

CSW 2024

3-6 JUNE IN LUND, SWEDEN



Preliminary program for CSW 2024 - Monday June 3rd

MONDAY JUNE 3RD

Time	MA6	MA7
09.00 - 10.00	Registration at Matteannexet	
10.00 - 12.00	<p>III-V nanowire device technology Short course</p> <p>10.00 III-V Nanowire Solar Cells <i>David Alcer</i></p> <p>10.25 Hot-carrier nanowire photovoltaics: from concepts to application <i>Javier Escobar Alcón</i></p> <p>10.50 High-speed III-V nanowire transistor technology <i>Lars Fhager</i></p> <p>11.15 Light emitting diodes - A history and characterisation methods <i>Kristi Adham</i></p> <p>11.40 InP/InAsP Quantum Discs-in-Nanowire Array Photodetectors <i>Jeddi Hossein</i></p>	<p>Advanced Characterization Methods Short course</p> <p>10.00 Watching semiconductors grow with atomic resolution <i>Daniel Madsen</i></p> <p>10.30 Characterization of nanostructured devices with nanofocused X-rays <i>Jesper Wallentin</i></p> <p>11.00 Studying device interfaces with advanced XPS techniques <i>Rainer Timm</i></p> <p>11.30 Time-resolved spectroscopy and microscopy methods for studying photo-excited charge carrier dynamics in semiconductors <i>Donatas Zigmantas</i></p>
12.00 - 14.00	Registration at Kårhuset	
	No lunch will be served	
	Aula Kårhuset	
14.00 - 14.20	Opening Ceremony	
14.20 - 14.40	Award Ceremony	
14.40 - 15.20	<p>Plenary I</p> <p>Powering up with Gallium Nitride technologie <i>Srabanti Chowdhury, Stanford</i></p>	
15.20 - 16.00	<p>Plenary II</p> <p>Connecting the Dots - Heterogeneous Integration, III-V, and the Future of Connectivity <i>Nadine Collaert, IMEC</i></p>	
16.00 - 18.00	Welcome Mingle at Matteannexet Pre-registration is required	

