



# An Overview of the 5th IEEE MTT-S Latin America Microwave Conference

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IEEE MTT-S Latin America Microwave Conference (LAMC-2025) – January 22-24, 2025 – San Juan, Puerto Rico

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The 5th IEEE Microwave Theory and Technology Society (MTT-S) Latin America Microwave Conference (LAMC) will be held in San Juan, Puerto Rico, from 22 to 24 January 2025. LAMC is a biennial conference that moves around to different locations in Latin America. It is technically and financially sponsored by the MTT-S, and it has consolidated itself as the flagship regional conference on RF and microwave engineering [1]. After four successful editions in Puerto Vallarta, Mexico (2016) [2]; Arequipa, Peru (2018) [3]; Cali, Colombia (2021, virtual); and San José, Costa

Rica (2023) [4], LAMC now goes to beautiful San Juan, near the historic district of Old San Juan, a picturesque tourist area on the northeastern coast of Puerto Rico Island, rich in culture, tradition, and history. In this edition, LAMC 2025 will be co-located with Radio & Wireless Week 2025.

## Technical Scope of LAMC 2025

LAMC 2025 will have a general scope of RF and microwave engineering, with technical sessions organized in the following seven general topics:

- 1) passive components, circuits, and devices (planar and nonplanar

components and circuits, filters and multiplexers, tunable devices, and metamaterials)

- 2) active devices, circuits, and measurement systems [RF integrated circuits (ICs) and monolithic microwave IC design, power amplifiers, linearization techniques, low-noise circuits, signal generation, conversion and control modules, linear and non-linear modeling, and measurement techniques]
- 3) RF systems and applications (microwave systems and front ends, industrial scientific and medical applications, navigation systems, intelligent transportation systems, imaging, sensors, and wireless power transmission)
- 4) communication systems (terrestrial, vehicular, satellite and indoor applications, and wireless and cellular communication systems)
- 5) active and passive antennas (phased arrays, integrated antennas, smart antennas, digital beamforming, and multiple-input, multiple output)
- 6) Signal power integrity and high-speed digital techniques [electromagnetic (EM) interference and compatibility, high-speed interconnects, postsilicon validation techniques, power delivery networks, computer simulations, and measurements]
- 7) CAD techniques for RF and microwave engineering (surrogate-based modeling and optimization, space mapping-based methods, model order reduction, machine learning approaches, statistical analysis and design, EM-based and multiphysics design optimization, EM field theory, and time- and frequency-domain numerical techniques).

In addition to the regular technical sessions, several exciting MTT-S-sponsored

events and activities will be implemented, as described next.

### Keynote Speakers

The following set of six extraordinary keynote speakers will enrich the LAMC 2025 technical program (in alphabetical order): Dr. Robert Aigner (technology platforms R&D at Qorvo), Prof. Dan Jiao (Purdue University, USA), Prof. Raafat Mansour (University of Waterloo, Canada), Dr. Félix A. Miranda (NASA Glenn Research Center, USA), Prof. Gabriel Rebeiz (University of California, San Diego, USA), and Prof. Emmanouil M. Tentzeris (Georgia Tech, USA).

### Special Session of the MTT-S Technical Committee on Design Automation

The MTT-S Technical Committee (TC) Funding Support Initiative, led by the MTT-S Technical Coordination and Future Directions Committee, approved a proposal from MTT-S TC-2, Design Automation Committee, as part of the LAMC 2025 technical program: the “MTT-S TC-2 Special Session on Current Trends in Artificial Intelligence (AI), Machine Learning (ML), and Space Mapping (SM) Techniques for Microwave Design Automation.” It will include technical talks given by highly recognized research authorities in this field, from academia and industry. By implementing this special session as part of an MTT-S conference in an emerging region, we expect to attract more interest to the general areas of CAD and electronic design automation techniques for RF and microwave circuits, especially addressing the Latin American community.

### Special Session on Microwave Research in Spain

Organized by Prof. Miguel Laso, from the Public University of Navarre,

Spain, a special session entitled “Recent Developments in Microwave Research in Spain” will be part of the LAMC 2025 technical program. This session will include six technical talks highlighting advanced microwave research currently developed at the Public University of Navarre, the Technical University of Valencia, the University of Zaragoza, the University of Vigo, the University of Seville, and the University of Cantabria.

