawa

Abstract number	Title	Presenter
GR-Mon-P6	Fabrication and Characterization of 4-Inch GaN Single Crystal Substrate	Yongzhong Wu
GR-Mon-P28	From UV-B to UV-C emission in core-shell structures based on (Al)GaN-micro-pillars arrays	Houssein Mohaidly
GR-Mon-P7	GaN catalyzed nucleation of low threading dislocation GaN on sapphire	Peter Ramvall
GR-Mon-P31	High Al-content Heterostructures Based on Dodecagonal AlGaN Microrods for Novel UV Emitter Applications	Paulina Ciechanowicz
GR-Mon-P29	Hot-Wall MOCVD of AlN/Al0.80Ga0.20N/AlN HEMTs on AlN substrates: Growth and 2DEG Properties	Minho Kim
GR-Mon-P8	Hydride Vapor Phase Epitaxy Growth of Freestanding GaN Substrates with High Conductivity for Vertical Power Electronic Devices	Ke Xu
GR-Mon-P30	Implanted Si-Doping in Homoepitaxial AlN grown using Conventional and Pulsed MOCVD	Tariq Jamil
GR-Mon-P9	InGaN donor substrate for highly relaxed InGaN pseudo-substrate	Hassan Damen
GR-Mon-P32	Low-temperature growth of Al monolayer on 7×7 reconstructed Si(111) surface by molecular beam epitaxy	Nhu Tran
GR-Mon-P33	Molecular beam epitaxy of GaN/AlxGa1-xN quantum wells on high-quality GaN substrates for indirect exciton diffusion	Benjamin Damilano
GR-Mon-P38	Numerical and experimental analysis of ammonothermal crystal growth configurations and their impact on the temperature field along the autoclave wall	Thomas Wostatek
GR-Mon-P17	Plasma-Assisted Molecular Beam Epitaxy of abrupt GaN/AlN/GaN-heterostructures on thin GaN-templates for High Electron Mobility Transistors	David Adolph
GR-Mon-P34	Reactive High-Temperature-Annealing of Aluminum Nitride on Sapphire in Ammonia and Carbon Monoxide	Karl Kreuzer
GR-Mon-P10	Reduction of Threading Dislocations in GaN Crystals During Facet Growth Induced by Oxygen Impurity in the Na Flux Method	Masayuki Imanishi
GR-Mon-P11	Research on the Influence of Vortex Morphology on the Uniformity of Crystal Growth in the Na-flux Method GaN Growth System	Ning Tang
GR-Mon-P35	Revolutionary Performance of a High-Speed Vertical Rotating Disc Reactor for Aluminum-Containing Epitaxial Growth on (111) Silicon	Soo Min Lee
GR-Mon-P12	Study of 6-inch HVPE-GaN grown with high growth-rate and thickness-uniformity	Xiangqian Xiu
GR-Mon-P13	The Effect of Ga Composition of Melt on the Dislocation Density at the Coalescence Region of GaN Crystal Grown with the Na-flux Point Seed Technique	Ryotaro Sasaki

GR-Mon-P36	The Impact of Mg doping on the hopping conduction of p-type Al-rich AlGaN	Zhibin Liu
Abstract number	**Title**	**Presenter**
GR-Mon-P14	Toward the realization of InGaN micro-substrates for efficient red emitting micro-LEDs	Arthur Sauvagnat
GR-Mon-P15	Ultra-thick InGaN layers grown on sapphire substrate	Tomas Hubacek
GR-Mon-P37	Vertically Conductive AlGaN Epilayers for Next Generation Power Electronics and UV Light Emitters	Pawel Prystawko

Physics and characterization

Abstract number	**Title**	**Presenter**
PC-Mon-P32	A polytype-transferable empirical-tight-binding parameterization of GaN	Anh Luan Phan
PC-Mon-P16	Bandgap Characteristics of Boron-Containing Nitrides— Ab Initio Study for Optoelectronic Applications	Henryk Teisseyre
PC-Mon-P17	Beta Irradiation Effects on GaN p-i-n Diodes: Unlocking Potential for Betavoltaic Microbatteries	Noor Alhuda Ahmed AL Saqri
PC-Mon-P11	Carrier Transport Mechanism of Cr-based Ohmic Contacts to Si-doped AlN	Chao-I (Benny) Liu
PC-Mon-P36	Characterization of Mg-Implanted GaN Layers for Vertical Power Devices Using UV-Assisted KPFM	Ana Cros
PC-Mon-P34	Characterizations of in-gap states in heavily doped GaN layers and a 25-nm-thick GaN-based tunnel junction	Daichi Imai
PC-Mon-P21	Comparison of different nitride-based heterostructures prepared by MOVPE for photocatalytic water splitting	Alice Hospodková
PC-Mon-P19	Confocal Raman and Photoluminescence Characterisation of a GaN-Based LED Chip	Matthew Berry
PC-Mon-P25	Controlled wurtzite versus zinc blende phase selection in GaN	Bruno Daudin
PC-Mon-P3	Correlative analysis of threading dislocations in aluminium nitride layers	Marek Patočka

PC-Mon-P7	Defect analysis comparing polarized stress imaging and X-ray topography methods on gallium nitride epitaxial layers on silicon and sapphire	Leon Schiller
Abstract number	**Title**	**Presenter**
PC-Mon-P12	Determination of the bulk refractive index of AlN by spectroscopic ellipsometry	Roland Weingärtner
PC-Mon-P28	Electrical properties and optical deep level transient spectroscopy of GaN with different C doping concentrations	Momoko Inayoshi
PC-Mon-P23	Electrically Detected Magnetic Resonance and Near Zero Field Magnetoresistance Investigation of Deep Level Point Defects in GaN pn Junction Diodes	Michael Elko
PC-Mon-P20	Enhancement of water splitting applicability of III-nitride based electrodes by application of surface MXene layers	Łukasz Janicki
PC-Mon-P39	Estimating ABC recombination coefficients by time-resolved cathodoluminescence – a method and examples	Konrad Sakowski
PC-Mon-P4	First observation of an optical signature for zinc-blende stacking faults in hexagonal AlN	Corentin Guérin
PC-Mon-P47	GaN advancing biofilm dynamics through surface engineering	Eon-Bee Lee
PC-Mon-P35	GaN Surface Passivation by Two-Dimensional Materials Coating	Danxuan Chen
PC-Mon-P33*	Giant Raman scattering by a GaN phonon-polariton	Mayssoune Mina
PC-Mon-P50	High n-type Doping of GaN by Germanium Ion Implantation	Kacper Sierakowski
PC-Mon-P48	Impact of Minority Carrier Injection on the Annealing Behavior of Nitrogen Interstitials in Homoepitaxial n-type GaN	Meguru Endo
PC-Mon-P6	Investigation of dislocation types and line vectors of threading dislocations in aluminum nitride using monochromatic and white-beam X-ray topography	Leon Schiller

PC-Mon-P49*	Investigation of Electrical Properties and Ohmic Contact Behaviour in Cubic Gallium Nitride with Different Silicon Doping Levels	Surender Subburaj
PC-Mon-P30	Investigation of RF Loss Mechanisms and Iron-Doping Memory Effect in N-polar GaN	Yu Qi
Abstract number	**Title**	**Presenter**
PC-Mon-P14	Isotope substitution and polytype control for point defects identification: the case of the ultraviolet color center in hexagonal boron nitride	Juliette Plo
PC-Mon-P9	Low-temperature deposition of amorphous AlN thin films on ITO-glass and ITO-PET substrates by rf-sputtering	Fernando Bernabé Naranjo
PC-Mon-P45	Measurement of the Dielectric Constant of GaN thin films at MHz to GHz Frequencies	David J Wallis
PC-Mon-P22	Microscopic Raman study of GaN p—n junction diodes grown on OVPE GaN substrates	Yusuke Hayashi
PC-Mon-P2	Multichannel Thermal Quenching of Si-Bound Excitons in AlN: Symmetry-Governed Exciton Transfer and Radiative Auger Process Competition	Guoping Li
PC-Mon-P40	Near field investigation of surface plasmon phonon polariton launch on n-GaN surface	Vytautas Janonis
PC-Mon-P8	Optical and structural characterisation of colour centres in (PVT and PVD synthesized) AlN for quantum applications.	Amy Albrecht
PC-Mon-P1	Optical losses in epitaxial AlN on sapphire: the role of defects and the promising solution of a sputtered buffer layer for integrated photonics	Samuele Brunetta
PC-Mon-P29	Optimizing GaN-Based Devices through Spectroscopic Ellipsometric Characterization of Thin Films and Layer Structures	Rebeka Levai
PC-Mon-P10	Oxidation of AlN surface and interface with GaN analyzed by molecular dynamics simulations	Yuki Ohuchi
PC-Mon-P26	Photoluminescence from a- and m-plane GaN:Be,O	Michael Reshchikov

PC-Mon-P15	Predicting the elastic properties of boron containing III-Nitride alloys: From ab initio studies to semi-empirical models	Aisling Power
PC-Mon-P46	Probing Fermi Energy and Temperature-Dependent Shifts in Doped Homo-Epitaxial GaN Layers Using Micro-Raman Spectroscopy	Aomar Ezza
Abstract number	**Title**	**Presenter**
PC-Mon-P37	Quantitative Analysis on Thermal Resistance of GaN-on-Si Materials Through Structure Function and Pulsed I-V Methods	Qingru Wang
PC-Mon-P18	Random telegraph noise and excess leakage current due to intrinsic defects in p-i-n diodes on GaN-on-Si substrate	Rajarshi Roy Chaudhuri
PC-Mon-P41	Recent advances in detection of atmospheric elements (H, C, O) in gallium nitride (GaN) via dual beam depth profiling with ToF-SIMS	Patrik Straňák
PC-Mon-P13	Searching for Point Defects in Cubic Boron Nitride	William Stenlund
PC-Mon-P42	Spontaneous and piezoelectric polarization: basic formulation implemented in ab initio approach to nitride wurtzite and zinc blende structures	Konrad Sakowski
PC-Mon-P44	Spontaneous polarity inversion in GaN driven by a calcium monolayer under near-equilibrium growth	Xiaohui Peng
PC-Mon-P27	Temperature dependent free carrier concentration in GaN:Si by Raman spectroscopy	Elias Kluth
PC-Mon-P24	The generation of H_N defects in p-GaN under the influence of temperature and current injection.	Xuan Liu
PC-Mon-P5	Time-resolved cathodoluminescence spectroscopy of oxygen-related defects in AlN layers	Barbara Szafranski
PC-Mon-P38	Understanding GaN Island Formation for Advancing the Growth of GaN on AlScN and AlYN by Metal-Organic Chemical Vapor Deposition	Niklas Wolff
PC-Mon-P31	Understanding the impact of stacking fault density on photoluminescence in zincblende InGaN/GaN Quantum Wells	W. R. Fieldhouse-Allen

