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Abstract:The radiation properties of a GaN/AlGaN-based terahertz-quantum cascade laser (THz-QCL) device fabricated on a high quality GaN substrate were investigated in this work. The radiant intensity from a THz-QCL fabricated on a GaN substrate showed a value (~20 pW) about 10 times higher than that from a THz-QCL grown on a metal organic chemical vapor deposition (MOCVD)-GaN template that we had used before. Furthermore, we observed for the first time spontaneous THz emission with a peak at 1.37 THz in the case of a THz-QCL grown on a GaN substrate.
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