### IEEE Region 9 Multilingual Video Competition

MTT-S Multilingual Video Competitions (MLVCs) aim to promote the creation of technical videos in different languages, on topics of interest for the MTT-S community, to broaden the reach and impact of MTT-S educational efforts worldwide [5]. In the case of the LAMC Region 9 MLVC, students enrolled in universities or research centers located in Latin America are invited to submit a technical video recorded in Spanish or Portuguese. These videos should explain a technical concept that is relevant to the topics of LAMC in a way that is easy to understand by engineering and science students early in their studies, highlighting main concepts and/or current practices in the topics and enthusiastically conveying a futuristic view. Awards of US\$1,300, US\$1,000, and US\$700, for the first, second, and third places, respectively, will be given at LAMC 2025. Three awardees for submissions in Spanish and three for submissions in Portuguese are anticipated (six awards in total). The first edition of a Region 9 LAMC MLVC was successfully implemented in San José, Costa Rica (see Figure 1).

### Diversity and Inclusion Initiative at LAMC 2025

Approved by the MTT-S Diversity and Inclusion (D&I) Ad-Hoc Committee, an event entitled “Promoting Diversity and Inclusion at LAMC-2025 by Supporting Region 9 Female Speakers” will be implemented to encourage more participation by female graduate

students, professors, and industrial researchers from Latin America, working in technical fields related to RF and microwave engineering and willing to present their research at the conference.

This D&I event is motivated by the fact that the number of women working in RF and microwave engineering remains low worldwide, and moreover, the scarcity of women in these technical fields in Latin America is even more acute. Fortunately, the MTT-S membership in Latin America has been consistently growing in the last five years, at an outstanding growth rate [1]. This has also positively impacted the number of female MTT-S members. For instance, in summer 2023, 13.69% of our Region 9 members were female, while for summer 2024, this proportion increased to 18.95%. We consider it strategic for the MTT-S to support the current positive trend by implementing this specific D&I initiative at the MTT-S flagship conference for Region 9.

Based on the above, the MTT-S D&I Ad-Hoc Committee will provide financial support through LAMC 2025 conference registration waivers granted to the largest possible number of female speakers from Region 9

(see Figure 2), constrained by the final approved budget. To maximize the impact of this initiative, the awarded female speakers must be MTT-S members studying or working at a university, research center, or industry located in Latin America, with no age limit for the awarded female participants.

This D&I event will be complemented by a separate MTT-S Young Professionals (YPs) and Women in Microwaves (WiM) event that is being organized as part of LAMC 2025, scheduled for the last day of the technical program. The D&I-awarded women will be invited to participate in that YPs and WiM event.

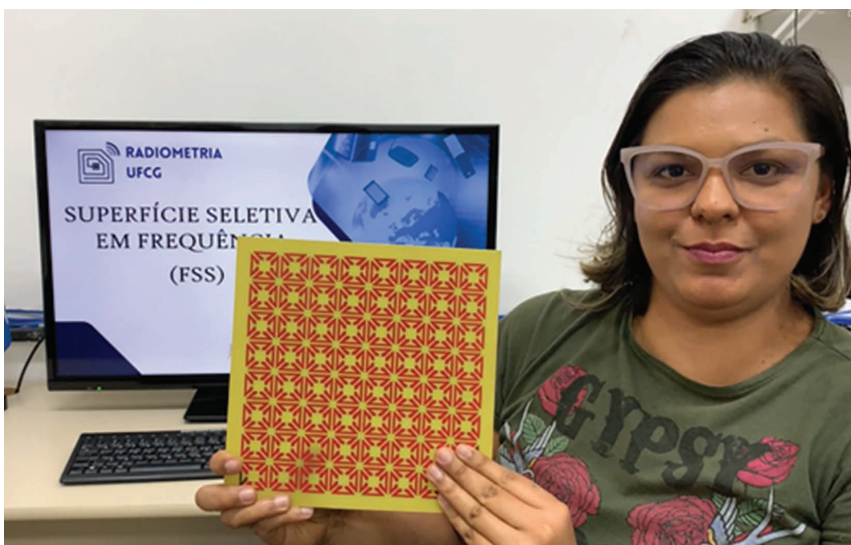
### Region 9 Graduate Student Sponsorship