PC-Mon-P43	Unraveling the stress evolution behavior induced by impurity incorporation in Ge-doped GaN bulk single crystals grown by Na-flux method	Zhiwei Si

Optical devices

Abstract number	Title	Presenter
OD-Mon-P11	A novel band broadening model for stimulated emission in Aluminium Gallium Nitride quantum wells with alloy fluctuations	Sebastian Kölle
OD-Mon-P18	Absorption spectroscopy of the absorber section of multi-section blue laser diodes	Shemshat Kerimova
OD-Mon-P3	Advancing UV-C LED performance: a comparative appraisal of p-contact strategies in AlGaN devices	Francesco Mercinelli
OD-Mon-P27	Breaking the Surface and Unlocking Superior Performance of Indium Rich Edge Emitting InGaN GaN Green LEDs	Subhranshu Sekhar Sahu
OD-Mon-P15	Comparative analysis of three-dimensional optical simulation methods for designing blue Photonic-Crystal Surface-Emitting Lasers	Arstan Bisianov
OD-Mon-P8	Design and Fabrication of Group III Nitride Based Ultraviolet Light Emitting Diode	Arnab Mondal
OD-Mon-P19	Effect of Current Spreading on the Operation of Nitride-Based Broad-Area Stacked Laser Diodes with a Tunnel Junction	Olga Soboleva
OD-Mon-P2	Effect of light polarization on light extraction efficiency of deep-ultraviolet light-emitting diodes	Kirill A. Bulashevich
OD-Mon-P34	Elimination of size effects in InGaN quantum dot cyan-green Micro-LEDs by constructing a full-M-plane hexagonal structure	Peng Zhang
OD-Mon-P21	Fabrication of Horizontally Stacked AlN/SiNx Transverse Quasi-Phase Matching Waveguide for Integrated Wavelength Converter	Hiroto Honda

OD-Mon-P26	GaN homogeneous circular polarizer metasurface for surface-emitting lasers	Li-Sheng Hu
OD-Mon-P32	GaN-based Freestanding Micro-LEDs with GHz Bandwidth and Low Efficiency Droop for Visible Light Communication	Jinpeng Huang
OD-Mon-P36	GaN-on-Si Arrayed μLEDs based Optogenetic Bioprobes for Neuroregulation	Jin Lin
Abstract number	**Title**	**Presenter**
OD-Mon-B16	Heterogeneously integrated GaN photonic crystal laser on Si (100)	Xiaoping Zhou
OD-Mon-P5	High Power AlGaN-Based Deep Ultraviolet Light Emitting Diodes with Chip-Scale Liquid Cup	Naixin Liu
OD-Mon-P25	High transmission of circularly polarized light and circular dichroism with all-dielectric metamaterial	Ting Zhi
OD-Mon-P40	High-Speed Self-Biased AlGaN-Based Deep UV MSM Photodetector	Balkrishna Choubey
OD-Mon-P1	Impact of quantum well number on the internal quantum efficiency in 233 nm Aluminium Gallium Nitride light emitting diodes: a simulation study	Bernd Witzigmann
OD-Mon-P38	Implementing Two-Step p-Type Doping to Improve Device Performance of GaN p-i-n Avalanche Photodiodes	Russell Dupuis
OD-Mon-P35	Laser Annealing-Driven InGaN Quantum Dot Formation in MQWs for High-Performance Green micro-LEDs	Xiaodong Wang
OD-Mon-B17	Low Threshold and Continuous-Wave Whispering Gallery Mode Laser with Single-Mode Operation	Feifan Xu
OD-Mon-P30	Micro-Transfer Printing of InGaN-based Red Micro-Light-Emitting Diodes on Silicon for Display Applications	Zhi Li
OD-Mon-P6	Numerical simulations of the capacitance-voltage characteristics of AlGaN-based far-UVC LEDs	Nicola Roccato

OD-Mon-P4	Realizing a High External Quantum Efficiency of 0.44% in 232 nm AlGaN-based far-UVC LED by Suppressing Relaxation in n-AlGaN Layer Via Homoepitaxy	Muhammad Ajmal Khan
OD-Mon-P39	Response to X-ray of PVT self-supported AlN radiation detector	Kai Su
OD-Mon-P24	Scalable GaN photonic-phonoinc integrated circuitry for reconfigurable signal processing	Liang Zhang
OD-Mon-P10	Selective removal of thin Al-rich AlGaN films by photo-assisted electrochemical etching	Phuc T. Nguyen
Abstract number	**Title**	**Presenter**
OD-Mon-P12	Simultaneous edge and surface stimulated emissions from optically pumped AlGaN-based deep ultraviolet laser bars	Yanan Guo
OD-Mon-P37	Size Effect Induced by Straggle Diffusion in Micro-LED Arrays for Visible Light Communication Devices	Ray Hua Horng
OD-Mon-P14	Structural Modifications of GaN/AlGaN Nanowire Photonic Crystal Laser to Improve the Top Output Efficiency	Dishiti Gupta
OD-Mon-P22	Supercontinuum generation in thick AlN-on-sapphire waveguides: expanding the spectrum toward the mid infrared	Raphaël Butté
OD-Mon-P13	Surface-emitting InGaN laser based on circular Bragg resonator	Yangzhi Tan
OD-Mon-P23	Terahertz electro-optical modulator based on two-dimensional plasmon excitation in AlGaN/GaN heterostructures	Irmantas Kašalynas
OD-Mon-P41	Unipolar Carrier Multiplication AlGaN Ultraviolet Avalanche Photodiode with Periodically Stacked Structure	Jiying Cao
OD-Mon-P33	Unraveling Optical Amplification by Optimizing Nanorod LED Designs for High-Efficiency Micro-LED Displays	Min-Seok Lee

OD-Mon-P9	Unveiling and eliminating the parasitic hole loss in AlGaN-based deep-ultraviolet light-emitting diodes	Chengzhi Ji
OD-Mon-P31	Using microLED Arrays as an Analysis Tool for Improving Heterogeneous Integration Yields	Georg Schöttler
OD-Mon-P29	Weak Polarization Electric Field LEDs with Enhanced Efficiency on Polar Plane	Gaoqiang Deng

Electronic devices

Abstract number	**Title**	**Presenter**
ED-Mon-P5	1200 V class vertical GaN-on-GaN p-i-n diodes with two-zone step-etched junction termination extension	Andrzej Taube
ED-Mon-P27	A Noval p-GaN Gate HEMT Platform with Non-Damage Dielectric Removal for GaN Comparators	Xinyu Sun
ED-Mon-P20	A novel p-NiO RESURF-FP Hybrid Termination boosting AlGaN/GaN HEMTs on Si to over 2000 V	Ruiling Gong
ED-Mon-P57	Achieving Low Ohmic Contacts on n-type AlN with Contact Resistivity at 10-4 Ω·cm2 Level	Haicheng Cao
ED-Mon-P12	Aggressive Vertical Scaling of AlN/GaN/AlGaN HEMTs-on-Si with 80 nm Thin GaN Channel Layer: Investigation of CW vs. Pulsed Performance	Yihao Zhuang
Ed-Mon-P17	AlN/GaN HEMTs on Si with outstanding noise and power characteristics	Xin Feng
ED-Mon-P44	Annealing up to 850 °C of Refractory Molybdenum-GaN Schottky Junctions for High Power, High-Temperature and RF Applications	Amir Al Abdallah
ED-Mon-P58	Atomic Layer Etching Enables Near-Ideal Schottky Contacts on Si-Doped AlN on sapphire	Haicheng Cao
ED-Mon-P29	Characterization of MOVPE grown n-GaN for Re-Al-X-Au based ohmic contacts: Effect of barrier layer (X = Re, Mo, Ni, Ti & Pd)	Amit P. Shah
ED-Mon-P40	Comparison of Thermal Resistance of E-mode AlGaN/GaN HEMT and D-mode AlGaN/GaN HEMT	Seoyun Lee

ED-Mon-P50	Contact Metallizations for p-GaN Gated HEMTs Operating at 800 °C	Suzanne Mohney
ED-Mon-P3	Curvilinear HEMT Designs for Improved Thermal Distribution	Andrew Binder
ED-Mon-P48	Effect of Ohmic Contact Characteristics on Al-rich AlGaN HEMT Performance	Hyun-Seop Kim
ED-Mon-P37	Effects of Oxygen Plasma and Hydrochloric acid surface treatment on Pseudo-Vertical GaN-on-Si Schottky diodes grown by localized epitaxy	David Plaza Arguello
Abstract number	**Title**	**Presenter**
ED-Mon-P34	Electrical properties of electrochemically energized AlGaN/GaN heterostructures	Ren Morita
ED-Mon-P31	Electrical properties of electrochemically energized n-GaN	Riku Ando
ED-Mon-P43	Enhancing Heat Dissipation in GaN-on-Diamond HEMTs through Device-First Transfer Bonding	Shiming Li
ED-Mon-P55	Etching of vertical GaN trench structures in chlorine-based plasma: The effect of BCl_3 and $SiCl_4$ additions.	Jarosław Tarenko
ED-Mon-P15	Evaluation of Doping Concentration-Dependent Static Performance of p-GaN Gate HEMTs under Adequately Activated Conditions	David Zhou
ED-Mon-P19	Fabrication and characterization of high power 1200 V AlGaN/GaN HEMT transistors	Maciej Kamiński
ED-Mon-P41	Formation of 2D Magnesium-Intercalated Layers Enables Improved Ohmic Contacts on MBE-Grown p-GaN	Haitao Wang
ED-Mon-P39	Gallium nitride patterning with atomic layer etching using conventional photoresist as etch mask	Christoffer Kauppinen
OD-Mon-P42	GaN radiation detectors with low-gain avalanche diode structure	Hironori Okumura
ED-Mon-P24	Giant diffusion of ohmic contact material in GaN/AlGaN stacks	Marie-Louise Bilke

