

Design of a Mach-Zehnder interferometer

Author: Wangchen Xu

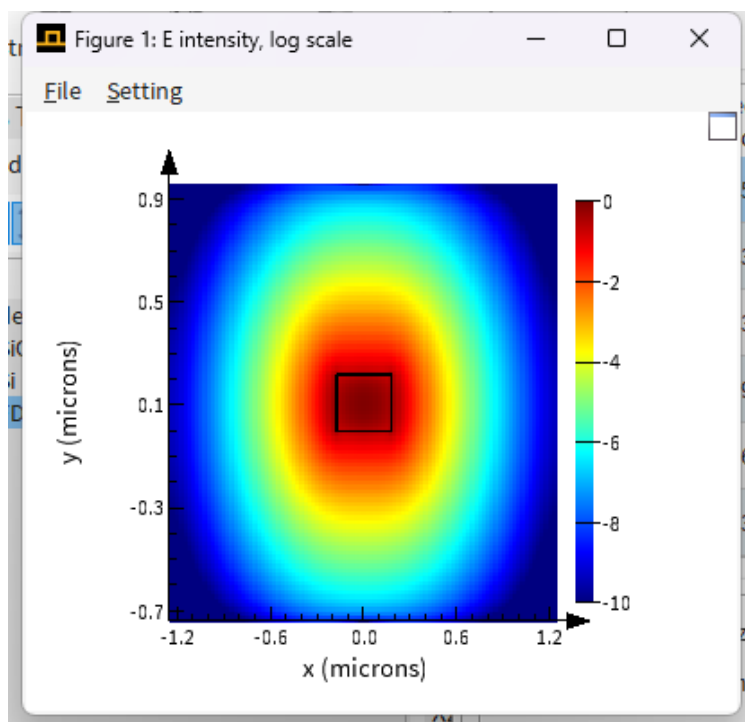
1. Abstract:

This is a draft paper for the Design of an MZI, which is created only for peer review description. Data and plots are not finally verified.

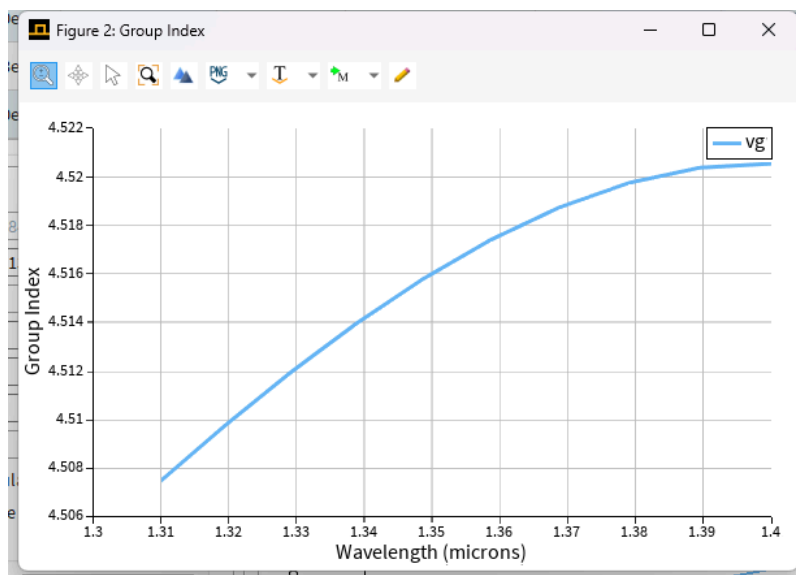
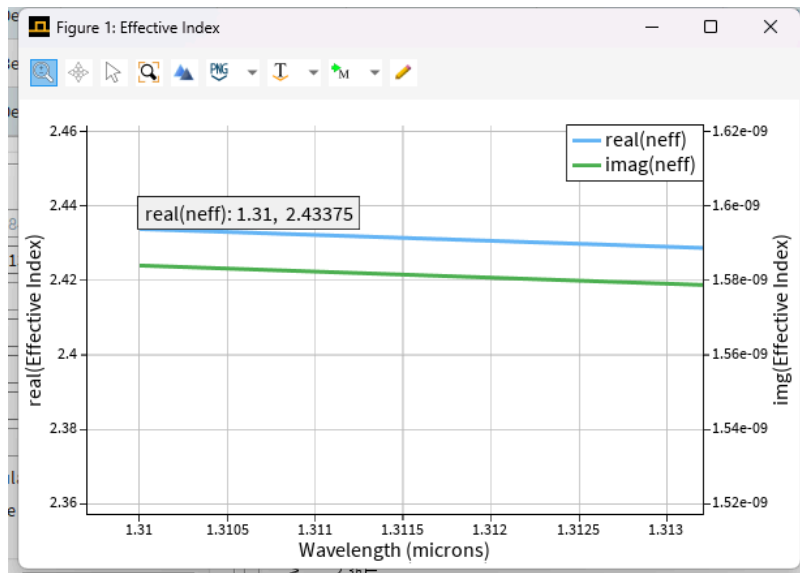
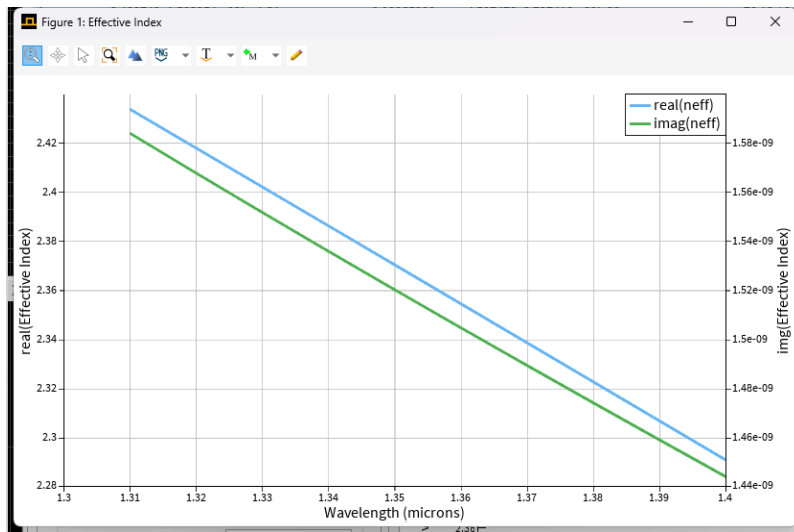
2. Introduction:

3. Modeling and simulation:

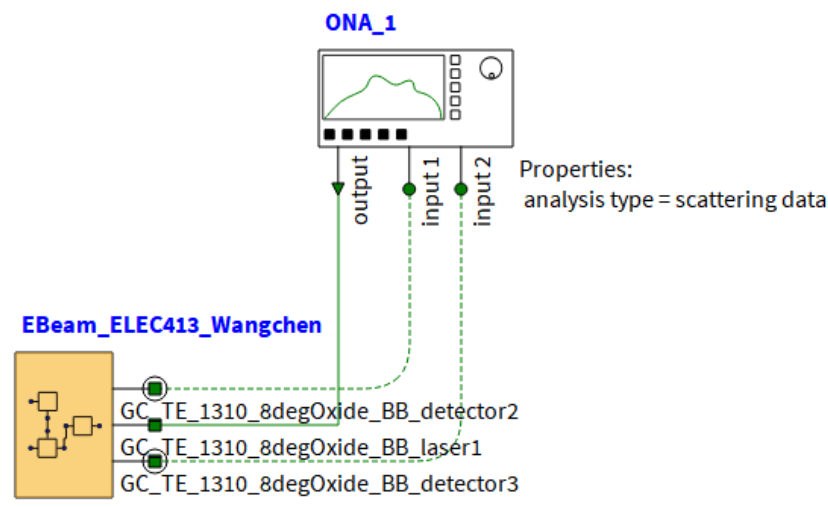
Part A: Lumerical MODE Log scale E intensity plot:
220nm * 350nm



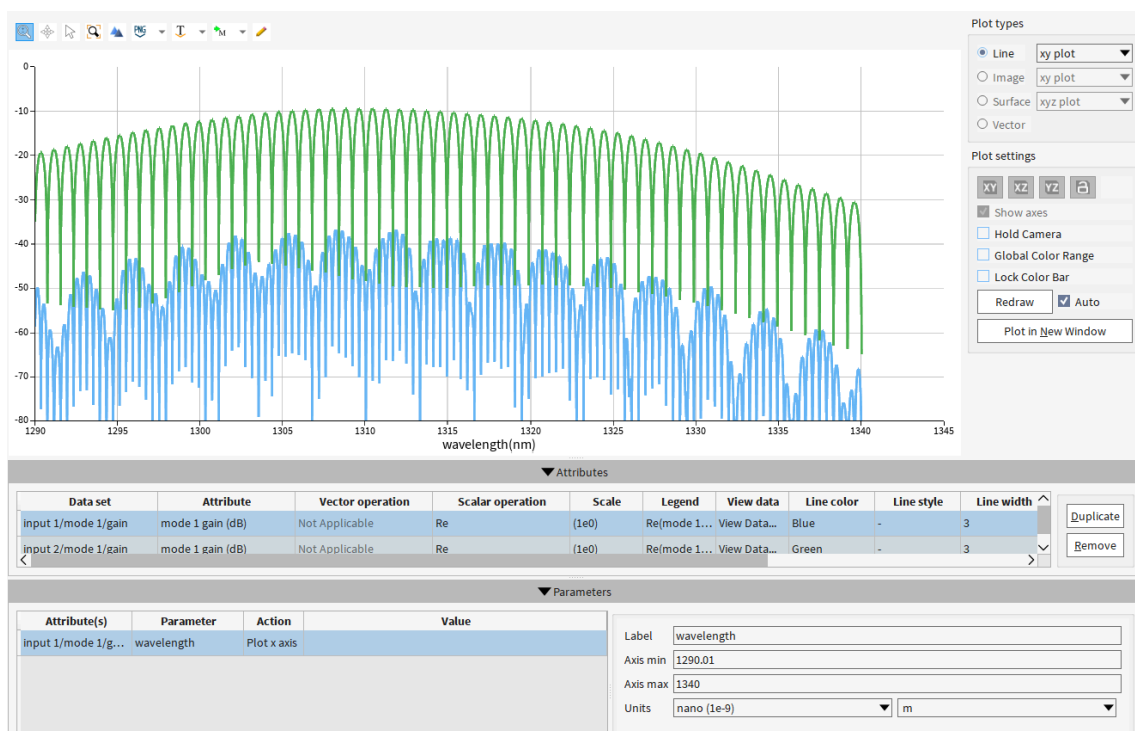
PartB: Effective refractive and group index plots to wavelength:



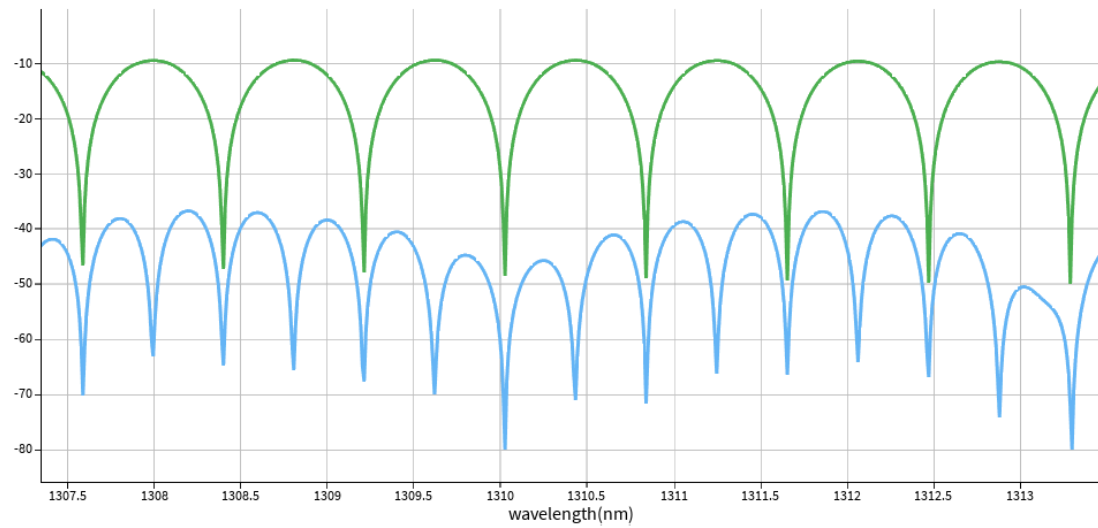
PartC: MZI circuit simulation in interconnet:



