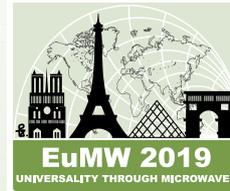


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PARIS, FRANCE
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The 22nd European Microwave Week combines:

- The European Microwave Conference (EuMC)
- The European Microwave Integrated Circuits Conference (EuMIC)
- The European Radar Conference (EuRAD)

PLUS:

- Workshops, Short Courses and Special Sessions
- The Forum on Defence, Security and Space
- The European Microwave Exhibition

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THE 22ND EUROPEAN MICROWAVE WEEK

The 2019 European Microwave Week (EuMW 2019) continues the series of successful microwave events held in Amsterdam (1998, 2004, 2008 and 2012), Munich (1999, 2003 and 2007), Milan (2002), Manchester (2006 and 2011), Nuremberg (2013 and 2017), Rome (2009 and 2014), Paris (2000, 2005, 2010 and 2015), London (2001 and 2016) and Madrid (2018). EuMW 2019 consists of three conferences:

- The European Microwave Conference (EuMC)
- The European Microwave Integrated Circuits Conference (EuMIC)
- The European Radar Conference (EuRAD)

In addition, the EuMW 2019 will include The Forum on Defence, Security, and Space.

EuMW 2019 provides the opportunity to attend conferences, workshops, short courses, and special sessions. For PhD and graduate students, special competitions will take place and doctoral sessions and lectures on microwave theory and techniques will be offered.

The annual European Microwave Exhibition, which is by far the largest trade show on RF and microwaves in Europe, is held in conjunction with the conferences. The exhibition includes a series of technical seminars describing microwave products and processes (exhibitor workshops).

The 2019 European Microwave Week will take place in Paris at the Paris expo Porte de Versailles, 1 place de la Porte de Versailles 75015 Paris. The venue is easy to reach from two international Airports – Paris-Charles de Gaulle Airport and Orly Airport– with a wide range of public transport options available to travel to and from the airports: shuttle buses, Metro (metro station: Porte de Versailles – Parc des Expositions) and Railway connections (RER). See <http://www.aeroportsdeparis.fr/ADP/en-GB/Passagers/Home/> It is also easy to reach by car or train.

Come join us at the heart of the ville lumière, Paris and enjoy the European Microwave Week. UNIVERSALITY THROUGH MICROWAVE is our motto but also a way of life of modern living where microwave wireless technologies is enabling/enhancing an entire new set of possibilities for everyone on how individuals and objects communicate, sense and move. The Universal 'Connected Humans' sector is developing and evolving – join us in Paris to discover innovations and new paradigms for the microwave community as we look towards Horizon 2020.

ADDRESSES

General Chair:

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Workshops, Short courses, Focused

Special Session Chair:

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Awards Chair:

Eric Bergeault
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IMPORTANT DATES:

21st December 2018 19:00 GMT+1
11th February 2019 19:00 GMT+1
19th April 2019
31st May 2019
10th June 2019

Deadline for proposals of workshops, short courses, focused and special sessions
Deadline for submission of papers
Notification of acceptance
Submission for requested grants and fellowships
Submission for final papers

EUMW 2019 EXHIBIT:

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Horizon House Publications, 16 Sussex Street, London SW1V 4RW, UK

SUBMISSION OF PRELIMINARY PAPERS AND GENERAL INSTRUCTIONS FOR AUTHORS

Authors are requested to submit a 4-page preliminary paper in the standard conference proceedings layout. A template can be downloaded from the EuMW 2019 website: www.eumweek.com. The paper must be uploaded in pdf format. The maximum file size is 1 MB. It is essential to emphasize the novel aspects of your paper. One author information form per paper must be completed at the EuMW 2019 website when uploading the paper.

The week comprises three conferences. A paper can only be submitted to a single conference. Do not upload the same paper to more than one conference. The deadline for submission of preliminary papers is 11th February 2019. Late submissions cannot be accepted. Each preliminary paper will be reviewed by the Technical Programme Committee (TPC) of the conference to which the paper has been submitted by the author(s). Exceptionally, the General TPC Chairman reserves the right to redirect a paper, which does not fit with the conference selected by its authors, towards the most appropriate conference. For topics common to two conferences, as indicated in the respective topics lists, the decision about acceptance of the paper will be taken jointly by both Technical Programme Committees. Even in this case, each paper must be submitted to only one conference, selected by the author(s). Authors will be notified on the status of their submission by 19th April 2019. The final digest paper will be required by 10th June 2019. Authors of accepted papers will find instructions for publication and presentation on the EuMW 2019 website. Authors are responsible for obtaining publication approval by their employer or sponsor. Papers must be written in English and formatted in the standard conference proceedings layout on A4 paper. Word or Latex Templates can be downloaded from the IEEE Conference Publishing site http://www.ieee.org/conferences_events/conferences/publishing/templates.html. Please, make sure that you choose the correct files and settings for an A4 conference paper.

