

ANNOUNCEMENT

The Nineteenth Special Issue on High-Power Microwave and Millimeter-Wave Generation

MODERN high-power microwave and millimeter-wave technologies continue to be an active focus of study with considerable interest in the scientific, industrial, defense, and academic communities. Today, these technologies find application in precision radar systems, next-generation particle accelerators, fusion devices, deep-space communications networks, electromagnetic warfare, high-bandwidth communications, microwave-assisted catalysis, and extreme depth drilling, to name a few. The ever-growing needs of these applications call for the production and utilization of electromagnetic radiation with tens of cm to sub-mm wavelength and time-averaged power on the order of tens of megawatts and peak power exceeding 1 GW. Such demands have motivated interdisciplinary innovations for both the production and delivery of high-power microwaves. Advances in modern vacuum electronic microwave and millimeter-wave sources include metamaterial and photonic bandgap interaction circuits, advances in cathode materials, geometries, and modeling capability, improved materials, treatments, and surface coatings for high-power components, and novel manufacturing techniques, such as additive manufacturing. These innovations have preceded unprecedented gains in peak and average microwave power, frequency capability and agility, and efficiency of high-power microwave systems. Complementary to microwave source development, considerable gains have been made in understanding and improving the high power capacity of microwave components, especially with regard to multipactor formation.

To highlight these advances, the Nineteenth Special Issue on High-Power Microwaves is scheduled to be published in 2023. Authors are invited to submit manuscripts to be refereed for inclusion in the *IEEE TRANSACTIONS ON PLASMA SCIENCE*. Topics of interest to the special issue include, but are not limited to, experimental, computational, and theoretical investigations of high-power microwave sources, amplifiers, and associated technologies and phenomena such as electromagnetic interaction structures, electron beams, sources, and interaction, microwave discharge and multipactor formation and mitigation.

This Special Issue is scheduled for publication in May 2023. All contributions must be submitted by August 31, 2022. We require that all prospective authors use the IEEE submission system at Manuscript Central to submit their electronic manuscripts (Adobe PDF or Microsoft Word formats are requested). The guest editors will conduct the entire review process using Manuscript Central. Instructions may be found at <http://mc.manuscriptcentral.com/tps-ieee>.

JIM BROWNING
Boise State University
Boise, ID 83725 USA
e-mail: jimbrowning@boisestate.edu

NICHOLAS M. JORDAN
University of Michigan
Ann Arbor, MI 48109 USA
e-mail: jordann@umich.edu

JACOB STEPHENS
Texas Tech University
Lubbock, TX 79409 USA
e-mail: jacob.c.stephens@ttu.edu

PENG ZHANG
Michigan State University
East Lansing, MI 48824 USA
e-mail: pz@egr.msu.edu