

SIX DAYS



THREE CONFERENCES



ONE EXHIBITION

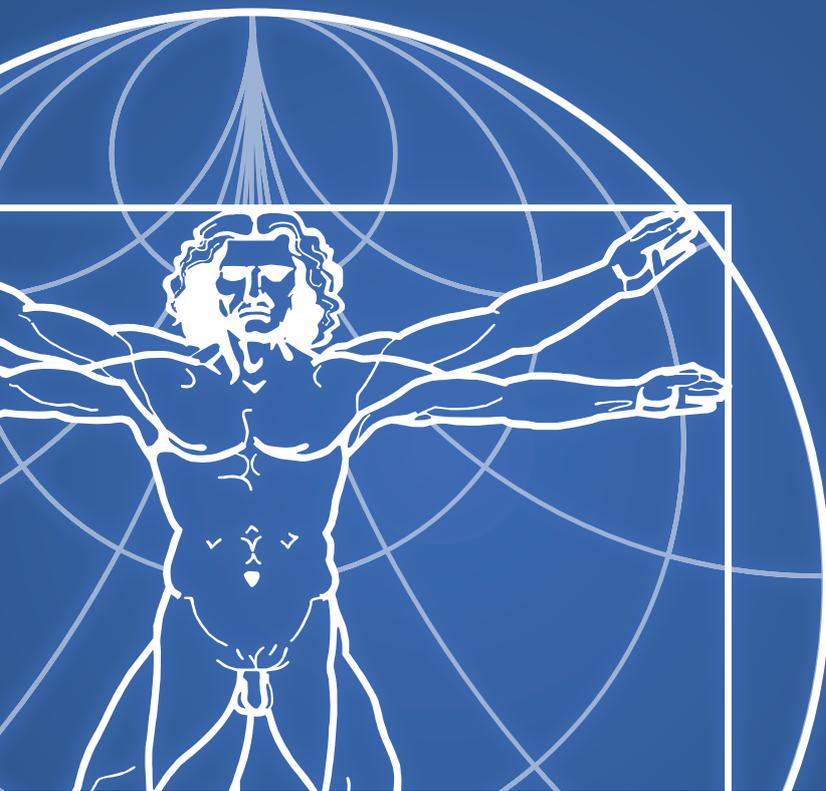
EUROPE'S PREMIER  
MICROWAVE, RF, WIRELESS  
AND RADAR EVENT



# EUROPEAN MICROWAVE WEEK 2022 CALL FOR PAPERS

MILANO CONVENTION CENTRE (MICO), MILAN, ITALY

25TH - 30TH SEPTEMBER 2022



## THE 25TH EUROPEAN MICROWAVE WEEK COMBINES THREE CONFERENCES:

- 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 Defence, Security and Space Forum
- The Automotive Forum
- The Beyond 5G Forum
- Student Activities
- The European Microwave Exhibition



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The 17th European Microwave Integrated Circuits Conference

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The 52nd European Microwave Conference

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The 19th European Radar Conference

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## THE 25TH EUROPEAN MICROWAVE WEEK

The 2022 European Microwave Week (EuMW 2022) continues the annual series of highly successful microwave events that started back in 1998. EuMW 2022 comprises three co-located conferences:

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

In addition, EuMW 2022 includes The Forum on Defence, Security and Space, The Automotive Forum, The Beyond 5G Forum and a very large trade show. EuMW 2022 provides the opportunity to participate in conferences, workshops, short courses and special sessions. There are also special events for PhD students.

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

The venue for EuMW 2022 will be MiCo Milan. A wide range of transport options are available to travel to MiCo Milan – air, rail network, tube, and cable car or walking/cycling. In particular, Milan is served by three international airports (Milan Malpensa, Milan Linate, and Orio al Serio Bergamo), by high-speed trains, and a very efficient underground and surface transport system. Many points of interest of Milan are at walking distance from MiCo. For more information, please visit <https://www.micomilano.it/en>

Come and join us in Milan and enjoy both the European Microwave Week (Europe's premier microwave, RF, wireless and radar event) and the city of Milan. Our slogan for EuMW 2022 is "Creative microwaves" – as we believe the colleagues and fellow professionals can be inspired by Milan, as it happened to Leonardo da Vinci during the seven years he worked in this dynamic European city.

