nanoHUB
online simulation and more

Quantum Confined Stark Effect in identical and non-identical QD stacks

Objective:

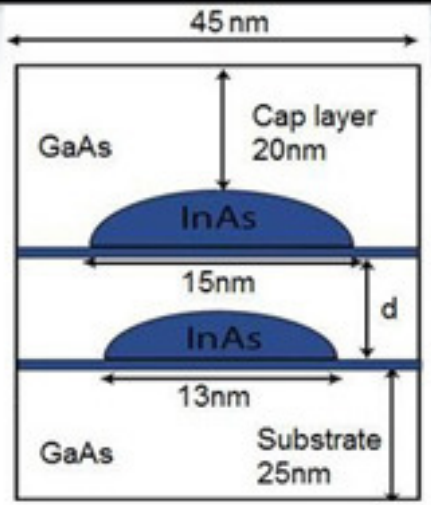
- Understand experimental Red Shift due to Quantum Confined Stark Effect (QCSE)
- Comparison of Quantum Confined Stark Effect in identical and non-identical QD stacks

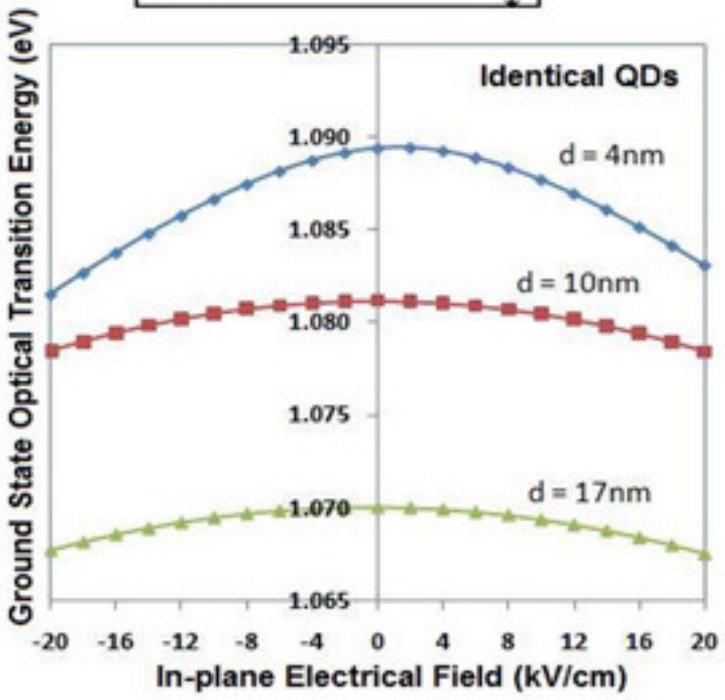
Approach:

- Realistic multi-million structures in NEMO-3D
  - Dome shaped Quantum Dots
  - Identical: D=15nm,15nm; H=3nm
  - Non-Identical: D=15nm, 13nm; H=3nm
  - 10nm cap, 25nm substrate, 0.5nm WL
  - Vary vertical quantum dot distance
- In-plane Electrical Field [-20kV/cm, 20kV/cm]

Expected Results:

- Consistency of simulation results with symmetric experimental Quantum Confined Stark Effect
- Feasibility to calculate value of polarizability





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