INCENTIVES FOR AUTHORS

All participants in one or more of the conferences will receive a memory stick containing the conference proceedings. Furthermore, all accepted papers will be published on IEEE Xplore. Selected papers will also be nominated by the Technical Programme Committee for a Special Issue of the International Journal of Microwave and Wireless Technologies, published by Cambridge University Press. Poster sessions, including electronic and interactive features, will be attractive and inspiring, encouraging information exchange and discussions between authors and participants. The poster sessions will have a dedicated slot in the programme. Each conference will award a best paper conference prize and one or two young engineer's prizes. Prize winners will receive a financial award.

WORKSHOPS AND SHORT COURSES

During EuMW 2019, a number of workshops and short courses on a variety of popular topics of current or emerging interest will be organized. If you have any suggestions for a workshop or a short course, please e-mail your proposals by 21st December 2018 to the Workshop and Short Course Chair Cedric Quendo (cedric.quendo@univ-brest.fr). Proposals should be submitted on the templates which will be available on the EuMW 2019 website or you can request them directly from Cedric Quendo. Proposers will be informed about the TPC's decision by 19th April 2019.

FOCUSED AND SPECIAL SESSIONS

Focused sessions are sessions dedicated to an emerging subject of specific interest to the microwave community. They consist of solicited and unsolicited papers. Special sessions should reflect specific (historical or recent) events of interest to the microwave community or recognize the life work of persons by honouring their contributions. They may also highlight technical achievements made in a specific geographical region of the world. If you have any suggestions for a focused or special session, please e-mail your proposal by 21st December 2018 to the Special Session Chair Cedric Quendo (cedric.quendo@univ-brest.fr). Proposals should be done on the templates which will be available on the EuMW 2019 website or be requested directly from the organisers. Proposers will be informed about the TPC's decision by 19th April 2019.

WOMEN IN MICROWAVE ENGINEERING

We continue the tradition of holding the Women in Microwave Engineering event during the European Microwave Week. Of course, both women and men are welcome. If you have any suggestions for the program of this event, please e-mail your proposal by 21st December 2018 to the Women in Microwaves Chair, Audrey Martin (audrey.martin@xlim.fr).

SPECIFIC LECTURES FOR MASTER AND PHD STUDENTS

A 2 days course dedicated to characterization issues will be organized including 1- day for practice. If you are interested in giving some lectures, please e-mail the student activities chair Florence Podevin (florence.podevin@grenoble-inp.fr) by 10th June 2019.

STUDENT DESIGN COMPETITION AND STUDENT CHALLENGE

Eligible students are invited to take part in the Student Design Competition or in the Student Challenge during EuMW 2019, which are organised by Pierre Blondy (pierre.blondy@xlim.fr) and Fabien Ferrero (fabien.ferrero@unice.fr). Please visit the EuMW 2019 website for further information.

STUDENT GRANTS AND FELLOWSHIPS

All EuMW conferences will provide several competitive student grants, and, in addition, the GAAS Association offers three PhD student fellowships for the European Microwave Integrated Circuits Conference. Applications should be sent to the General Chairman by 1st June 2019.



THE CITY OF PARIS



Paris, the City of Lights, is the capital city of France, and its largest Its area is 105 km² with around 2.15 million habitants and around 12 million people including the suburbs. Paris is also the centre of French economy, politics and culture. Paris has many art museums and historical buildings. Paris attracts millions of visitors every year to discover its old neighbourhoods, its fashion and luxury stores on the famous “Champs Elysées” and of course, the iconic “Tour Eiffel”. The Louvre is one of the most famous museums featuring the Mona Lisa and the Venus de Milo statue. Other museums include Musée Picasso, Musée Rodin, Musée d’Orsay and the Musée du quai Branly.



Paris has many theatres and opera houses. Two of the largest opera houses include Opéra Garnier and the Opéra Bastille. As a traffic center, Paris has a very good underground subway system (called the Metro). It also has two airports. The Metro was built in 1900, and its total length is more than 200 km. The city has a multi-cultural style, because 20% of people are from outside France. There are many different restaurants with all kinds of food.

For information on just a sample of the city’s sites, visit <http://en.parisinfo.com/>



PARIS EXPO PORTE DE VERSAILLES CONVENTION CENTRE

The PARIS Expo Porte de Versailles Convention Centre is a new venue providing contemporary, made-to-measure spaces for large-scale international conferences at a site which is 15 minutes from the Eiffel Tower.

Unique location in the heart of the capital. 228,211m² with 8 pavilions, two amphitheatres, and 32 meeting rooms. Known worldwide and acclaimed by visitors, Paris Porte de Versailles opens the field of all possibilities by hosting more than 120 exhibitions each year but also many events, conventions, product launches, ... Whatever your requirements, its spaces are fully modular and available to hire to allow the wildest projects.





