MBE-Grown III-Nitride Based Blue Laser Diodes on c-plane GaN Substrates

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Automotive lighting
Replacing energy-inefficient incandescent and halogen filament bulbs and even light emitting diodes (LEDs) and serve as a mainstream lighting source, which would be particularly beneficial due to their low-energy requirements

Photoluminescence spectra
PL spectra for planar InGaN/GaN quantum wells grown with same indium flux and varied plasma power. Schematic illustration of the PL structure grown on GaN-on-Sapphire substrate is shown as an inset

Waveguide simulation
Simulated equilibrium energy band diagram of the active region

Device under test
Devices exhibit strong electroluminescence at room temperature even at a current density of 20 kA/cm². No lasing is yet observed. The reason of this non-lasing behavior could be due to unoptimized active region that will be investigated.