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EuMIC01 : Large Signal and Non-Linear Characterization Techniques

Chair: Teresa M. Martín-Guerrero, Universidad de Málaga, Spain

Co-Chair: Nuno Borges Carvalho, Universidade de Aveiro, Portugal

09:00–10:40, Sunday 3rd April 2022, Room 10

- 1 **Load-Pull Measurement of SiGe:C HBT in BiCMOS 55nm Featuring 11dBm of Output Power at 185GHz**
C. Maye¹, Sylvie Lépilliet¹, E. Okada¹, E. Brezza², A. Gauthier², M. Margalef-Rovira¹, Daniel Gloria², Guillaume Ducournau¹, Christophe Gaquière¹
¹IEMN (UMR 8520), France; ²STMicroelectronics, France
- 5 **Nonlinear Characterization of Wideband Power Amplifiers with Frequency-Dependent Match Load**
Sanket Chaudhary¹, Nuno Borges Carvalho¹, Marina Jordão¹, Marc Vanden Bossche², Adam Cooman³, Sergio C. Pires³
¹Universidade de Aveiro, Portugal; ²National Instruments, Belgium; ³Ampleon, The Netherlands
- 9 **Intermodulation Products of a CMOS SP6T Antenna Switch: Results Comparison Between an Experimental Test-Bench and a Corresponding Simulated Virtual Test-Bench**
M. Ben-Sassi¹, H. Saleh¹, O. Sow¹, I. Lahbib¹, Greg D. U'Ren¹, C. Hellepee², D. Passerieux², G. Neveux², Denis Barataud²
¹X-FAB, France; ²XLIM (UMR 7252), France
- 13 **A Computationally-Efficient Self-Consistent Large Signal Model for GaN HEMTs Based on ASM-HEMT**
S. Khandelwal¹, K. Kikuchi², H. Yamamoto²
¹University of South Florida, USA; ²Sumitomo Electric Industries, Japan
- 17 **Large-Signal Modeling for Nonlinear Analysis of Experimental Devices in 22nm FDSOI Technology**
Quang Huy Le¹, Dang Khoa Huynh¹, Anurag Nayak¹, Steffen Lehmann², Zhixing Zhao², Thomas Kämpfe¹, Matthias Rudolph³
¹Fraunhofer IPMS, Germany; ²GlobalFoundries, Germany; ³BTU, Germany

EuMIC02 : Silicon Based RF Solutions

Chair: Peter Magnee, NXP Semiconductors, The Netherlands

Co-Chair: Rüdiger Quay, Fraunhofer IAF, Germany

09:00–10:40, Sunday 3rd April 2022, Room 11

- (NA) **SiGe BiCMOS as Enabling Technology for Next Generation RF & THz Systems**
Gerhard Kahmen, IHP, Germany
- 22 **Analysis of the Relaxed Contacted-Poly-Pitch Effect on the RF Performance of Strained-SiGe-Channel p-FETs in 22nm FDSOI Technology**
Quang Huy Le¹, Dang Khoa Huynh¹, Steffen Lehmann², Zhixing Zhao², Thomas Kämpfe¹, Matthias Rudolph³
¹Fraunhofer IPMS, Germany; ²GlobalFoundries, Germany; ³BTU, Germany
- 26 **Design Methodology of Wide Tuning Range DGS-Based VCO for K-Band Applications in 0.18- μ m CMOS Technology**
Baichuan Chen¹, Samundra K. Thapa¹, Nusrat Jahan², Adel Barakat¹, Ramesh Pokharel¹
¹Kyushu University, Japan; ²CUET, Bangladesh
- 30 **Linearity Assessment of GaN HEMTs on Si Using Nonlinear Characterisation**
Rana ElKashlan¹, Ahmad Khaled¹, Raul Rodriguez¹, Vamsi Putcha¹, Uthayasankaran Peralagu¹, AliReza Alian¹, Nadine Collaert¹, Piet Wambacq², Bertrand Parvais²
¹imec, Belgium; ²Vrije Universiteit Brussel, Belgium
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Tejinder Singh, Raafat R. Mansour, University of Waterloo, Canada