ED-Mon-P52	Highly crystalline AlN on GaN with in-situ pretreatment By Plasma Enhanced Atomic Layer Deposition	Soumen Mazumder
ED-Mon-P6	Highly crystalline HEMT with AlGaN back-barrier on GaN substrate suppressing the carrier generation between substrate and epitaxial layer	Kazuhiro Akiyama
ED-Mon-P23*	Hybrid Isolation Technology for GaN-based Planar MIS-HEMT with Regrown Degenerate n-GaN Ohmic Contact	Xinkun Zhang
ED-Mon-P49	Impact of Conventional and Pulsed Flow MOCVD on Al-Rich AlGaN Channel Layers for HEMTs	Okhyun Nam
Abstract number	**Title**	**Presenter**
ED-Mon-P9	Impact of Mg doping at the p-GaN/AlGaN/GaN heterostructure interface on Performance of E-mode HEMTs	Haodong Wang
ED-Mon-P8	In-situ control during growth and processing of GaN-based vertical power devices using optical metrology	Frank Brunner
ED-Mon-P35	Influence of GaN cap layers on the ohmic contact formation to AlScN/GaN heterostructures	Isabel Streicher
ED-Mon-P30	Influence of the Atomic Layer Etching sequence on the electrical behavior of gate recessed AlGaN/GaN High Electron Mobility Transistors	Sarah Seidel
ED-Mon-P22	Investigation of electrochemical etching properties of heavily oxygen doped n-type GaN	Sogo Yokoi
ED-Mon-P47	Investigation of GaN MOS structures with SiO2 formed by atomic layer deposition using bis (ethyl-methyl-amino) silane and ozone	Masanoabu Takahashi
ED-Mon-P51	KrF Excimer Pulsed Laser Annealing of Si Ion-implanted GaN using an AlN Protective Layer	Takao Miyajima
ED-Mon-P42	Low temperature activation of implanted Mg acceptors in GaN	Max Reimer
ED-Mon-P2	Low-Damage Atomic Layer Etching of GaN HEMTs Using BCl3/Ar: A Comparison with Conventional ICP Etching	Boxuan Gao

ED-Mon-P4	Metalorganic Vapor Phase Epitaxy Grown Pseudomorphic AlN/GaN/AlN HEMTs on AlN Substrates with Breakdown Field of 2 MV/cm	TaeGi Lee
ED-Mon-P1	Microchannel Cooling for Performance Enhancement of GaN-on-Si High Electron Mobility Transistors	Xin Feng
ED-Mon-P11	Monolithic GaN based Envelope Tracking Power Amplifier	Weijun Luo
ED-Mon-P13	Monolithic integration of p-GaN HEMT and poly-crystalline diamond FET for Complementary FET circuit	Jiun Oh
Abstract number	**Title**	**Presenter**
ED-Mon-P16	Normally-off recessed p-NiO gate GaN-based HEMTs fabricated using "buffer-free" AlGaN/GaN heterostructures on SiC substrates	Justyna Wierzbicka
ED-Mon-P54	Ohmic Characteristics of n+-InAs/n+-GaAs/n+-GaN for Low-contact-resistivity Source/Drain of GaN-channel HEMTs	Takuya Hoshi
ED-Mon-P33	Ohmic electrode structure for AlGaN/GaN heterostructures near electron depletion	Sho Shirasu
ED-Mon-P45	Over 360 V breakdown voltage Schottky barrier diodes based on Molybdenum-GaN contact annealed at 700 °C for DC power and high temperature applications	Hugo Bouillaud
ED-Mon-P32	Performance of Ohmic Contacts on AlGaN/GaN HEMTs Recessed by Direct Laser Micromachining	Justinas Jorudas
ED-Mon-P53	Reduction of hole traps in GaN MOS structures by introducing Mg atoms near SiO2/GaN interfaces	Yuichi Sakagami
ED-Mon-P14	Role of epitaxial capping material on the dynamic on resistance in a Gallium Nitride on Silicon Carbide power device	Anirudh Venugopalarao
ED-Mon-P26	Si implanted ohmic contacts with modulated pulse annealing for AlGaN/GaN HEMTs	Amer Bassal

ED-mon-P25	Significant improvement of breakdown voltage of Al0.86Ga0.14N Schottky barrier diodes by atomic layer etching	Tingang Liu
ED-Mon-P36	Strain engineering of silicon nitride layers for pinch-off voltage modulation of GaN high-electron-mobility transistors	Ali Koyucuoglu
ED-Mon-P28*	Suppression of Mg contamination of the channel region by introduction of diffusion absorption layer under p-GaN in e-HEMT structures	Rudolf Shymon
ED-Mon-P38	Suppression of n-Type Inversion in High-Dose Mg-Implanted GaN Layers via Cap-Annealing under Ultra-High Pressure	Meguru Endo
ED-Mon-P10	Surface Refinement and Electrical Enhancement of 3D GaN fin Structures through TMAH Treatment	Hyun-Woo Lee
ED-Mon-P18	Switching Characteristics of p-GaN Schottky-gate AlGaN/GaN HEMTs: Impact of Gate Offset	David Zhou
ED-Mon-P7	Threshold voltage instabilities of the vertical GaN MOS FET structures with semi-insulating channel	Roman Stoklas
ED-Mon-P21	Ultralow Specific On-Resistance in p-GaN Gate HEMTs Enabled by Optimized AlN Spacer Design	David Zhou
ED-Mon-P56	Vertically Integrated Two-Memristors-One-Cell Nonvolatile Resistive Random-Access Memory through Nitrogen Vacancy Engineering	Haijiao Ma

Poster Session 2

Tuesday July 8, 17:00 – 19:00

Growth

Abstract number	Title	Presenter
GR-Tue-P13	Amorphous Carbon Films used for Remote Epitaxy of cubic Gallium Nitride on 3C SiC (001) Substrates	Donat Josef As

GR-Tue-P14	Atomic energy modulated epitaxy of N-polar AlN and GaN	Ran Feng
GR-Tue-P3	Boron for Strain-Compensation in BInGaN: Effects on Luminescence Properties	Olivia Shortall
GR-Tue-P15	Crack-Free Growth of Thick Gallium Nitride on Sapphire for High-Voltage Applications	M Nazri Kasuan
GR-Tue-P16	Developing GaN HEMTs Reclaiming Process for GaN on SiC Epi-Structure to Close the Loop of Supply Chain	David Dai
GR-Tue-P17	Development of gallium oxide-GaN junctions by HVPE for high-power and high-frequency electronics	Carl Hemmingsson
GR-Tue-P18	Development of GaN Micro-Pyramids and Platelets with High Uniformity for Red Emissions	Changhao Li
Abstract number	**Title**	**Presenter**
GR-Tue-P19	Enhanced GaN coalescence overgrowth on top-down nanowires using In as surfactant	Jingxuan Kang
GR-Tue-P20	Epitaxial Growth and Characterization of N-polar InAlGaN by Plasma Assisted Molecular Beam Epitaxy	Md Irfan Khan
GR-Tue-P21	Epitaxy of group III nitrides on Si with Sc2O3 interlayer	Tomas Grinys
GR-Tue-P4	Evaluation of growth temperature dependency in BGaN growth using AlGaN template on QST substrate	Atsuhiro Hayashi
GR-Tue-P5	Evaluation of radiation tolerance on BGaN detectors at KUR	Ryohei Kudo
GR-Tue-P6	Feasibility of molecular beam epitaxy of boron-nitride-arsenide highly mismatched alloys.	Sergei V. Novikov
GR-Tue-P22	GaN nanowires grown by PAMBE on metallic ZrN buffers – a critical impact of ZrN layer thickness on the growth temperature	Karol Olszewski

GR-Tue-P23	High rate, high quality tuneable nitrides by plasma atomic layer deposition enabling volume manufacturing for GaN device integration	Michael Powell
GR-Tue-P24	High-Rate GaN Growth by Magnetron Sputter Epitaxy Using a Solid Ga Target	Morris Ott
GR-Tue-P25	Impact of AlN Buffer Thickness on the 2DEG and Thermal Properties of thin-GaN channel HEMTs	Minho Kim
GR-Tue-P26	In-situ MOCVD Doping of Be and Be,O in (Al,Ga)N for Improved p-Type Conductivity	Fatemeh (Shadi) Shahedipour-Sandvik
GR-Tue-P2	Interfacial Structure and Stability of ScAlMgO4-GaN Interfaces: Implications for Mg and Sc Diffusion and Doping Behavior	Weifang Lu
GR-Tue-P7	Layered Boron Nitride - Heterointegration and applications	Suresh Sundaram
Abstract number	**Title**	**Presenter**
GR-Tue-P27	Mechanism of self-assembled cubic InGaN/GaN quantum wells and bulk InGaN layers in metal-modulated molecular beam epitaxy	Mario F. Zscherp
GR-Tue-P29	Microstructure control of zincblende GaN via nucleation layer growth V-to-III ratio	MJ Kappers
GR-Tue-P28	MOVPE Growth Dynamics of GaN on High-Resistivity Si and SOI Substrates	Ramesh Raju
GR-Tue-P31	N-polar GaN growth via high temperature chlorine-based halide vapor phase epitaxy for rapid dislocation reduction	Ping Qiu
GR-Tue-P30	Novel solutions for the deposition of highly n-doped GaN by sputtering	Silvia Schwyn Thöny
GR-Tue-P32	RF-MBE growth and characterization of InAlN thermoelectric thin films	Momoko Deura
GR-Tue-P33	Selective area growth of GaN micro-platelets on graphene for micro-LEDs applications	Jonathan Henriques

