Ebeam_GC_SiN_TE_1310_8deg

Last Updated: Aug 2024

Description

A grating coupler is used to couple light straight from a fibre to on-chip photonic components without the need for micro-mechanics etch coupling techniques. The design is a compact focusing grating coupler used for TE polarization at O-band with 8 degree insertion angle on the SiN platform offered by ANT.

Model Name

ebeam_GC_SiN_TE_1310_8deg

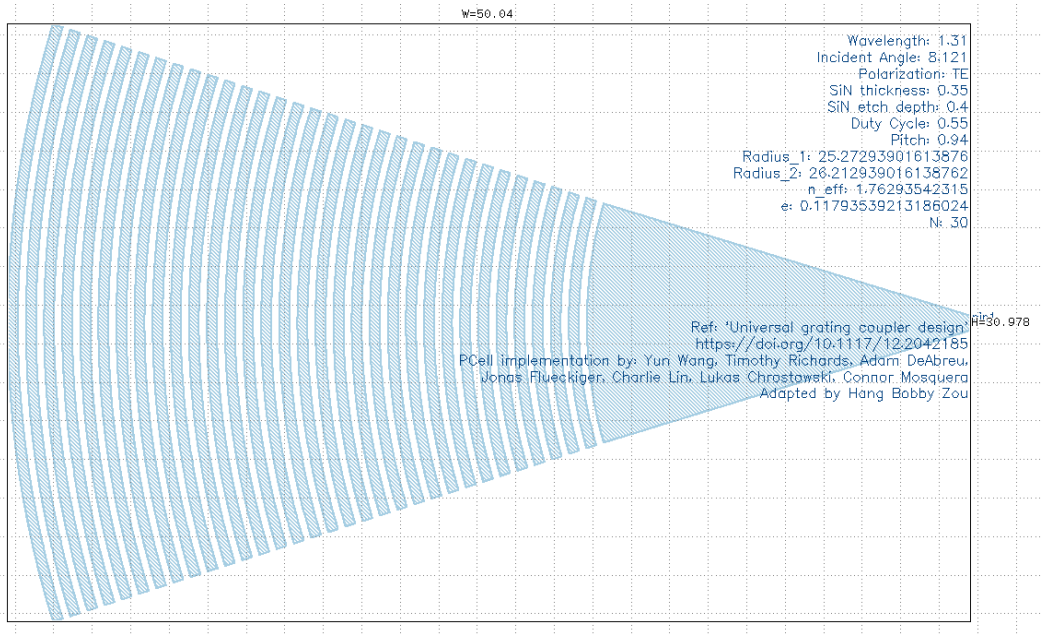


Fig. 1: Compact Model of ebeam_GC_SiN_TE_1310_8deg

Compact Model Information

- Support for TE polarization
- Operating at 1280 - 1380 wavelength
- Performance (Insertion Loss, 3dB Bandwidth):
  - TE – ~ 5dB of IL, ~40nm of BW

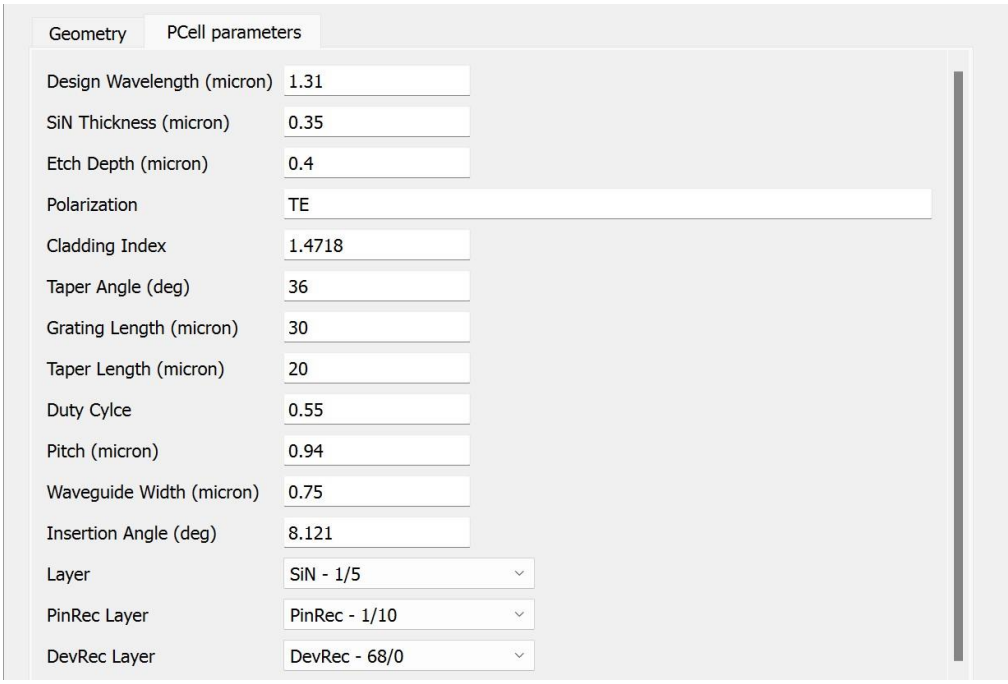
[Insert SEM Picture & other relevant photos of model]