The 49th European Microwave Conference

EUROPEAN MICROWAVE CONFERENCE 2019
Paris 1st – 3rd October 2019

50 years after the first edition in 1969, the 49th European Microwave Conference (EuMC) remains the main event in the 2019 European Microwave Week, the largest event in Europe dedicated to microwave components, systems and technology. The European Microwave Conference is a premier event to present the status and trends in the fields of microwave, millimetre-wave and terahertz systems and technologies. A broad range of high frequency related topics, from materials and technologies to integrated circuits, systems and applications will be addressed in all their aspects: theory, simulation, design, and measurement. Examples include the latest developments for filters and passive components, modelling and design of RF MEMS and microsystems, high frequency and high data rate microwave photonics, highly stable and ultra low-noise microwave and millimetre-wave sources, new linearization techniques, 5G, IoT, and the impact of new packaging technologies. Special emphasis will be placed on emerging technologies and materials for microwave components such as nanotechnologies and graphene, metamaterial structures and devices, tuneable RF components, reconfigurable RF systems and system-in-package.

The scope also includes electromagnetic field theory, theoretical and experimental developments in wave propagation and antenna systems, and advanced simulation and characterization techniques. An additional focus will be put on the system implications of future microwave communications, wireless power transfer, radar with wireless communication capability, millimetre-wave imaging systems, and microwaves in industrial and medical applications.

The European Microwave Conference provides many opportunities for networking and interaction with international experts in a wide variety of specialties, attracting delegates with academic as well as industrial backgrounds. With carefully selected papers in more than 40 oral and poster sessions, the conference represents an exciting forum for the presentation and discussion of the most recent advances in the microwave arena. In addition to scientific papers, contributions on industrial applications are also encouraged, covering the fields of instrumentation, medical, telecommunication, radar, space, automotive and defence systems, etc.

EuMC 2019 CONFERENCE TOPICS

Passive Components, Circuits and Subsystems

- E1 Planar Passive Components and Circuits: *Planar transmission lines, couplers, dividers/combiners, hybrids, lumped-element circuits, tuneable planar components and devices*
- E2 Non-Planar Passive Components and Circuits: *Non-planar micromachined transmission lines, waveguides, couplers, dividers/combiners, hybrids, tuneable components and devices*
- E3 Planar Filters and Multiplexers: *Innovative synthesis and analysis, active filters*
- E4 Non-Planar Filters and Multiplexers: *Innovative 3D filters and multiplexers, non-planar integrated technologies (LTCC, Liquid Crystal Polymer, MCM-Deposition)*
- E5 Smart materials, RF MEMS, MOEMS and NEMS: *Bulk and thin-film ferrite components, ferroelectrics, surface and bulk acoustic wave devices including FBAR devices, RF micro-electro-mechanical and micromachined components and systems*
- E6 Metamaterials, Frequency Selected Surfaces and Electromagnetic Bandgap Structures: *Components, circuits and systems using metamaterials, frequency selected surfaces and electromagnetic bandgap structures*
- E7 Interconnects, Packaging and Multi-Chip Modules: *Assembly methods, hybrid integration, interconnects and multi-chip modules, heterogeneous IC technologies*
- E8 Emerging Materials and Technologies: *Novel 2D/3D printing techniques, graphene, novel-material based nanotechnology, nanoscale components, superconducting materials and devices, additive manufacturing techniques, organic, transparent, textile and other*

mode operation, linearization and predistortion techniques, efficiency enhancement, adaptive gain control, matching and packaging, amplitude and phase characterization

- E15 Sub-THz and THz Components, Circuits and Systems: *Sources, detectors, and receivers, devices, components, and systems, modelling, simulation and analysis techniques*
- E16 Microwave Photonic Components, Circuits and Systems (*): *Including indium phosphide and silicon nitride based photonic integrated circuits*

Field and Circuit Analysis, Simulation and Characterization Techniques

- E17 Electromagnetic Field Theory and Numerical Techniques: *Frequency and time domain modelling, periodic structures, sparse arrays, simulation of electrically large problems, multi-scale and multi-physics approaches*
- E18 Electromagnetic Compatibility and Interference, Signal Integrity: *Field emission and immission modelling and measurements, electromagnetic compatibility, robustness and interference issues, signal-flow device modeling, distortion and stability analyses, digital pre- and post-distortion techniques*
- E19 Interaction of Electromagnetic Waves with Matter, Biological Effects, Electromagnetic Scattering: *Electromagnetic propagation and absorption phenomena, electrodynamic characterization of biological materials, interaction at atomic/molecular/macrosopic level*
- E20 Measurement Techniques and Systems from RF to THz: *Frequency and time domain measurements, automated performance testing*

- E25 Channel modelling and Measurements: *Extended channel models, cluster emulation, narrowband and wideband channel measurements*

