In summary, in consideration of strain effect in band alignment simulation, the PL peak positions as a function of Sb composition (samples A-C) are well fitted by the simulated transition wavelength of strained W QWs at 20 K. The discrepancy in samples E and F can be attributed to the higher defect densities which result from partial relaxation in the QWs (**Fig. 2**). The experimental PL emissions from samples A-F are shown in **Fig. 3**.

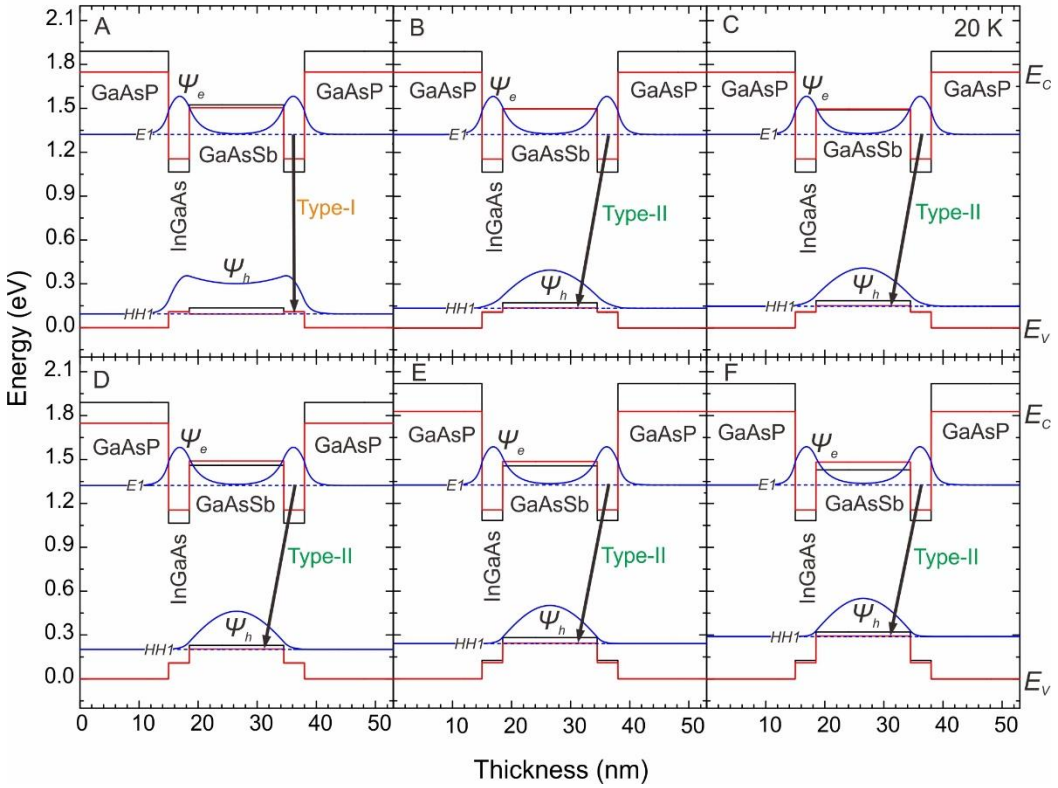

Fig. 1. Simulated energy band diagrams of unstrained- (black solid-lines) and strained- (red solid-lines) GaAsSb/InGaAs W QW with different Sb compositions. The e-wavefunctions (ψ_e) and h-wavefunctions (ψ_h) are presented in blue solid-lines.

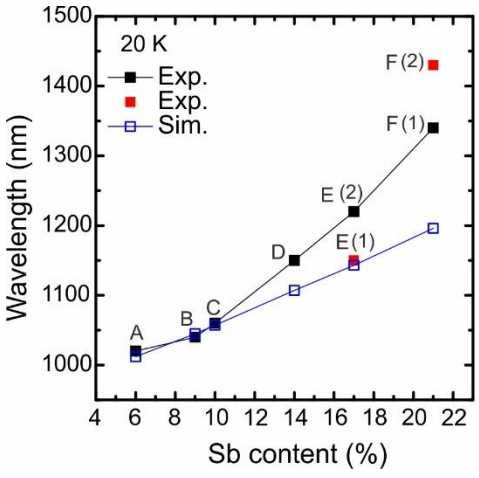

Fig. 2. Experimental and simulated PL emission wavelengths of strained GaAsSb/InGaAs W QW are compared.

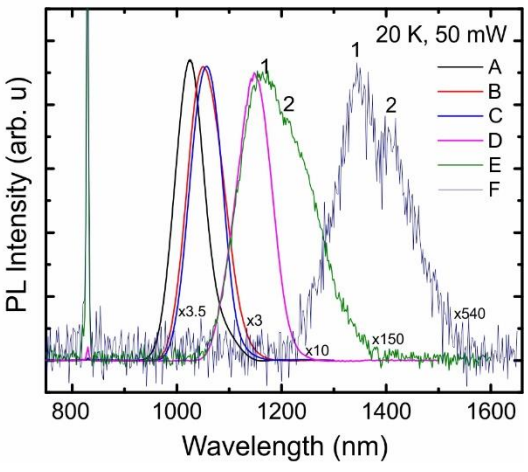

Fig. 3. PL spectra of GaAsSb/InGaAs W QW with different Sb contents (6-21 %).