GaN Marathon 2024

Preliminary Conference Program

June 10-12, 2024 | Verona, Italy

Sunday June 9, 2024

Hotel Due Torri, Verona

REGISTRATION and WELCOME, from 16:00 to 18:00

Monday June 10, 2024

Hotel Due Torri, Verona

8:00	**REGISTRATION and WELCOME**		
9:00	**OPENING CEREMONY – Matteo Meneghini (General Chair)**		
	10A - KEYNOTE SESSION		
9:30	Keynote	Hiroshi Amano	**Nagoya University**, Vertical devices on bulk nitride substrates
10:00	Keynote	Anthony Sanders	**Infineon Technologies,** Integrated GaN Partitioning: Challenges and Solutions
10:30	Keynote	Aurelien David	**Google**, Revisiting the physics of InGaN LEDs: Myths and facts
11:00	**Coffee break**		
	10B - OPTOELECTRONIC DEVICES 1		
11:20	Invited	Ulrich Steegmueller	**ams OSRAM**, Game Changing semiconductor Technologies - From high-power to miniaturized and smart LEDs
11:40	Invited	Nicolas Grandjean	**Institute of Physics, School of Basic Sciences, EPFL**, Efficiency of III-nitride quantum wells: the importance of point defects
12:00	Invited	Rachel Oliver	**Department of Materials Science and Metallurgy, Cambridge University**, Microscopy of cubic nitrides for LEDs
12:20	Invited	Tim Wernicke	**Technische Universität Berlin, Institute of Solid State Physics**, Metalorganic vapor phase epitaxy of AlGaN based UVC LEDs
12:40	Invited	Ulrich Schwarz	**TU Chemnitz, Institute of Physics**, Transition between quantum confinement and bulk-like behavior in wide polar quantum wells
13:00	**Lunch Break (Pizzeria Da Pino, Piazza Bra, 15 min Walking Distance from the Conference)**		
	10C - RF DEVICES 1		
14:30	Invited	Michael Mikulla	**Fraunhofer IAF – Inatech**, Advances in mm-Wave Gallium Nitride HEMTS and MMICs in Gain and Efficiency
14:50	Invited	Jose Jimenez	**Qorvo**, 20 lessons learnt on 20 years working in GaN-RF
15:10	Invited	Eduardo Marty Chumbes	**Raytheon Technologies**, Millimeter-wave ScAlN RF Transistors – Status and Future Direction
15:30	Student	Franco Ercolano	**University of Bologna**, TCAD analysis of the High-Temperature Reverse-Bias Stress on AlGaN/GaN HEMT
15:40	Invited	Farid Medjdoub	**CNRS-IEMN**, The next millimeter-wave breakthrough coming up with advanced AlN/GaN transistors
16:00	Student	Aniruddhan Gowrisankar	**IISC**, Engineering a Low RF Loss HEMT-on-Silicon
16:10	Invited	Patrick Fay	**Department of Electrical Engineering, University of Notre Dame**, Advances in Polarization Engineering for Power, Linearity, and Thermal Management
16:30	**Coffee break**		
	10D - POWER DEVICES 1		
16:50	Invited	Kalparupa Mukherjee	**CamGaN Devices**, Next generation of ICeGaN for superior no load and light load performance
17:10	Invited	Tetsuo Narita	**Toyota Central R&D Labs.,Inc.**, Engineering of Channel Mobility, Threshold Voltage and Reliability in GaN MOSFETs Using AlSiO/AlN Gate Stacks Formed By Plasma-Enhanced Atomic Layer Deposition
17:30	Student	Shun Lu	**Nagoya University**, Recess-etching-free GaN p-MOSFET achieved by p-type contact to GaN/AlGaN heterojunction with Mg-annealing process
17:50	Invited	Srabanti Chowdhury	**Stanford University**, Diamond on GaN: On achieving low temperature growth and low thermal boundary resistance
18:00	Invited	Christian Huber	**Bosch**, Is vertical GaN on foreign substrates feasible? Insights from the YESvGaN project
18:20	Regular	Lars Heuken	**Porsche**, Elevating Electric Sports Cars: GaN Power Semiconductors Unleashed
18:40	Invited	Karen Geens	**IMEC**, GaN power device fabrication for extension to higher voltages
18:50	Regular	Patrick Diehle	**Fraunhofer Institute for Microstructure of Materials and Systems IMWS**, Doping investigation of structured GaN devices by highly lateral resolved TOF-SIMS

END OF DAY 1, 19:00

INVITED, COMMITTEE & SPONSOR DINNER (INVITATION ONLY)

Tuesday June 11, 2024

Hotel Due Torri, Verona

11A - POWER DEVICES 2

8:20	Student	Youssef Hamadoui	**CNRS-IEMN**, High quality fully versus pseudo vertical GaN-on-Silicon pn diodes
8:30	Invited	Arno Stockman	**BelGaN**, Dynamic phenomena in 650V p-GaN technology
8:50	Regular	Nicolò Zagni	**University of Modena and Reggio Emilia**, Insights from Device Simulations into Trapping Effects in Vertical GaN Power Devices
9:10	Invited	Gianmauro Pozzovivo	**Infineon Technologies Austria AG**, GaN Power HEMTs: Next Level of Performance-to-Cost Ratio for Broader Market Adoption
9:20	Invited	Herbert Pairitsch	**Infineon Technologies Austria AG**, Power-GaN, the long path from materials science to innovative products
9:40	Invited	Ferdinando Iucolano	**STMicroelectronics**, GaN Devices: Industrial trends and challenges
10:00	Invited	Marnix Tack	**GaN Valley**, GaN Valley™: a unique ecosystem accelerating GaN innovation and business growth in Europe
10:20	Invited	Davide Bisi	**Transphorm Inc.**, Latest Progress on GaN Cascode Devices for High-Power Applications
10:40	**Coffee break**		