EuMIC03: Transceiver MMICs

Chair: Mehmet Karaaslan, Teledyne e2v, UK

Co-Chair: Friedel Gerfers, Technische Universität Berlin, Germany

09:00–10:40, Sunday 3rd April 2022, Room 12

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Marc Rocchi, OMMIC, France
- 39 **A Bidirectional 28GHz RF Transceiver Front-End with Test and Calibration Interface for 5G Phased Arrays**
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¹FAU Erlangen-Nürnberg, Germany; ²Infineon Technologies, Germany; ³Technische Universität München, Germany
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- 47 **Two-Element 81–86GHz SiGe Transmitter Beamformer for Backhaul Applications**
Roe Ben Yishay, Oded Katz, Danny Elad, ON Semiconductor, Israel
- 51 **A W-Band Single-Chip Receiver in a 60nm GaN-on-Silicon Foundry Process**
Robert Malmqvist¹, Rolf Jonsson¹, Mingquan Bao², Rémy Leblanc³, Koen Buisman⁴, Christian Fager⁴, Kristoffer Andersson²
¹FOI, Sweden; ²Ericsson, Sweden; ³OMMIC, France; ⁴Chalmers University of Technology, Sweden
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EuMIC04: EuMIC Opening Session

Chair: John Christopher Clifton, EuMIC 2021 Chair

Co-Chairs: Shokrollah Karimian, EuMIC 2021 Co-Chair and Edward Wasige, EuMIC 2021 TPC Chair

11:20–13:00, Sunday 3rd April 2022, Room 7-9

- (NA) **Welcome Address: Opening of the European Microwave Integrated Circuits Conference 2021**
John Christopher Clifton, EuMIC 2021 Chair
- (NA) **III-V Nitride Semiconductors for Microwave Applications**
Christopher Snowden, ERA Foundation, UK
- (NA) **High-Efficiency PAs for Broadband High-PAR Signals**
Zoya Popović, University of Colorado Boulder, USA

EuMIC05: Integrated Circuit Modelling and Design Methodology

Chair: Vadim Issakov, Technische Universität Braunschweig, Germany

Co-Chair: Matthew OKeefe, INEX Microtechnology, UK

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Mathani Eltayeb¹, Morten Olavsbråten², Gian Piero Gibiino¹, Alberto Santarelli¹
¹Università di Bologna, Italy; ²NTNU, Norway
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Petros Beleniotis¹, Serguei Chevtchenko², Matthias Rudolph¹
¹BTU, Germany; ²FBH, Germany
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- 71 **Low-Power Ka- and V-Band Miller Compensated Amplifiers in 130-nm SiGe BiCMOS Technology**
Batuhan Sutbas¹, Herman Jalli Ng², Jan Wessel¹, Alexander Koelpin³, Gerhard Kahmen¹
¹IHP, Germany; ²Hochschule Karlsruhe, Germany; ³Technische Universität Hamburg, Germany
-

EuMIC06: Integrated PAs for 5G, SATCOM and Vehicular Applications

Chair: TBA

Co-Chair: Alessandro Cidronali, Università di Firenze, Italy

14:20–16:00, Sunday 3rd April 2022, Room 10

- (NA) **Buffer-Free GaN-on-SiC HEMT Heterostructures for Sub-6GHz and mmWave RF Devices**
Jr-Tai Chen, SweGaN, Sweden
- 76 **A High GBW High Power Wideband Power Amplifier for Automotive Radar Application**
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- 80 **A Highly Rugged 39GHz 19.3dBm Power Amplifier for 5G Applications in 45nm SOI Technology**
Alice Bossuet¹, Baudouin Martineau¹, Cédric Dehos¹, Benjamin Blampey¹, Alexis Divay¹, Yvan Morandini²
¹CEA-Leti, France; ²Soitec, France
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Takuma Torii, Yoshifumi Kawamura, Eigo Kuwata, Masaomi Tsuru, Mitsubishi Electric, Japan
- 88 **125W Solid State Power Amplifier for 17.3–20.2GHz SatCom Applications**
R. Giofrè¹, P. Colantonio¹, L. Cabria², M. Lopez²
¹Università di Roma “Tor Vergata”, Italy; ²TTI Norte, Spain

