

## Recent Developments in Semipolar InGaN Laser Diodes

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Group III-nitride semiconductors (GaN, AlN, and InN) are attractive materials for a wide range of electronic and photonic applications. The most widely employed growth plane for III-nitrides is the polar plane, characterized by the presence of a polarization-induced internal electric field in heterostructures. To eliminate the deleterious effects of polarization, III-nitride devices grown on nonpolar and semipolar orientations have become a major area of research. In addition to the reduction in the polarization-induced internal electric field, semipolar orientations potentially offer the possibility of higher indium incorporation, which is necessary for the emission of light in the visible range and is the preferred growth orientation for green/yellow light-emitting diodes and lasers. This review presents the recent progress on the development of semipolar InGaN quantum well laser diodes. The developments of laser diodes in three different semipolar planes such as (11–22), (20–21), and (20–2–1) planes are discussed including the bright prospects of group III-nitrides.

**Keywords:** III-nitride semiconductor, semipolar, laser diode, InGaN|GaN quantum well.

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