MZI photonic circuit schematic simulated in Ansys Lumerical Interconnect

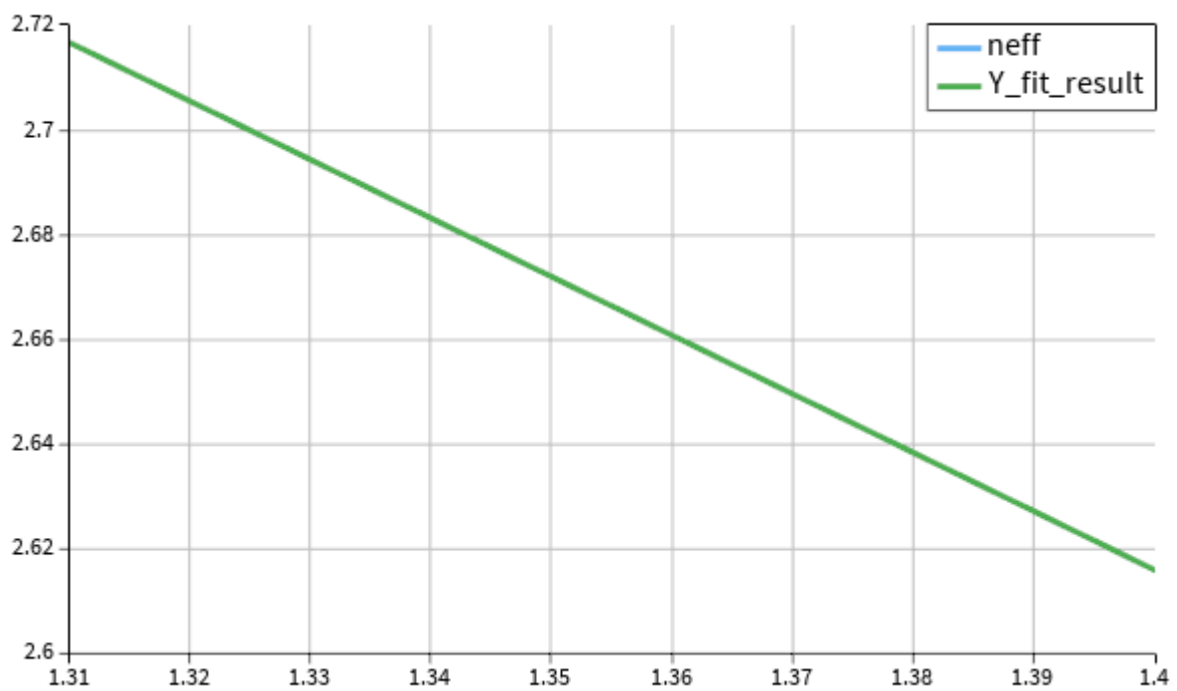


Transmission spectra of MZI circuits

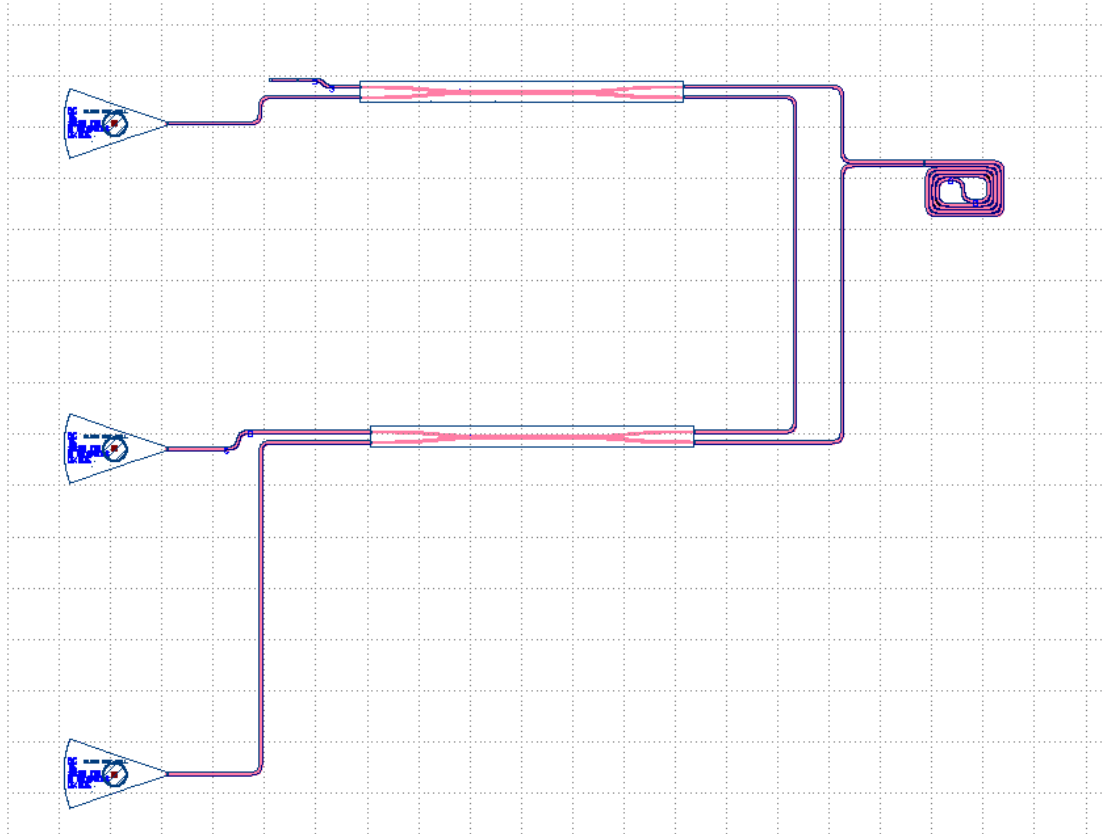


Transmission spectra of MZI circuits

PartD: Matlab simulation of the model in 1310nm:



4. Proposed layout for fabrication :



This is my current design for chip1, I will switch the “Spiltter” vertically to save space for more designs in the future.

5. Conclusion:

6. Reference:

7. Appendix:

