

Plenary Joint GHz/AntennEMB opening session
Thursday May 24 09:00-10:45 (E:A)

Time:	Title:
09:00-09:15	Welcome
09:15-10:00	Invited Speaker 1
10:00-10:45	Invited Speaker 2

GHz Sessions
Thursday May 24 11:15-13:00

Session: Active and Passive Devices I (E:A)

	Advanced Millimetre-Wave Waveguide Components Enabled by Silicon Micromachining Adrian Gomez-Torrent, Umer Shah KTH Royal Institute of Technology
11:15-11:30	
	Fabrication of Tunnel Field-Effect Transistors Abinaya Krishnaraja, Elvedin Memisevic, Markus Hellenbrand et al. Lund University
11:30-11:45	
	RF Characterisation of Vertical III-V Nanowire Tunnel FETs Markus Hellenbrand, Elvedin Memisevic, Johannes Svensson et al. Lund University, EIT
11:45-12:00	
	Electro-Thermal Memory of GaN HEMTs Mattias Thorsell, Johan Bergsten, Anna Malmros et al. Microwave Electronics Laboratory, MC2, Chalmers
12:00-12:15	
	Graphene field-effect transistors for high frequency applications Muhammad Asad, Marlene Bonmann, Xinxin Yang et al. Chalmers University of Technology
12:15-12:30	
	Micromachined Cavity Resonator Sensor for on Chip Material Characterisation at 260 GHz Dragos Dancila ¹ , Bernhard Beuerle ² , Umer Shah ² et. al. ¹ Microwave group, Division of Solid-State Electronics, Uppsala University. ² Micro and Nanosystems, Royal Institute of Technology
12:30-12:45	
	Planar Goubau Line for THz on-Wafer Biosensing Juan Cabello-Sánchez, Helena Rodilla, Vladimir Drakinskiy et al. Chalmers Tekniska Högskola
12:45-13:00	

Session: mm-wave circuits (E:B)

	E-band Upconverting Transmitter Using X6 Multiplier Dhecha Nopchinda ¹ , Zhongxia He ¹ , Göran Granström ² et al. 1Chalmers University of Technology, 2 Gotmic AB
11:15-11:30	
	InP HEMT Design for Cryogenic Low Noise Amplifiers E. Cha ¹ , G. Moschetti ² , N. Wadefalk ² et al. 1GigaHertz Centre, Chalmers University of Technology, Gothenburg, 2Sweden Low Noise Factory AB, Gothenburg, 3Sweden RISE Research Institute of Sweden, Boras, Sweden
11:30-11:45	
	An InP DHBT G-band 140-220 GHz Low Noise Amplifier with 80 GHz bandwidth for high data rate communication and sensor applications Herbert Zirath, Vessen Vassilev Chalmers University
11:45-12:00	
	Characterization of Graphene FET based 200 GHz Mixer and 1 GHz Amplifier Integrated on a Si Substrate Marlene Bonmann, Michael Andersson, Yaxin Zhang et al. Chalmers University of Technology
12:00-12:15	
	An 85-GHz Digitally Controlled Oscillator Utilizing a Novel Frequency Fine-Tuning Technique Rikard Gannedahl, Johan Holmstedt Electrical and Information Technology, Lund University
12:15-12:30	
	Two mm-wave VCOs in 28-nm UTBB FD-SOI CMOS Therese Forsberg, Johan Wernehag Markus Törmänen et al. Department of Electrical and Information Technology, Lund University
12:30-12:45	

	Leaky Wave Antenna at 300 GHz in KTH's Micromachined Waveguide Technology
	Dragos Dancila, Bernhard Beuerle, Umer Shah
11:15-11:30	Uppsala University, Royal Institute of Technology,
	Recent Progress and Challenges of EMF Compliance of 5G Cellular Equipment
11:30-11:45	Bo Xu, Davide Colombi, Zhinong Ying
	A Novel Design Procedure for Waveguide Slot Arrays
	Johan Wettergren, Per Magnusson, Erik Silfverswärd
11:45-12:00	RUAG Space AB, Bluetest AB
	Dense Patch Antenna Array with VCSEL based Interconnections for Future 5G Cellular Applications
	Zhongxia Simon He, Tamas Lengyel, Yang Jian
12:00-12:15	Chalmers
	Some Important Antenna Design Aspects for the 5th Generation mmWave User Device
	Zhinong Ying, Kun Zhao, Bo Xu
12:15-12:30	Sony, Ericsson AB
	Integrated Active Doherty Antenna Transmitter
	Marianna Ivashina, Christian Fager, Rob Maaskant
12:45-13:00	Chalmers

