THE COMPUTATION OF DOUBLE-QUANTUM WELL ENERGY LEVEL IN SILICON-GERMANIUM COMPOU ND（SI1-XGEX） WITH NUMERICAL METHOD

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ABSTRACT

THIS WORK STUDIES MAINLY ON THE COMPUTATION OF DOUBLE QUANTUM WELL IN SILICON-GERMANIUM (SI1-XGEX) COMPOUND WITH NUMERICAL METHOD AND MODEL-SOLID THEORY.BECAUSE OF THE HETERO-STR UCTURE INTERFACE AND LATTICE CONSTANT MISMATCH BETWEEN THESE TWO ELEMENTS,THERE IS INDUCED STRAIN IN THE GEXSI1-X LAYER, WHICH CAN BE ADJUSTED THROUGH DIFFERENT CONCENTRATION (X)AND THE WELL WIDTH TO PRODUCE A 4-LEVEL SYSTEM.BY USING THIS 4-LEVEL SYSTEM,IT IS POSSIBLE TO PRODUCE TERA-HERTZ RADIATION EMISSION, WHICH IS IMPORTANT FOR PRACTICAL APPLICATION IN OPT -ICAL ENGINEERINGS.

Keywords : 無

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