CORNERSTONE STANDARD COMPONENTS LIBRARY

(On 200 nm Si_3N_4 Platform)

Preface

In this document, we summarized the up-to-date designs and their simulation results of our CORNERSTONE standard components on 200 nm thick Silicon Nitride (Visible light) platform, at the same time we are optimizing the current designs, adding in new designs, and gathering more measurement results. Most of the dimensions are given in this documents, whilst a few of them are not. Thus, please use this document together with out up-to-date GDS library with can be downloaded at https://www.cornerstone.sotonfab.co.uk/design-rules/ .

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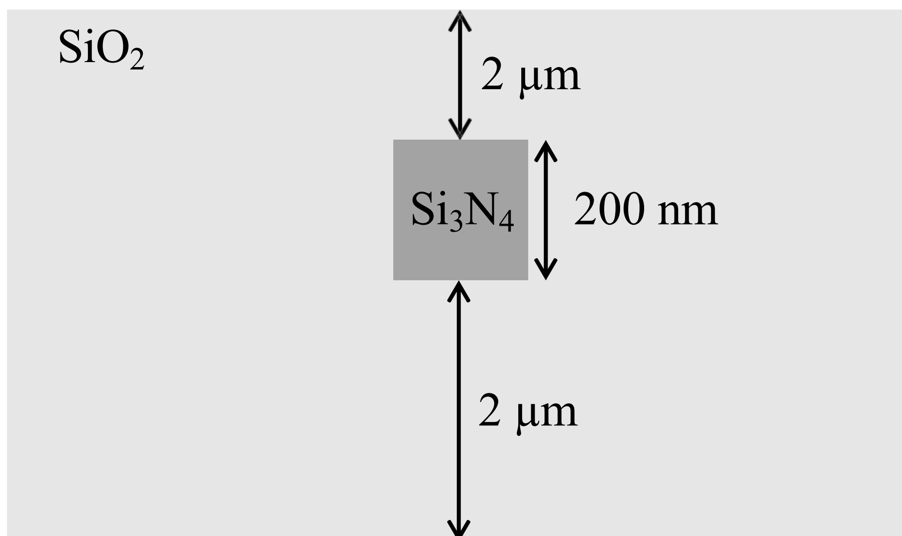
Wavelengths: 780 nm, 638 nm, 520 nm