Preliminary program for CSW 2024 - Tuesday June 4th

TUESDAY JUNE 4TH

Time	MA6	MA7
07.30 - 08.30	Registration	
08.30 - 09.00	Session Gallium Oxide and related Chairs: Zetian Mi & Srabanti Chowdhury High performance gallium oxide devices, <i>Uttam Singiseti</i>	Nano and Micro Optics Chairs: Elisa Antolin & Plamen Paskov Epitaxy of quantum dots operating in the telecom C-band and scalable fabrication of quantum photonic devices, <i>Pawel Holewa</i>
09.00 - 10.00	Contributed talks 09.00 Ga2O3/GaN HETEROSTRUCTURE FOR DEEP UVC SENSING AND LED APPLICATIONS, <i>Peter Ramvall</i> 09.15 The epitaxial strain and stress relationships in the alpha and beta phases of (Al,Ga)2O3 and their effects onto phonon and electronic properties, <i>Mathias Schubert</i> 09.30 HIGH-CRYSTALLINE QUALITY SI-DOPED β-Ga2O3 WITH DIFFERENT SURFACE ORIENTATIONS BY HOT-WALL MOCVD, <i>Daniela Gogova</i> 09.45 HfO2/β-Ga2O3(-201) interface electrical properties after thermal treatment, <i>Karim Cherkaoui</i>	Contributed talks 09.00 High-performance Micro-Size Light-Emitting and Detecting Diodes with Triangular shapes, <i>Huabin Yu</i> 09.15 1.5μm SINGLE-PHOTON EMISSION FROM GaSb QUANTUM DOT EXCITED RESONANTLY WITH A SEMICONDUCTOR LASER, <i>Teemu Hakkarainen</i> 09.30 IMPROVING LIGHT COUPLING IN LWIR T2SL AND QWIP DETECTORS USING METASTRUCTURES: A NUMERIC SIMULATION STUDY, <i>Linnea Bendrot</i> 09.45 TUNEABLE STRUCTURAL COLORS FROM TiO2 MIE RESONATOR ARRAYS IN GLASS, <i>Mikko Kjellberg</i>
10.00 - 10.30	Coffee Break at Matteannexet Sponsored by – Taiyo Nippon Sanso	
10.30 - 11.00	UWB materials Chairs: Vanya Darakchieva & Michal Bockowski AlN crystal growth and defect characterization: A Next Generation Ultrawide Bandgap Semiconductor and its Potential for Power Devices, <i>Elke Meissner</i>	Lasers I Chairs: Takuya Inhoue & Pawel Holewa Perspectives on the future of hybrid and regrown PCSELS, <i>Weidong Zhou</i>
11.00 - 12.00	Contributed talks 11.00 Fully coalesced thin GaN growth on AlN substrates for AlN-based HEMTs by hot-wall MOCVD, <i>Minho Kim</i> 11.15 Thermal transport in AlGaIn/GaN HEMTs grown on SiC, GaN, and AlN substrates, <i>Dat Q Tran</i> 11.30 Fabrication at the speed of light: towards analyte-specific sensors made of diamond using UV laser as energy source, <i>Joana-Catarina Mendes</i> 11.45 THE ROLE OF GLASS-FRIT BONDING IN ACHIEVING CRACK-FREE GaN-HEMT TRANSFER TO SILICON CARRIER FOR DIAMOND GROWTH, <i>Rizwana Khanum</i>	Contributed talks 11.00 ENHANCED PERFORMANCE OF MULTIWAVELENGTH NANOWIRE LASERS, <i>Mattias Jansson</i> 11.15 PHOTONIC CRYSTAL SURFACE-EMITTING LASERS FABRICATED BY DEEP-HOLE DRY ETCHING, <i>Myeongeun Kim</i> 11.30 Selectively Grown Buried InGaAs/InP Quantum Wells on (001) SOI for Lateral Laser Diodes, <i>Donghui Fu</i> 11.45 New contact approach for optical loss reduction in nano-ridge laser diodes grown on 300 mm silicon wafers, <i> Davide Colucci</i>
12.00 - 13.00	Lunch at Matteannexet	
13.00 - 13.30	THz Electronics Chairs: Patrick Fay & Jan Stake Progress in Epitaxy of Ultra-High-Speed InP-based Transistors for Future Wireless Communication Systems, <i>Takuya Hoshi</i>	Wide Bandgap Photonics Chairs: Elke Meissner & Francesco La Via Progress in AlGaIn-based Far-UVC LED Technologies and Their Applications, <i>Michael Kneissl</i>