GHz Sessions

Session: Active and Passive Devices II (E:A)

	Drain current saturation in graphene field-effect transistors for high frequency applications
	Marlene Bonmann, Muhammad Asad, Xinxin Yang et al.
14:00-14:15	Chalmers University of Technology
	Optically Controlled Dielectric Rod Waveguides with Carbon Nanotube Thin Layers for Terahertz Wave Applications
	Dmitri V. Lioubtchenko, Serguei Smirnov, Ilya Anoshkin et al.
14:15-14:30	KTH Royal Institute of Technology
	InGaAs Nanowire MOSFETs for high-frequency applications
	Fredrik Lindelöw, Lasse Södergren, Erik Lind
14:30-14:45	Lunds Universitet
	Multilayer Micromachined Dual-Mode Elliptic Cavities Filter With Axial Feeding at 270 GHz
	Oleksandr Glubokov, Xinghai Zhao, James Campion et al.
15:00-15:15	KTH Royal Institute of Technology
	Magnetic Influence on Cryogenic InP HEMT LNAs
	Isabel Harrysson Rodrigues, Arsalan Pourkabirian, Jan Grahn
15:15-15:30	Chalmers University of Technology
	A revolutionary GaN-on-SiC heteroepitaxy for high-frequency power transistors
	Jr-Tai Chen et al.
15:30-15:45	SweGaN AB, Sweden, Department of Microtechnology and Nanoscience, Chalmers University of Technology.

Session: Communication Systems (E:B)

	An 8-bit, 800MS/s redundantly scaled SAR ADC
	Victor Åberg, Christian Fager, Lars Svensson
14:00-14:15	Chalmers University of Technology
	High-Speed High-Accuracy Time-Interleaved SAR ADC for 5G Radio Base Stations
	^{1,2} Siyu Tan, ¹ Pietro Andreani, ² Mattias Palm et al.
14:15-14:30	¹ Department of Electrical and Information Technology, Lund University, ² Ericsson Research
	A 40 Gbps PAM-4 RF-DAC with 1.2 pJ/bit Energy Efficiency
	Frida Strömbeck, Zhongxia Simon He, Herbert Zirath
14:30-14:45	Chalmers University of Technology
	Towards Long-Range Backscatter Communication with TunnelDiode Reflection Amplifier
	¹ Gustav Eriksson, ² Ambuj Varshney, ¹ Dragos Dancila et al.
	¹ Microwavegroup, Division of Solid-State Electronics, Uppsala University. ² Department of Information
15:00-15:15	Technology, Uppsala University
	Two Tunable Integrated Duplexer Architectures
	¹ Imad ud Din, ¹ Stefan Andersson, ^{1,2} Henrik Sjöland et al.
15:15-15:30	¹ Ericsson AB, ² Lund University

An All-Digital Polar PWM Transmitter

¹Muhammad Touqir Pasha, ^{1,2}Muhammad Fahim Ul Haque, ³Jahanzab Ahmad et al.

¹Department of Electrical Engineering, Linköping University, ²Department of Electronic Engineering, NED

15:30-15:45 University of Engineering and Technology, Karachi, Pakistan, ³Intel Corporation, High Wycombe, United Kingdom

AntennEMB Session: (E:1406)

Thursday May 24 14:00-15:45

Application of Higher-Order MLFMM for Efficient Monostatic RCS Calculation

Peter Meincke

14:00-14:15 TICRA, Denmark

On a Helmholtz transmission problem in planar domains with corners

14:15-14:30 Anders Karlsson, Johan Helsing, Lund University

On bandwidth of embedded antennas, a case study of the optimal position

Lars Jonsson

14:30-14:45 KTH Royal Institute of Technology

Bounds on the absorption in lossy surrounding media

Sven Nordebo

15:00-15:15 Linnaeus University

Perturbation approach to the reflection of modes from a deformed end surface in a PEC waveguide