Systems and Applications

- E26 Microwave Systems: *System simulation and characterization, base-station front-ends and handheld transceivers, satellite systems, navigation and positioning systems, industrial systems, vehicular applications and intelligent transportation systems*
- E27 Millimeter-wave, THz Technologies and Systems (**): *mm-Wave and THz wireless communications, imaging/spectroscopy, sensors*
- E28 Ultra Wide Band Technology and Systems (**): *Ultra-wideband sensing, localization and communication techniques and applications, imaging and spectroscopy, system implementation, performance evaluation, Ultra-wideband radar*
- E29 Emerging System Architectures: *Optimized and highly integrated RF front-ends and architectures, digital/RF signal processing, advanced modulation techniques*
- E30 Wireless Power Transfer and Energy Harvesting: *Short- and long-range device and system designs, nearfield and farfield techniques, high-power applications, rectifier circuits, energy harvesting techniques, circuits and devices*
- E31 Biological and Medical Applications: *Diagnostic and therapeutic applications, biological and clinical measurement and treatment systems, wireless medical sensors and implants, body-area networks, medical telemetry and telemedicine, smart home microwave applications*
- E32 Wireless High Data Rate Communications and Cognitive Radio: *3G/4G/5G systems, software-defined radio, wireless transceiver systems*
- E33 RFID, Near Field Communication, Microwave/Wireless Sensors and Sensor Networks: *Including non-destructive testing and crowd sensing*
- E34 Process Automation, Mobility, and Logistics: *Industry 4.0, intelligent transport systems and smart logistics, machine-to-machine communications, smart metering, smart cars and other*

Active Components, Circuits and Subsystems

- E9 Low Noise Circuits and Modules (*): *LNA, detectors, receivers, radiometers*
- E10 Frequency Generation, Conversion and Control: *Oscillators, VCOs, phase-locked loops and frequency synthesizers, mixers, frequency multipliers/dividers*
- E11 Front-End and Transceiver Modules, System-in-Package Technologies: *Analog and digital front-end architectures, modulators/demodulators, analogue RF and mixed signal SIP, switches, phase shifters, limiters*
- E12 Tunable and Reconfigurable Circuits and Systems (*): *Reconfigurable transceiver circuits, modules and amplifiers*
- E13 High Power Amplifiers: *Hybrid power amplifiers, high power amplifiers, power combining techniques, vacuum electronics*
- E14 Power Amplifiers, Efficiency Enhancement and Linearization (*): *Cartesian and polar power amplifier design, behavioural modelling, continuous and switch-*

Antennas and Propagation

- E21 Antenna Design and Characterization (**): *Modelling, calibration and measurements, antenna systems, multiple polarizations, multiple beams*
- E22 Integrated Antennas: *Active antennas, reconfigurable antennas*
- E23 Phased Arrays (Active/Passive), Related Circuits and Components, Tx/Rx Module Technologies (**): *Array design, feed and distribution network, phase shifters and delay lines, receive and transmit arrays, active and passive retrodirective arrays, bias and control circuitry, integration and packaging*
- E24 Smart Antennas, Digital Beam-Forming Antennas, MIMO Antennas: *Smart antennas, multi-beam antennas, beam forming and beam steering, analog and digital vector-modulators, multi-antenna systems, diversity schemes, MIMO antennas, massive-MIMO approaches*

General Topic

- E21 Education and RF Engineering: *Online teaching, e-learning, MOOC and SPOC, engineering education, international exchange programs*

(*): common topic with EuMIC
(**): common topic with EuRAD



The 49th European Microwave Conference

CONFERENCE HIGHLIGHTS

The European Microwave Conference is the ideal event to keep up to date with the most recent achievements in the field of microwave theory, technology, systems, and applications. Through its multidisciplinary and highly interactive character, it offers second-to-none opportunities to network and interact with international experts from the industrial and academic fields. High quality contributions, selected via a rigorous reviewing process, offer an unparalleled perspective on the state-of-the-art in the field. Keynotes and invited papers, presented by well-known specialists, as well as a variety of workshops, short courses and special sessions on "hot topics" will complement the programme.

EuMC MICROWAVE PRIZE

The EuMC Technical Programme Committee and the EuMW Steering Committee will award the EuMC Microwave Prize of €5,000 to the author(s) of the best paper to the 49th European Microwave Conference. An extended version of the winning paper will be considered for publication in the International Journal of Microwave & Wireless Technologies.

EuMC YOUNG ENGINEERS PRIZE

The Technical Programme Committee of the EuMC and the EuMW Steering Committee will award two EuMC Young Engineers' Prizes of €2,000 each to young engineers or researchers who have presented an outstanding paper at the European Microwave Conference. To be eligible, candidates must: (1) be under 30 years of age at date of award, (2) be the first author of the paper, and (3) be the contribution presenter in an oral or a poster session. The first author must have made a major contribution to the work reported which must be described in an electronic statement signed by all authors of the paper (effectively co-authors state that their contribution was merely advisory). This statement must include the date of birth of the first author and must be submitted together with the original submission. The number of co-authors of the paper is not limited. An extended version of the winning papers will be considered for publication in the International Journal of Microwave & Wireless Technologies.

REDUCED FEES AND SPECIAL GRANTS

Reduced registration fees are offered for students as well as senior persons aged 65 years or more. The European Microwave Association will also provide up to 9 student grants of €750 and free EuMC registration. Applicants for a student grant must be aged 30 or younger at the time of the European Microwave Week, be a full-time student (i.e., an undergraduate or a PhD student), and they will be asked to provide a supervisor's written confirmation of their current student status. The European Microwave Association will also provide several grants for delegates coming from the Newly Independent States, from Russia and from low-income countries. The value of the grant is €750 in addition to a free EuMC registration. Applications should be sent to the EuMW General Chairman by June 1st, 2019.