EuMIC07: Frequency-Converting Circuits

Chair: Ingmar Kallfass, Universität Stuttgart, Germany

Co-Chair: Lars-Erik Wernersson, Lund University, Sweden

14:20–16:00, Sunday 3rd April 2022, Room 17

- 92 **A Ka-Band MMIC Single-Chip Frequency Converter for Telecom Satellite Applications**
*Francesco Scappaviva¹, Davide Resca¹, Luca Cariani¹, Andrea Biondi¹,
Francesco Vitulli², François Deborgies³*
¹MEC, Italy; ²Thales, Italy; ³ESA, The Netherlands
- 96 **A V-Band Low-Power and Compact Down-Conversion Mixer with Low LO Power in 130-nm SiGe BiCMOS Technology**
Batuhan Sutbas¹, Herman Jalli Ng², Jan Wessel¹, Alexander Koelpin³, Gerhard Kahmen¹
¹IHP, Germany; ²Hochschule Karlsruhe, Germany; ³Technische Universität Hamburg, Germany
- 100 **A 60GHz Frequency Doubler with 3.4-dBm Output Power and 4.4% DC-to-RF-Efficiency in 130-nm SiGe BiCMOS**
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- 104 **A 14.6GHz – 19.2GHz Digitally Controlled Injection Locked Frequency Doubler in 45nm SOI CMOS**
Olli Kursu, Timo Rahkonen, Aarno Pärssinen, University of Oulu, Finland
- 108 **A W-Band Up-Conversion Mixer with Integrated LO Frequency Doublers in a 60nm GaN Technology**
Mingquan Bao¹, Robert Malmqvist², Rolf Jonsson², Jonas Hansryd¹, Kristoffer Andersson¹
¹Ericsson, Sweden; ²FOI, Sweden

EuMIC08: Components and Subsystems for 100GHz and Above

Chair: Ullrich Pfeiffer, Bergische Universität Wuppertal, Germany

Co-Chair: Herbert Zirath, Chalmers University of Technology, Sweden

16:40–18:20, Sunday 3rd April 2022, Room 8

- (NA) **Highly Integrated Multi-Channel D-Band Radar Transceivers in Silicon Technologies**
Vadim Issakov, Infineon Technologies, Germany
- 113 **SiGe BiCMOS Building Blocks for E- and D-Band Backhauling Front-Ends**
*G. Amendola¹, L. Boccia¹, F. Centurelli², Pascal Chevalier³, A. Fonte⁴, S. Karman⁵,
S. Levantino⁵, A. Mazzanti⁶, C. Mustacchio¹, A. Pallotta⁷, I. Petricli⁸, C. Samori⁵,
F. Tesolin⁵, Pasquale Tommasino², Antonio Traversa⁴, Alessandro Trifiletti²*
*¹Università della Calabria, Italy; ²Università di Roma “La Sapienza”, Italy;
³STMicroelectronics, France; ⁴SIAE MICROELETTRONICA, Italy; ⁵Politecnico di Milano,
Italy; ⁶Università di Pavia, Italy; ⁷STMicroelectronics, Italy; ⁸Università di Pavia1, Italy*
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*Iulia Dan¹, Christopher Grötsch¹, Laurenz John², Sandrine Wagner², Axel Tessmann²,
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¹Universität Stuttgart, Germany; ²Fraunhofer IAF, Germany
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*Athanasios Gatzastras¹, Hermann Massler², Arnulf Leuther², Sébastien Chartier²,
Ingmar Kallfass¹*
¹Universität Stuttgart, Germany; ²Fraunhofer IAF, Germany
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55nm Technology**
*Victor Fiorese¹, Joao Carlos Azevedo Goncalves¹, Simon Bouvot¹, Emmanuel Dubois²,
Christophe Gaquière², Guillaume Ducournau², François Danneville², Sylvie Lépilliet²,
Daniel Gloria¹*
¹STMicroelectronics, France; ²IEMN (UMR 8520), France

EuMIC09: High Performance LNAs

Chair: Lars-Erik Wernersson, Lund University, Sweden

Co-Chair: Ingmar Kallfass, Universität Stuttgart, Germany

16:40–18:20, Sunday 3rd April 2022, Room 9

- 129 **200GHz Low Noise Amplifiers in 250nm InP HBT Technology**
Utku Soylu¹, Ahmed S.H. Ahmed¹, Munkyo Seo², Ali Farid¹, Mark Rodwell¹
¹University of California at Santa Barbara, USA; ²Sungkyunkwan University, Korea
- 133 **Output Power Limited Rugged GaN LNA MMIC**
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- 136 **A Highly Linear 79GHz Low-Noise Amplifier for Civil-Automotive Radars in 22nm FD-SOI CMOS with -6dBm iP_{1dB} and 5dB NF**
Songhui Li¹, David Fritsche¹, Laszlo Szilagyi¹, Xin Xu¹, Quang Huy Le², Defu Wang², Thomas Kämpfe², Corrado Carta¹, Frank Ellinger¹
¹Technische Universität Dresden, Germany; ²Fraunhofer IPMS, Germany
- 140 **Highly Linear D-Band Low-Noise Amplifier with 8.5dB Noise Figure in InP-DHBT Technology**
M. Hossain¹, Ralf Doerner¹, Hady Yacoub¹, Tom K. Johansen², Wolfgang Heinrich¹, Viktor Krozer¹
¹FBH, Germany; ²Technical University of Denmark, Denmark
- 144 **C-Band Low-Noise Amplifier MMIC with an Average Noise Temperature of 44.5K and 24.8mW Power Consumption**
Felix Heinz, Fabian Thome, Arnulf Leuther, Oliver Ambacher, Fraunhofer IAF, Germany
-