Preliminary program for CSW 2024 - Tuesday June 4th

Time	MA6	MA7
13.30 - 14.30	<p>Contributed talks</p> <p>13.30 InP/GaAsSb DHBT Emitter Etching Process Optimization with a Simultaneous $f_T/f_{MAX} = 451/914$ GHz and 86% Device Yield, <i>Mojtaba Ebrahimi Maroufi</i></p> <p>13:45 Terahertz Oscillators Integrated with Multiple Resonant Tunneling Diodes into Cavity Resonator, <i>Feifan Han</i></p> <p>14.00 A 4.7-THz GaAs Schottky barrier diode mixer, <i>Divya Jayasankar</i></p> <p>14.15 Coherent Coupling in a Two-Dimensional Arrayed Resonant-Tunneling-Diode Terahertz Oscillator, <i>Zhenling Tang</i></p>	<p>Nitride nanowire light emitting diodes: from single wire properties to device applications, <i>Maria Tchernycheva</i></p> <p>Contributed talks</p> <p>14.00 Development of Rocksalt-structured-MgZnO-based UV-C Lamp Emitting in 190-220 nm Spectral Range, <i>Kotaro Ogawa</i></p> <p>14:15 III-nitride-based photonic crystal surface-emitting lasers with UVC emission, <i>Dogukan Apaydin</i></p>
14.30 - 15.00	<p>Coffee Break at Matteannexet Sponsored by – Taiyo Nippon Sanso</p>	
15.00 - 16.00	<p>Postersession at Matteannexet</p>	
16.00 - 16.30	<p>Wide Bandgap Devices Chairs: Martin Dawson & Uttam Singiseti</p> <p>HETEROGENEOUS INTEGRATION: BRINGING THE BEST MATERIAL FOR THE FUNCTION, <i>Tomas Palacios</i></p>	<p>Integrated Photonics Chairs: Mattias Hammar & Eric Tournier</p> <p>Semiconductor quantum dots for integrated photonics and long distance implementations, <i>Simone Portalupi</i></p>
16.30 - 17.30	<p>Contributed talks</p> <p>16.30 Diamond growth for power and quantum device applications, <i>Okhyun Nam</i></p> <p>16.45 FIRST GAN DETECTOR ARRAY FOR HIGH ENERGY PROTON BEAM IMAGING, <i>Matilde Siviero</i></p> <p>17.00 Trap Characterization And Microwave Power Performance In Buffer-Free AlGaIn/GaN-On-SiC MISHEMTs, <i>Amit Bansal</i></p> <p>17.15 Short-term reliability assessment of sub-micron thick AlN/GaN-on-Silicon HEMTs grown by MBE for RF applications, <i>Elodie Carneiro</i></p>	<p>Contributed talks</p> <p>16.30 INTEGRATED AMPLITUDE AND PHASE MODULATOR FOR FREE-SPACE OPTICAL COMMUNICATIONS ESTABLISHED IN THE LWIR ATMOSPHERIC WINDOW, <i>Salvatore Pes</i></p> <p>16.45 Compact light couplers for III-V membrane devices laterally grown on SOI, <i>Zhaojie Ren</i></p> <p>17.00 RIDGE QUANTUM CASCADE DETECTORS FOR FREE-SPACE OPTICAL COMMUNICATIONS ESTABLISHED IN THE LWIR, <i>Nour Nawfal</i></p>
17.40	<p>Guided tour in Lund Pre-registration is required</p>	

