



# MTT-S Society News

## **IMS2019 Student Design Competition Results**

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The IEEE Microwave Theory and Techniques Society (MTT-S) 2019 International Microwave Symposium (IMS2019) in Boston, Massachusetts, held 11 Student Design Competitions (SDCs), with entries from around the world. Twelve MTT-S technical committees (TCs) coordinated and sponsored one or more of the SDCs. The SDCs were further supported by industrial partners, who provided models, software, samples, and measurement equipment, and by the MTT-S, which provided monetary prizes. The final and deciding measurements were performed at the symposium. The students were given very challenging problems and came up with novel and elegant solutions. Many of the competitions had stated figures of merit that determined the winning entry. As the six SDC articles in this issue show, the students spent considerable effort optimizing their designs to maximize specification scores in each specific competition. Students showed



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Each of the students participating in the design competitions was recognized during the Student Awards Luncheon at IMS2019. The winners received certificates and prizes, as determined by the MTT-S TCs. The winning teams were also invited to submit an article to *IEEE Microwave Magazine* describing their successful design. Most of the winning participants chose to submit articles for review. As noted, six of these peer-reviewed articles appear in this issue. The remainder will appear in future

not only a great deal of enthusiasm about the SDCs but also interest in the MTT-S community.

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## Student Design Competitions at IMS2020

Students from around the world are invited to participate in the Student Design Competitions (SDCs) to be held June 2020 during the upcoming IEEE Microwave Theory and Techniques Society (MTT-S) 2020 International Microwave Symposium (IMS2020) in Los Angeles. The SDCs are lively events with dynamic interactions among students and judges. IMS2020 will continue this tradition with a very strong SDC program. Emerging topics in the RF and microwave fields will be featured within the specialties of the 27

technical committees of the MTT-S. This IMS event offers students the opportunity to put theories into real hardware and software designs and to compete with other students at an international level.

For the IMS2020 competitions, students will have a variety of design topics from which to choose (the final list of topics was not available at press time). Detailed information on the SDCs, including the specifications for each design, can be found at the IMS2020 website: <https://ims-ieee.org/>.

**TABLE 1. The list of competitions, MTT-S sponsors, and winning teams at IMS2019.**

SDC Title	Sponsoring TC(s)	Winning Team
Carrier Aggregation BAW Quadplexer Module	2	Yuchen Cao and Haifeng Lyu, University of Central Florida, United States
High-Performance Optoelectronic Oscillator	3	(First-place tie) Shifeng Liu, Hongzhen Zhou, Hanting Zhao, and Bowen Zhang, Nanjing University of Aeronautics and Astronautics, China; Andrej Lavric and Kristjan Vuk Baliz, University of Ljubljana, Slovenia
High-Efficiency Power Amplifier	5	Pradyot Yadav, Georgia Institute of Technology, United States
Videos at a Fancy Bar Counter: Sub-6 5G Flexible Low-Interference Receiver	6	Markus Heinrichs, TH Köln—University of Applied Sciences, Germany
Four-Channel Switchable/Reconfigurable Filter Bank	8	Changkun Liu, University of Electronic Science and Technology of China
Power Amplifier Linearization Through Digital Pre-Distortion	9 and 11	Thomas Ackermann, Julián Potschka, and Tim Maiwald, FAU Erlangen-Nurnberg, Germany
Wearable/Frugal Microwave Energy Harvesting	10, 20, and 26	(First-place tie) Guoyue Xu and Chihyu Yang, National Chung Cheng University, Taiwan; Christoph Domnik and Simon Huesges, Hochschule Niederrhein, University of Applied Sciences, Germany
High-Sensitivity Motion-Sensing Radar	10 and 20	Benedict Scheiner and Fabian Michler, University of Erlangen-Nuremberg, Germany
High-Efficiency Power Amplifier for 1.8 MHz	17	Markus Heinrichs, TH Köln—University of Applied Sciences, Germany
Adaptive Relay Transceiver	20	(First-place tie) Davi Valerio de Queiroz Rodrigues, Jing Wang, and Daniel Fernando Rodriguez, Texas Tech University, United States; Tianyi Wang, Changxuan Han, Dong Gan, and Xiaohui Liu, University of Electronic Science and Technology of China
Backscatter Radio	24	Ajibayo Adeyeye, Yepu Cui, Aline Eid, and Jimmy Hester, Georgia Institute of Technology, United States

issues. The list of competitions, their MTT-S TC sponsors, and the top winners are shown in Table 1. (See “Student Design Competitions

at IMS2020” for information about SDCs at IMS2020 in Los Angeles).

Details of the activities and interests of the MTT-S TCs can be found

on the MTT-S website at <https://www.mtt.org/technical-committees/>.