Platform: 200 nm Si_3N_4

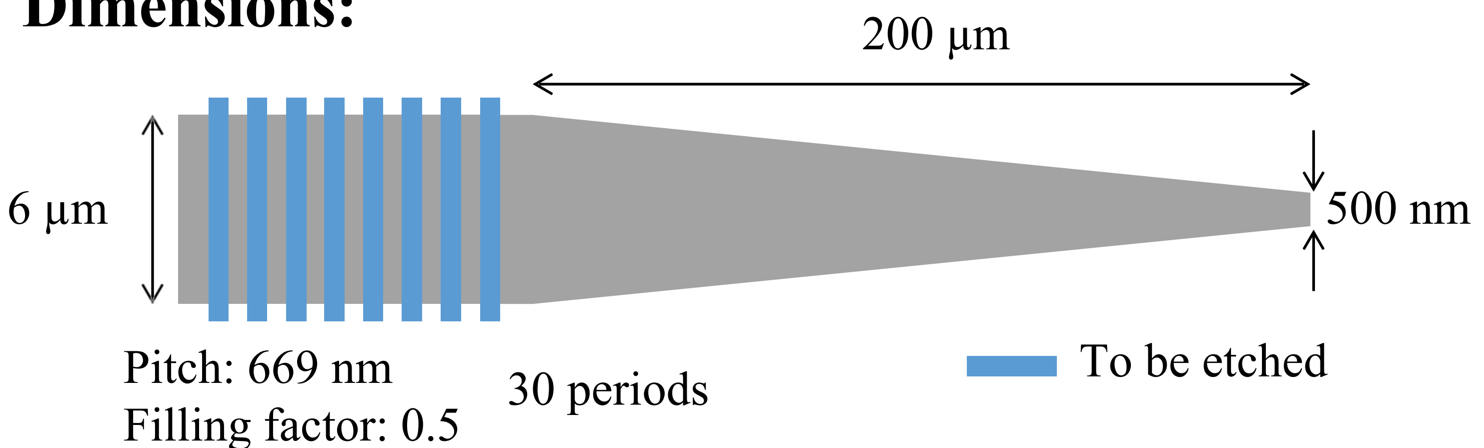
STRIP Waveguide



SiN200nm_780nm_TE_STRIP_Grating_Coupler

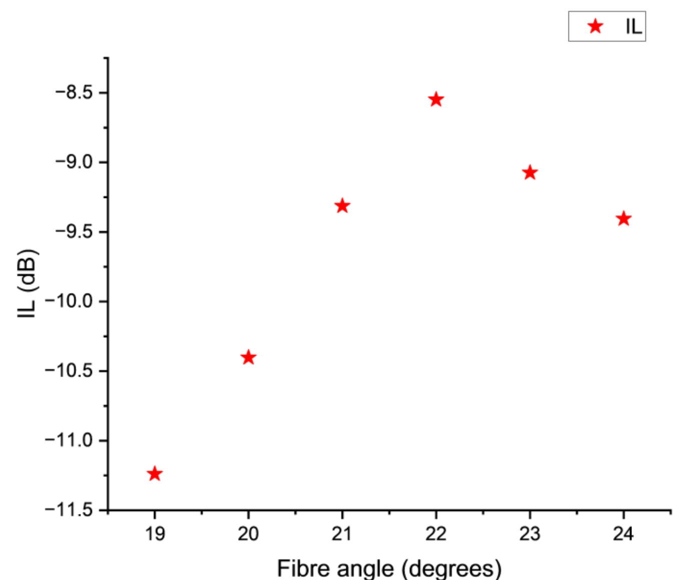
Platform:	200 nm Si_3N_4
Wavelength:	780 nm
Etching depth:	200 nm
Polarization:	TE
Cell name in GDS lib:	SiN200nm_780nm_TE_STRIP_Grating_Coupler