## ADDRESSES

### General Chair:

Luca Perregrini  
University of Pavia  
[general.chair@eumw2022.org](mailto:general.chair@eumw2022.org)

### General TPC Chair:

Maurizio Bozzi  
University of Pavia  
[tpc.chair@eumw2022.org](mailto:tpc.chair@eumw2022.org)

### Treasurer:

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University of Salento  
[treasurer@eumw2022.org](mailto:treasurer@eumw2022.org)

### General Co-Chair:

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### Operations Director:

Lorenzo Silvestri  
University of Pavia  
[operations@eumw2022.org](mailto:operations@eumw2022.org)

## IMPORTANT DATES:

28 February 2022	Deadline for proposals of workshops, short courses, focussed and special sessions
25 March 2022	Deadline for submission of papers
6 June 2022	Notification of acceptance
20 June 2022	Deadline for submission of requests for grants, fellowships, and visas
1 July 2022	Deadline for final paper
15 July 2022	Deadline for final Workshop Slide Upload

## EUMW 2022 EXHIBIT:

For exhibition enquiries, please contact:

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Tel: +44 20 7596 8742

email: [rvaughan@horizonhouse.co.uk](mailto:rvaughan@horizonhouse.co.uk)

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, in English. A template, as well as instructions for paper submission, can be found on the website: [www.eumweek.com](http://www.eumweek.com). The paper must be uploaded in pdf format. The maximum file size is 3 MB. It is essential to emphasise the novel aspects of your paper. One author information form per paper must be completed 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. As regards the deadline for submission of preliminary papers, the notification of the status of the submission, and the final digest paper upload, please refer to "Important Dates" section in the second page of this Call for Papers. Late submissions will not 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). The TPC Chair decides whether a paper is accepted and assigns it to an oral or poster session. The General TPC Chair reserves the right to redirect a paper, which does not fit with the conference selected by its authors, towards the most appropriate conference. Authors of accepted papers will find instructions for publication and presentation on the EuMW 2022 website. Authors are responsible for obtaining publication approval from their employer or sponsor.

## INCENTIVES FOR AUTHORS

Presenting at EuMW 2022 gives you the opportunity to interact with your peers, present your work to an international audience, receive feedback and exchange ideas with academia and industry. Your paper will be published in the IEEE Xplore Digital Library, contributing to your professional development, visibility, credibility, and proper exposure of your work. **Selected papers will also be nominated by the TPC for a Special Issue of the International Journal of Microwave and Wireless Technologies, published by Cambridge University Press. This Special Issue will be published in open access, with the article processing charges covered by the European Microwave Association (EuMA).** Each conference will award a conference best paper prize and one or two young engineer's prizes. Prize winners will receive a financial award. All participants in one or more of the conferences will receive an electronic version of the conference proceedings.

## WORKSHOPS AND SHORT COURSES

A number of workshops and short courses, on a variety of topics relating to current or emerging interests, will be organised during EuMW 2022. Do you have any suggestions for a workshop or short course? Your proposal is very welcome and should be sent to: [workshops@eumw2022.org](mailto:workshops@eumw2022.org). We encourage early discussion of any such ideas with the Workshops and Short Courses Chairs before the submission deadline. Proposals should be submitted on the templates which will be available from [www.eumweek.com](http://www.eumweek.com) or can be requested directly to [workshops@eumw2022.org](mailto:workshops@eumw2022.org). As regards the deadline for proposals submission and the notification of the status of the submission, please refer to "Important Dates" section in the second page of this Call for Papers.