GR-Tue-P34	Selective Area Growth of GaN Nanowires on Si with Ga Pre-Filling	Gulzhan Baigarinova
GR-Tue-P8	Sputtered wurtzite-type (Al,Hf)N thin films: Synthesis, crystallographic texture, and surface-acoustic-wave generation	Laura I. Wagner
GR-Tue-P9	Structural and optical properties of ultrathin B and BN layers grown on sapphire by molecular beam epitaxy	Emil Mihai Pavelescu
GR-Tue-P35	Surface morphology of 265 nm optically pumped lasers on high temperature annealed AlN/sapphire with different miscut	Massimo Grigoletto
GR-Tue-P10	The lift-off technology of GaN-based electronic and optoelectronic devices using Hexagonal BN-assisted van der Waals Epitaxy	Tongbo Wei
GR-Tue-P36	Towards true vertical GaN-on-Si(111) devices with TiN	Armin Dadgar
Abstract number	**Title**	**Presenter**
GR-Tue-P37	Unveiling Growth-Driven Optical Dynamics in Molecular Beam Epitaxy Grown InGaN/GaN Nanowires: A Systematic Study	Soumyadip Chatterjee
GR-Tue-P11*	Van der Waals epitaxy h-BN/AlN back barrier with controllable boron-diffusion for high-performance AlGaN/GaN HEMTs	Haidi Wu
GR-Tue-P12	Van der Waals β-Ga_2O_3 Thin Films on High-Thermal-Conductivity Polycrystalline Diamond/h-BN Related Two-Dimensional Materials	Zhichun Yang
GR-Tue-P38	Vertical nanowire-based high electron mobility transistor structure grown by MOCVD	Ashutosh Kumar
OD-Tue-P42	Wafer-scale epitaxy of single-crystalline III-nitride semiconductors on amorphous SiO2/Si(100) substrates	Yimeng Sang

Physics and characterization

Abstract number	Title	Presenter
PC-Tue-P24	AlGaN/GaN MIS-HEMT Kink Effect Attribution to Poole-Frenkel Effect Through Device Topology Analysis	Arthur Collier
PC-Tue-P47	AlN/GaN Heterostructures: A Nanosecond Pulsed I-V Study by Undergraduate Engineering Students for Extracting the Velocity–Field Dependence	Ernesto Momox
PC-Tue-P6	Annealed Mg Nanodot Arrays on GaN for P-Type Ohmic Contact with Improved Surface Morphology	Rong Teng
PC-Tue-P31	Bayesian Analysis of Time-Resolved Photoluminescence in Indium Gallium Nitride Quantum Wells: Evidence of Compressed/Stretched-Exponential Behavior	Kazunori Iwamitsu
Abstract number	**Title**	**Presenter**
PC-Tue-P38	Carrier localization in long-wavelength emitting InGaN quantum-wells	Xiaoping Zhou
PC-Tue-P30	Comparison of metal-modulated and conventionally grown cubic, red emitting InGaN bulk layers and InGaN/GaN quantum wells	Silas A. Jentsch
PC-Tue-P27	Confocal resonant Raman scattering and photoluminescence in thick InGaN layers	Daqi Wang
PC-Tue-P19	Correlation Study of AlGaN/GaN HEMT Structures Performed with Novel Wafer Level Capacitance Mapping Technique and Spectroscopic Ellipsometry	Marshall Wilson
PC-Tue-P7	Deep-Level Transient Spectroscopy evaluation of epilayers grown on bulk GaN substrates for vertical devices	Pedro F. P. P. Rocha
PC-Tue-P17	Defects in Ammonothermal-based GaN Vertical Power Devices	Andrew Winchester

PC-Tue-P52	Determination of electronic structure parameters from spectroscopic ellipsometry and GW calculations: A case study on non-degenerate ScN	Jona Grümbel
PC-Tue-P42	Determination of quantum efficiency of InGaN-based light emitting diodes grown by plasma-assisted molecular beam epitaxy	Szymon Lach
PC-Tue-P39	Direct observation of anisotropic lateral ambipolar diffusion of charge carriers in a blue InGaN single quantum well on freestanding GaN	Conny Becht
PC-Tue-P9	Effects of Tilt Angle and Dose on Mg Channeled Implantation into GaN(0001)	Atsushi Suyama
PC-Tue-P29	Exciton Dynamics in Two-Dimensional Hybrid Structures based on an InGaN Quantum Well coupled to a MoSe2 Monolayer	Danxuan Chen
PC-Tue-P11	From GaN to Contact Electrification Induced Interface Spectroscopy	Ding Li
Abstract number	**Title**	**Presenter**
PC-Tue-P16	GaN FinFETs and High-k Dielectrics: A Synchrotron XPS Study of Interface Chemistry	Shreemoyee Chakraborty
PC-Tue-P20	Gate-Controlled Rashba and Dresselhaus Spin-Orbit Coupling in AlGaN/GaN heterostructures	Shuaiyu Chen
PC-Tue-P23	High Power Factor Stability Over Wide Low-Temperature Ranges in GaN-Based Two-Dimensional Hole Gas for Thermoelectric Generators	Lex Pardon
PC-Tue-P1	Identification of the Fe acceptor in semi-insulating heavily Fe doped HVPE GaN by optical studies	Auditee Majumder Momo
PC-Tue-P15	Impact of Charge Trapping on Threshold Voltage Instability in Quasi-Vertical GaN Trench MOSFETs on Sapphire	Huaxing Jiang

PC-Tue-P28	Impact of Growth Temperature on the Emission Properties of Zincblende InGaN/GaN Quantum Wells	Daniel Dyer
PC-Tue-P22	Investigation of electron transport in 2DEG AlGaN/GaN and 3D GaN channels under strong electric field	Irmantas Kašalynas
PC-Tue-P44	Investigation of wide-bandgap semiconductor materials by optical defect spectroscopy and THz-TDS	Christian Röder
PC-Tue-P33	Low and high frequency noise investigation from micro to macro scales in InGaN light-emitting diodes	Danylo Bohomolov
PC-Tue-P36	Low-frequency local fluctuations of light emissions in InGaN light-emitting diodes	Oliver Liu
PC-Tue-P35	Low-frequency noise components modelling in InGaN light-emitting diodes	Vita Ivanova
PC-Tue-P45	Microscopic Understanding, Engineering, and Utilization of Defect Behavior in Wide-Bandgap Semiconductors	Zhiming Shi
Abstract number	**Title**	**Presenter**
PC-Tue-P43	Misfit accommodation in a single atomic layer at a highly lattice-mismatched InN/GaN interface	Emi Kano
PC-Tue-P49	Multi-fields Coupling in Nitride Semiconductors and Stress Imaging Systems	Junyi Zhai
PC-Tue-P41	Optical Characterization of Thin-Film InGaN-Based Edge-Emitting Lasers	Wai Yuen Fu
PC-Tue-P53	Optical Detection of Sliding Ferroelectric Switching in hBN with a WSe2 Monolayer	Sébastien Roux
PC-Tue-P25	Optical properties of cubic InGaN for the entire In composition range	Elias Kluth
PC-Tue-P40	Optimisation of micropattern geometry for efficiently emitting InGaN quantum wells	Adam Brejnak
PC-Tue-P2	Phase diagram of GaN — where is its wurtzite-rocksalt-liquid triple point?	Izabella Grzegory

PC-Tue-P32	Photoluminescence excitation wavelength dependency of blinking phenomena in InGaN/GaN single quantum well	Kotaro Oikawa
PC-Tue-P37	Polarisation-resolved cathodoluminescence study of a zincblende InGaN/GaN single quantum well	X. Xu
PC-Tue-P4	Process and Characterization of Ohmic Contacts to p-type GaN using Ni/NiO/ITO Multilayer Scheme	Taoufik Slimani Tlemcani
PC-Tue-P10	Properties of defects formed during GaN growth as a result of hillock coalescence	Marcin Zajac
PC-Tue-P18	Quantitative Investigation of Ultra-Low Thermal Boundary Resistance Mechanisms at Diamond/GaN Heterojunctions	Haolun Sun
PC-Tue-P46	real time observation of stacking fault migration	Xifan Xu
PC-Tue-P12	Red Emission of GaN:Eu Films Grown by Plasma-Assisted Molecular Beam Epitaxy: Effects of Europium Concentration and Magnesium Co-Doping	José Cardoso
Abstract number	**Title**	**Presenter**
PC-Tue-P8	Role of deep traps in thermal stability of resistivity in bulk ammonothermal GaN:Mg	Marcin Zajac
PC-Tue-P26	Role of electronic degrees of freedom in In incorporation during MOVPE - ab initio explanation	Pawel Kempisty
PC-Tue-P34	Stress and doping analysis of low n-doped GaN layers grown on GaN, silicon and sapphire substrates by micro-Raman	Camille Sonneville
PC-Tue-P14	Studies on Threshold Voltage Instabilities in Vertical Trench GaN MOSFETs with Different Gate Oxides	Veronica Zhan Gao
PC-Tue-P3	Subsurface Modification of the Valence Band in Wide Bandgap III-Nitrides Through Mn ions incorporation	Kamila Nowak

PC-Tue-P48	The characterization of self-built electric field via the Urbach tail	Sha Han
PC-Tue-P5	The Photoionization Processes of Deep Trap Levels in n-GaN Films grown by MOVPE on Ammono-GaN substrates	Pawel Prystawko
PC-Tue-P50	THERMAL CONDUCTIVITY OF WURTZITE ScAlN: EFFECT OF LAYER THICKNESS	Dat Q. Tran
PC-Tue-P21	Thermal transportation analysis of GaN channel layer in N-polar GaN HEMT using neural network potential	Shigeki Yoshida
PC-Tue-P51	Ultra-low Sheet Resistance of ScAlN/GaN HEMTs	Zetian Mi
PC-Tue-P13	Unveiling N-Polar III-Nitride MOCVD Growth on SiC: Atomic-Scale Insights and Optimization via ADF STEM	Ingemar Persson

Optical devices

Abstract number	**Title**	**Presenter**
OD-Tue-P4	240 nm AlGaN-Based Deep Ultraviolet Micro-LEDs: Carrier Transport, Sidewall Engineering, and Nanorod Optimization	Shunpeng Lu
OD-Tue-P19	Could InGaN UL play a dual role in blue light emitting diodes for both defect trapping and dislocation screening?	Yao Chen
OD-Tue-P27	Deep-Level-Mediated Red Luminescence in Trench-Architected Thick InGaN Films with 5nm low Blueshift	Haodong Zhang
OD-Tue-P12	Efficiency of Carrier Injection to InGaN Multiquantum Wells	Agata Bojarska-Cieślińska
OD-Tue-P37	Efficient nonreciprocal acousto-optic modulation in GaN integrated photonic-phononic waveguides	Liang Zhang

