SESSION 10a: EMERGING TECHNOLOGIES

Chair: Chanh Nguyen, *Teledyne Scientific*

The common theme of this session is "Beyond CMOS" or "More-than-Moore". We have four presentations describing novel approaches to extend performance and functionality over and above the traditional scaling of Si CMOS by incorporating compound semiconductors. The invited paper from SOITEC reviews the latest developments in substrate engineering to integrate III-V/Ge on Si, device architecture and challenges of this heterogeneous integration on the CMOS platform. Integration of GaN and Si to form a hybrid wafer by wafer bonding technology is the subject of the invited paper from MIT. Devices, circuits, and systems exploiting GaN/Si hybrid wafers will be discussed. The next invited paper from UCLA presents two alternative approaches to substrate engineering for compound semiconductor applications: the transfer of III-V templates and porous semiconductors for epi growth and device layer transfer. The last presentation from University of Berlin discusses the integration of different technologies from the perspective of modular multi-functional technology development.