N/A

Fig. 2: SEM Picture of [Component_Name]

Parameters

http://github.com/lukasc-ubc/SiEPIC_EBeam_PDK/



Simulation Results
From [Source]:

[Insert Simulation Results]
TBD
Fig. 3: Simulation Results for [Insert_Details]

Experimental Results
From [Source]:

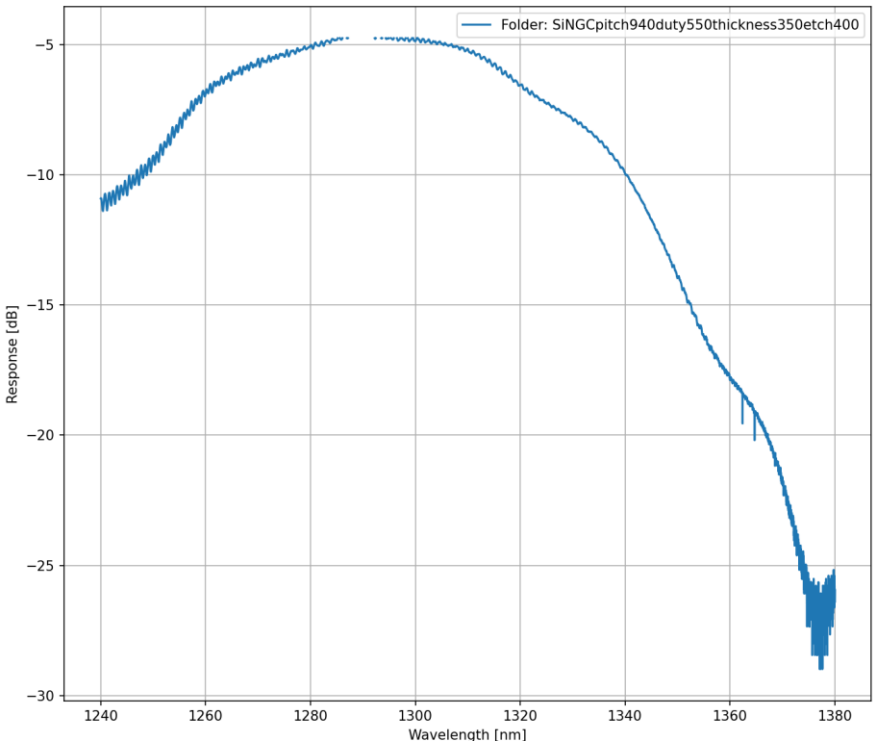


Fig. 4: Experimental Results for ebeam_GC_SiN_TE_1310_8deg, note: the top spectrum is slightly cropped due to some slight measurement artifact

Additional Details

- Design tools & methodology:
  - Lumerical 2.5D and 3D FDTD
  - MATLAB
  - Eigenmode expansion propagator (MODE Solutions)

Reference

1. Universal grating coupler design, https://doi.org/10.1117/12.2042185 PCell implementation by: Yun Wang, Timothy Richards, Adam DeAbreu, Jonas Flueckiger, Charlie Lin, Lukas Chrostowski, Connor Mosquera
2. Silicon Photonics Design: From Devices to Systems. L. Chrostowski and M. Hochberg, Cambridge University Press, 5 2015.