

Physics and chemistry of nanostructures

Progress Navolchi project

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Outline

- People
- **Materials**
- Processing
- Properties
- Devices
 - Absorbance of functionalized waveguides
- Planning of future work



Materials

- InP/CdS
 - Why?
 - Type 2 heterostructure with emission wavelength > 1000 nm
 - Status
 - InP synthesis state-of-the-art
 - CdS shell growth established yet analysis not yet complete
 - Current activities
 - Push emission wavelength as far as possible to the IR
 - Planned (next month)
 - TA-analysis



Materials

- HgTe
 - Why?
 - Zero bandgap semiconductor -> size quantization brings it in the near IR
 - Status
 - HgTe synthesis established, yet limited size tuning
 - PL seems bright (no PLQY yet)
 - Single exponential decay
 - Planned (next month)
 - TA-analysis