## FOCUSSED AND SPECIAL SESSIONS

Focussed Sessions are sessions dedicated to an emerging subject of specific interest to the microwave community. Special Sessions should reflect specific (historic or recent) events of interest to the microwave community or recognise the life work of people by honouring their contributions. They may also highlight technical achievements made in a specific geographical region of the world. Proposals for focussed or special sessions should be sent to [focussed.sessions@eumw2022.org](mailto:focussed.sessions@eumw2022.org), using the templates available from [www.eumweek.com](http://www.eumweek.com). As regards the deadline for proposals submission and the notification of the status of the submission, please refer to "Important Dates" section in the second page of this Call for Papers.

## WOMEN IN MICROWAVE ENGINEERING

We continue the tradition of holding the Women in Microwave Engineering event during EuMW. Of course, both women and men are welcome to participate in this event.

## STUDENT GRANTS AND VISAS

EuMC, EuMIC and EuRAD will provide several competitive student grants. Applications should be sent to the EuMW 2022 Grants Chair, by emailing [grants@eumw2022.org](mailto:grants@eumw2022.org) within the deadline (see "Important Dates" section). For assistance in obtaining a visa letter, please contact [visas@eumw2022.org](mailto:visas@eumw2022.org).

## STUDENT ACTIVITIES

Students will shape the future of our profession and are particularly targeted throughout EuMW. Activities for students include 'schools' dedicated to PhD students and a Career Platform to help with planning professional development beyond university. For more information, please contact [student.activities@eumw2022.org](mailto:student.activities@eumw2022.org).



## THE CITY OF MILAN



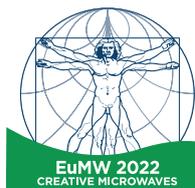
Milan is the undisputed business and financial capital of Italy, it is also home of the financial markets and is the base for all of the country's multinationals, making Milan a confirmed international metropolis. Its fine aesthetic traditions are upheld in new projects carried out in the city by star architects. Among the many fascinating monuments, it is worth mentioning the Duomo di Milano, the world's largest Gothic cathedral, the Sforza Castle, La Scala theatre, the Church of Santa Maria delle Grazie with the Last Supper painting of Leonardo da Vinci. The city also enjoys an enviable setting in Lombardy. Filled with enchanting art cities, this is the Italian region with the largest natural parks and splendid lakes surrounded by mountains and is a paradise for both mountaineers and skiers. The region's strong attachment to its longstanding traditions is reflected in the unforgettable flavours of internationally renowned local cuisine and wine. For more information, visit <https://www.yesmilano.it/en>.



## MICO MILANO CONVENTION CENTRE

MiCo Milano Convention Centre is home to the most important international association and corporate events. It is right in the heart of Milan, in the completely renewed quarter of City Life, surrounded by hotels, ranging from luxury to budget, and by many restaurants. The venue boasts excellent transport links for both national and international visitors, with easy access to the underground and surface transport system, convenient connection to three international airports (Milan Malpensa, Milan Linate, and Orio al Serio Bergamo) and to the high-speed trains system. Many points of interest of Milan are at walking distance from MiCo. For more information, please visit <https://www.micomilano.it/en>.





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The 52nd European Microwave Conference

## EUROPEAN MICROWAVE CONFERENCE 2022 MILAN 27TH - 29TH SEPTEMBER 2022

The 2022 European Microwave Conference is Europe's largest conference dedicated to microwave, millimetre-wave and terahertz devices, systems and technologies and will give you opportunities to share and discuss your recent findings with peers and experts across this region of the spectrum. In 1452, Leonardo da Vinci, the famous genius of the Renaissance, was born. In 2022, 570 years later, he is still a symbol of the possible and prolific union between science and art, engineering and creativity. Leonardo spent several years in Milan, where he realized the drawing known as the Vitruvian Man, which inspired our EuMW 2022 logo, and remembers us that "Man is the measure of all things".

The conference is being held from the 27th to the 29th of September 2022 in Milan, Italy, and represents the main event in the European Microwave Week. 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 of 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 linearisation techniques, 5G, IoT, and the impact of new packaging technologies on development applications.

The European Microwave Conference provides ample 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 50 oral and poster sessions, the conference represents an exciting forum for the presentation and discussion of the most recent advances in the microwave area. In addition to scientific papers, contributions on industrial applications are also strongly encouraged, covering the fields of instrumentation, medical, telecommunication, radio astronomy, radar, space, automotive and defence systems.