EuMIC10: Advances in Si and GaN Based Integrated PAs

Chair: Khaled Elgaid, Cardiff University, UK

Co-Chair: Rocco Giofrè, Università di Roma "Tor Vergata", Italy

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Simon J. Mahon, Melissa C. Gorman, Michael C. Heimlich, Macquarie University, Australia
- 152 **A 27dBm Ku-Band SiGe Power Amplifier Working up to 90°C with High Robustness to the 2:1 SWR**
B. Coquillas¹, Eric Kerhervé¹, S. Redois², A.-C. Amiaud², L. Roussel², Bruno Louis², E. Itcia², T. Merlet²
¹IMS (UMR 5218), France; ²Thales, France
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Frowin Buballa¹, Sebastian Linnhoff¹, Thomas Hoffmann², Andreas Wentzel², Wolfgang Heinrich², Friedel Gerfers¹
¹Technische Universität Berlin, Germany; ²FBH, Germany
- 160 **400-Watt S-Band Power Amplifier MMIC**
A.P. de Hek, G. van der Bent, F.E. van Vliet, TNO, The Netherlands
- 164 **A 41.5dBm Broadband AlGaIn/GaN HEMT Balanced Power Amplifier at K-Band**
S. Samis¹, C. Friesicke², T. Maier², Rüdiger Quay², Arne F. Jacob¹
¹Technische Universität Hamburg, Germany; ²Fraunhofer IAF, Germany

EuMIC11 : Broadband Integrated Circuits

Chair: Friedel Gerfers, Technische Universität Berlin, Germany

Co-Chair: Mehmet Karaaslan, Teledyne e2v, UK

16:40–18:20, Sunday 3rd April 2022, Room 17

- (NA) **Is SiGe BiCMOS an Essential Technology for 6G?**
Pascal Chevalier, STMicroelectronics, France
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C. Schmidt¹, Tobias Tannert², J.H. Choi¹, C. Caspar¹, D. Pech¹, S. Wünsch¹, G. Ropers¹, J. Schostak¹, V. Jungnickel¹, R. Freund¹, Markus Grözing², Manfred Berroth²
¹Fraunhofer HHI, Germany; ²Universität Stuttgart, Germany
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¹Technical University of Denmark, Denmark; ²Bifrost Communications, Denmark
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- 181 **A DC to 20GHz Variable Gain Amplifier with Tunable Input Matching in 22nm FDSOI Technology**
Seyyedmohsen Seyyedrezaei, Manu Viswambharan Thayyil, Corrado Carta, Frank Ellinger, Technische Universität Dresden, Germany
-

EuMIC12 : Device Modelling and Simulation of Parasitic Phenomena

Chair: Raphaël Sommet, XLIM (UMR 7252), France

Co-Chair: Valeria Brunel, United Monolithic Semiconductors, France

09:00–10:40, Monday 4th April 2022, Room 13

- 185 **Noise Modeling of GaN/AlN HEMT**
Sanaul Haque¹, Frank Schnieder², Oliver Hilt², Ralf Doerner², Frank Brunner², Matthias Rudolph²
¹BTU, Germany; ²FBH, Germany
- 189 **Efficient TCAD Temperature-Dependent Large-Signal Simulation of a FinFET Power Amplifier**
E. Catoggio, S. Donati Guerrieri, F. Bonani, G. Ghione, Politecnico di Torino, Italy
- (NA) **A TCAD Simulation Study on Gated-Anode Diodes for Microwave Applications**
Arijit Bose¹, Debaleen Biswas¹, Qiang Ma¹, Yoichi Tsuchiya¹, Hidemasa Takahashi², Yuji Ando², Akio Wakejima¹
¹NITech, Japan; ²Nagoya University, Japan
- 197 **Trap Characterization in InAlN/GaN and AlN/GaN Based HEMTs with Fe- and C-Doped Buffers**
Emmanuel Dupouy, P. Vigneshwara Raja, Florent Gaillard, Raphaël Sommet, Jean-Christophe Nallatamby, XLIM (UMR 7252), France
- 201 **Mechanisms of Buffer and Surface Traps in GaN HEMTs for Low Frequency Y21 and Y22 Parameters**
Tomohiro Otsuka¹, Yutaro Yamaguchi¹, Masaomi Tsuru¹, Toshiyuki Oishi²
¹Mitsubishi Electric, Japan; ²Saga University, Japan

