

# Quantum Dots in Quantum Wells Selective Overgrowth and Wavelength Tuning

## Objective:

- Optical emission at 1.5 $\mu\text{m}$  without GaN
- Understand experimental data on QD spectra in selective overgrowth

## Approach:

- Model large structure
  - 60nm x 60nm x 60nm
  - 15 million atoms
- No changes to the published tight binding parameters

## Result:

- Match experiment remarkably well
  - Strain
  - change in quantum dot aspect ratio
- Quantitative model of complex system

## Publication:

Accepted in IEEE Trans. Nanotechn.

