Testing an Integrated Tunable Quantum Cascade Laser

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Superstructure grating (SSG) designs are used to create widely tunable lasers with wavelength selectivity achieved by matching SSG modes of the front and rear grating section.

Two tuning methods were employed:

Method A:
Constant voltage to gain section while varying current to either rear or front grating.

Method B:
Constant voltage to gain section while supplying current to both rear or front grating; DC bias applied to either front or rear grating.

For tuning ranges and best method, please visit my poster!
Key SSG-DBR Test Issues

FT-IR Spectrometer:

1. Artifacts caused by FT-IR scan velocity / laser repetition rate mismatch

2. Artifacts caused by interferometer mirror assembly magnet failure
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