11B – GROWTH TECHNIQUES 1

11:00	Regular	Jan Kuzmik	**Slovak Academy of Sciences**, InN/InAlN Heterostructures for New Generation of Fast Electronics
11:10	Invited	Michal Bockowski	**Institute of High Pressure Physics of the Polish Academy of Sciences**, GaN-on-GaN technology from the perspective of materials science
11:20	Regular	Elke Meissner	**Fraunhofer Institute for Integrated Systems and Device Technology IISB**, Growth of thick freestanding 3-inch GaN crystals by vertical down-flow HVPE
11:40	Invited	Christof Mauder	**Aixtron SE**, 300 mm MOCVD Reactor Technology for Vertical GaN-on-Si Power Devices
11:50	Student	Yingying Lin	**Nagoya University**, Anisotropic hole transport along [0001] and [11-20] direction in p-doped (10-10) GaN
12:10	Invited	Kazutada Ikenaga	**Taiyo Nippon Sanso Corporation**, Advancements in MOCVD and Supporting Equipment Technology for GaN
12:20	Regular	Gaudenzio Meneghesso	**University of Padova**, The GaN4AP projects: results and challenges
12:40	**Lunch break (Hotel Due Torri, Lobby)**		

11C - RF DEVICES 2

13:40	Invited	Enrico Zanoni	**University of Padova**, Degradation of RF devices
14:00	Invited	Keisuke Shinohara	**Teledyne Scientific Company**, GaN HEMT scaling for millimeter-wave applications
14:20	Regular	Yvon Cordier	**Univ. Côte d'Azur, CNRS, CRHEA**, Evaluation of ScAlN/GaN HEMTs grown by ammonia source molecular beam epitaxy
14:30	Invited	Kozo Makiyama	**Sumitomo Electric Industries Ltd.**, High-power-density N-polar MIS GaN HEMT for power amplifiers
14:50	Invited	Jeong-Sun Moon	**HRL Laboratories**, Millimeter-wave Graded-channel GaN HEMT Technology for 5G and Beyond
15:10	Student	Hossein Yazdani	**Ferdinand-Braun Institute**, Si-implantation for Low Ohmic Contact Resistances in RF GaN HEMTs
15:20	Break		
15:30	Follow ACME people to bus stop		
16:00	**Bus transfer to Lazise (45 min)**		

Dogana Veneta, Lazise

17:00	**POSTER SESSION**
19:00	Break/Free Time during Dinner Setup (enjoy Lazise and the lakeside!)
20:00	**CONFERENCE DINNER (Dogana Veneta)**
22:30	**First Bus leaves to Verona**
0:00	**Second Bus leaves to Verona**

Wednesday June 12, 2024			
	Hotel Due Torri, Verona		
	12A - POWER AND RF DEVICES 3		
8:20	Invited	Mayank Shrivastava	**IISC**, Physical Insights into the Processes Leading to Dynamic RON and its Mitigation Through Novel Surface Passivation Scheme
8:40	Invited	Han Wui Then	**Intel**, 50nm DrGaN in 3D Monolithic GaN MOSHEMT and Silicon PMOS Process on 300mm GaN-on-Si(111)
9:00	Invited	Elison Matioli	**Institute of Electrical and Micro-Engineering, EPFL**, Emerging Technologies for GaN-based RF and vertical power devices
9:20	Invited	Oliver Hilt	**Ferdinand-Braun-Institut**, AlN-based GaN channel HEMTs on AlN and SiC substrates
9:40	Regular	Carlo De Santi	**University of Padova**, p-GaN gate reliability physics
9:50	**Coffee break**		
	12B - OPTOELECTRONIC DEVICES 2		
10:10	Regular	Claude Weisbuch	**Ecole Polytechnique**, What we learned from photo and electro emission experiments in III-nitrides
10:20	Regular	Matteo Buffolo	**University of Padova**, Understanding UV LEDs degradation
10:30	Student	Lukas Uhlig	**Chemnitz University of Technology**, Fast lateral mode competition phenomena in InGaN broad-ridge laser diodes
10:40	Invited	Åsa Haglund	**Chalmers University of Technology**, Ultraviolet (light my way)…towards surface-emitting UV lasers
11:00	Regular	Saulius Marcinkevicius	**KTH Royal Institute of Technology**, Hole Injection into Quantum Wells of Long Wavelength GaN LEDs
11:10	Invited	Jan Ruschel	**Ferdinand-Braun-Institut**, Operation-induced degradation effects in AlGaN-based UV LEDs
11:30	Regular	Bernd Witzigmann	**Friedrich-Alexander Universität Erlangen-Nürnberg (FAU)**, Impact of alloy fluctuations on optical gain in AlGaN based UV lasers
CLOSING CEREMONY AND AWARDS – Matteo Meneghini (General Chair), 11:40 to 12:00			

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