49TH EuMC TEAM

Function	Name	Email
Chair	Stéphane Bila, CNRS, XLIM	stephane.bila@xlim.fr
Co-Chair	Hervé Leblond, Thales Alenia Space	herve.leblond@thalesalieniaspace.com
TPC Chair	Anthony Ghiotto, Bordeaux-INP - IMS	anthony.ghiotto@bordeaux-inp.fr
TPC Co-Chair	Alex Takacs - University of Toulouse - LAAS	atakacs@laas.fr



The 14th European Microwave Integrated Circuits Conference

EUROPEAN MICROWAVE INTEGRATED CIRCUITS CONFERENCE 2019
Paris 29th September – 2nd October 2019

The 14th European Microwave Integrated Circuits Conference (EuMIC) will be held in Paris, France, as part of the European Microwave Week 2019. Initiated by the GAAS® Association in 1990 and renamed in 2006, the conference returns to Paris in 2019.

The EuMIC conference is jointly organized by the GAAS® Association and EuMA and is the premier European technical conference for RF, microwave and photoelectronic. It has established itself as a key contributor to the success of the overall European Microwave Week and remains the largest scientific event in Europe related to microwave integrated circuits.

The aim of the conference is to promote the discussion of recent developments and trends, and to encourage the exchange of scientific and technical information covering a broad range of high-frequency related topics, from materials and technologies to integrated circuits and applications; encompassing all relevant aspects such as theory, simulation, design, and measurement. Research and innovation in this field helps to create the crucial enabling infrastructure for new and emerging information and communication applications, such as 5G communications, the Internet-of-Things or sustainable electronics.

Technological innovations continue to drive challenges for modelling and simulation as well as for the characterization techniques applied at both device and circuit levels. While GaAs and silicon-based IC technologies are extensively used in today's systems, wide-bandgap (SiC, GaN,

etc.) are taking an ever increasing share in new systems and emerging technologies such as CNT and graphene-based devices are expected to become commercially available within the coming years, with a huge expected impact on system performance. Moreover, new materials and devices push integrated circuit capability to millimetre-wave and even to THz bands, while high-speed digital and optoelectronic integrated circuits represent other key areas of interest.

In the modelling area, topics related to device and system small- and large-signal characterization, test set-ups, and modelling approaches up to the THz band are of interest. In the technology area, papers on nanotechnologies for microwaves, as well as wide-bandgap devices and technologies for microwave photonics are specifically solicited. Topics related to semiconductor devices, IC reliability and 3D-interconnects in ICs are also invited to the conference. Finally, contributions are encouraged in the areas of circuit design and applications, RF and microwave ICs, millimetre and sub-millimetre wave ICs, photonic ICs, mixed-signal and high-speed digital ICs, tunable and reconfigurable ICs as well as integrated detectors, receivers, transmitters, and transceivers.

If you are interested in the subject of microwave and RF microelectronic devices and ICs, the EuMIC conference is an exceptional high-quality event to learn about the latest advances in the field and to meet internationally recognized experts from both industry and academia.

EuMIC 2018 CONFERENCE TOPICS

Characterisation, Modelling and Circuit Simulation

- G01 Physics-based and Multi-physics Device Modelling and Simulation: *Physical device and structure modelling to active linear and non-linear simulation, characterization, parameter extraction and model validation techniques. Design optimization techniques for simulation*
- G02 TCAD Device Modelling and Simulation: *Circuit- and statistics-based modelling including but not limited to analysis and design optimization, surrogate modelling and model-order reduction techniques*
- G03 Small Signal, Large Signal and Noise Modelling and Characterization: *Empirical and behavioural device and structure modelling including but not limited to active and passive, linear and non-linear characterization, parameter extraction, and model validation techniques*
- G04 Linear and Non-linear CAD Techniques for Devices and Circuits: *Computer-aided design including but not limited to design automation, finite-difference, finite-element, integral equation, hybrid and other simulation methods for RF, microwave and terahertz devices and circuits, distortion, stability and qualitative dynamics analysis*
- G05 Modelling of Passive RF, Microwave, mm-Wave and Photonic Components for ICs: *Physical and electrical equivalent modelling of passive high frequency and photonic components, integrated guided-wave structures, transducers and interconnects*
- G06 Advanced Packaging and Thermal Simulation of High Power Devices and ICs: *High power, electronic packaging thermal management, heat dissipation, electrothermal effects, semiconductor device packaging*

Technologies and Devices

- G07 Nanotechnologies, Nanodevices and Nanomaterials for Microwaves: *New and emerging material and device concepts including but not limited to carbon nanotubes, nanowires, nanoparticles, other nano-object based devices and systems, 1D-2D material-based electronics, metamaterials, graphene, diamond, organic carbon-based devices and technologies*
- G08 III-V Compound Semiconductor Devices and IC Technologies: *Monolithic integrated electronic devices based on III-V compound semiconductor technologies including but not limited to RF, microwave, and millimetre-wave active and passive devices in GaAs, InP and other compound semiconductors*