OD-Tue-P10	Enhanced performance of AlGaN-based DUV LEDs through Hole Injection Efficiency Promotion Enabled by Polarization Engineering	Hongchang Tao
OD-Tue-P18	Enhanced Performance of GaN-based Light-emitting Diodes by Photoelectrochemical Etching and Transfer-printing Process	Huanqing Chen
OD-Tue-P40	Enhanced Properties of Heavily Mg-doped GaN by Combining Thermal Annealing Processes in Ammonia/Nitrogen	Xuecheng Wei
OD-Tue-P11	Enhancement of Light Extraction of Deep Ultraviolet Light Emitting Diodes	Wei-Chih Lai
OD-Tue-P28	Europium doped GaN quantum disks in GaN nanowires for efficient red LEDs realization	Alvaro Revilla-Martin
OD-Tue-P38	GaN photocathodes with field-induced negative electron affinity: a novel pathway to electron sources	Stefano Marinoni
OD-Tue-P3	Highly Reflective and Conductive a New Ni/Al/Au p-electrode for 292 nm UVB LED on C-plane Sapphire	Hamida Zia
Abstract number	**Title**	**Presenter**
OD-Tue-P34	III-Nitride nanowires for flexible, transparent and synaptic devices	Min Jiang
OD-Tue-P36	Improvement of Cleavage Consistency via Stealth Dicing Strategy	Menglai Lei
OD-Tue-P29*	InGaN Red LED with Quasi-quantum Well Effect Based on High Al Composition in Electron Blocking Layer	Anda Cheng
OD-Tue-P15	Insights into degradation processes in nitride laser diodes	Lucja Marona
OD-Tue-P9	Investigation of graded composition p-AlGaN for improved 330 nm ultraviolet light emitting diode performance	Peter J Parbrook

OD-Tue-P26	Investigation of Spatial and Spectral Electroluminescence of Blue and Green-Emitting InGaN/GaN Micro-Light-Emitting Diodes	Quang Trung Le
OD-Tue-P30	Investigation on the Enhanced Performance of N-polar InGaN-based Red LEDs	Hongchang Tao
OD-Tue-P22	Leakage Current in Pyramidal GaN micro-Light-Emitting Diodes	Andrei Vorobiev
OD-Tue-P13	Methods for temperature equalization in a one-dimensional array of nitride edge-emitting lasers	Dominika Dąbrówka
OD-Tue-P21	Micro-LEDs Based on InGaN Quantum Dots Grown by Molecular Beam Epitaxy for Visible Light Communication	Haowen Hua
OD-Tue-P24	Monolithic Trichroic MicroLED Display with Selective Etched Nanopillars	Bo Lu
OD-Tue-P23	Monolithically Integrated GaN MicroLEDs with Two HEMTs and One MIM Capacitor for AR and Smartwatch Microdisplay Applications	Yuefei Cai
OD-Tue-P41	Nanowatt-Level Optoelectronic GaN-based Heterostructure Artificial Synaptic Device for Associative Learning and Neuromorphic Computing	Teng Zhan
Abstract number	**Title**	**Presenter**
OD-Tue-P31	Observation of ultraviolet photothermoelectric bipolar impulse in gallium-based heterostructure nanowires	Jinjie Zhu
OD-Tue-P16	Performance improvement of GaN-based laser diode by TMAH solution treatment on m-plane sidewall ridge structure	Mengyang Huang
OD-Tue-P35	Performance improvements of AlGaN solar-blind ultraviolet phototransistor by N/Si-ratio-controlled in-situ SiNx passivation	Zhuoya Peng
OD-Tue-P14	Plasma-Isolated, Gain-Guided InGaN Laser Diodes – Advantages and Challenges	Szymon Grzanka

OD-Tue-P1	Post-wet-etching of Ni/Au ohmic contact to enhance the light extraction efficiency of AlGaN-based DUV LEDs	Jianchang Yan
OD-Tue-P33	Revealing Physical Insights into Heterostructure Nitride Ultraviolet Photodetectors	Qing Cai
OD-Tue-P2	Room temperature electroluminescence of Pr-implanted GaN p-n junction diode	Shin Ito
OD-Tue-P7	Simulation of (Al,Ga)N-based UV LEDs including effects from disorder	Michael O'Donovan
OD-Tue-P20	Super retina TFT based full color microLED display via laser mass transfer	Xu Yang
OD-Tue-P25	The role of In fluctuation in InGaN quantum wells in LEDs and how to tailor them with a SiNx interlayer	Markus Pristovsek
OD-Tue-P8	Thermal stability deterioration in UVC LEDs	Grigory Onushkin
OD-Tue-P39	TiS2 on GaN nanorod photoelectrode for accelerating photoelectrochemical hydrogen evolution reaction	Hoki Son
OD-Tue-P32	Top-down-fabricated GaN p-i-n junction single nanowire photodetectors	Elçin Akar
OD-Tue-P5	Wafer-scale vertical injection AlGaN-based DUV-LEDs	Jiaming Wang
OD-Tue-P17	Wavelength Tuning of Three-Terminal LED	Bo LU

Electronic devices

Abstract number	**Title**	**Presenter**
ED-Tue-P31	0.1V On-voltage p-GaN Gated Anode Heterostructure Diode for Rectifying Radio Wave	Naotaka Iwata
ED-Tue-P42	30°C Junction Temperature Reduction @ 24 W/mm in GaN Devices Enabled by 300 nm Polycrystalline Diamond Heat Spreader with AlN Insertion Layer	Kexin Deng

ED-Tue-P37	A Highly Linear 2-Transistor Monolithic Temperature Sensor Employing p-GaN HEMTs for GaN Power ICs	Fangqing Li
ED-Tue-P20	Abnormal phenomenon of source-drain current of AlGaN/GaN heterostructure device under UV/visible light irradiation	Baijun Zhang
ED-Tue-P51	AlScN/GaN (MIS)HEMTs grown by Metal-Organic Chemical Vapor Deposition	Franziska C. Beyer
ED-Tue-P9	Analysis of Trapping-Induced Transconductance Overshoot in the Transfer Characteristics of AlGaN/GaN MIS-HEMTs	Tintumol Dennis
ED-Tue-P11	Breakdown Voltage Anomoly in AlGaN/GaN Metal-Insulator-Semiconductor High Electronic Mobility Transistor	Yichong Ding
ED-Tue-P2	Comparative Epitaxial Study of Si- and Ge-doped n+ (In)GaN Source/Drain Layers for Radio Frequency High Electron Mobility Transistors (RF HEMT)	Sourish Banerjee
ED-Tue-P24	CuOx as an alternative gate material for AlGaN/GaN high-electron-mobility transistors	Aleksandra Wójcicka
ED-Tue-P16	Current Collapse Measurements of AlGaN/GaN HEMTs at Elevated Temperatures up to 300°C	Jeewoo Kang
ED-Tue-P29	Development of p-channel GaN FETs on extremely-low doped p-GaN with Mg-diffused Ohmic contacts	Manuel Fregolent
Abstract number	**Title**	**Presenter**
ED-Tue-P33	E-mode AlGaN/GaN MIS-HEMTs on Si with 2.92 W/mm of Power Density at Vds = 12 V for Low-Voltage Applications	Mengdi Li
ED-Tue-P44	Effect of sharp interface on 2-DEG characteristics of AlGaN/GaN HEMTs regrown on high quality AlN buffer layers	Chuyoung Cho
ED-Tue-P14	Effects of the high pressure annealing on threshold voltages in GaN-MOSFETs	Tetsu Kachi

ED-Tue-P47	Enhancement of Electromechanical Coupling Coefficient in AlN/Si BAW filters by Ti-ion Implantation	Subramaniam Arulkumaran
ED-Tue-P50	Ferroelectricity-driven inhomogeneity and giant nonlocality in Graphene/twisted WSe2 heterostructure	Rahul Debnath
ED-Tue-P21	Gate leakage mechanisms and their compact modeling in p-GaN gate AlGaN/GaN HEMTs	Carlo De Santi
ED-Tue-P18	High conductive strained quantum-well AlN/GaN/AlN heterostructure on AlN templates grown by PA-MBE through interface engineering and strain modulation	Guanlin Wu
ED-Tue-P34	High-efficiency Al2O3 /AlN/GaN MOS-HEMTs on 150-mm Si Substrate for Low-Voltage Applications	Lingjie Qin
ED-Tue-P40	High-Temperature Characteristics of Extreme Bandgap MOSHFET	Abdullah Al Mamun Mazumder
ED-Tue-P25	Hysteresis-Free GaN P-GIT Utilizing 2DEG as a Back Gate	Jiaolong Liu
ED-Mon-P46*	Impact of Atomic Layer Etching Depth on Carrier Mobility in AlGaN GaN HEMTs A Study of Scattering Mechanisms and Optimization	Boxuan Gao
ED-Tue-P17	Impact of gate orientation on DC and RF characteristics of GaN/AlGaN high electron mobility transistors	Patrick Jonsson
Abstract number	**Title**	**Presenter**
ED-Tue-P41	Impact of Prolonged, High Temperature Exposure on AlGaN/GaN Heterostructure at 500C up to 216 Hours	Can Jiang
ED-Tue-P48	Impurity and Distributed Polarization Doping for AlN-Based Schottky Barrier Diodes	Christoph Margenfeld
ED-Tue-P3	Influence of Al fraction on gate leakage in AlGaN channel high electron mobility transistors on silicon	Philippe Ferrandis

