

Ultra-Wide Band Gap Workshop

Future systems require higher performance (e.g., higher output power RF devices, higher power handling switching transistors and protection circuits, high temperature transistors, UV sources) to meet application requirements. Just as SiC and GaN technology provided a leap ahead in capability over legacy Si and GaAs technology, the ultra-wide band gap (UWBG) semiconductors (e.g., AlN, cBN, diamond, Ga₂O₃) show promise as the next leap in RF, power, and opto-electronics. However, these materials and associated devices are in their infancy. The objective of this workshop is to review the current status of UWBG material and device research and identify the key technical challenges (material quality/defectivity, thermal limitations, reliability, integration/packaging - codesign) that must be overcome to make UWBG devices ready for system insertion.