Welcome from, Dr. Gerald M. Borsuk, Dr. Keith Krapels, and Mr. Franklin (Spike) Fanning

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We are pleased to introduce this Special Edition of the Journal of DoD Research and Engineering (JDR&E) that focuses on the great work of the Department of Defense in microelectronics R&D. The JDR&E is pleased to partner with the Government Microcircuit Applications & Critical Technology Conference (GOMACTech) for this issue. GOMACTech held its first meeting in 1968 in Gaithersburg, Maryland. The purpose of the Conference then as it is today is to bring forward new results in microelectronics related R&D of significance to the U.S. Government with significant contributions from the DoD electronics S&T community. This partnership is a first of its kind for the JDR&E and illustrates its on-going commitment to the DoD S&T and R&E community. This issue contains a selection of articles that draw from presentations held at the 2019 GOMACTech Conference. The Defense Technical Information Center (DTIC) will hold a repository of the balance of the proceedings papers submitted for the conference.

The annual GOMACTech Conference is open to U.S. citizens and U.S. persons only, making it a venue for presentation of ITAR technical data in a controlled, unclassified environment. Their partnership with the JDR&E is the ideal peer-reviewed forum in which to present these articles to the DoD S&T community because of its protection from information exfiltration, a risk often associated with the publication of data in academic journals.

As the Service's members of the Executive Steering Group for DoD's Advanced Electronics Community of Interest, we are strong proponents of collaboration between the Service laboratories. This collaboration brings together DoD's best and brightest scientific minds to provide cutting-edge technology and advanced strategies for empowering and supporting the Warfighter. GOMACTech has served as a focal point for these interactions.

During our careers supporting the nation's defense, we have witnessed the benefits to our Warfighters that are the direct result of the Service's scientific and technical collaborations. One example is the development of high power gallium nitride (GaN) MMIC chips that provide the high power RF for our next generation of active aperture radar, EW, and communications systems. This leading edge technology has enabled superior electronically steered antennas for platforms ranging from ships to UAS's. It has also spun off new capabilities to the private sector. For example, major technology transitions to the commercial sector of RF MMIC technology enabled by the R&D in this defense community was a key enabling component of cellular technology. It is timely that we publish this edition, given the current focus of DoD's Modernization Priority in Microelectronics. Our Warfighters depend on your contribution and collaboration; please join us in this important collaborative endeavor.

For their foresight and vision to create a venue that enables collaboration at a higher level, we extend our sincere thanks to Dr. Michael Griffin, Under Secretary of Defense for Research and Engineering; Ms. Mary Miller, the Principal Deputy to the Director of Defense for Research and Engineering for Research and Technology; Dr. JihFen Lei, Director for Research, Technology and Laboratories within the Office of the Assistant Secretary of Defense for Research and Engineering, Mr. Dale Ormond, Principal Director of Research in the Office of the Assistant Secretary of Defense for Research and Engineering; and Mr. Christopher Thomas, Administrator of DTIC. We also wish to extend our thanks to the GOMACTech leadership team for facilitating the level of professional cooperation that has enabled the microelectronics community to partner with the JDR&E for this special edition.