Martin Norgren, Fatemeh Ghasemifard

15:15-15:30 KTH

Fast Analysis of Large Finite Electrically Interconnected Antenna Arrays using CEM One

Bo Strand, Emil Kieri, Erik Abenius

15:30-15:45 ESI Group

GHz Sessions

Session: Packaging (E:A)

Antenna in Package (AiP) for 5G mmWave systems

¹Bengt Madeberg, ²Konstantinos Prionidis, Mark Holm

16:10-16:25 ¹Huawei Technologies Sweden AB, ²Provinn AB

Topology optimization of microwave components with minimum-size control

16:25-16:40 Emadeldeen Hassan, Eddie Wadbro, Linus Hägg et al.

Compact Millimetre-Wave Integration Concept for Future Wireless and Sensor Systems

¹K. Rasilainen, ^{1,2}M. Thorsell, ¹K. Buisman et al.

16:40-16:55 ¹Chalmers University of Technology, ²SAAB AB, ³Ericsson AB

Enabling Millimeter-Wave High Power Generation with Wide-Band Spatially Distributed TE₁₀ Excitation

¹Artem Roev, ¹Rob Maaskant, ¹Marianna Ivashina et al.

16:55-17:10 ¹Chalmers University of Technology, ²SAAB AB

Session: Radars and Sensors (E:B)

Multi-Port Front-End and DSP Co-Design for Vital Signs Detector

Adriana Serban, Qin-Zhong Ye et al.

16:10-16:25 ITN-Communication Electronics, Linköping University, Campus Norrköping

Homodyne Detection Based System for Continuous Glucose Monitoring

Lars Haulin, Dragos Dancila

16:25-16:40 Microwave group, Division of Solid-State Electronics, Uppsala University

Continuous Complex Permittivity Extraction of Water-Glucose Solutions with a Resonant Microwave Cavity at 300 MHz

Matthias Carlsson, Gustav Eriksson, Jens Ljungberg et al.

16:40-16:55 Microwave group, Division of Solid-State Electronics, Uppsala University

