

IEEE MTT-S Undergraduate Scholarships/Graduate Fellowships

UNDERGRADUATE/PRE-GRADUATE SCHOLARSHIPS

Up to 10 Undergraduate/Pre-Graduate Scholarships in the amount of \$1500 may be granted semi-annually to assist BS and MS students in electrical engineering. Application deadlines are April 15 and October 15.

GRADUATE FELLOWSHIPS

MICROWAVE ENGINEERING FELLOWSHIP

Up to 12 Fellowships in the amount of \$6000 may be granted each year to assist graduate students pursuing a graduate degree in microwave engineering. Application deadline is October 15.

MICROWAVE ENGINEERING FOR MEDICAL APPLICATIONS FELLOWSHIP

Up to two Fellowships in the amount of \$6000 may be granted each year to assist graduate students pursuing a graduate degree focused on applying microwave engineering to medical applications. Application deadline is October 15.

[Apply Now \[mtt.org/students\]\(http://mtt.org/students\)](#)

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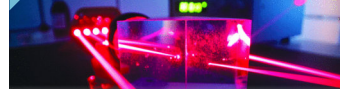


Millimeter-Wave GaN Devices for 5G

Semiconductor technology plays an important role in realizing the 5G mobile communication system. One of the technical objectives for 5G is to significantly boost cellular network throughput-by 100 times compared with 4G (to achieve a peak data rate of > 10 Gb/s). Achieving this goal will require massive multiple input/multiple output (MIMO) antenna technology.

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doi 10.1109/MMM.2021.3056936



Silicon Photonics for Microwave Appl.

Today's explosive increase in data traffic demands even further improvement in such systems toward next-generation platforms. Current 4G mobile systems provide stationary users with data speeds up to 1 Gbit/s and high-mobility users with speeds up to 100 Mbit/s for mobile online access and multimedia applications.

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doi 10.1109/MMM.2020.2998703



Quantum Computing for Microwave Engg.

During the past decade, quantum computing has grown from a field known mostly for generating scientific papers to one that is poised to reshape computing as we know it. The aim of this article is to introduce the microwave engineers to quantum computing and demonstrate how the vast microwave community's expertise could contribute to that field.

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doi 10.1109/MMM.2020.2993475



Inkjet-/3D/4D-Printed Perpetual Electronics

With the revolutionary developments in the fields of mmWave and massive Internet of Things (IoT) technologies and the billion devices promised to be implemented by the end of the decade, the realization of inexpensive, and low-power is highly desirable. Additive manufacturing is a technology seeing widespread adoption to enable rapid prototyping.

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doi 10.1109/MMM.2020.3023310

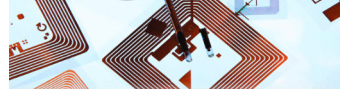


Superconducting Parametric Amplifiers

In superconducting quantum computing, the qubit state information is conveyed via low-power microwave fields. Ultra-low-noise microwave amplification plays a central role in measuring these fields to quickly and accurately infer the qubit state. Parametric amplification, once a concept during the 60s, enables highly efficient measurements of these quantum circuits.

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doi 10.1109/MMM.2021.2993476

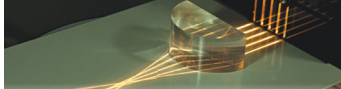


Digital RFID Reader on an FPGA Chip

Radio-frequency identification (RFID) readers are the main bottleneck when building an RFID system. The cost of the readers can be high, and these devices can be bulky. Moreover, when these RFID readers have to be included in a small mobile device, the cost increases, or the system becomes more complex to put together.

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doi 10.1109/MMM.2020.3042045

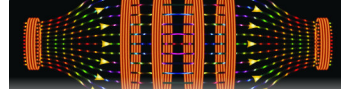


Near-Field Microwave Microscopy

In the suite of modern microscopy techniques, nondestructive methods are especially important. One of the challenging tasks of microscopic imaging, independent of the employed physical principle, is the imaging of nanoscale objects in situ and in operando, in the medium of their natural existence or operation.

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doi 10.1109/MMM.2020.3008241



Negative Group Delay Circuits and Appl.

With the new generation of communication technologies, there is a higher requirement for the quality of signal transmissions. Achieving this quality requires attention not only to signal amplitude but also to phase. However, negative group delay (NGD) circuits are an effective way to compensate for positive group delay and decrease the variability of passband delay.

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doi 10.1109/MMM.2020.3035862

Join the IEEE MTT-S International Microwave Symposium (IMS) 2022 in Denver, Colorado, 19-24 June 2022



Coming year 2022, the IMS is scheduled to be held in Denver, Colorado, on 19-24 June. IMS2022 is the centerpiece of Microwave Week 2022, which includes the RFIC Symposium (www.rfic-ieee.org) and the ARFTG Microwave Measurement Conference (www.arftg.org). Join us as we explore the new Peaks of Microwaves including: Radar, Phased Arrays, OTA test, Microwave for Tiny AI and IOT, Microwaves and satellites for Space 2.0, Quantum RF Engineering, 5G/6G Hardware and much more. Microwave Week provides a wide variety of technical and social activities for attendees and exhibitors. There is something for everyone at IMS2022 including, competitions for best paper awards, RF Bookcamp intended for students, workshops, networking events, YP events and much more.