- G09 Wide-Bandgap Semiconductor Devices and IC Technologies: *Monolithic integrated electronic devices based on wide-bandgap-based semiconductors including but not limited to RF, microwave, and millimetre-wave active and passive devices in GaN, SiC, diamond and others*
- G10 Si-based Semiconductor Devices and IC Technologies: *Monolithic integrated electronic devices based on Si-based semiconductor technologies including but not limited to RF, microwave, and millimetre-wave active and passive devices in Si (CMOS, SiGe BiCMOS and others)*
- G11 Device and IC Reliability, Manufacturing Processes and Testing: *MMIC technologies and processes including but not limited to manufacturing, reliability, failure analysis, testing, yield and cost*
- G12 3D-Interconnects in ICs: *3D-interconnects, wafer-level stacking and bonding, interconnect between heterogeneous materials, and technologies with integrated cooling. Planar and non-planar integrated transmission lines, waveguides, couplers, dividers/combiners, tuneable devices*
- G13 Devices for Integrated Microwave Photonics: *Novel electronic, photonic and opto-electronic devices for millimetre wave and Terahertz operation including but not limited to tunnel-FETs, resonant tunnelling diodes, uni-traveling carrier photo diodes, mixers and other nonlinear photonic devices, and Silicon Photonics*
- G14 New and Emerging Material and Device Concepts (Metamaterials, Graphene, Carbon Nanotubes, Organic, etc.): *New and emerging material and device concepts other than those included in previous sections*

Circuit Design and Applications

- G15 RF and Microwave Integrated Circuits: *Linear and non-linear MMICs with upper cut-off frequencies up to 30 GHz including but not limited to signal amplification, generation, modulation, frequency conversion, phase and amplitude control*
- G16 Millimetre-Wave and Sub-Millimetre-Wave Integrated Circuits: *Linear and non-linear MMICs with upper cutoff frequencies beyond 30 GHz including but not limited to signal amplification, generation, modulation, frequency conversion, phase and amplitude control*

- G17 Low Noise Circuits and Modules (*): *Low noise amplifiers, filters, mixers, sources and other circuits and modules such as detectors, receivers, radiometers*
- G18 Integrated Solid State Power Amplifiers: *Monolithically integrated power amplifiers for RF, microwave, and millimetre-wave signals including but not limited to wide bandgap, compound semiconductor and silicon-based microwave power amplifiers; switch-mode amplifiers*
- G19 Power Amplifiers: *Efficiency Enhancement and Linearization (*): Cartesian and polar power amplifier design, behavioural modelling, continuous and switch-mode operation, linearization and predistortion techniques, efficiency enhancement, adaptive gain control, power combining, matching and packaging, amplitude and phase characterization*
- G20 Si-Based, Mixed Signal, High Speed Digital ICs: *Integrated circuit modelling, Mixed analogue-digital integrated circuits. High speed integrated circuits. InP and Si-based circuits*
- G21 Power Silicon Devices: *Semiconductor materials, Silicon compounds, power electronics, power semiconductor diodes and transistors*
- G22 Ultra-Low-Power Integrated Circuits: *Intelligent sensors, low-power electronics. Energy consumption.*
- G23 Tuneable and Reconfigurable Circuits and Systems (*): *Electric, magnetic, mechanical and thermal tuning approaches, switches and switching devices, tuneable, reconfigurable or programmable devices, performance metrics and evaluation*
- G24 Integrated Receivers, Transmitters and Transceivers: *Monolithic integrated transceiver circuits including but not limited to homodyne, heterodyne, direct-detection, coherent and incoherent receivers, detectors and radiometers, transmitters and transceivers, on-chip calibration and compensation techniques*
- G25 Microwave Photonic Circuits and Systems (*): *Including indium phosphide and silicon nitride based photonic integrated circuits*

(* common topic with EuMC)



**EuMIC
2019**

**The 14th European Microwave
Integrated Circuits Conference**

CONFERENCE HIGHLIGHTS

Over 100 papers and poster papers will be presented with contributions from Europe, Asia, Middle East, USA, and a growing number of emerging countries. High-quality papers and posters will be accepted after a rigorous review process and made available in the Conference Proceedings. Lively industrial panel sessions will also be organized. Keynote speakers from industry and academia will present invited talks on hot topics. Tailored short courses and workshops will complement the program.

EuMIC MICROWAVE PRIZE

The EuMIC Technical Program Committee and the EuMW Steering Committee will award the EuMIC 2019 Prize of €3,000 to the author(s) of the best contributed paper to EuMIC 2019. An extended version of the winning paper will be considered for publication in the International Journal of Microwave and Wireless Technologies. The EuMIC Technical Program Committee and the EuMIC Young Engineer Prize.