## EuMC 2022 CONFERENCE TOPICS

### Passive Components, Circuits and Subsystems

- E01 Planar Passive Components and Circuits
- E02 Planar Filters and Multiplexers
- E03 Non-Planar Passive Components and Circuits
- E04 Non-Planar Filters and Multiplexers
- E05 Smart materials, RF MEMS, MOEMS and NEMS
- E06 Metamaterials, Frequency Selective Surfaces and Electromagnetic Bandgap Structures
- E07 Interconnects and Packaging
- E08 Additive Manufacturing and Emerging Materials

### Active Components, Circuits and Subsystems

- E09 Low Noise Hybrid Circuits and Modules
- E10 Systems for Frequency Generation, Conversion and Control
- E11 Front-End and Transceiver Modules, System-in-Package Technologies
- E12 Power Amplifier Systems, including Efficiency Enhancement and Linearisation Techniques
- E13 Power Amplifier Behavioural Modelling and its Applications
- E14 Sub-THz and THz Systems and Modules
- E15 Microwave Photonic Components, Circuits and Systems

### Field and Circuit Analysis, Simulation and Characterisation Techniques

- E16 Electromagnetic Field Theory and Numerical Techniques
- E17 Electromagnetic Modelling and Optimization by Artificial Intelligence and Machine Learning
- E18 Electromagnetic Compatibility and Interference, Signal Integrity
- E19 Modelling of Interaction of Electromagnetic Waves with Matter, Biological Effects
- E20 Measurement Techniques and Systems from RF to THz
- E21 Channel Characterisation
- E22 Antenna and Array Characterisation Techniques

### Antennas and Propagation

- E23 Microwave and Millimetre-wave Antenna Design
- E24 Sub-THz and THz Integrated Antennas
- E25 Array Antennas, Smart Antennas, MIMO Antennas and Related Tx/Rx Module Technologies
- E26 Microwave and Millimetre-wave Integrated Antennas

### Systems and Applications

- E27 Microwave Systems
- E28 Millimetre-wave Systems
- E29 Sub-THz and THz Systems
- E30 Biological and Medical Applications, Biomedical Sensing and Imaging, Dosimetry
- E31 Components and Systems for Remote Sensing Applications
- E32 Wireless Power Transfer and Energy Harvesting
- E33 Components and Systems for Microwave Sensing
- E34 Short Range Wireless Applications, RFID, NFC, IoT, WSN
- E35 Wearable Microwave Components, Antennas, and Systems
- E36 Smart Antennas, Digital Beam-forming and MIMO Antennas for Future Networks
- E37 Wireless High Data Rate Communications and Cognitive Radio
- E38 Smart Factory, Mobility and Logistics
- E39 Quantum Microwave Systems and Applications

### General topics

- E40 Education in RF and Microwave



The 52nd 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 at the 52nd 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

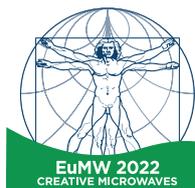
The Technical Programme Committee of the EuMC and the EuMW Steering Committee will award two EuMC Young Engineer Prizes of €2,000 each to young engineers or researchers who have presented an outstanding paper at the European Microwave Conference. To be eligible, candidates must: (1) be under 30 years 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 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 & 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 14 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 a number of 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 2022 Grants Chair by emailing [grants@eumw2022.org](mailto:grants@eumw2022.org) within the deadline (see “Important Dates” section).