ED-Tue-P23	Investigating the Role of Threshold Voltage Hysteresis in Switching Performance of Normally-Off AlGaN/GaN MIS-HEMT	Shantveer Kanta
ED-Tue-P8	Investigating the Short Channel Effects and Scaling Capability between AlScN/GaN and AlInGaN/GaN HEMTs	Hao Lee
ED-Tue-P7*	Investigation of carrier transport and recombination processes in p-NiO gate AlGaN/GaN HEMTs under gate bias	Yanghu Peng
ED-Tue-P22	Investigation of Environmental Influence on C(V) Characteristics of GaN MISHEMT Test Structures	Benjamin Weber
ED-Tue-P15	Investigation of scattering components in AlSiO/AlN/GaN metal-oxide-semiconductor field-effect transistors formed on polar and non-polar planes	Tetsuo Narita
ED-Tue-P13	Investigation of Threshold Voltage Instability in AlN/GaN MIS-HEMTs under High-Field Stress and Temperature Variations	Huilin Li
ED-Tue-P38	Meandering Tapered Gate HEMTs for Improved Thermal Performance	Andrew Binder
ED-Tue-P1	Mechanism of Anomalous Breakdown Characteristics in MIS-HEMT Compared to Schottky-Gate HEMT for RF Applications	Yuchen Qian
ED-Tue-P35	MmWave AlGaN/GaN HEMTs on a 6-inch Si Substrate with 150 nm T-gate Fabrication Process	Xin Feng
Abstract number	**Title**	**Presenter**
ED-Tue-P26	Modified edge-gating geometry of AlGaN/GaN high-electron-mobility transistors for terahertz detection	Maxim Moscotin
ED-Tue-P19	Multi-Gate Finger Microwave GaN HEMTs on Si substrates with Individual Source Vias	Xin Feng

ED-Tue-P4	Negative Bias Instability of Thin-Barrier Gallium Nitride Metal-Insulator-Semiconductor High Electron Mobility Transistors	Simei Huang
OD-Tue-P6	New Interpretation of Fermi-level Pinning Behavior in P-type GaN MOS Capacitors via Temperature-Dependent C-V measurements	Fumiyuki Sei
ED-Tue-P5	Noise Characteristics of AlGaN/GaN HEMTs with Different Al Mole Fraction	Ki-Sik Im
ED-Tue-P10	Output Conductance Overshoot in AlGaN/GaN MIS-HEMTs	Spyridon Papadogeorgos
ED-Tue-P30	Overcoming Trapping Effects in Buffer-Free QuanFINE GaN HEMTs towards Enhanced RF Power and Efficiency	Lyes Ben Hammou
ED-Tue-P6	Post-gate annealing effects on short channel GaN-on-Si HEMTs	Elodie Carneiro
ED-Tue-P49	Study of Distributed Polarization Doped (DPD) Extreme Bandgap AlGaN Layers for Devices	Tariq Jamil
ED-Tue-P43	Study on Gate with Ferroelectric Multilayers by Annealing Treatments on the Performance of GaN MOS-HEMTs Grown on SiC substrate	Po Chuan Liao
ED-Tue-P45	TCAD Analysis of the Impact of Impurities and Traps in the AlGaN Barrier of GaN HEMTs on the CV Characteristics of MIS Structures	Kosuke Miura
ED-Tue-P27	TCAD based modeling of off-state degradation in AlGaN/GaN MOS-HEMTs	Jaya Jha
ED-Tue-P39	Temperature-Dependent Analysis of Enhancement-Mode P-Channel Recessed-MOS GaN FETs	Seung-Su Kim
Abstract number	**Title**	**Presenter**
ED-Tue-P12	The Influence of Partially and Fully Depleted p-GaN Layer on Threshold Voltage Instability in p-GaN Gate HEMTs	Yanlin Wu

ED-Tue-P46	The Two Dimensional Hole Gas in Hexagonal Boron Nitride Grown on (100) Silicon Substrates by Metal Organic Chemical Vapor Deposition	Chen-Da Du
ED-Tue-P36	Thermal generation rate of hole traps in GaN MOS structures	Masahiro Hara
ED-Tue-P32	Time-Dependent Gate Breakdown of Schottky p-GaN Gate HEMTs down to 15 K	Siyuan Ye
ED-Tue-P28	Trade-offs in mechanical and electrical properties of Silicon Nitride passivation for microwave Gallium Nitride High-Electron Mobility Transistors	Jesper Berglund Eklind

Poster Session 3

Thursday July 10, 15:00 – 16:00

Growth

Abstract number	**Title**	**Presenter**
GR-Thu-P7	A cascade model for the defect-mediated electrochemical etching of porous gallium nitride distributed Bragg reflectors	Ben Thornley
GR-Thu-P8	Analysis of GaN substrate polishing damage and its propagation to GaN epi layers using multiphoton photoluminescence	Shota Fujiki
GR-Thu-P9	Assessment of Subsurface Damage in GaN Substrates Induced by Mechanical Polishing	Natsuko Omiya
Abstract number	**Title**	**Presenter**
GR-Thu-P1	Capturing ionization energies of acceptors in GaN and AlN with density functional theory	Kelsey Mirrielees

GR-Thu-P2	Computational Study of Point Defect Formation in InxGa1−xN Thin Films Under MOCVD Growth Conditions	Pawel Kempisty
GR-Thu-P10	Development of monitoring technique for damaged layers using electrical resistance during power device polishing	Ryota Koshino
GR-Th-P3	Diffusion of Magnesium in GaN: Experimental Evidence explained by DFT study	Karol Kawka
GR-Thu-P11	Direct fabrication of record low resistivity (< 10-4Ω·cm2) contacts for n-type AlxGa1-xN (x>0.8)	Tingang Liu
GR-Thu-P4	Donor Diffusion in GaN: A DFT study	Karol Kawka
GR-Thu-P12	Electrochemical Process Design for Integrated Components based on Porous Gallium Nitride	Florian Meierhofer
GR-Thu-P22	Graphene-Coated Templates for Exfoliation of MOCVD-Grown GaN	Arūnas Kadys
GR-Thu-P13	High-Temperature Annealing of Ion-Implanted Aluminum Nitride: Effect of Point Defects on Crystal Recovery	Christoph Margenfeld
GR-Thu-P5	Limited Diffusion of Silicon in GaN: A DFT Study Supported by Experimental Evidence	Karol Kawka
GR-Thu-P14	Mitigation of Silicon Interface Contamination for Improved Selective Area and Patterned Regrowth	Francesco Marcantoni
GR-Thu-P15	Oxygen Plasma Etching for Tailored Thru-Hole Densities in Graphene Masks for thru-hole epitaxy	Chinkyo Kim
GR-Thu-P16	Photoluminescence analysis of time-dependent isotropic dry etching for reducing sidewall nonradiative recombination of n-GaN in micro-LEDs	Zhengfei Wei
GR-Thu-P17	Porous GaN: Anion-Specific Etching Mechanisms and Morphological Control	Thom Harris-Lee
GR-Thu-P18	Preparation of Highly Smooth Surfaces on OVPE-GaN Substrates via Photoelectrochemical Reaction-Assisted Polishing	Kiyoto Kayao
GR-Thu-P19	Qualification of AlN substrates after different surface treatments	Julia Schwar
Abstract number	**Title**	**Presenter**

GR-Thu-P20*	Study on slicing process of GaN bulk wafer using fixed abrasive wire saw	Shinya Moriyama
GR-Thu-P6	Theoretical Analysis and Fabrication of Epitaxial Cubic Boron Nitride-Diamond Heterojunctions with Multiple Crystal Orientations	Mark Polking
GR-Thu-P21	Wafer-scale single-crystalline GaN-based heterogeneous integration material by ion-cutting technique	Tiangui You

Physics and characterization

Abstract number	**Title**	**Presenter**
PC-Thu-P2	Characterisation of the Iron Defect Level in GaN and Dilute AlxGa1-xN Alloys	Christopher Dawe
PC-Thu-P17	Competition between intrinsic and defective luminescence in GaN microdisks under nanoindentation	Zhiwei Si
PC-Thu-P1*	Defects in AlGaN with varying Al content	Igor Prozheev
PC-Thu-P11	Degree of optical polarization and Urbach tails in (Al,Ga)N quantum wells: An atomistic tight-binding study	Stefan Schulz
PC-Thu-P10	Effects of Compositional and Interfacial Fluctuations on the Broadening of Excitonic Transition Linewidths in AlGaN-Based Quantum Wells	Hideaki Murotani
PC-Thu-P21	Enhancement of Electron Injection in GaN-on-Si Nanowire-Based Vertical Devices Using a Graphene Buffer	Swagata Bhunia
PC-Thu-P24	From Experiment to Equation a Predictive Model for Quantum Dot Photoluminescence	Kusumkoli De
PC-Thu-P19	High-Piezoelectric properties of GaN Nanowires for Powering Medical Implants	Szu-Wei Chen
Abstract number	**Title**	**Presenter**

PC-Thu-P5	In Situ Time-Resolved XPS Investigation of High-k Oxide Atomic Layer Deposition on (Al)GaN	Rainer Timm
PC-Thu-P26	Investigation of GaN/AlN self-assembled quantum dots through time-resolved photoluminescence	Johann Stachurski
PC-Thu-P20	Investigation of InGaN/GaN nanowire oxidation for functionalization and size-tuning of the quantum discs	Nidel Dilan Tchoulayeu Possie
PC-Thu-P23	Lasing Dynamics of One-dimensional Core-shell GaN/InGaN Nanowire Structures with Ultra-low Thresholds	Dae-Young Um
PC-Thu-P14*	Measuring spectral radiant flux from red InGaN MicroLEDs and calculating their external quantum efficiency – Pitfalls and possibilities	Martin Berg
PC-Thu-P27	Microscopic theory of phonon polaritons and long wavelength dielectric response	Olle Hellman
PC-Thu-P14	Minimising plasma-induced damage on nGaN for uLED mesa etching applications	Sungjin Cho
PC-Thu-P25	Nanoscopic Luminescence Analysis of GaN/AlN Quantum Dots	Gordon Schmidt
PC-Thu-P12	Optically Driven Ultrafast GHz-THz Coherent Acoustic Phonons in AlGaN/GaN heterostructures Under High-Excitation Densities	Shazan Ahmad Bhat
PC-Thu-P4	PHONON MEAN FREE PATH - THERMAL CONDUCTIVITY RELATION OF AlxGa1−xN, AND β-Ga2O3 SEMICONDUCTORS	Pegah Ghanizadeh
PC-Thu-P16	Photoluminescence-based optical inspection for GaN / InGaN MicroLED wafers	Sami Dzsaber
PC-Thu-P22	Raman spectroscopy applied to measurement of Mg doping in GaN nanostructures	Kris Bertness
PC-Thu-P7	Selective thermal etching fabrication of AlGaN/air distributed Bragg reflectors with > 200 nm stop-band	Pierre-Marie Coulon
PC-Thu-P8	Structural and electrical properties of AlGaN/GaN heterostructures grown on 2-degrees off-axis 4H-SiC epilayers	Fabrizio Roccaforte
Abstract number	**Title**	**Presenter**