TUESDAY JUNE 4TH

Preliminary program for CSW 2024 - Wednesday June 5th

WEDNESDAY JUNE 5TH

Time	MA6	MA7
07.30 - 08.30	Registration	
08.30 - 09.00	GaN and SiC Power Devices Chairs: Michael Kneissl & Tomas Palacios Breaking Barriers with GaN: Crystal Growth and Ultra-High-Pressure Annealing Strategies, <i>Michal Bockowski</i>	Epitaxial Synthesis of nanomaterials Chairs: Saptarshi Das & Michihiko Suhara Quantum Device Epitaxy, <i>Erik Bakkers</i>
09.00 - 10.00	Growth, defects and applications of 3C-SiC, <i>Francesco La Via</i> Contributed talks 09.30 VERTICAL GAN PN DIODE WITH TRIPLE-ZONE EDGE TERMINATION USING STREAMLINED SINGLE-IMPLANT PROCESSING, <i>Yu Duan</i> 09.45 Fully-Vertical GaN-on-SiC Trench MOSFETs, <i>Jialun Li</i>	Contributed talks 09.00 Template-Assisted Selective Epitaxy of InAs on W metal films, <i>Johannes Svensson</i> 09.15 Growth of GaSb nanowires revealed by environmental TEM, <i>Mikelis Marnauza</i> 09.30 III-V NANOWIRES WITH LIGHT-ABSORBING/EMITTING PROPERTIES ON A 2-INCH Si WAFER, <i>Keisuke Minehisa</i> 09.45 Charge carrier diffusion induced nanowire light-emitting diodes, <i>Yue Zhao</i>
10.00 - 10.30	Coffee Break at Matteannexet Sponsored by – Taiyo Nippon Sanso	
10.30 - 11.00	III-V HEMT & HBTs Chairs: Cezar Zota & Yasuyuki Miyamoto InGaAs HEMTs for Cryogenic Applications, <i>Arnulf Leuther</i>	Lasers II Chairs: Weidong Zhou & Simone Portalupi Temporal control of photonic-crystal surface-emitting lasers, <i>Takuya Inoue</i>
11.00 - 12.00	Contributed talks 11.00 High f_T and f_{max} of double δ -doped GaInSb channel HEMTs, <i>Ryosuke Kouno</i> 11.15 INVESTIGATION OF ATOMIC LAYER ETCHING FOR FABRICATION OF InP HEMTs, <i>Austin Minnich</i> 11.30 Enhanced electron mobility in InSb/Ga _{0.22} In _{0.78} Sb composite channel HEMT structure, <i>Tomoki Jinnai</i> 11.45 TiW-based InP DHBT technology for next generation communication systems analog front-end integrated circuits, <i>Virginie Nodjadjim</i>	Contributed talks 11.00 Type-I and type-II interband cascade lasers emitting below 3 μm , <i>Maëva fagot</i> 11.15 OPTIMIZATION OF PL- AND LASING-WAVELENGTH DETUNING OF MEMBRANE LASERS FOR UNCOOLED OPERATION, <i>Takuro Fujii</i> 11.30 Robust Measurement of Nanowire Laser Performance Across 8 Designs using Experimental Big-Data, <i>Stephen Church</i> 11.45 Investigation of device length dependence of 1.55- μm -band QD-RSOA in threshold current of SiPh-based heterogeneous tunable laser, <i>Taisuke Matsuki</i>
12.00 - 13.00	Lunch at Matteannexet	
13.00 - 13.30	GaN HEMTs Chairs: Arnulf Leuther & Jan Grahn Advances in Field Control and Exploitation in III-N Devices, <i>Patrik Fay</i>	Nanowires and Advanced Characterization Chairs: Erik Bakkers & Katsuhiko Tomioka Nanoscale compositional and luminescence fluctuations in Zn-doped GaAs nanowires, <i>Stephen Church</i>

Preliminary program for CSW 2024 - Wednesday June 5th

WEDNESDAY JUNE 5TH

Time	MA6	MA7
13.30 - 14.30	<p>Contributed talks</p> <p>13.30 BUFFER ENGINEERING OF ALGAN CHANNEL TRANSISTORS ON SILICON GROWN BY MOLECULAR BEAM EPITAXY FOR HIGH VOLTAGE APPLICATIONS, <i>Antoine BARBIER-CUEIL</i></p> <p>13:45 GaN HEMT using partial high-k films at G-D spacing to improve breakdown voltage, <i>Yasuyuki Miyamoto</i></p> <p>14.00 High threshold voltage p-GaN/p-AlGaN/AlGaIn/GaN HEMT, <i>Min Gi Jeong</i></p> <p>14.15 CONTROL OF COMPOSITION AND CHANNEL-BARRIER INTERFACE SHARPNESS IN MOCVD GROWN HIGH-AI CONTENT AlGaIn/GaN HEMTS, <i>Alexis Papamichail</i></p>	<p>Contributed talks</p> <p>13.30 ANNEALING EFFECT ON GaAs AND GaNAs NANOWIRES AT VARIOUS TEMPERATURES, <i>HIDETOSHI HASHIMOTO</i></p> <p>13:45 Visualizing the Vapor-Solid-Solid Growth of Wurtzite GaP Nanowires, <i>Tianyi Hu</i></p> <p>14.00 SINGLE INDIUM PHOSPHIDE NANOWIRE DIODES AS ULTRAHIGH-RESOLUTION DETECTORS FOR IMAGING X-RAY AND OPTICAL FOCI, <i>Nils Lamers</i></p> <p>14.15 STRAINED CORE/DUAL-SHELL NANOWIRES: THE DIFFERENT INTERFACE ROLES AND THEIR IMPORTANCE FOR APPLICATIONS OF GAAS ACROSS NEAR-INFRARED, <i>Xiaoxiao Sun</i></p>
14.30 - 15.00	<p>Coffee Break at Matteannexet Sponsored by – Taiyo Nippon Sanso</p>	
15.00 - 16.00	<p>Postersession at Matteannexet</p>	
16.00 - 16.30		<p>Heterostructures and interfaces Chairs: Stephen Church & Anders Gustafsson</p> <p>Three-Dimensional Monolithic and Heterogeneous Integration of Two-Dimensional Materials, <i>Saptarshi Das</i></p>
16.30 - 17.30		<p>Contributed talks</p> <p>16.30 NANOCLOUDS IN HIGH-MOBILITY ULTRAFAST InGaAs PHOTOCONDUCTORS ON InP, <i>Steffen Breuer</i></p> <p>16.45 INVESTIGATION OF INP-SI INTERFACE BAND STRUCTURE USING DENSITY FUNCTIONAL THEORY, <i>Kyro Odyssefs Kosmatos</i></p> <p>17.00 III-V semiconductor epitaxy based on machine learning and in-situ feedback control, <i>Chao Zhao</i></p> <p>17.15 OPTICALLY ACTIVE InGaAs AXIAL NANOWIRE HETEROSTRUCTURES FOR QUANTUM INTEGRATED PHOTONIC CIRCUITS, <i>Hyowon Jeong</i></p>
19.00	<p>Conference Dinner at Grand Hotel Pre-registration is required</p>	