## 52ND EuMC TEAM

Function	Name	Email
Chair	Alessandra Costanzo	<a href="mailto:eumc.chair@eumw2022.org">eumc.chair@eumw2022.org</a>
Co-Chair	Luca D'Antonio	<a href="mailto:eumc.cochair@eumw2022.org">eumc.cochair@eumw2022.org</a>
TPC Chair	Marco Pasian	<a href="mailto:eumc.tpc@eumw2022.org">eumc.tpc@eumw2022.org</a>



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The 17th European Microwave  
Integrated Circuits Conference

## EUROPEAN MICROWAVE INTEGRATED CIRCUITS CONFERENCE 2022 MILAN 26TH - 27TH SEPTEMBER 2022

The 17th European Microwave Integrated Circuits Conference (EuMIC) will be held in Milan, Italy, as part of the European Microwave Week 2022. Initiated by the GAAS<sup>®</sup> Association in 1990 and renamed in 2006, the conference is being held from the 26th to the 27th of September 2022 in Milan, Italy, in the Convention centre representing an International hubs for technical and financial activities in a truly dynamic city that never goes to sleep! The EuMIC conference is jointly organized by the GAAS<sup>®</sup> Association and EuMA, and is the premier European technical conference for RF and microwave electronics, and opto-electronics. 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 showcase recent notable achievements and trends within our industry 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 help to create the crucial enabling infrastructure for new and emerging information and communication applications.

How will the next mega trends in 5G+ connectivity, connected cars, intelligent sensors, pan-global satellite coverage, Smart City & Smart Factory developments affect what high frequency devices we should be developing next? Where will the smart investment money go and what are the most promising areas to focus your IC start-up company?

Whilst traditionally, the EuMIC conference has focussed mostly on III-V semiconductor technologies, we are particularly keen to encourage more Si based contributions as we recognise the

rapidly progressing applicability of CMOS/SOI solutions for microwave/millimetre-wave applications.

Technological innovations continue to drive challenges for modelling and simulation as well as for the characterisation techniques applied at both device and circuit levels. While GaAs and silicon-based IC technologies are extensively used in today's systems, emerging technologies such as wide-bandgap (SiC, GaN, etc.), CNT, and graphene-based devices are expected to become commercially available within the coming years, with a huge impact on system performance expected. 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 devices and systems, small- and large-signal characterisation, 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 submillimetre-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 keen to hear of the latest advances in RF/microwave/mmWave device and IC technology, and how they will drive the next Telecomms, Industrial, Automotive and Smart City revolutions, then the EuMIC conference is the place to be in September 2022! Our team is putting a programme together which will ensure that you won't be disappointed.

### EuMIC 2022 CONFERENCE TOPICS

#### Modelling, Simulation of Devices and Circuits

- G01 TCAD and Multi-Physics Based Device and IC Modelling and Simulations
- G02 Linear, Nonlinear and Noise Characterization and Modelling Techniques
- G03 Linear and Nonlinear CAD Techniques for Devices and Circuits
- G04 Advanced Methods for Microwave Integrated Circuit Design and Modelling (Also Including AI, DL, ML, ANN)

#### Technologies, Devices and IC-Processes

- G05 Nano-materials, Technologies and Devices for Microwave to THz Applications
- G06 Device and IC Manufacturing: Reliability, Processes and Testing
- G07 Passive Devices, Hetero-Integration and 3D-Interconnects in ICs

G08 Si-Based Microwave and Millimetre-wave Technologies and Devices

G09 Compound Semiconductor Technologies and Devices

G10 New and Emerging Material and Device Concepts (Quantum Electronics, CNT, Organic, ...)

G11 Devices for THz Electronics and Integrated Microwave Photonics

#### Integrated Circuit Design

G12 RF, Microwave and Millimetre-wave Integrated Circuits up to 100 GHz

G13 Millimetre-wave (beyond 100 GHz) and THz Integrated Circuits

G14 Integrated Receivers, Transmitters and High-Speed Transceivers

G15 Power Amplifier Integrated Circuits

G16 Integrated Frequency Sources and frequency conversion

G17 ICs for Phased Array Antennas

G18 Microwave Photonics Integrated Circuits

G19 Mixed-signal Integrated Circuits and GB/s Data Converters

G20 Low Noise Integrated Circuits

G21 Si-based Integrated Circuits Design

G22 Si-based Power Amplifier Integrated Circuits

#### Emerging Technologies and Applications

G23 Microwave and Millimetre-wave Integrated Circuits for Innovative Applications (Smart Industry, Smart Devices, 6G, M2M, LoRa, RFID, IoT, IoT,...)