EuMIC YOUNG ENGINEERS PRIZE

EuMW Steering Committee will award a EuMIC Young Engineer Prize of €2,000 to young engineers or researchers who have presented an outstanding paper at the European Microwave Integrated Circuits Conference. To be eligible, candidates must be (1) under 30 years of age at date of award, (2) the first author of the paper, and (3) the contribution presenter in an oral or a poster session. The first author must have a major contribution in the work reported, which must be described in an electronic statement signed by all co-authors of the paper (effectively co-authors state that their contribution was merely advisory). This statement has to include the date of birth of the first author and must be submitted together with the original submission. The number of co-authors of the paper is not limited. An extended version of the winning paper will be considered for publication in the International Journal of Microwave and Wireless Technologies.

GAAS® PHD STUDENT FELLOWSHIP

The GAAS® Association sponsors three student fellowships of €2,000 each, to be given to young full-time PhD students each having an accepted paper at EuMIC 2019. The purpose is to recognize and provide financial assistance to international PhD students who show promise and interest in pursuing a graduate degree in microwave electronics. Applications should be submitted before June 1st, 2019 to the EuMW General Chairman. For further details, see the GAAS® Association website www.gaas-symposium.eu.

REDUCED FEES AND SPECIAL GRANTS

Reduced registration fees are offered for students as well as senior persons aged 65 years or more. The European Microwave Association will also provide up to four student grants of €750 and free EuMIC registration. Applicants for a student grant must be aged 30 or younger at the time of the European Microwave Week, be a full-time student, i.e., an undergraduate or a PhD student, and they will be asked to provide a supervisor's written confirmation of their current student status. The European Microwave Association will also provide several grants for delegates coming from the Newly Independent States, from Russia, and from low-income countries. The value of the grant is €750 in addition to a free EuMIC registration. Applications should be sent to the EuMW General Chairman by 1st June 2019.

14TH EuMIC TEAM

Function	Name	Email
Chair	Farid Medjdoub, IEMN-CNRS	farid.medjdoub@iemn.univ-lille1.fr
Co-Chair	Hervé Blanck, United Monolithic Semiconductors GmbH	herve.blanck@ums-ulm.de
TPC Chair	Jean Christophe Nallatamby, XLIM-Université de Limoges	jean-christophe.nallatamby@unilim.fr
TPC Co-Chair	Joaquín Portilla, University of the Basque Country, UPV/EHU	joaquin.portilla@ehu.es



**EUROPEAN
MICROWAVE
WEEK**
PORTE DE VERSAILLES
PARIS, FRANCE
29TH SEPT - 4TH OCT 2019
www.eumweek.com



The 16th European Radar Conference

EUROPEAN RADAR CONFERENCE 2019
Paris 2nd - 4th October 2019

The 16th European Radar Conference (EuRAD 2019) will be held from 2th to 4th October 2019 in Paris, France, in the framework of the European Microwave Week 2019. This Radar Conference is the major European event for the present status and the future trends in the field of radar research, technology, system design and applications.

In the Radar Sub-systems and Phenomenology area, the conference focuses on radar EM phenomenology modelling and characterization, antenna design (simulation and measurements) with last innovations on antenna characterization, active/passive phased arrays and transceiver technologies as well as reconfigurable front-ends and sub-systems.

The Radar Signal Processing topic intends to collect the main recent innovative research contributions on digital beamforming, MIMO processing, interferometry, polarimetry, tomography, waveform diversity, tracking and target localization, high-resolution radar signal processing techniques, robust multi-dimensional signal processing techniques and compressive sensing. A specific focus is also expected on the use of machine learning and deep learning for radar application.

The Radar Architecture and Systems topic addresses the development of sensors from the classical designs such as CW, over-the-horizon, passive, noise and polarimetric radar, up to the most complex and sophisticated architectures, such as remotely piloted aircraft radar, multi-sensor and multifunctional systems, UWB systems and millimetre-wave and THz radars. We expect new tools for radar simulation and system performance modelling as much as new trends on cognitive, bio-inspired and software defined radars.

The Radar Applications area covers various fields such as ground/space radar, remote sensing, subsurface and ground penetrating radar, surveillance, traffic control, automotive radars, defence and security, as well as other radar uses, related to medical, industrial, and system diagnostic applications. Special attention will be given to novel applications such as multistatic radar systems, passive radar, short range and near-field radars, bio-medical imaging, millimetre-wave and THz technology or any other new emerging radar application.