Preliminary program for CSW 2024 - Thursday June 6th

THURSDAY JUNE 6TH

Time	MA6	MA7
07.30 - 08.30	Registration	
08.30 - 09.00	Optical Detectors and Solar Chairs: Magnus Borgström & Håkan Pettersson Optics of 2D material solar cells, <i>Elisa Antolín</i>	Neuromorphic Computing Chairs: Karl-Magnus Persson & Anders Mikkelsen Analog bilayer memristors for neuromorphic computing, <i>Saketh Mamidala Ram</i>
09.00 - 10.00	Contributed talks 09.00 Sustainable high efficiency multi-junction nanowire solar cells, <i>Mariia Shcherbakova</i> 09.15 Monolithically integrated InAs/InGaAs dual-band infrared photodetector, <i>Seungwan Woo</i> 09.30 DYNAMICS OF HOT CARRIERS IN InGaAs NANOWIRES MONOLITHICALLY GROWN ON SILICON, <i>Hamidreza Esmailpour</i> 09.45 Multijunction-type PIN photodetector with pinhole reflection for optical communication applications, <i>Toshimasa Umezawa</i>	Contributed talks 09.00 Optoelectronic Nanowire Neuron, <i>Thomas Kjellberg Jensen</i> 09.15 Semiconductor-Oxide Interfaces of InAs-based Ferroelectric and Memristive Devices, <i>Austin Irish</i> 09.30 III-V NANOWIRE BASED NEUROMORPHIC NANOPHOTONIC DEVICES, <i>Vidar Flodgren</i> 09.45 Activation Energies and Polarization-Dependent Conduction in Ferroelectric InAs-based Capacitors, <i>Hannes Dahlberg</i>
10.00 - 10.30	Coffee Break at Matteannexet Sponsored by – Taiyo Nippon Sanso	
10.30 - 11.00	AlScN and ferroelectrics Chairs: Olli-Pekka Kilpi & Daniela Gogova Thermal conductivity of III-Nitrides, <i>Plamen Paskov</i>	III-V Quantum and Nanowire Devices Chairs: Takuya Hoshi & Lars Fhager Energy-efficient cryogenic electronics for quantum computing, <i>Cezar Zota</i>
11.00 - 12.00	Polarization order and emerging device applications of wurtzite ferroelectrics, <i>Zetian Mi</i> Contributed talks 11.30 MOLECULAR BEAM EPITAXY OF (Al,Sc)N NANOWIRES FOR PIEZOELECTRIC ENERGY HARVESTING, <i>Philipp John</i> 11.45 TERAHERTZ OPTICAL HALL EFFECT IN AlScN/GaN AND AlYN/GaN HEMT STRUCTURES, <i>Vallery Stanishev</i>	Contributed talks 11.00 Investigation of Noise Performance in InP HEMTs with Varying Indium Channel Composition from 80 K to 300 K, <i>Junjie Li</i> 11.15 Gate-Controlled Near-Surface Josephson junctions, <i>Louise Olausson</i> 11.30 Demonstration of vertical resonant tunneling field-effect transistor using InGaAs/GaAs super lattice nanowires, <i>Yoshiki Tai</i> 11.45 Enhancing III-V Nanowire MOSFET RF Performance through Optimized Gate Resistance, <i>Marcus Sandberg</i>
12.00 - 13.00	Lunch at Matteannexet	
13.00 - 14.30	Oxide Enabled Electronics Contributed talks 13.00 Lattice-matching epitaxy of rutile-type GexSn1-xO2 alloy film on TiO2 substrate for device applications, <i>Hitoshi Takane</i> 13:15 SOLID-PHASE-EPITAXY OF RUTILE-GeO2 IN MOLECULAR BEAM EPITAXY (MBE), <i>Wenshan Chen</i> 13.30 Non-volatily Reconfigurable Frequency Modulation with a III-V Ferroelectric Transistor, <i>Zhongyunshen Zhu</i> 13.45 DEVELOPMENT OF AN ITO-BASED FERRO-ELECTRICAL MOSFET, <i>Karl-Magnus Persson</i>	Semiconductor nanostructures, surfaces, and synchrotron studies Chairs: Maria Tchernycheva & Lutz Geelhaar Exploring semiconductor nanostructures with synchrotron nanobeams, <i>Gema Martinez Criado</i> Contributed talks 13.30 SURFACE PROPERTIES OF P-GAN AND INTERACTION WITH NICKEL, <i>Mikko Miettinen</i> 13:45 Bismuth-trimer adlayer on In- and Sb- terminated InSb(111) surfaces, <i>Rohit Yadav</i> 14.00 Quasi-ALE process for GaN: High etching rate without compromising the surface roughness, <i>Paula Mourinho-Miñambres</i> 14.15 Evaluating Atomic Layer Etching: Analytical Approaches to Ion Energy Control for semiconductor devices, <i>Oscar Danielsson</i>

Preliminary program for CSW 2024 - Thursday June 6th

Time	MA6	MA7
14.30 - 15.00	Coffee Break at Matteannexet Sponsored by – Taiyo Nippon Sanso	
15.00 - 15.30	Quantum Dots and Advanced Characterization Chairs: Gema Martinez Criado & Rainer Timm Growth and properties of GaAs quantum dots for quantum science and technology, <i>Armando Rastelli</i>	UV LEDs and mLEDs Chairs: Joana Mendes & Lars Samuelson UV LEDs/micro-LEDs for optical wireless communications, <i>Martin Dawson</i>
15.30 - 16.30	Contributed talks 15.30 In-situ OBSERVATION OF InAs/GaAs QUANTUM DOTS USING THE MAGNIFICATION INFERRED CURVATURE METHOD, <i>Jinkwan Kwoen</i> 15.45 IN-SITU SYNTHESIS OF FexPy NANOPARTICLES, <i>Azemina Kraina</i> 16.00 Monodisperse InAs QDs investigation through Atom Probe Tomography, <i>Binita Tongbram</i> 16.15 THz electron paramagnetic resonance ellipsometry for defect characterization in semiconductor materials: Bloch equations and superconvergence rules in the frequency-dependent magnetic susceptibility, <i>Viktor Rindert</i>	Contributed talks 15.30 SCALABLE TOP-DOWN FABRICATION OF (IN,GA)N NANOWIRES FROM EPITAXIAL LAYERS, <i>Lutz Geelhaar</i> 15.45 OPTICAL INVESTIGATIONS OF NANO-LEDS BASED ON MICRON SIZED III NITRIDE PLATELETS, <i>Anders Gustafsson</i> 16.00 InGaN platelets for red micro LEDs, <i>Martin Berg</i>

THURSDAY JUNE 6TH