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Visit IMS ims-ieee.org

Register for IMS2022 ims-ieee.org/registration2022

Grants to Attend Quantum Technology Events

Graduate Student Travel Grants

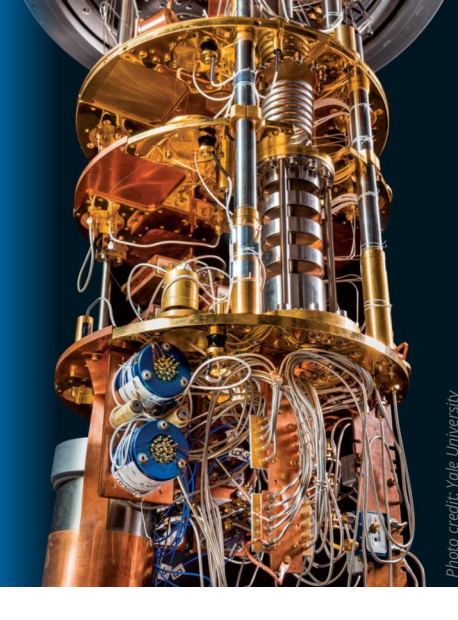
IEEE MTT Society is offering up to 10 travel grants of \$1,000 each for graduate students working in quantum technology field to attend the Quantum Technology events at the IMS2022.

[Apply Feb 1, 2022](#)

Planned Quantum Activities at IMS2022

- Quantum Workshops
- Quantum Panel Session
- Focused Sessions
- Quantum Bootcamp
- Quantum System Day Reception

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Women in Microwaves

In an interview with Sherry Hess, the 2021 IMS Women in Microwaves (WIM) event chair, IEEE Microwave Theory and Techniques Society (MTT-S) Administrative Committee member and chair of the Women in Microwaves Subcommittee, discusses the 2021 annual WIM event at the IEEE International Microwave Symposium (IMS2021) with the new event chair, Dr. Rhonda Franklin, a professor at the University of Minnesota (UMN).

Read about the discussion with Sherry Hess and Rhonda Franklin in the May 2021 issues of the IEEE MTT-S Microwave Magazine.

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IEEE Young Professionals

IEEE Young Professionals is the group of IEEE members and volunteers who have graduated from their first professional degree within the past 15 years. It is an international community, whose members are interested in elevating their professional image, expanding their global network, connecting with peers locally and giving back to their community.

Since it encompasses all members from recent university graduates to experienced professionals and entrepreneurs, the group is highly diverse in what it has to offer.

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IMFW 2021

IEEE MTT-S International Microwave Filter Workshop
November 17-19, 2021 Perugia Italy

Registration Now Open for Microwave Filter Workshop

Registration is now open for the IEEE International Microwave Filter Workshop (IMFW 2021), Perugia, Italy, 17-19 Nov. 2021. This conference represents a unique and unprecedented opportunity to bring together scientists from industry and academia around the world that work on filters, to share the most recent advances in filter theory, technology, manufacturing, and applications.

IMFW 2021 is the first conference dedicated to the filter community organized by MTT-S and EuMA.

*Remote presentation option will be available for authors who are unable to travel/attend in person.

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EUROPEAN MICROWAVE WEEK 2021

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EuMW 2021 EXCEL LONDON EXHIBITION & CONFERENCE CENTRE, UK
13 - 18 FEBRUARY 2022
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51st EUROPEAN MICROWAVE CONFERENCE
The 10th European Microwave Integrated Circuits Conference
The 18th European Radar Conference

Europe's Premier Microwave, RF, Wireless and Radar Event

The 24th European Microwave Week 2021 takes place in the historic city of London. Bringing industry and academia together, European Microwave Week 2021 is a SIX day event, including THREE cutting edge conferences, THREE forums, and ONE exciting trade and technology exhibition featuring leading players from across the globe.

EuMW 2021 provides access to the very latest products, research and initiatives in the microwave sector. It also offers you the opportunity for face-to-face interaction with those driving the future of microwave technology.

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IEEE MTT-S on Social Media



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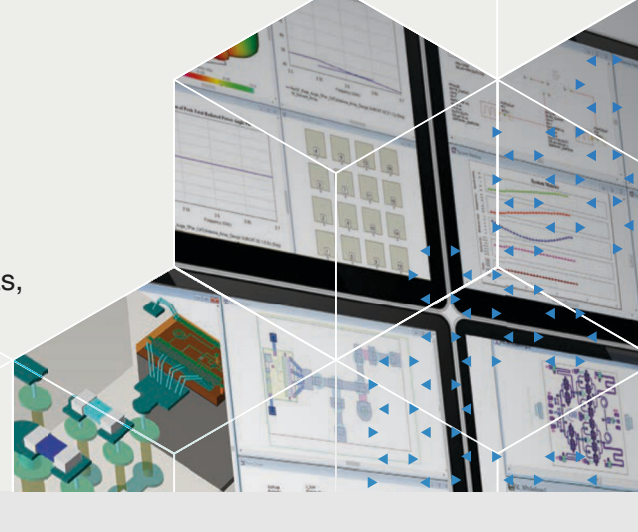
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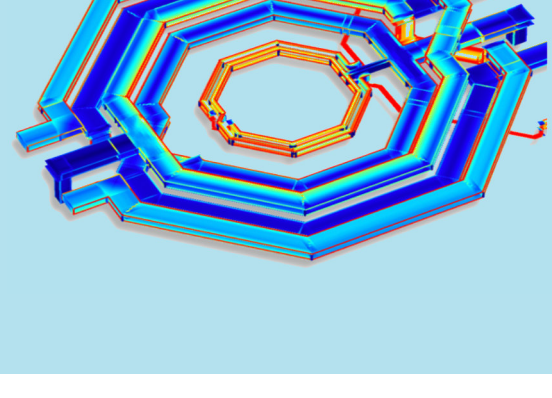
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IOT Calls for Fast Communication Between Sensors

Developing the 5G mobile network may not be the only step to a fully functioning Internet of Things, but it is an important one — and it comes with substantial performance requirements. Simulation ensures optimized designs of 5G-compatible technology, like this phased array antenna.

Learn more comsol.blog/5G



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