Multi-Path Suppression for Millimeter-Wave Reflectometry

Sebastian Heunisch, Lars Ohlsson, Lars-Erik Wernersson

16:55-17:10 Lund University

AntennEMB Session: Poster Session Thursday May 24 16.10-17:10

- A Ka-Band Active Integrated Antenna for 5G Applications: Initial Design Flow**
Wan-Chun Liao, Rob Maaskant, Thomas Emanuelsson, Marianna Ivashina
16:10-17:10 Chalmers
- 6x6 MIMO Antennas Covering the Whole LTE and WiFi Spectrum for Vehicle Applications**
Mohamed Sanad
16:10-17:10 Cairo University Faculty of Engineering
- Effect of the Fat Thickness Variation on In-Body Microwave Propagation**
Noor Badariah Asan, Mauricio Perez, Jacob Velander
16:10-17:10 Uppsala University
- User Body Impact on User Equipment Antennas and Channel Characteristics in 5G Communication Systems**
Kun Zhao, Carl Gustafson, Qingbi Liao
16:10-17:10 Sony Mobile Communications
- Micromachined 140 GHz Planar Gap Waveguide Array Antenna for Line of Sight (LOS) MIMO Backhaul Links**
S. Farjana, A. U. Zaman, P. Enoksson
16:10-17:10 Chalmers
- Electromagnetically Coupled Multilayer Patch Antenna for 60 GHz Communications**
Imran Aziz
16:10-17:10 Uppsala University
- Low Cost Aperture Coupled Patch Antenna Design**
A. Gustafsson, T. Boman, D. Axelsson
16:10-17:10 FOI Swedish Defence Research Agency, Cinside
- A Study on Phased Array Antennas for Long Range Detection VHF Radar**
Jakob Helander, Daniel Sjöberg
16:10-17:10 Lund University
- Multifilar Helix Antenna with High Isoflux Gain and Low Cross-Polarization**
Patrik Dimming, Joakim Johansson
16:10-17:10 RUAG Space
- A Dual Polarized and Balanced Antenna using Quadruple L-Probe feeds for Wideband X-Band Applications**
Lars Pettersson
16:10-17:10 RISE Acreo AB
- Combined Optimisation of Feed Chains and Large Reflectors**
Peter
16:10-17:10 TICRA
- Partial Element Equivalent Circuit Simulations of Electromagnetic Field Propagation through Magneto-Dielectric Slabs**
Andreas Hartman, Sweden Giulio Antonini, Università degli Studi dell
16:10-17:10 Luleå University of Technology
- Volume Integral Equation Formulation for Microwave Tomography**
Michael Mattes
16:10-17:10 Technical University of Denmark (DTU)
- Perfectly matched layers for the finite element method with higher-order basis functions**
Thomas Rylander
16:10-17:10 Chalmers
- Physical Bounds for new Antenna types and Environments**
Casimir Ehrenborg, Mats Gustafsson
16:10-17:10 Lund University
- Using Convex Optimization to Compensate for Radome Effects in Monopulse Arrays**
Henrik Frid
16:10-17:10 Saab and KTH
- Multiple scattering by a collection of randomly located obstacles distributed in a dielectric slab**
Niklas Wellander and Gerhard Kristensson
16:10-17:10 Swedish Defence Research Agency (FOI) , Lund University
- Design and Characterization of Circular Polarization Selective Structures**
Johan Lundgren, Andreas Ericsson, Daniel Sjöberg
16:10-17:10 Lund University, Ticsra

TE-wave propagation in a graded waveguide structure

Mariana Dalarsson, Sven Nordebo

16:10-17:10

Linnaeus University

Plenary Joint GHz/AntennEMB opening session

17:15-18:00 Invited Speaker III

Plenary Joint GHz/AntennEMB opening session

8:15-9:00 IEEE Distinguished Lecture / Plenary Session

9:15-10:00 Invited Speaker IV

GHz Sessions**Session: Active and Passive Devices III (E:A)****CMOS Integration Based on All-III-V Materials**

Adam Jönsson, Johannes Svensson, Lars-Erik Wernersson

10:30-10:45 Lund University, Electrical and Information Technology

Low-Loss Hollow and Silicon-Core Micromachined Waveguide Technologies Above 100 GHz

James Campion, Bernhard Beuerle, Aleksandr Krivovitca et al.

10:45-11:00 KTH Royal Institute of Technology

Comparison among Microstrip, Covered Microstrip and Inverted Microstrip Gap Waveguide in Losses based on Variational Method

Jinlin Liu, Jian Yang, Ashraf Uz Zaman

11:00-11:15 Chalmers University of Technology

Low-Loss Micromachined Waveguide Power Divider and Hybrid Coupler for mm-Wave and THz Systems¹Robert Malmqvist, ¹Andreas Gustafsson, ¹Jan Svedin et al.11:15-11:30 ¹Swedish Defence Research Agency (FOI), ²Royal Institute of Technology (KTH)**Thru-Reflect-Line for Nanowire MOSFET Calibration**

Stefan Andric, Lars Ohlsson, Lars-Erik Wernersson

11:30-11:45 Department of Electrical and Information Technology, Lund University

Homodyne detection in graphene FET power detectors

Xinxin Yang, Andrei Vorobiev, and Jan Stake

11:45-12:00 Chalmers University of Technology

Session: 5G Systems**LO system for 5G mmW Antenna Array Systems**

Christian Elgaard, Tony Pålsson, Henrik Sjöland et al.

10:30-10:45 Ericsson Research AB

MATE, Chalmers' millimeter-wave MIMO testbed towards 100 Gbit/s

Koen Buisman, Thomas Eriksson

10:45-11:00 Chalmers University of Technology

Smart Bowtie - A UWB mm-Wave Array for 5G Communication Systems

Jian Yang, Sadegh Mansouri Moghaddam, Ashraf Zaman et al.

