

# Mid-infrared intersubband absorption in non-polar m-plane AlGa<sub>N</sub>/Ga<sub>N</sub> multiple quantum wells

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## Abstract:

In the past few years, the III-N quantum wells have presented an important interest for both theoretical [1,2] and experimental [3] considerations. This is due to the fact that these systems have been extensively used in optoelectronic devices such as light-emitting diodes, near-infrared (NIR) photodetectors and NIR quantum cascade lasers... It is well known that in the c-plane quantum wells, spontaneous and piezoelectric polarization create a large internal electric field along the c-axis [4,5]. This electric field causes many effects that make subband design and transition energy more complex in the mid-infrared ranges [1]. In this work, theoretical and numerical study of the mid-infrared intersubband absorption in non-polar m-plane Ga<sub>N</sub>/AlGa<sub>N</sub> multiple-quantum wells . Our results, were found to be in good agreement with experimental data [6-9].

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