G24 Wearable Integrated Electronics for Sensing Applications from MHz to THz

G25 Microwave Integrated Circuits for Autonomous Systems and Vehicular Communications (V2X, C-ITS, ...)

G26 Microwave Integrated Circuits for Quantum Computing



The 17th European Microwave  
Integrated Circuits Conference

## CONFERENCE HIGHLIGHTS

About 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 organised. Keynote speakers from industry and academia will present invited talks on hot topics. Tailored short-courses and workshops will complement the programme.

## EuMIC MICROWAVE PRIZE

The EuMIC Technical Programme Committee and the EuMW Steering Committee will award the EuMIC 2022 Prize of €3,000 to the author(s) of the best contributed paper at the 17th European Microwave Integrated Circuits Conference. An extended version of the winning paper will be considered for publication in the International Journal of Microwave and Wireless Technologies.

## EuMIC YOUNG ENGINEERS PRIZE

The EuMIC Technical Programme Committee and the 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) 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 co-authors of the paper (effectively co-authors state that their contribution was merely advisory). Further rules are similar to EuRAD and EuMC.

## TOM BRAZIL FELLOWSHIP AWARD (BY THE GAAS® ASSOCIATION)

As part of the fellowship award, for the next 3 years, starting in 2021, the GAAS® Association will promote an essay competition in memory of Prof. Tom Brazil who was a great contributor to the Microwave Community and a well-known friend and colleague for many of us. To be eligible to participate the student has to be enrolled in a full time Ph.D. or graduate degree programme in microwave electronics.

The student should write a 4000-word essay or max of 12 pages including diagrams and tables, reporting His/Her view on "Microwaves for global challenges", thus describing what kind of future microwave activities would be important and why. The essays will be shortlisted and the top 3 will be asked to do a final pitch during EuMW Week.

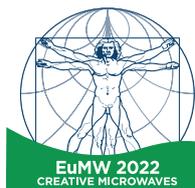
Applications should be sent to the email address [brazilaward@eumw2022.org](mailto:brazilaward@eumw2022.org) by 1st September 2022. For further details, see the conference website and the GAAS® Association website: [www.gaas-symposium.eu](http://www.gaas-symposium.eu).

## 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 six 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 a number of 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 2022 Grants Chair by emailing [grants@eumw2022.org](mailto:grants@eumw2022.org) within the deadline (see "Important Dates" section).

## 17TH EuMIC TEAM

Function	Name	Email
Chair	Paolo Colantonio	<a href="mailto:eumic.chair@eumw2022.org">eumic.chair@eumw2022.org</a>
Co-Chair	Francesco Barletta	<a href="mailto:eumic.cochair@eumw2022.org">eumic.cochair@eumw2022.org</a>
TPC Chair	Alessandro Cidronali	<a href="mailto:eumic.tpc@eumw2022.org">eumic.tpc@eumw2022.org</a>
TPC Co-Chair	Rocco Giofré	<a href="mailto:eumic.tpc@eumw2022.org">eumic.tpc@eumw2022.org</a>



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The 19th European Radar Conference

## EUROPEAN RADAR CONFERENCE 2022 MILAN 28TH - 30TH SEPTEMBER 2022

The 19th European Radar Conference (EuRAD 2022) will be held from the 28th to the 30th of September 2022 in Milan, Italy, in the framework of the European Microwave Week 2022. 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. The EuRAD conference will bring together a global network of researchers, practitioners and institutes working on topics related to the following four areas of focus.

The Radar Sub-systems and Phenomenology topic comprises radar electromagnetic phenomenology (including radar cross section) modelling and characterisation, antenna design (simulation and measurements) including innovations and methods in antenna characterisation, phased arrays, fully digital arrays, transceiver technologies as well as reconfigurable front-ends and sub-systems.

