2025 Feb 05

ELEC 413 chip 2 design peer review submission

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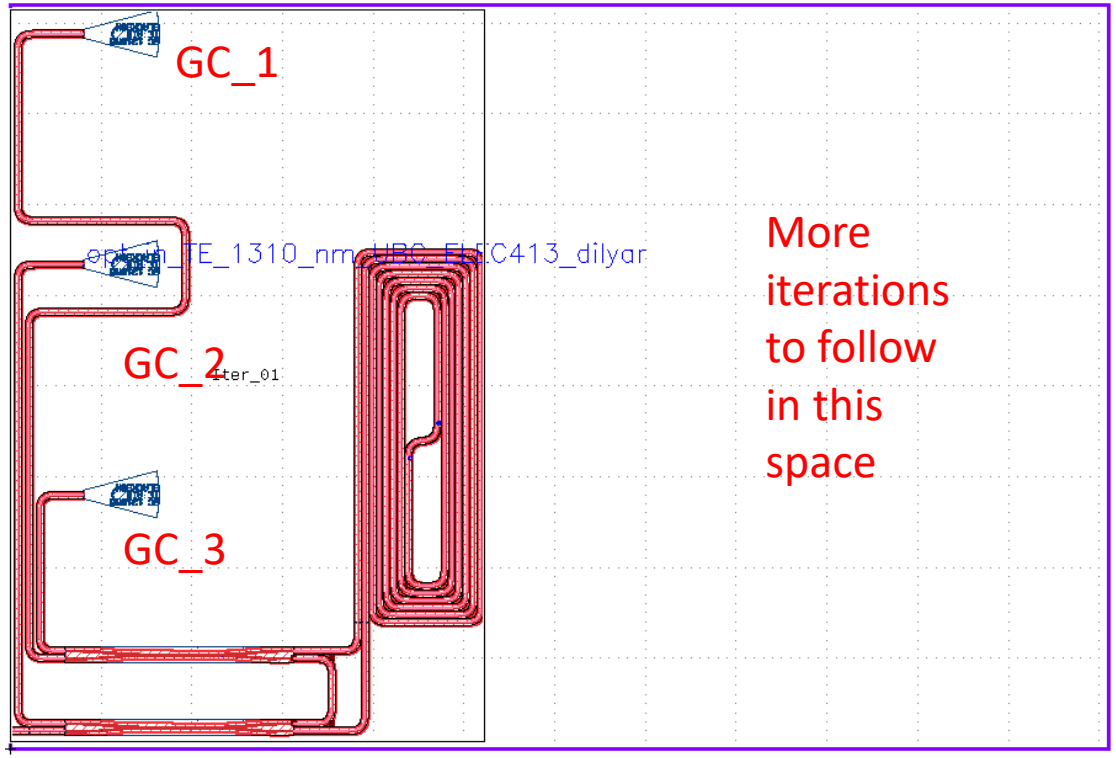
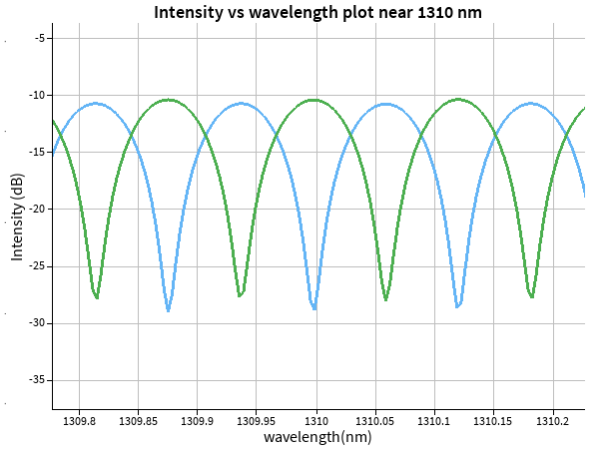
Github forked repo link: https://github.com/dilyar-arkin/UBC-ELEC413-2025/tree/main/submissions



Chip 2 design layout overview



Intensity plot of GC_1 and GC_3

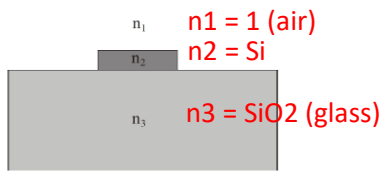
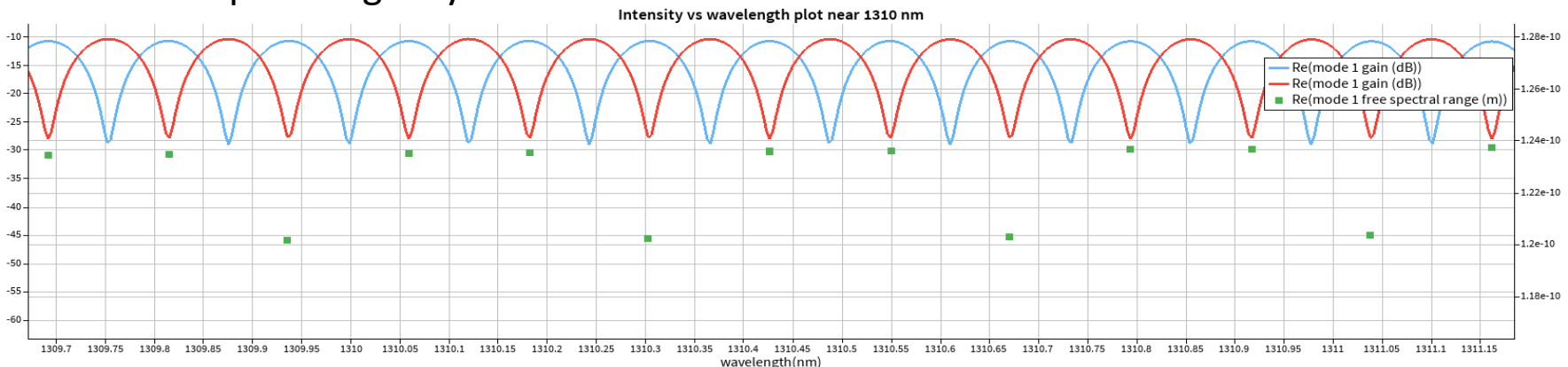


Figure 1a. Strip Waveguide.



- Chip 2 design takes laser signal at grating couple # 2 (one in the middle) and splits 50/50 via splitter # 1. Path length difference after the splitter #1 will re-combine via splitter #2, the outputs from splitter #2 are connected to GC_1 and GC_3 respectively.
- See intensity plot as a function of wavelength measurement of GC_1 (blue) and GC_3 (green).
- This destructive/constructive interference pattern can be used as a building blocks for developing wavelength division multiplexer for our course project.
- Next, I need to quantify tunable parameters, and fixed parameters such as group index, effective index of the wave guide. Need to estimate the loss, characterize the phase shift.