EuMIC13: Receiver Components

Chair: Friedel Gerfers, Technische Universität Berlin, Germany

Co-Chair: Lars-Erik Wernersson, Lund University, Sweden

09:00–10:40, Monday 4th April 2022, Room 14

- 205 **A Low Phase Noise Phase-Locked Loop with Short Settling Times for Automotive Radar**
Tobias T. Braun¹, Marcel van Delden¹, Christian Bredendiek², Jan Schoepfel¹, Nils Pohl¹
¹Ruhr-Universität Bochum, Germany; ²Fraunhofer FHR, Germany
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Janis Wörmann¹, Aleksey Dyskin², Sébastien Chartier³, Ingmar Kallfass¹
¹Universität Stuttgart, Germany; ²Technion, Israel; ³Fraunhofer IAF, Germany
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Sumeet Londhe¹, Noam Bar-Helmer², Samuel Jameson², Eran Socher¹
¹Tel Aviv University, Israel; ²Rafael, Israel
- 217 **A Highly Linear SiGe BiCMOS Gilbert-Cell Based Downconversion Mixer for 5G Applications**
Mir Hassan Mahmud, Abdurrahman Burak, Can Çalışkan, Tahsin Alper Ozkan, Ali Bahadır Ozdol, Melik Yazici, Yasar Gurbuz, Sabanci University, Turkey
- 221 **37.2-to-42.0GHz VCO with -93.4dBc/Hz Phase Noise for FMCW Radar in 22nm FDSOI**
Laszlo Szilagyi¹, Songhui Li², Xin Xu², Paolo Valerio Testa¹, Andres Seidel², Corrado Carta², Frank Ellinger²
¹GlobalFoundries, Germany; ²Technische Universität Dresden, Germany
-

EuMIC14: Advances in mm-Wave and High Power Integrated PA Technologies

Chair: Franco Giannini, Università di Roma "Tor Vergata", Italy

Co-Chair: Simon J. Mahon, Macquarie University, Australia

09:00–10:40, Monday 4th April 2022, Room 17

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Amit Shrestha¹, Ralf Doerner¹, Hady Yacoub¹, Tom K. Johansen², Wolfgang Heinrich¹, Viktor Krozer¹, Matthias Rudolph¹, Andreas Wentzel¹
¹FBH, Germany; ²Technical University of Denmark, Denmark
- 229 **A 117.5–130GHz 22.1dBm 11.5% PAE DAT Based Power Amplifier in InP 130nm HBT Technology**
Linsheng Zhang, Vinay Iyer, Jay Sheth, Linli Xie, Robert M. Weikle, Steven M. Bowers, University of Virginia, USA
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Seifeddine Fakhfakh¹, Guillaume Callet¹, Estelle Byk¹, Laurent Favede¹, Aleksandra Malko², Sandra Riedmueller², Pierre Denis², Hervé Blanck², Marc Camiade¹
¹UMS, France; ²UMS, Germany
- 237 **A D-Band Power Amplifier with 12dBm P1dB, 10% Power Added Efficiency in InP-DHBT Technology**
M. Hossain¹, T. Shivan¹, Ralf Doerner¹, S. Seifert¹, Hady Yacoub¹, Tom K. Johansen², Wolfgang Heinrich¹, Viktor Krozer¹
¹FBH, Germany; ²Technical University of Denmark, Denmark
- 241 **A 28-GHz-Band GaN HEMT MMIC Doherty Power Amplifier Designed by Load Resistance Division Adjustment**
Ryo Ishikawa, Takuya Seshimo, Yoichiro Takayama, Kazuhiko Honjo, University of Electro-Communications, Japan