The Radar Techniques topic aims to attract innovative research contributions on digital beamforming and other multi-antenna techniques (including MIMO, multi-static and networked), signal processing techniques for detection and estimation, localisation and tracking, imaging, information extraction, target classification and compressive sensing. This incorporates also, for example, interferometry, polarimetry, tomography etc.. Contributions on sensor management, cognitive techniques and waveform diversity as well as on spectrum sharing and

joint radar and communication are also included. Submissions are also expected in the use of machine learning, deep learning and adaptive techniques for radar.

The Radar Architecture and Systems topic incorporates the latest 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, incorporated in, for example, remotely piloted aircraft, multi-sensor and multi-functional systems, UWB systems, millimetre-wave and THz systems and quantum radar. New tools for radar simulation and system performance modelling, model-based design, as well as new trends in cognitive, bio-inspired, low-cost and software defined radars are encompassed.

The Radar Applications topic encompasses various domains such as automotive and transportation radars, defence, sense & avoid radar for UAVs and security applications, geoscience, weather & environmental remote sensing (including subsurface and ground penetrating radar), as well as other radar uses, related to industrial, medical/biological, and sensing/diagnostic applications. A transversal focus is also expected on the re-emerging areas of electronic surveillance and countermeasures for radar applications in relation to the growth of the internet-of-things. Contributions on radar systems and missions for space exploration are also welcome. Any other new emerging radar application is also included.

## EuRAD 2022 CONFERENCE TOPICS

### RADAR Sub-Systems and Phenomenology

- R01 Phenomenology and Modelling
- R02 Antenna Design and Characterisation
- R03 Phased Arrays, Fully Digital array, Circuits and Components, Tx/Rx Modules
- R04 Radar Front-Ends

### RADAR Techniques

- R05 Beam-Forming and Multi-Antenna Techniques
- R06 Robust Detection and Estimation, Compressive Sensing and Information Extraction
- R07 Localization, Tracking, and Sensor Data Fusion
- R08 Imaging Techniques and Target Classification
- R09 Sensor Management, Cognitive Techniques and Waveform Diversity
- R10 Spectrum Sharing and Joint Radar and Communication
- R11 Machine Learning and Artificial Intelligence for Radar

### RADAR Architectures and Systems

- R12 Radar Ultra-Wideband Technology and Systems
- R13 Imaging and Short-range Radar Systems
- R14 HF and Over the Horizon Radar Systems
- R15 Passive and Multi-sensor Architectures and Systems
- R16 Radar Networks
- R17 Adaptive and Cognitive Radar systems
- R18 Multifunctional Radar
- R19 Radar Millimetre-wave, THz Technology and Systems
- R20 Quantum Radar
- R21 Low-cost and Software-Defined Radar
- R22 System Simulation and Modelling

### RADAR Applications

- R23 Defence Applications, Electronic Surveillance (ES) and Electronic Warfare (EW)
- R24 Sense & Avoid Radar for UAVs and Security Applications
- R25 Industrial and Emerging Applications
- R26 Medical & Biological Applications
- R27 Human Activity Monitoring, including Gesture Recognition
- R28 Automotive & Transportation
- R29 Geoscience, Weather & Environmental Remote Sensing
- R30 Radar systems and Missions for Space Exploration



The 19th 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 best paper at the 19th European Radar Conference. The value of the EuMA Radar Prize is €3,000. An extended version of the winning paper will be considered for publication in the International Journal of Microwave and Wireless Technologies.

## EURAD YOUNG ENGINEER PRIZE

The EuRAD Technical Programme Committee and the EuMW Steering Committee will award a EuRAD Young Engineer Prize of €2,000 to young engineers or researchers who have presented an outstanding contribution at the European Radar 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). Further rules are similar to EuMC and EuMIC.

## REDUCED FEES AND SPECIAL GRANTS

Reduced registration fees are offered for students as well as senior persons aged 65 years or more and for military personnel (with proof of affiliation). The European Microwave Association will also provide up to five student grants of €750 and free EuRAD 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 low-income countries. The value of the grant is €750 in addition to a free EuRAD registration. Applications should be sent to the EuMW 2022 Grants Chair by emailing [grants@eumw2022.org](mailto:grants@eumw2022.org) within the deadline (see "Important Dates" section).

