

SESSION 12: EMERGING TECHNOLOGY A

Chair: Patrick Fay, *University of Notre Dame*

Three presentations in session 12 describe novel device concepts while the invited paper from Osaka University covers the exciting luminescent and magnetic properties of rare-earth doped semiconductors and their application to GaAs-based 1.5 μ m and GaN-based red LEDs. The invited paper from Penn State University will address important aspects of CS-based tunnel transistor architecture for energy efficient logic applications, addressing both theoretical considerations such as switching speed as well as fabrication and characterization of such devices. The presentation from GA Tech will demonstrate advancements on III-N DHBTs through the use of higher In content in the base layer, and discuss both fabrication technique and device analysis. Finally, the work from the University of Notre Dame will show the promise of enhancement-mode InAlP-oxide gate pseudomorphic MOSFETs. These are attractive device candidates for future high-speed circuits enabling the design of circuits operating from a single power supply.