The MTT-S Education Committee approved the implementation of a Region 9 graduate student sponsorship to encourage the participation of graduate students from Latin America in

LAMC 2025. This initiative provides partial financial support to attend LAMC to graduate students officially registered in a master's or doctoral program offered by a university or research institute located in Latin America who are also MTT-S members. We will request all sponsored students to submit, after the conference, a one-page report describing the most interesting technical or professional aspects they learned during LAMC 2025 as well as their overall impression or comments about the conference. Details on the selection criteria and application procedures are available at the conference website (<https://lamc-ieee.org/students/r9-graduate-student-sponsorship/>).

## MTT-S Multilingual Video Competitions aim to promote the creation of technical videos in different languages, on topics of interest for the MTT-S community.

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**Figure 1.** One of the participants (the first-place winner) in the Portuguese version of the MLVC at LAMC 2023: Juliete Da Silva Souza, from the Federal University of Campina Grande, Brazil. (Source: Prof. Eduardo Rojas; used with permission.)



**Figure 2.** One of the few female Ph.D. students from Latin America to present a research paper at LAMC 2023, in San Jose, Costa Rica: Alejandra Villagrán-Gutiérrez, from CINVESTAV Guadalajara, Mexico. (Source: Prof. José E. Rayas-Sánchez; used with permission.)

## Gala Dinner and Cultural Event at Club Náutico de San Juan

LAMC 2025 will celebrate with its gala dinner at Club Náutico de San Juan, a 20-minute walk from the conference hotel. With panoramic views to the San Antonio Channel and San Juan Bay, it will provide an exciting venue for relaxation, networking, and enjoying some of the Puerto Rican cuisine in a tropical atmosphere.

## Looking Forward to Seeing you in Puerto Rico

LAMC offers a high-quality technical forum for the Latin America re-

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gion and all the MTT-S community. We hope that LAMC 2025 will further promote higher visibility of the research efforts undertaken in this geographical region as well as stronger collaborations between Latin American institutions and research groups worldwide. We will be looking forward to hosting you in the warm and friendly Borinquen.

## References

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## IEEE RWW2025 Women in Microwaves Event *(continued from page 46)*

steering of the Tx antennas to maximize the RF–RF link efficiency will be discussed. Second, an investigation of efficient rectifier circuitry designed on-chip as well as the use of commercial off-the-shelf components to maximize the RF–dc power conversion efficiency will be presented. Finally, future research directions on increasing the power transfer distance to scale up the amount of power delivered to the load for the proposed wireless power beaming network system will be highlighted.



**Prof. Ifana Mahbub** is the director of the Integrated Biomedical Radiofrequency Circuits and Systems Laboratory. She works on ultrawideband and

millimeter-wave phased-array antenna systems for long-range power beaming applications and vehicle-to-vehicle communication for UAVs, focusing on the RF and microwave components and miniaturized antenna designs. She is the recipient of the NSF Career Award (2020), the DARPA Young Faculty Award (2021), and the DARPA Director's Fellowship (2023). She received a B.Sc. degree (2012) in electrical and electronic engineering from the Bangladesh University of Engineering and Technology and a Ph.D. degree (2017) in electrical engineering from the University of Tennessee, Knoxville. She is an associate editor for *IEEE Transactions on Antennas and Propagation*. She is a senior member of various IEEE Societies and serves as the IEEE Microwave Theory and

Technology Society's (MTT-S's) Region 5 coordinator of the Membership and Geographic Activities Committee. She also serves as the vice chair for International Union of Radio Science Commission K and is a full member of Commission B.

The WiM event at RWW2025 is organized by the MTT-S's WiM Subcommittee. Please refer to the RWW2025 homepage for the WiM event schedule details: <https://www.radiowirelessweek.org/>. The MTT-S WiM Subcommittee organizes various special sessions at MTT-S-sponsored conferences. We aim to increase the visibility of women researchers and engineers, inspiring young professionals to follow these career paths: <https://mtt.org/women-in-microwaves/>.

