



# COMPARISON OF ARCHITECTURES OF WIDELY TUNABLE QUANTUM CASCADE LASERS IN THE MID-INFRARED SPECTRUM

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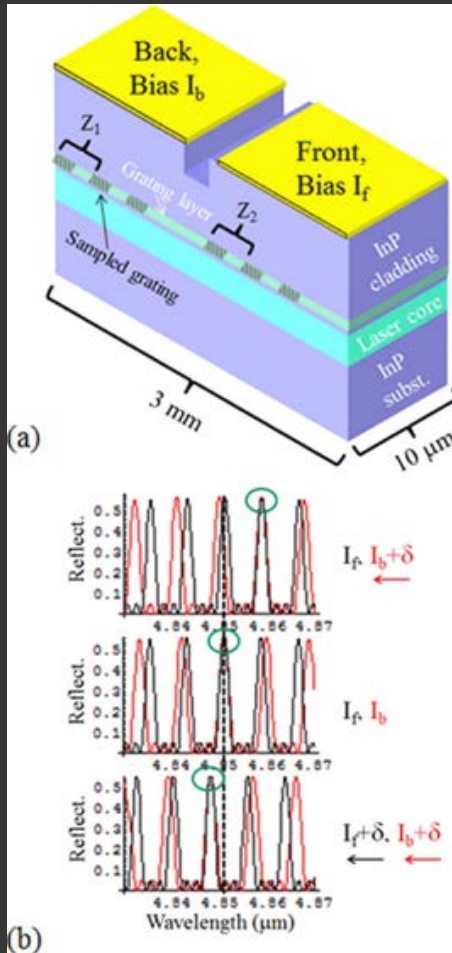
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# Introduction

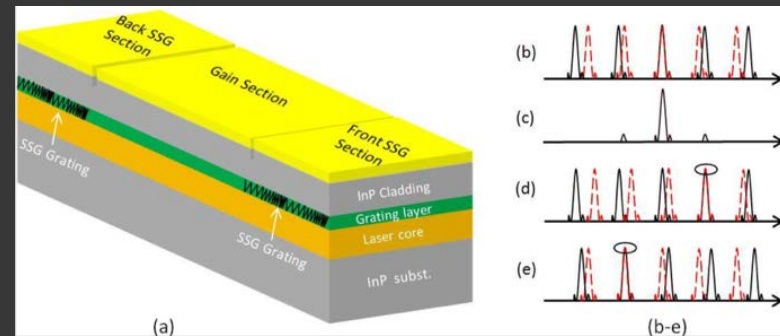
- Widely tunable quantum cascade lasers (QCL) in the mid-infrared (mid-IR) spectrum have a variety of real world applications including spectroscopy.
- It is desirable for commercial use that the detector be small, stable, and have a high power output.
- Here we examine two candidates:
  - distributed feedback laser with sampled grating (SG-DFB)
  - super structure grating distributed Bragg reflectors (SSG-DBR)

# SG-DFB



Periodic gratings are etched into a laser waveguide, with gain provided for the two grating sections.

# SSG-DBR



Periodic gratings are etched into a section adjacent to gain section.

Thank You!

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