PC-Thu-P3	Temperature dependence of charge carrier diffusion in GaN and AlGaN layers	Carsten Netzel
PC-Thu-P9	Temperature Dependence of the Optical Polarization Degree in AlGaN-Based MQWs with Emission Wavelengths in the Range of 220–230 nm	Hideaki Murotani
PC-Thu-P18	The fingerprints of ultra-thin shells on GaN nanowires in macroscale performance	Radoslaw Szymon
PC-Thu-P13	Thermal-Based Measurement Method of Effective Internal Optical Power and Internal Quantum Efficiency for Ultra-Violet AlGaN/GaN Light-Emitting Diodes	Byongjin Ma

Optical devices

Abstract number	**Title**	**Presenter**
OD-Thu-P2	A path towards thin-film flip-chip UVC LEDs by photo-assisted electrochemical etching	Artem Shushanian
OD-Thu-P18	A Quick Blood Test for Lung Cancer by Nitride Surface-Enhanced Raman Spectroscopy	Thuy Doan Khanh Huynh
OD-Thu-P10	Demonstration of GaN-based Resonant Cavity Light-emitting Diodes and Photodetectors by Micro-Transfer Printing	Zhi Li
OD-Thu-P14	Design and Fabrication of GaN/AlGaN THz Quantum-Cascade Laser Structure on SiC Substrate	Akira Kaneko
OD-Thu-P13	Design and Simulation of InGaN/GaN MQW Mode-Locked Lasers	Jianwei Fu
OD-Thu-P15	Design, Growth, and Characterization of Al(x)In(y)Ga(1−x−y)N-Based Integrated Infrared-Visible Detector-Emitter	Alireza Lanjani
OD-Thu-P12	Electrochemical lift-off of GaN films for GaN-on-GaN technology	Meixin Feng
OD-Thu-P7	Enhancing Light Extraction in Nanorod LEDs through Size-Dependent Resonance Effects	Ja-Yeon Kim
Abstract number	**Title**	**Presenter**

OD-Thu-P1	High Efficiency and Large Current Injection AlGaN-based Deep Ultraviolet Micro-LED Arrays	Xuejiao Sun
OD-Thu-P3	High-efficiency air-cavity reflector for DUV micro-LEDs	Xiao Wei Sun
OD-Thu-P11	Low-Temperature Characteristics of Polarization-Doped Nitride Emitters	Muhammed Aktas
OD-Thu-P13	Marked Enhancement of Optical Gain by Doping for 10 THz-band GaN-based Quantum-Cascade Laser Analyzed by NEGF method	Airu Takahashi
OD-Thu-P6	Micro-Scale Light-Emitting Diodes with Bandwidth up to 7.2 GHz Estimated from Equivalent Circuit Model	Xinran Zhang
ED-Thu-P25	New localized landscape Model for Absorption and Emission Spectra with Polarization Ratio in AlGaN-Based UV LEDs with Alloy Fluctuation.	Yuh-Renn Wu
OD-Thu-P5	Optical gain measurements of InGaN red-light-emitting LED epitaxial layers	Itsuki Shimbo
OD-Thu-P16	Optimizing AlGaN Barrier Thickness for Enhanced Responsivity in GaN-on-Si HEMT UV Detectors	Abdalla Eblabla
OD-Thu-P8	Semi-polar (20-21) InGaN/GaN-based MCLED array with orthogonally polarized emissions	Baoping Zhang
OD-Thu-P17	The quatification of the interband transitions in the quantum confined Stark Effect	Sha Han
OD-Thu-P19	Theory of contact to p-type GaN – new multilayer design	Stanislaw Krukowski
OD-Thu-P4	Wafer-scale characterization of 4232-Pixel-Per-Inch red micro-LED arrays for industrial mass production	Hyeong Ho Park

Electronic devices

Abstract number	Title	Presenter
ED-Thu-P12	1 kV Ultra-wide bandgap Al0.47Ga0.53N Vertical Junction Barrier Schottky Diodes	Chao Liu
ED-Thu-P6	Avalanche Signature Analysis in state of the art GaN-on-Si Vertical PiN Diodes	Youssef Hamdaoui
ED-Thu-P19	Capacitance-Frequency Co-Optimization and Multi-Scenario Applications of High-Power Tri-Channel Trench-Anode GaN Schottky Diodes	Kai SU
ED-Thu-P5	Deep-Level Defects Induced Degradation of Negative Differential Resistance in GaN-Based Resonant Tunneling Diodes	Haibing Qiu
ED-Thu-P20	Effect of compensation on the performance of AlN-based heterojunction p-n diodes	Cristyan Quiñones
ED-Thu-P14	Effect of oxygen partial pressure on the properties of sputtered vertical NiO/GaN heterojunction diodes	Wojciech Hendzelek
ED-Thu-P1	Engineering of Interface Barrier in MXene/GaN for Schottky Diode Applications and Contact Performance	Dominika Majchrzak
ED-Thu-P16	Engineering Vertical AlGaN Schottky Barrier Diodes: Influence of Stack Design and Anode Alignment on Reverse Leakage Suppression	Avinas N Shaji
ED-Thu-P4	Experimental Analysis and Performance Evaluation of GaN PiN Betavoltaic Cells	Jaewon Park
ED-Thu-P2	Fabrication of GaN Junction Barrier Schottky Diodes using p-GaN Selective-Area Growth	Qi Shu
ED-Thu-P21	Fully Vertical Si-doped AlN SBDs with Crack-free AlN Film on Si(111)	Haicheng Cao
ED-Thu-P24	High performance GaN-on-sapphire Schottky Detector with SNR over 2×10^6	Jinfeng Zhang
ED-Thu-P26	High Sensitivity AlGaN/GaN Magnetic Sensing: Split-Electrode Sensor Array for Ultralow Field Detection at 2.4 uT	Yung C. Liang
ED-Thu-P18	High-Performance Vertical GaN-on-GaN Schottky Barrier Diodes with Robust kV-Class Operation	Xinchen Ge

Abstract number	Title	Presenter
ED-Thu-P15	kV-class Vertical GaN Junction Barrier Diodes using Mg Implantation	Will Mecouch
ED-Thu-P10	Low Leakage Etched-And-Regrown GaN p-n diodes with Fluorine Plasma Treatment	Xingyu Fu
ED-Thu-P7	Polarization Superjunctions for Reduced Leakage and Enhanced Breakdown Characteristics in GaN-based Field-Effect Schottky Barrier Diodes	Arno Kirchbrücher
ED-Thu-P22	Precise ablation of gallium nitride heterostructures with a femtosecond laser for microelectronics applications	Simonas Indrišiūnas
ED-Thu-P8	Reverse current suppression of p-GaN diode using SiOx interlayer	Zixian Jiang
ED-Thu-P17	Reversibility of Reverse I–V Degradation Caused by Forward Current Stress in GaN p-n Diodes	Daiki Iwata
ED-Thu-P9	Schottky contacts on GaN epilayers grown on bulk substrates	Giuseppe Greco
ED-Thu-P11	Semipolar (11-22) AlN/AlGaN Schottky diodes grown by metal-organic chemical vapor deposition	Junxue Ran
ED-Thu-P3	Tunneling current in Schottky structures formed on heavily doped n-type GaN	Masahiro Hara
ED-Thu-P13	Ultra-wide Bandgap Al0.5Ga0.5N vertical PN Memory Diodes	Chao Liu

Women in Nitrides – diversity and inclusion

Monday, July 7, 19:00 - 20:30

"Women in Nitrides - diversity and inclusion" will be held on Monday evening in the Clarion Hotel & Congress Malmö Live. Please join this reception to network and mingle with others in the nitrides community.

This event is the fifth of its kind after Women in Nitrides at ICNS-13 and 14 as well as IWN2022 and IWN2024. It will feature a panel discussion of established and experienced researchers discussing diversity and inclusion to inspire scientific and professional careers in the field of nitride semiconductors. This will be followed by relaxed group discussions aiming to build and expand your network. All participants can attend without additional charge. Drinks and finger food available. Space may be limited, and registration is required.

Program

Pannelists

This event is sponsored partially by IEEE photonics society, ThorLabs, AlixLabs AB and Malmö University.

AlixLabs | THORLABS

IEEE Photonics Society | MALMÖ UNIVERSITY

Rump Sessions

Tuesday, July 8, 19:00 - 20:30

Expect bold opinions, sharp debate, and real insight into what's next for III Nitrides. Bring your questions and your curiosity. Snacks and extra drink available.

The Rump Sessions are partly sponsored by HexaTech, Inc.

Rump Session 1 – >kV Nitride Power Devices: Challenges and Technologies

High 1

As demand rises for compact, efficient, and high-voltage power electronics across sectors like electric vehicles, renewable energy, and grid infrastructure, nitride semiconductors—particularly GaN and AlN—have emerged as key candidates for next-generation power devices operating above 1 kilovolt. Lateral GaN transistors with breakdown voltage above 1200 V are already on the market, and vertical architectures have been already demonstrated for kV-range operation. This panel session will bring together leading experts from academia, industry, and national laboratories to examine the current status and future trajectory of >kV nitride power devices.

The discussion will focus on critical technological challenges including substrate research, device engineering, material quality, defect control, thermal management, and reliability under high-field operation. Panelists will also highlight innovations in epitaxial growth, and on lateral and vertical device architectures.

Attendees will gain insight into ongoing research, upcoming opportunities, and on paths to overcome the barriers currently limiting the development of >kV nitride power electronics. This panel will serve as a vital touchpoint for shaping the roadmap of high-voltage nitride technology.

🎤 Invited Panelists:
Michał Boćkowski, Unipress
Srabanti Chowdhury, Stanford University
William Alan Doolittle, Georgia Institute of Technology
Shota Kaneki, Sumitomo Chemical
Farid Medjdoub, IEMN-Lille
Tetsuo Narita, Toyota Central Research

🗣️ Moderators:
Prof. Matteo Meneghini, University of Padova
Prof. Jun Suda, Nagoya University

Rump Session 2 – Novel Nitrides and Concepts

High 4

During the session the important new directions in the field of physics and technology of III-N compounds will be discussed. The Invited Panelists and the Audience will highlight recent advancements in material technologies, understanding physical properties as well as in formulating requirements and prospects for future new applications in two exciting areas:

1. Hexagonal BN for quantum technologies
In particular:, crystal growth and doping, polytypism band structures, isotopic effects, optical properties in UV as well and issues and facts of BN for quantum technologies and sensing will be summarized and open for discussion of the future R&D.

2. Potential of ferroelectric wurtzites (AlScN,…) for new classes of electronic devices: towards in-memory computing architectures based on non-volatile memory (NVM).
In particular: unique advantages and challenges of various deposition techniques (sputtering, MBE, MOVPE, PLD), fatigue issue as a main obstacle for NVM devices, high leakage current due to VN, ways to the lowering of the energy switching barriers will be highlighted and open for discussion of the future R&D.

🎤 Invited Panelists:
Igor Aharonovich, *University of Technology Sydney*
Guillame Cassabois, *Montpellier University*
Jim Edgar, *Kansas State University*
Simon Fichtner, *Kiel University*
Jong Kyu Kim, *POSTECH*
Sébastien Roux,
Chris van de Walle, *UCSB*

🗣️ Moderators:
Bernard Gil, *Montpellier University*
Debdeep Jena, *Cornell University*

Rump session 3 - microLEDs for displays and other applications

Live 2 & 3

Join us for an exciting Rump Session on microLEDs that dives deep into the current landscape and future potential of micro-LED technology. From groundbreaking displays to advanced AR/VR and data communication, micro-LEDs are poised to reshape multiple industries.

📌 What to expect:
A high-impact panel featuring leading voices from industry and academia, discussing the three main pillars:
🔬 Physics and limitations of micro-LEDs
🚀 Applications driving micro-LED development
⚙️ Technology and fabrication – mastering small sizes at massive scale

💡 Key questions we'll explore:
Can we push LED efficiency even further?
What are the physical limits — and how can we work around them?
InGaN or InGaAlP for red micro-LEDs?
Will micro-LEDs outshine OLEDs in consumer electronics?
What's the real game-changer: AR/VR, communication, or something else?

🎤 Invited Panelists:
Jean-Jacques Drolet (ams-OSRAM, DE)
Frank Yan (Fuzhou Univ. & SID, CN/US)
Falcon Liu (Play Nitride, TW)
Zhe Zhuang (Nanjing Univ., CN)
Youngjoon Hong (Sungkyunkwan Univ., KR)
Motoaki Iwaya (Meijo Univ., JP)
Zetian Mi (Univ. of Michigan, US)
Jim Speck (UCSB, US)

🧑‍🎤 Moderator: Martin Strassburg (ams-OSRAM, DE)

Publishing

Special-Topic Collection on Frontiers in Nitride Semiconductors Research

Conference manuscripts for ICNS-15 can be submitted to **Applied Physics Letters** (APL), **Journal of Applied Physics** (JAP), or **AIP Advances** (ADV). Accepted manuscripts will be collated in a joint Special-Topic Collection on Frontiers in Nitride Semiconductors Research. Articles will undergo regular peer review and will be handled by regular Associate Editors at APL, JAP, and ADV. This Special-Topic Collection will open in July 2025 and close in December 2025.

The Special Topic seeks manuscript submissions covering a broad range of aspects in the field of Nitride Semiconductors Research. We seek manuscripts which report on the latest achievements in nitride semiconductor materials, devices, and integrated circuits relevant for sustainable applications in power electronics, high-frequency electronics and photonics. The guest editors for this Special Topic will be Oliver Ambacher,Vanya Darakchieva,Izabella Grzegory, Åsa Haglund, Erik Lind, Piotr Perlin, Filip Tuomisto, Lars Samuelson, and Mathias Schubert as Associate Editor for APL.

All authors will be given the opportunity to choose which journal they would like to be included in this multi-journal collection: APL (short-form letters); JAP (comprehensive, long-form articles), and ADV (either format is acceptable). Papers that are deemed not appropriate for publication in APL and JAP by the editors can be considered for transfer to AIP Advances and still remain in the collection. JAP will also accept transfers from APL as the editors suggest.

Please note the following about APL, JAP, and ADV:

APL is a hybrid subscription journal. It is free to publish with APL's traditional license. Authors can elect for open access publication in APL but must agree to pay an Article Processing Charge (APC) of $3800.

JAP is a hybrid subscription journal the same as APL, except it is part of AIP Publishing's Subscribe to Open pilot. All submissions in 2025, even if published in 2026, will be made Open Access at NO CHARGE to authors.

ADV is a gold open access journal. Authors must pay an APC of $1800 to publish. There are limited discounts and waivers available for authors of certain countries.

Those details can be found here:
https://publishing.aip.org/resources/researchers/open-science/open-access/#policy

Submission opening day for this Special Topic is July 14.

Submission must be done through the regular submission sites for APL, JAP, or ADV. During submission, the manuscript must be assigned to this Special Topic via a drop-down menu. Further instructions will follow soon as well.

Social Events

Welcome Reception

Sunday, July 6, 18:00 - 20:00

Join us for a Welcome Reception to kick off an exciting ICNS-15 conference!

We’re thrilled to welcome you and invite you to enjoy a relaxed evening of delicious food, refreshing drinks, and great company. It's the perfect opportunity to meet new people, reconnect with old friends, and get ready for what’s ahead. The opening evening of the conference will come alive with the vibrant sounds of two talented folk musicians, setting a warm and lively tone for the days ahead. Read more about the musicians of the evening below.

We look forward to seeing you there!

The Welcome Reception will be held in the ”Living Room” at Malmö Live.

Gala Dinner

Thursday, July 10, 18:30 - 00:00

Celebrating an evening of elegance, fine dining, and exceptional company. The evening will feature a three-course meal, carefully crafted to delight your senses, accompanied by drinks and live entertainment. From breathtaking live performances to unexpected surprises. Singers and musicians will take the stage and will be leaving you inspired, moved, and delighted.

This is more than a dinner. It's a celebration of excellence and the joy of being together. Dress to impress, bring your sense of wonder, and prepare for a night you'll never forget. We look forward to sharing this special night with you.
*Pre-registration is required.

Before Dinner Concert: Elisabeth Melander Jazz Quartet with Malmö Strings
After Dinner Show with Students from Malmö Academy of Music. Read more about the musicians here.

The Gala dinner is sponsored by Mitsubishi Chemical Group.

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Excursions

Wednesday, July 9

Canal tour in Malmö

Enjoy a tour along the charming canals and parks, including the tranquil Kungsparken, and bustling harbor. They will pass by iconic landmarks like the Turning Torso and the historic Malmöhus Castle in the old town.

Guided city walk in Malmö

Join this guided city walk that will be telling you about interesting people, places, buildings and events. The tour basically explains Malmös development from a small Danish fishing village to Sweden's third largest city. Of course we will also give you an insight into modern Swedish culture and customs.

Castle tour in Skåne

Experience an exciting castle tour through the history of Skåne! Join us on a guided journey as we visit two of the region’s most fascinating castles: Torup Castle and Svaneholm Castle. Let yourself be enchanted by the castles history, architecture, and the unique stories that surround them. Welcome to an experience that will take you back in time.

MAX IV Lund

MAX IV offers access to 16 beamlines that provide modern X-ray spectroscopy, scattering/diffraction, and imaging techniques to contribute to solving scientific questions in a wide range of areas. The visit will include up to three beamlines with techniques and methods of specific interest to the nitride community.

Axis Communications, Lund

Are you curious about Axis Communications? Then this is a great opportunity to visit our head quarter in Lund on the 9th of July 2025. Get to know how our strong focus on R&D has taken us to the position as global industry leader within video surveillance. You will have the opportunity to visit our Axis Experience Center and get more in-depth knowledge about how we work and how our cutting-edge technology add value to society.

Day trip for accompanying persons only

Visit the Island of Ven, July 8

Legend has it that this small island between Landskrona and Denmark was formed when a giant dropped a lump of earth into the sea. Today, Ven is known for its beautiful cliffs dropping straight into the sea, white beaches, quaint cottages, cosy cafés and fun hills for cycling. The tour guides you through four remarkable destinations on Ven, with a delicious lunch included.

LUND UNIVERSITY | NanoLund CENTER FOR NANOSCIENCE

Lund University – Assistant Professorships

In Semiconductor Materials and Technologies

We're hiring! Join us at the forefront of semiconductor research.

Lund University is recruiting **three tenure-track Assistant Professors** to help shape the future of semiconductor materials and technologies. This is a unique opportunity to build your career at the intersection of cutting-edge materials science and impactful technology development.

Open Positions:

- Assistant Professor in Semiconductor Photonics
- Assistant Professor in Semiconductor Technology
- Assistant Professor in Sustainable Semiconductors

What We Offer:

- A world-class research environment with state-of-the-art nanofabrication and materials characterization facilities
- Home to the Swedish Chips Competence Center (SCCC)
- Home to the Swedish Competence Center for III-Nitride Technology C3NiT
- Active partner in the European Chips Joint Undertaking pilot line on wide bandgap semiconductors

Learn more and apply:

www.nano.lu.se/about-nanolund/career-opportunities

LUND UNIVERSITY | NanoLund CENTRE FOR NANOSCIENCE

Lund University – Postdoctoral Position

Novel ultra-wide bandgap semiconductor technology

We're hiring! Join us at the forefront of semiconductor research.

Lund University is recruiting a postdoc to develop novel ultra-wide bandgap semiconductor technology based on AlN and related alloys. This includes growth by metalorganic vapor phase epitaxy and developing AI approaches for deterministic synthesis to achieve n- and p-type conductive AlN and related UWBG Al containing alloys. Doping and processing of ultra wide bandgap semiconductors present challenges, but it can enable electronic devices with substantially better performance as compared to traditional power electronic devices based on Si and SiC.

What We Offer:

- A world-class research environment with state-of-the-art nanofabrication and materials characterization facilities
- Home to the Swedish Chips Competence Center (SCCC)
- Home to the Swedish Competence Center for III-Nitride Technology C3NiT
- Active partner in the European Chips Joint Undertaking pilot line on wide bandgap semiconductors

Learn more and apply:

https://lu.varbi.com/en/what:job/jobID:835969/type:job/where:4/apply:1

15th International Conference on Nitride Semiconductors (ICNS-15)
Malmö, Sweden, July 6 – 11, 2025