Dimensions:



Experimental

Specification	
Insertion loss	< -9dB
3dB BW [nm]	64 (Sim.)
Fibre angle [°]	18 (Sim.)
Fibre angle [°]	22 (Exp.)



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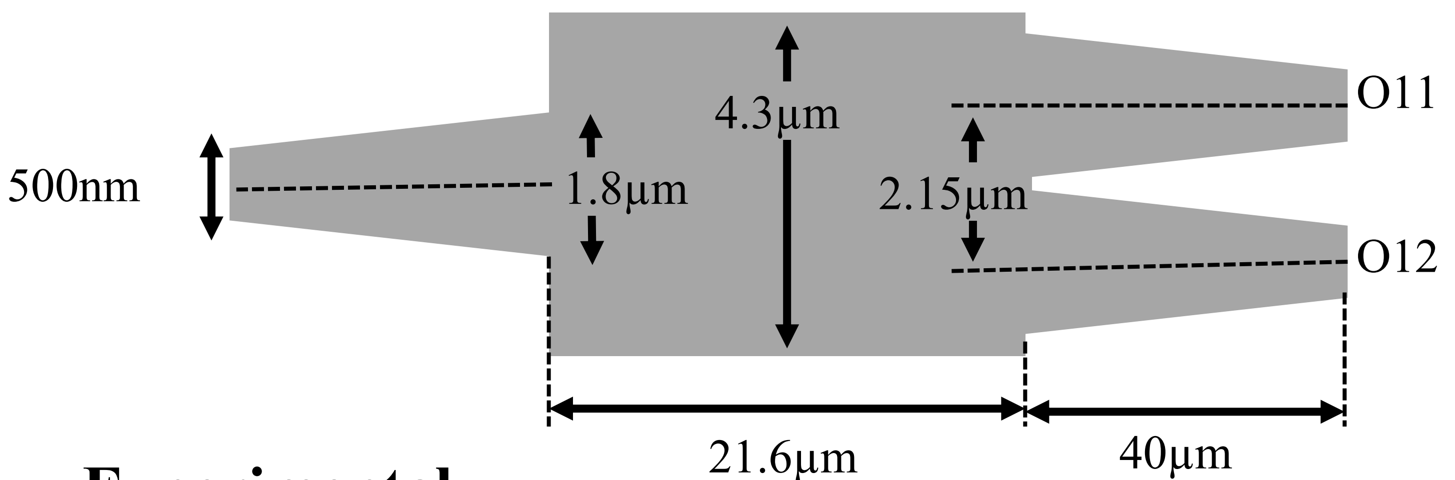
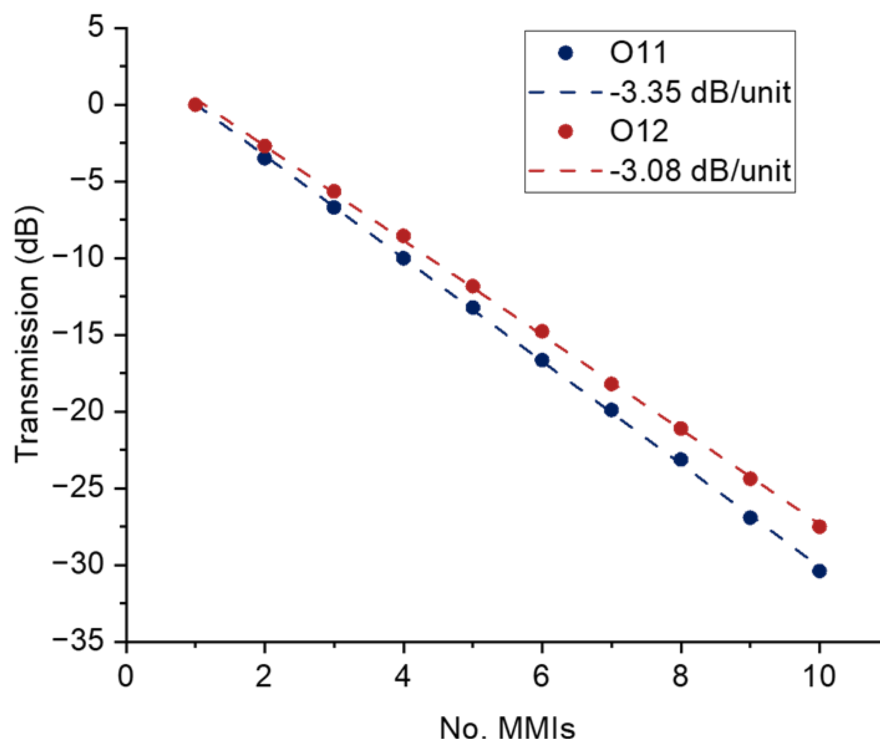
SiN200nm_780nm_TE_STRIP_1x2_MMI