EuMIC15: EuMIC Posters

Chair: Mustafa Bakr, University of Oxford, UK

10:40–13:30, Monday 4th April 2022, Exhibition Hall

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Oner Hanay, David Bierbuesse, Renato Negra, RWTH Aachen University, Germany
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F. Costanzo¹, L. Pace¹, P.E. Longhi¹, W. Ciccognani¹, S. Colangeli¹, Rémy Leblanc², E. Limiti¹
¹Università di Roma “Tor Vergata”, Italy; ²OMMIC, France
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¹National Taiwan University, Taiwan; ²Academia Sinica, Taiwan
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- (NA) **1–6GHz 35W Balanced GaN-HEMT Power Amplifier with Innovative Quadrature Couplers**
Alexey Radchenko, Sergey Garmash, Andrei Kishchinsky, Microwave Systems, Russia
- 269 **A 300GHz Frequency Doubler in Transferred Substrate InP DHBT Technology**
Arsen Turhaner¹, M. Hossain², Mohamed Brahem², Tom K. Johansen¹
¹Technical University of Denmark, Denmark; ²FBH, Germany
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Aniello Franzese¹, Nebojsa Maletic¹, Mohamed Eissa¹, Muh-Dey Wei², Renato Negra², Andrea Malignaggi¹
¹IHP, Germany; ²RWTH Aachen University, Germany
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Christian Bredendiek¹, Klaus Aufinger², Nils Pohl³
¹Fraunhofer FHR, Germany; ²Infineon Technologies, Germany; ³Ruhr-Universität Bochum, Germany
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R. Ahamed¹, Mikko Varonen², Dristy Parveg², M. Najmussadat¹, Mikko Kantanen², Y. Tawfik¹, K.A.I. Halonen¹
¹Aalto University, Finland; ²VTT, Finland
- 285 **A Ka-Band 40W Output Power and 30% PAE GaN MMIC Power Amplifier for Satellite Communication**
Keigo Nakatani, Yutaro Yamaguchi, Masaomi Tsuru, Mitsubishi Electric, Japan
- 289 **Probabilistic Poly Harmonic Distortion Model**
Anna Davis Manjaly, Justin King, Trinity College Dublin, Ireland

EuMIC16: Phased Array Components from S-Band up to 300GHz

Chair: Frank E. van Vliet, TNO, The Netherlands

Co-Chair: Michael Schlechtweg, Fraunhofer IAF, Germany

14:20–16:00, Monday 4th April 2022, Room 4

- 293 **An S-Band 34dBm Stacked-HBT Phase Driver in 0.25 μ m BiCMOS Technology for GaN-Based Phased-Array Radar Transmit Chain**
J. Essing, Alice Bossuet, R. Knight, A.P. de Hek, F.E. van Vliet, TNO, The Netherlands
- 297 **A Phase Coherent DC–25GHz 6-Bit SiGe BiCMOS Step Attenuator with IP_{1dB} >20dBm**
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- 305 **A 25–50GHz Digitally Controlled Phase-Shifter**
Steeven Voisin¹, Vincent Knopik², Eric Kerhervé¹
¹IMS (UMR 5218), France; ²STMicroelectronics, France
- 309 **A 270–330GHz Vector Modulator Phase Shifter in 130nm SiGe BiCMOS**
Mohammad Hassan Montaseri, Sumit Pratap Singh, Markku Jokinen, Timo Rahkonen, Marko E. Leinonen, Aarno Pärssinen, University of Oulu, Finland
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EuMIC17: EuMIC Closing Session

Chair: John Christopher Clifton, EuMIC 2021 Chair

Co-Chairs: Shokrollah Karimian, EuMIC 2021 Co-Chair and Edward Wasige, EuMIC 2021 TPC Chair

16:40–18:20, Monday 4th April 2022, Room 8-11

- (NA) **Awards Ceremony**
Kamal K. Samanta, EuMW 2021 Awards Chair
- (NA) **Efficient, Broadband and Linear Radio Frequency Amplifier Architectures**
Kevin Morris, University of Bristol, UK
- (NA) **6G — Known Technologies with a Twist or Maybe Not?**
Nadine Collaert, imec, Belgium
- (NA) **Closing Remarks and Invitation to EuMIC 2022**
John Christopher Clifton, EuMIC 2021 Chair