11:00-11:15 Chalmers University of Technology

Compensation of Hardware Impairments in MATE, the Chalmers mmWave MIMO Testbed

Mohammad Hossein Moghaddam, Koen Buisman, Thomas Eriksson et al.

11:15-11:30 Chalmers University of Technology

On the Impact of Colored Transmitter Noise on Millimeter Wave MIMO Systems

Sina Rezaei Aghdam, Thomas Eriksson

11:30-11:45 Department of Electrical Engineering, Chalmers University of Technology

Link Performance Characterization of D-band Radios¹Mikael Hörberg, ¹Yinggang Li, Vessen Vassilev² et al.11:45-12:00 ¹Antenna and Microwave HW Research Center, Ericsson Research, Ericsson AB, ²Microwave Electronics Laboratory, MC2, Chalmers University of Technology**AntennEMB Session: (E:1406)****60 GHz Dual-polarized Probe for Spherical Near-Field and Power Flow Diagnostics for a Standard Gain Horn**

Paula Irina Muntianu, Olav Breinbjerg

10:30-10:45 Technical University of Denmark

10:45-11:00	<p>A Numerical Analysis of the Random-LOS Measurement Accuracy for Vehicle Applications Madeleine Schilliger Kildal, Jan Carlsson, Andrés Alayón Glazunov, Chalmers, Provinn AB, University of Twente</p> <p>SAR-ISAR blending using a combination of L1 and L2-minimization methods Christer Larsson, Johan Jersblad</p>
11:00-11:15	<p>Saab Dynamics and Lund University, Saab Barracuda</p> <p>Microwave technology for detecting abdominal bleeding Stefan Candefjord</p>
11:15-11:30	<p>Chalmers</p> <p>Channel Hardening in Massive MIMO - A Measurement Based Analysis Sara Gunnarsson, Liesbet Van der Perre, Fredrik Tufvesson</p>
11:30-11:45	<p>Lund University, KU Leuven</p> <p>Comparative Study of Planar and Spherical Phaseless Nearfield Antenna Measurements Javier Fernández Álvarez, Olav Breinbjerg</p>
11:45-12:00	<p>DTU</p>

GHz Sessions

Session: RF Systems (E:A)

13:30-13:45	<p>A Flexible Multi-Gbps Transmitter Using Ultra-High Speed Sigma-Delta-over-Fiber Ibrahim Can Sezgin, Thomas Eriksson, Johan Gustavsson et al. Chalmers University of Technology</p> <p>GaN for Microwave Radio Links David Gustafsson, Kristoffer Anderson, Jonas Hansryd</p>
13:45-14:00	<p>Ericsson AB</p> <p>DEEP INTEGRATION: Fusing Antennas and Electronics Rob Maaskant</p>
14:00-14:15	<p>Chalmers & TU/e</p> <p>Digital predistortion with bandwidth limitations for a 28 nm WLAN 802.11ac transmitter ¹Ted Johansson, ¹Oscar Morales Chacón, ²Thomas Flink</p>
14:15-14:30	<p>¹Linköping University, ²Catena Wireless Electronics AB</p> <p>Measurement technique of parameters of transmission lines with spatially-spaced connectors ¹Vladimir Guba, ²Aleksandr A. Savin, ³Olesia N. Bykova et al.</p>
14:30-14:45	<p>¹Copper Mountain Technologies USA, ²Tomsk State University of Control Systems and Radio Electronics, ³NPK TAIR</p>

Session: Power Amplifiers (E:B)