Platform:	200 nm Si_3N_4
Wavelength:	780 nm
Etching depth:	200 nm
Polarization:	TE
Cell name in GDS lib:	SiN200nm_780nm_TE_STRIP_1x2_MMI

Dimensions:



Experimental



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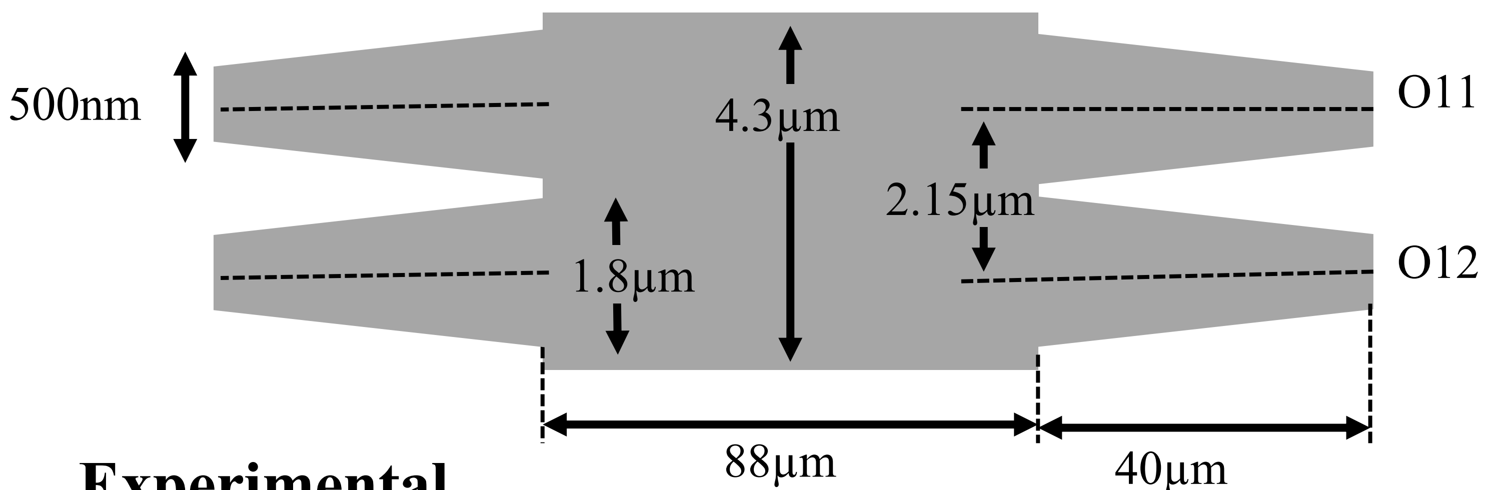
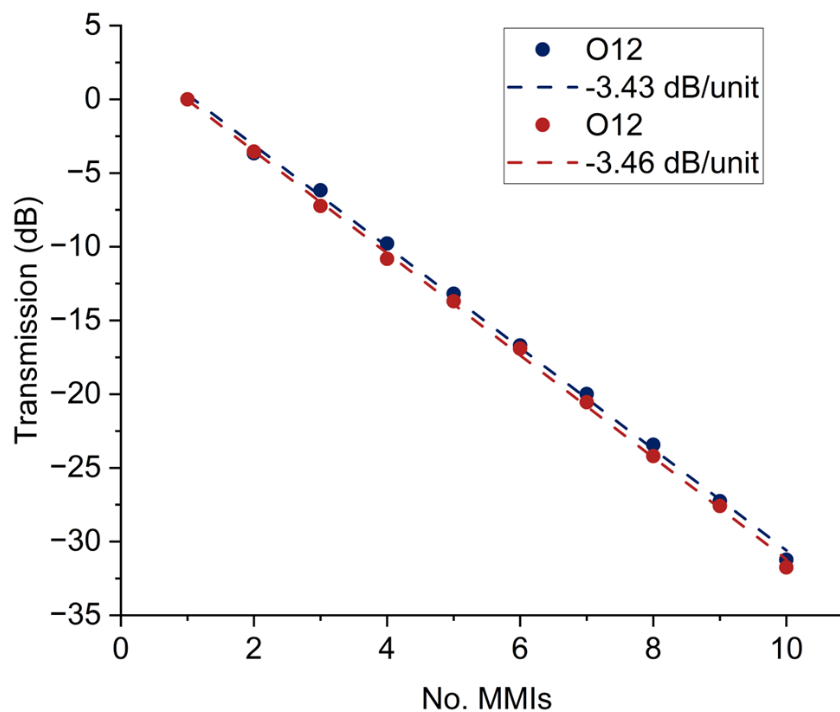
SiN200nm_780nm_TE_STRIP_2x2_MMI

Platform:	200 nm Si_3N_4
Wavelength:	780 nm
Etching depth:	200 nm
Polarization:	TE
Cell name in GDS lib:	SiN200nm_780nm_TE_STRIP_2x2_MMI

Dimensions:



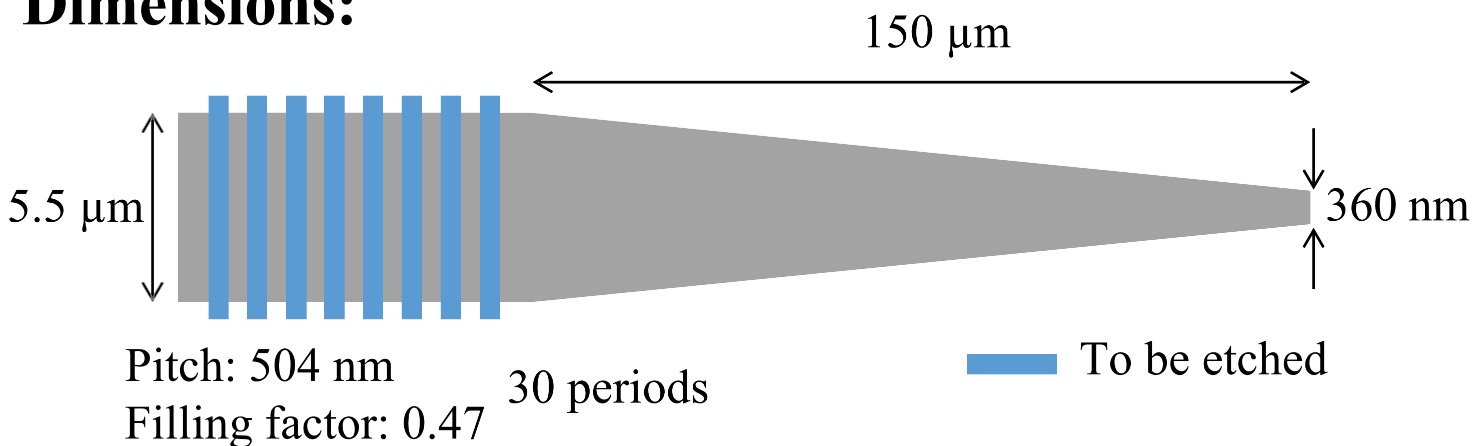
Experimental



SiN200nm_638nm_TE_STRIP_Grating_Coupler

Platform:	200 nm Si_3N_4
Wavelength:	638 nm
Etching depth:	200 nm
Polarization:	TE
Cell name in GDS lib:	SiN200nm_638nm_TE_STRIP_Grating_Coupler

Dimensions:



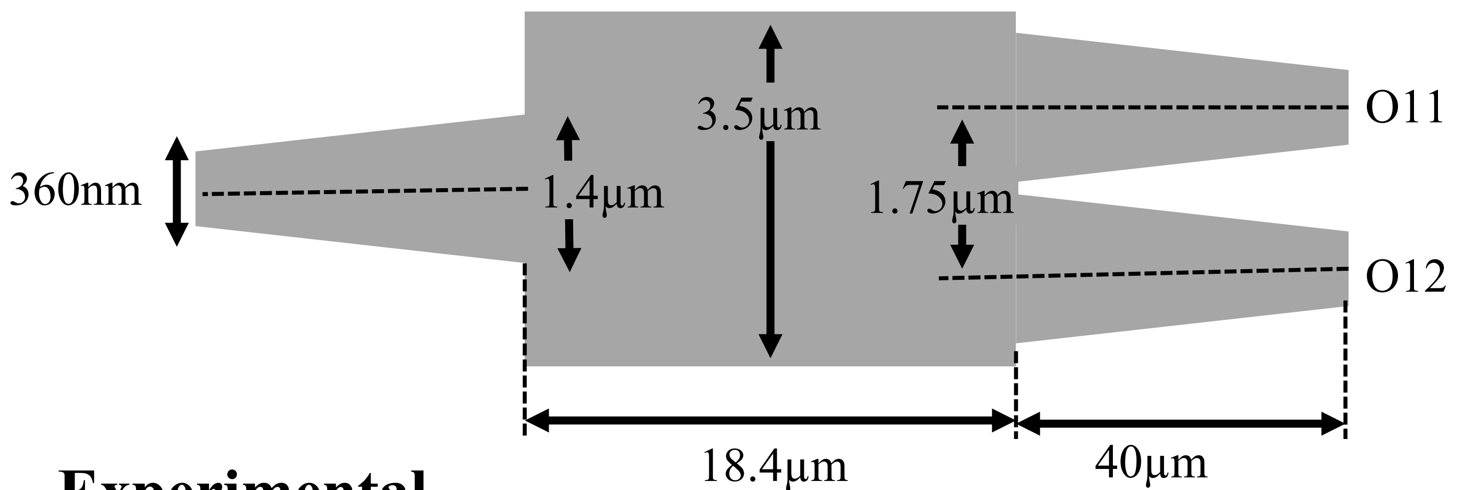
Experimental

Specification	
Insertion loss	-15.06 dB
3dB Bandwidth [nm]	43 (Simulated)
Fibre angle [degree]	18