EuRAD 2019 CONFERENCE TOPICS

RADAR Sub-systems and Phenomenology

- R01 Phenomenology and Modelling: *RCS, clutter, complex media, propagation, modelling, channel emulation and over-the-air testing, foliage and ground penetration, method of geophysical parameter estimation, radar polarimetry*
- R02 Antenna Design and Characterization (*): *Reconfigurable antennas, multi-polarization, antenna with digital beamforming, antenna's characterization in its environment, system diagnostic, near-field characterization*
- R03 Phased Arrays (Active/Passive), Related Circuits and Components, Tx/Rx Module Technologies (*): *Array design, feed and distribution network, phase shifters and delay lines, receive and transmit arrays, active and passive retrodirective arrays, integration and packaging*
- R04 Radar Front-Ends: *Reconfigurable & multifunction front-ends, mixed signal radar sub-systems, advanced receiver design*

RADAR Signal and Data Processing

- R05 Beam-Forming, Signal Generation and Reception: *Digital beam-forming, MIMO detection, MIMO processing*
- R06 Tracking, Localisation and Classification: *Target tracking, localisation, classification, automatic target recognition, machine learning, data fusion in MIMO Systems*
- R07 Imaging Techniques: *High resolution processing, 1D, 2D and 3D target imaging, MTI/STAP/SAR processing and techniques, tomography, polarimetry, interferometry*
- R08 Robust Detection and Compressive Sensing: *Robust and multi-dimensional detection, robust estimation techniques, compressive sensing, sparse representations*

RADAR Architectures and Systems

- R09 Ultra-Wide Band Technology and Systems (*): *Ultra-wideband sensing, localisation and communication techniques and applications, imaging and spectroscopy, system implementation, performance evaluation, Ultra-wideband radar*
- R10 Large and Short-Range Detection Systems: *Short range radar, over the horizon, imaging and CW radars, pulsed radar, synthetic aperture radar, remotely piloted aircraft radars, ground/airborne/maritime/space-based radars, pulse-doppler*
- R11 Multi-Sensor Architectures and Systems: *Network, passive and MIMO radars, multi-sensor and multi-static systems, data fusion, cooperative radar*
- R12 Innovative Radar Concepts: *Over-the-horizon, cognitive radar and bio-inspired radar, software defined radar*
- R13 Multifunctional RF radar: *Communications and radar, meteorology and Positioning, SAR, brownout/whiteout conditions, collision avoidance with other platforms and obstacles, terrain following and ground mapping, weather avoidance*
- R14 Millimetre-wave, THz Technology and Systems (*): *Wideband and ultra-wideband systems, frequency allocation and re-allocation, radar architecture, antennas, radar front-ends*
- R15 Simulation and Modelling: *Radar Simulation, system performance estimation, radar modelling in an operational environment, waveform diversity and information coding*

RADAR Applications

- R16 Defence and Security: *Air and surface surveillance, fire control and multi-function capabilities, electronic surveillance, defence & attack and its impact on radar, remotely piloted aircraft detection, homeland security, drone detection radar, mw and THz Imaging, crowd monitoring*
- R17 Subsurface Applications and near field techniques: *Ground penetrating radar, foliage penetrating radar, radar detection of landmines and improvised explosive detector, biomedical Imaging*
- R18 Automotive Radar: *Remote traffic monitoring, anti-collision, autonomous driving, sense and avoid*
- R19 Industrial Applications and Emerging Radar Application: *Non-destructive testing, radar for agricultural product, near-field imaging, evanescent sensors, home and building application*
- R20 Geophysical Parameter Estimation: *Complex media characterization, 2-D, 3-D and 3-D + T imaging, weather radar, remote Sensing*

(*) common topic with EuMC



The 16th European Radar Conference

CONFERENCE HIGHLIGHTS

The conference is the ideal event to keep up to date with the latest achievements in the field of radar and to interact with international experts from industry and academia. The conference brings together researchers and radar designers and developers from all over the world to stimulate development of new trends, products and services. International experts will present keynote papers on topics of current importance and on the latest advances. Tailored short courses and workshops will complement the programme.

EuMA RADAR PRIZE

The EuMA Radar Prize is awarded by the EuRAD Technical Programme Committee and the EuMW Steering Committee to the author(s) of the paper presenting the most significant advance in radar state of the art. The value of the EuMA Radar Prize is €3,000. Eligible candidates for the EuMA Radar Prize are the author(s) of a paper accepted for inclusion in the programme of EuRAD, published in the Conference Proceedings and presented during the conference in either an oral or poster session. An extended version of the winning paper will be considered for publication in the International Journal of Microwave and Wireless Technologies.

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16TH EuRAD TEAM

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SIX DAYS

THREE CONFERENCES

ONE EXHIBITION

EUROPE'S PREMIER
MICROWAVE, RF,
WIRELESS AND
RADAR EVENT



CALL FOR WORKSHOPS/ SHORT-COURSES

PARIS EXPO PORTE DE VERSAILLES, PARIS, FRANCE
29TH SEPTEMBER – 4TH OCTOBER 2019

The European Microwave Week 2019 will take place from 29th – 4th October in Paris expo Porte de Versailles, Paris, France. Besides the contributed papers, the programme shall include workshops and short-courses on Sunday, Monday and Friday. If you have ideas for workshops or short-courses, we invite you to e-mail your proposals to the Workshop and Short Course Chair Cedric Quendo (cedric.quendo@univ-brest.fr). The proposals should be one page long and indicate the selected conference (EuMC, EuMIC, or EuRAD), the title and an abstract of the topic. The name(s), affiliation(s) and e-mail address(es) of the organizer(s), the duration (half or full day), a preliminary list of speakers, and the expected attendance. We look forward to receiving your submission.



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cedric.quendo@univ-brest.fr