EuMIC/EuMC01 : Novel Filtering Devices in Integrated Technologies

Chair: Roberto Gómez-García, Universidad de Alcalá, Spain

Co-Chair: Michael Höft, CAU, Germany

09:00–10:40, Monday 4th April 2022, Room 1

- (NA) **A Millimeter-Wave Substrate Integrated Waveguide Filter in Si-BCB Technology**
Jordan Corsi¹, Giuseppe Aciri¹, Maxime Moulin¹, Nicolas Zerounian², Anne-Sophie Grimault-Jacquin², Loïc Vincent³, Guillaume Ducournau⁴, Frédéric Aniel², Florence Podevin¹, Philippe Ferrari¹, Emmanuel Pistono¹
¹RFIC-Lab (EA 7520), France; ²C2N (UMR 9001), France; ³CIME Nanotech, France; ⁴IEMN (UMR 8520), France
- (NA) **A 100GHz Bandpass Filter Employing Shielded Folded Ridged Quarter-Mode SIW Resonator in CMOS Technology**
Baichuan Chen, Samundra K. Thapa, Adel Barakat, Ramesh Pokharel, Kyushu University, Japan
- (NA) **SAW Resonator Band-Pass Filter on GaN/Si Operating at 8GHz**
Alina-Cristina Bunea¹, Dan Neculoiu², Adrian Dinescu¹
¹IMT Bucharest, Romania; ²UPB, Romania
- (NA) **Engineered High Resistivity Silicon Substrates in IPD Technology Used for Miniaturized Sub-6GHz Filters**
Atte Haapalinna¹, Heikki Holmberg¹, Arto Hujanen², Katja Parkkinen¹, Pekka Rantakari², Jan Saijets², Tauno Vähä-Heikkilä²
¹Okmetic, Finland; ²VTT, Finland
- (NA) **Glass-Integrated Single- and Dual-Band Bandpass Filters**
Andrea Ashley, Dimitra Psychogiou, University of Colorado Boulder, USA
-

EuMIC/EuMC02 : THz components

Chair: Emma MacPherson, University of Warwick, UK

Co-Chair: Oleksiy Sydoruk, Imperial College London, UK

09:00–10:40, Monday 4th April 2022, Room 4

- (NA) **A SiGe Based 0.48THz Signal Source with 45GHz Tuning Range**
Jonathan Wittemeier¹, Florian Vogelsang¹, David Starke¹, Holger Rücker², Nils Pohl¹
¹Ruhr-Universität Bochum, Germany; ²IHP, Germany
- (NA) **The Effect of Surface Passivation for Sub-THz Silicon Gradient Refractive Index Lens**
Antti Lamminen¹, Aleksii Tamminen², Jaakko Saarilahti¹, Vladimir Ermolov¹, Pekka Pursula¹
¹VTT, Finland; ²Aalto University, Finland
- 341 **Optoelectronic Millimeter-Wave Integrated Circuits Fabricated in Pure Silicon-Based Technologies**
Uroschanit Yodprasit, Wolfgang Winkler, Silicon Radar, Germany
- (NA) **140GHz Differential Antennas in Embedded Wafer Level Ball Grid Array Technology**
Akanksha Bhutani, Elizabeth Bekker, Teng Li, Lucas Giroto de Oliveira, Thomas Zwick, KIT, Germany
- (NA) **Enhancing mmWave On-Chip-Antennas Using In-Package Electromagnetic Bandgap Structures**
Dmitrii Kruglov, Oleg Iupikov, Marianna V. Ivashina, Rob Maaskant, Chalmers University of Technology, Sweden

EuMIC/EuMC03 : MMIC Power Amplifiers and Supply Modulation

Chair: Jeff Powell, Teratech Components, UK

Co-Chair: Markus Mayer, ARELIS, France

14:20–16:00, Monday 4th April 2022, Room 14

- (NA) **A 6–18GHz 13W and 22% PAE GaN Power Chipset**
Mehdi Dinari, Benoît Mallet-Guy, Yves Mancuso, Thales, France
- (NA) **On-Chip Power Combining with 3-Stage 75–110GHz GaN MMIC Power Amplifiers**
Shane Verploegh, Timothy Sonnenberg, Mauricio Pinto, Akim Babenko, Zoya Popović, University of Colorado Boulder, USA
- (NA) **Wideband Phase Modulator MMIC for K-Band Supply-Modulated Power Amplifier Linearization**
Gregor Lasser¹, Connor Nogales¹, Maxwell R. Duffy², Zoya Popović¹
¹University of Colorado Boulder, USA; ²Northrop Grumman, USA
- (NA) **Compact Design of a L-Band 40W 40MHz Envelope Tracking GaN Power Amplifier for Small Cells**
Olivier Nonet¹, Wilfried Demenitroux¹, Frederic Ploneis¹, Denis Barataud², Michel Campovecchio²
¹Thales, France; ²XLIM (UMR 7252), France
- (NA) **A 600-W Enhancement-Mode GaN Multi-Level Dynamic Converter for Supply Modulated PAs**
Connor Nogales, Zoya Popović, Gregor Lasser, University of Colorado Boulder, USA
-