## 19TH EURAD TEAM

Function	Name	Email
Chair	Pierfrancesco Lombardo	<a href="mailto:eurad.chair@eumw2022.org">eurad.chair@eumw2022.org</a>
Co-Chair	Marco De Fazio	<a href="mailto:eurad.cochair@eumw2022.org">eurad.cochair@eumw2022.org</a>
TPC Chair	Debora Pastina, Fabiola Colone	<a href="mailto:eurad.tpc@eumw2022.org">eurad.tpc@eumw2022.org</a>

SIX DAYS

THREE CONFERENCES

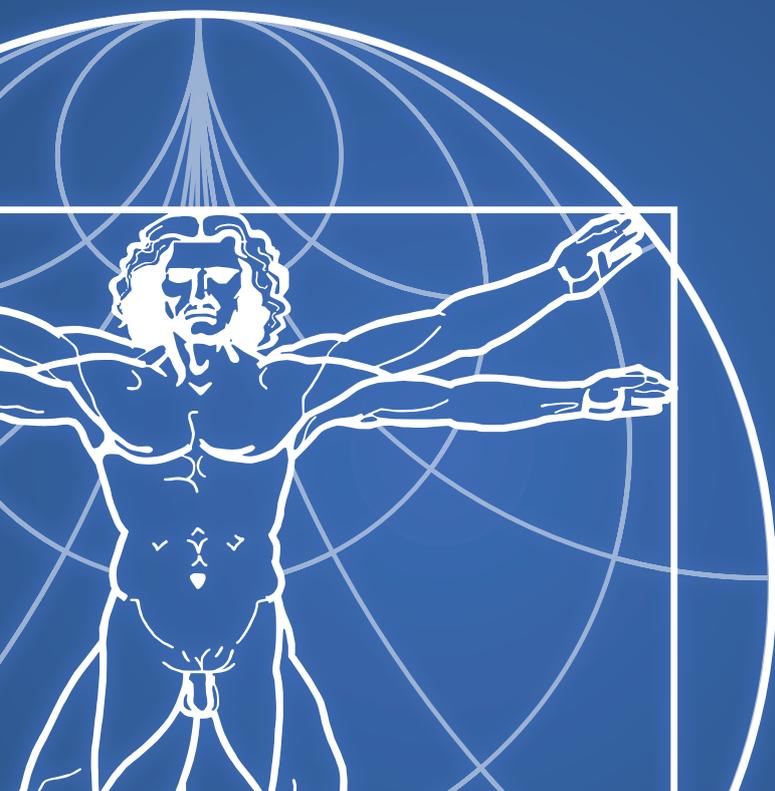
ONE EXHIBITION

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



# CALL FOR WORKSHOPS/ SHORT-COURSES

MILANO CONVENTION CENTRE (MICO), MILAN, ITALY  
25TH - 30TH SEPTEMBER 2022



The European Microwave Week 2022 will take place between 25th and 30th September 2022 at MiCo Milan, Italy. Besides the contributed regular papers, the programme will also include workshops and short courses. Should you have any ideas for workshops or short courses related to EuMC, EuMIC and EuRAD, on exciting or emerging topics related to microwaves, please contact the Workshops and Short Courses Chairs, Cristiano Tomassoni and Luigi Boccia at [workshops@eumw2022.org](mailto:workshops@eumw2022.org). We encourage early discussion of any such ideas with the Workshop and Short Course Chairs before the submission deadline. We accept half-day (4-6 speakers) and full-day (8-12 speakers) workshops or short courses. Proposals should include the selected conference (EuMC, EuMIC, or EuRAD), the title and an abstract of the topic, complemented with details of the organisers and speakers. The template to be used for the proposals is available at [www.eumweek.com](http://www.eumweek.com). For the submission deadline please refer to "Important Dates" section in the second page of this Call for Papers. We look forward to receiving your submission!

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**SUBMIT WORKSHOP/SHORT-COURSE PROPOSALS  
ONLINE TO: [WORKSHOPS@EUMW2022.ORG](mailto:WORKSHOPS@EUMW2022.ORG)**