13:30-13:45	<p>Optimal Power Consumption during the Charging of Superconducting Cavities using Drain Voltage Modulation of Solid State Power Amplifiers Long Hoang Duc, Anirban Bhattacharyya, Jörgen Olsson et al. Microwave group, Division of Solid-State Electronics, Uppsala University</p> <p>Design, fabrication and measurement of 1kW Class-E amplifier at 100 MHz Stefan Book, Long Hoang Duc, Dragos Dancila</p>
13:45-14:00	<p>Solid state electronics, Uppsala University</p> <p>Harmonic Tuning of Mixed-Mode Outphasing Amplifiers ¹Paolo Enrico de Falco, ²Konstantinos Mimis, ²Souheil Ben Smida et al.</p>
14:00-14:15	<p>¹Telecommunication Research Laboratory, Toshiba Research Europe Limited, Bristol, UK, ²Communication Systems and Networks Laboratory, University of Bristol, Bristol, UK</p> <p>Load Modulated Balanced Amplifier with Doherty-like Driving ¹William Hallberg, ²Prathamesh Pednekar, ¹Christian Fager</p>
14:15-14:30	<p>¹Chalmers University of Technology, ²University of Colorado, Boulder, CO, USA</p> <p>Implementation of a Highly Efficient Solid State RF Power Source for Superconducting Cavities Long Hoang Duc, Anirban Bhattacharyya, Jorgen Olsson et al.</p>
14:30-14:45	<p>Microwave group, Division of Solid-State Electronics, Uppsala University</p>

AntennEMB Session: Poster Session, Friday May 25 13:30-14:45

13:30-14:45	<p>On stored energies of thin periodic antennas and scatterers Andrei Ludvig-Osipov, B. L. G. Jonsson KTH Royal Institute of Technology</p>
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	Nano-Particle Route Towards Directive Radiation
	Samel
13:30-14:45	Technical University of Denmark
	A Case Study for Antenna Current Optimization Problems with Quadric Constraints
	Shuai Shi, B. L. G. Jonsson
13:30-14:45	KTH Royal Institute of Technology
	Novel Harmonic Suppressed Miniaturized FSS for UWB Low Signature Sensor Integration
	Alireza Kazemzadeh
13:30-14:45	Altair Engineering AB
	Low-Dispersive All-Metal High-Symmetric Metasurfaces
	Fatemeh Ghasemifard, Martin Norgren, Oscar Quevedo-Teruel
13:30-14:45	KTH Royal Institute of Technology
	Optimization and Experimental Verification of Dual Band Circular Polarization Selective Structures
	Andreas Ericsson, Johan Lundgren, Daniel Sjöberg
13:30-14:45	Ticra, Lunds Universitet
	Thermal Tuning of a Microwave Water-Based Metasurface
	Rasmus Elkjaer Jacobsen, Samel Arslanagić
13:30-14:45	Technical University of Denmark
	Saab Antenna Test Range Overview
	Bengt Svensson, Christer Larsson, Lars-Gunnar Huss
13:30-14:45	Saab AB
	A TEM-cell for electromagnetic characterization
	Torleif Martin, Ronny Gunnarsson, Edward Lindenholt
13:30-14:45	Saab, Lund university
	A New Analytical Model for Microstrip Multi-layer Split-Ring-Resonator based Sensor for Biomedical Applications
	Viktor Mattsson, Mauricio Perez, Robin Augustine
13:30-14:45	Uppsala Universitet
	A Simulation Study of a Self Learning Haemorrhagic Detection Algorithm
	Andreas Fhager, Stefan Candefjord, Mikael Persson
13:30-14:45	Chalmers, MedTech West
	Gesture recognition using a cheap FMCW radar system interfaced with a machine learning algorithm
	Daniel Sjöberg
13:30-14:45	Lund University
	RCS-calculation methodology tested on a scale model fighter aircraft
	Magnus Gustavsson, Åsa Andersson, Rolf Jonsson
13:30-14:45	FOI
	Monitoring healing progression after craniosynostosis-based craniotomy with a non-invasive microwave approach: An overview
	Syaiful Redzwan, Jacob Velander, etal
13:30-14:45	Uppsala University
	Direct metal laser sintering printed millimeter and submillimeter waveguides
	Max Holmberg, Dragos Dancila, Anders Rydberg
13:30-14:45	Uppsala University
	On plasmonic resonances in layered waveguide structures
	Yevhen Ivanenko, Mariana Dalarsson, Sven Nordebo
13:30-14:45	Linnaeus University
	A Planar Dual-Polarized Ultra-Wideband Millimeter-Wave Array Antenna
	Sadegh Mansouri Moghaddam, Jian Yang, Andrés Alayón Glazunov
13:30-14:45	Chalmers
Plenary Joint GHz/AntennEMB closing session	
15:30-16:15	Invited Speaker 6
16:15-16:30	Closing remarks