EuMIC/EuMC04 : EuMIC/EuMC Posters

Chair: Mustafa Bakr, University of Oxford, UK

13:50–16:40, Monday 4th April 2022, Exhibition Hall

- 370 **Microwave Sensing Using Metal-Insulator-Metal Diodes Based on 4-nm-Thick Hafnium Oxide**
Martino Aldrigo¹, Mircea Dragoman¹, Sergiu Iordanescu¹, Mazen Al Shanawani², George Deligeorgis³
¹IMT Bucharest, Romania; ²Università di Bologna, Italy; ³FORTH, Greece
- 374 **Automatic Nonlinear Nonquasi-Static Diode Model Extraction from Large-Signal Measurements**
A. García-Luque¹, Teresa M. Martín-Guerrero¹, Alberto Santarelli², Carlos Camacho-Peñalosa¹
¹Universidad de Málaga, Spain; ²Università di Bologna, Italy
- 378 **Compact GaN RF-Switches for Power Applications**
Samira Driad¹, Charles Teyssandier¹, Laurent Caille¹, C. Chang¹, Laurent Brunel¹, Benoît Lambert¹, Hermann Stieglauer², Valeria Brunel¹
¹UMS, France; ²UMS, Germany
- 382 **Analysis of RF Stress Influence on Large-Signal Performance of 22nm FDSOI CMOS Transistors Utilizing Waveform Measurement**
Dang Khoa Huynh¹, Quang Huy Le¹, Steffen Lehmann², Zhixing Zhao², Germain Bossu², Wafa Arfaoui², Defu Wang¹, Thomas Kämpfe¹, Matthias Rudolph³
¹Fraunhofer IPMS, Germany; ²GlobalFoundries, Germany; ³BTU, Germany

EuMIC/EuMC04 continued...

- 386 **Towards an Excitable Microwave Spike Generator for Future Neuromorphic Computing**
Qusay Al-Taai¹, Razvan Morariu¹, Jue Wang¹, Abdullah Al-Khalidi¹, Ali Al-Moathin¹, Bruno Romeira², José Figueiredo³, Edward Wasige¹
¹University of Glasgow, UK; ²INL, Portugal; ³Universidade de Lisboa, Portugal
- 390 **Numerical and Experimental Investigations of Self-Mixing Effect of a Planar Gunn Diode Oscillator**
Ming Yan Zhong, David R.S. Cumming, Chong Li, University of Glasgow, UK
- (NA) **An Ultra-Wideband Microstrip-to-WR15 Waveguide Transition for MMIC Applications**
Bent Walther, Marcel van Delden, Thomas Musch, Ruhr-Universität Bochum, Germany
- (NA) **An Integrated Multiphysics Model for Phase-Change Material Switches**
Ines Bettoumi¹, Kateryna Kiryukhina¹, Olivier Puig¹, Pierre Blondy²
¹CNES, France; ²XLIM (UMR 7252), France
- (NA) **Doherty Load Modulation Based on Non-Reciprocity**
Paul Saad¹, Han Zhou², Jose-Ramon Perez-Cisneros², Rui Hou¹, Christian Fager², Bo Berglund¹
¹Ericsson, Sweden; ²Chalmers University of Technology, Sweden
- (NA) **Adopting Supercapacitors in a Single-Stage Marx-Type Multilevel Supply Modulator**
Lukas Hüssen, Renato Negra, RWTH Aachen University, Germany
- (NA) **A 30-W GaN Quasi-MMIC Doherty Power Amplifier Based on All-Distributed Inductors Load Network**
Rui-Jia Liu¹, Xiao-Wei Zhu¹, Jing Xia², Peng Chen¹, Chao Yu¹, Lv Zhang³, Zhi-Yong Chen¹
¹Southeast University, China; ²Jiangsu University, China; ³Guobo Electronics, China
- (NA) **A Digital Power Amplifier for 32-QAM**
Gavin T. Watkins, Toshiba, UK
- (NA) **Effect of Switch Figure of Merit on Frequency-Reconfigurable Power Amplifier Performance**
Adam Der, William Sear, Taylor Barton, University of Colorado Boulder, USA
- (NA) **Practical Work for Master2 Students: MMIC Distributed Amplifier Design for High Data Rate Receiver on GaAs-UMS Technology**
C. Algani¹, E. Leclerc²
¹ESYCOM (UMR 9007), France; ²UMS, France