SESSION 11a: GaN DEVICES

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This session focuses on several device fabrication developments for III-N field-effect transistors. It first discusses the effect of oxidant sources on the threshold voltage shift in AlGaN/GaN MIS-HEMTs presented by Fujitsu researchers. The second presentation reveals a way to improve gate leakage and microwave performance of III-N HEMTs by inserting a thin Erbium oxide as the gate dielectric. Using the atomic layer deposition (ALD) approach, the third presentation showcases the effectiveness of an ultrathin AlN film for AlGaN/GaN HEMT passivation. In nitrogen-polar GaN HEMTs development, the impact of step edges on the trapping behavior is presented. The session concludes with a heat distribution study on AlGaN/GaN HEMTs with nano-crystalline diamond heat spreaders.