267. Title: Bandgap engineering of 1.3 mu;m quantum dot structures for terahertz (THz) emission

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Abstract: Terahertz (THz) technology has attracted vast interests due to its wide applications. Quantum dot (QD) system is proposed to be the most suitable candidate for compact THz sources based on intraband transitions. However, transition energies of reported results still fall outside the THz range (with corresponding energy of sim;0.441 meV). In this study, we investigate the effect of growth temperature and monolayer coverage on the transition energies of InAs/InGaAs/GaAs QDs and InAs/GaAs bilayer QDs, respectively. Consequently, the obtained energy difference was less than 40 meV, thus demonstrating the feasibility of varying the QD growth parameters for bandgap engineering towards the THz emission range.