

SESSION 9a:
WIDE BANDGAP POWER DEVICES
Chairs: Toshihide Kikkawa, *Fujitsu Laboratories*
Shyh-Chiang Shen, *Georgia Tech*

This session will start with a discussion on SiC-based high-temperature, high frequency multi-chip power modules presented by Arkansas Power Electronics International. High-speed full H-bridge power modules were developed to exploit the advantages of wide bandgap devices, power packaging, gate drivers and bus work for power systems. The session will continued with a discussion of emerging applications for GaN transistors in high-frequency electronics that can potentially offer an alternative technology platform that is currently dominated by silicon power MOSFETs from Efficient Power Conversion Corp. The presentation will be followed by a discussion of high-performance 600-V AlGaIn/GaN high electron mobility transistors (HEMTs) developed by researchers at the Hong Kong University of Science and Technology. The GaN-on-silicon platform has been a center of research effort. Another paper from NXP semiconductor Research in Belgium will also present their work on GaN-based Schottky diodes and power switches fabricated in a Si-production Fab for 600-900 V operations. The session will conclude with a presentation on a high-power (180 W) L-band GaN-HEMT power amplifier module with 66% power added efficiency presented by colleagues from the Thales Alenia Space.