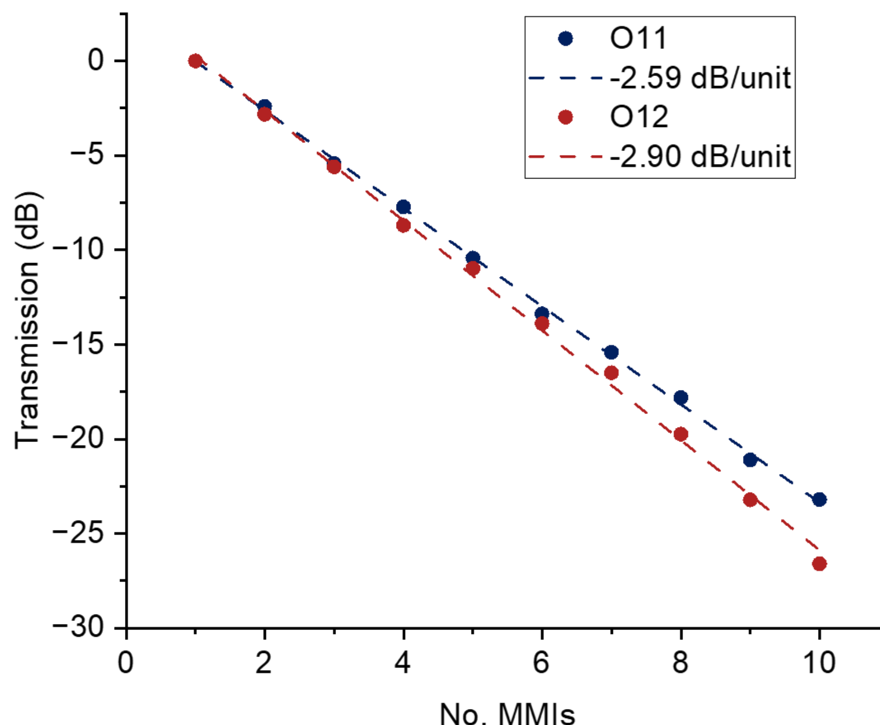
SiN200nm_638nm_TE_STRIP_1x2_MMI

Platform:	200 nm Si_3N_4
Wavelength:	638 nm
Etching depth:	200 nm
Polarization:	TE
Cell name in GDS lib:	SiN200nm_638nm_TE_STRIP_1x2_MMI

Dimensions:



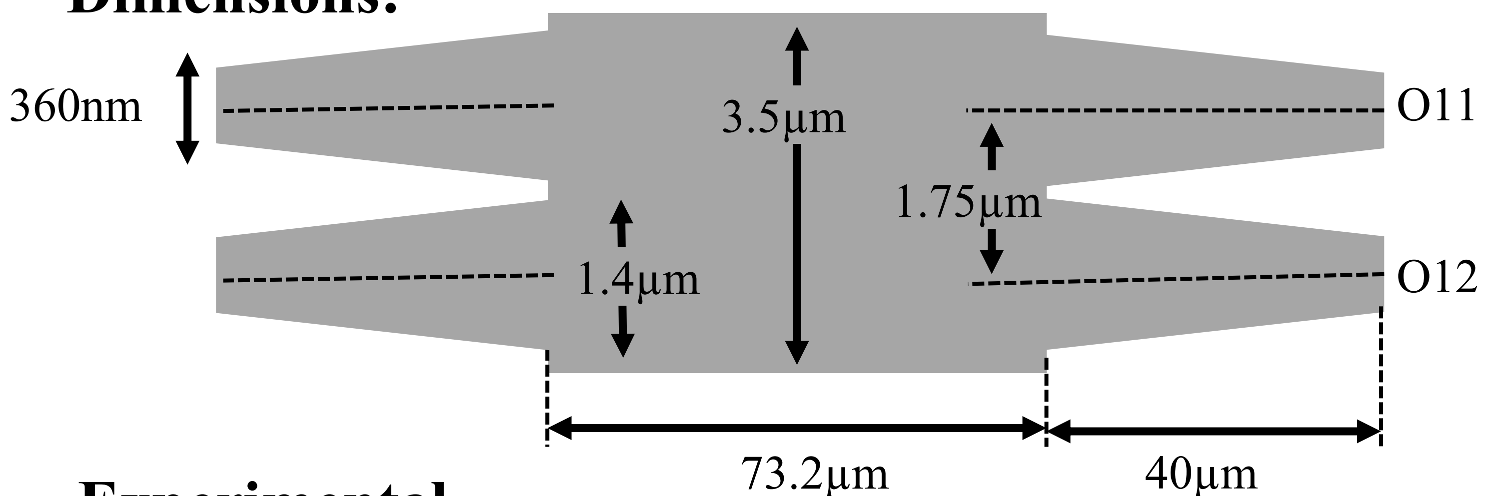
Experimental



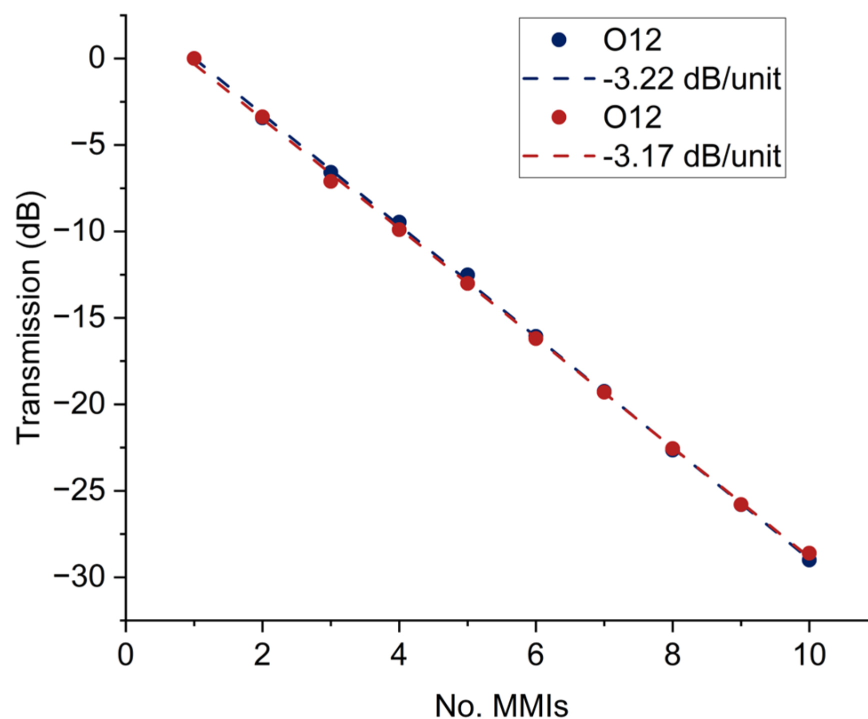
SiN200nm_638nm_TE_STRIP_2x2_MMI

Platform:	200 nm Si_3N_4
Wavelength:	638 nm
Etching depth:	200 nm
Polarization:	TE
Cell name in GDS lib:	SiN200nm_638nm_TE_STRIP_2x2_MMI

Dimensions:



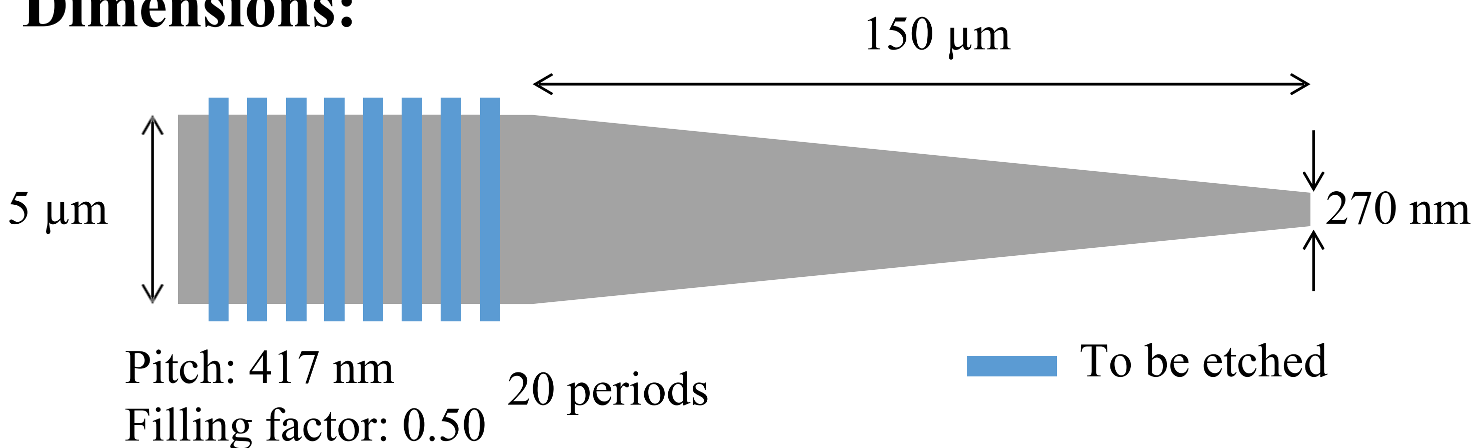
Experimental



SiN200nm_520nm_TE_STRIP_Grating_Coupler

Platform:	200 nm Si_3N_4
Wavelength:	520 nm
Etching depth:	200 nm
Polarization:	TE
Cell name in GDS lib:	SiN200nm_520nm_TE_STRIP_Grating_Coupler

Dimensions:



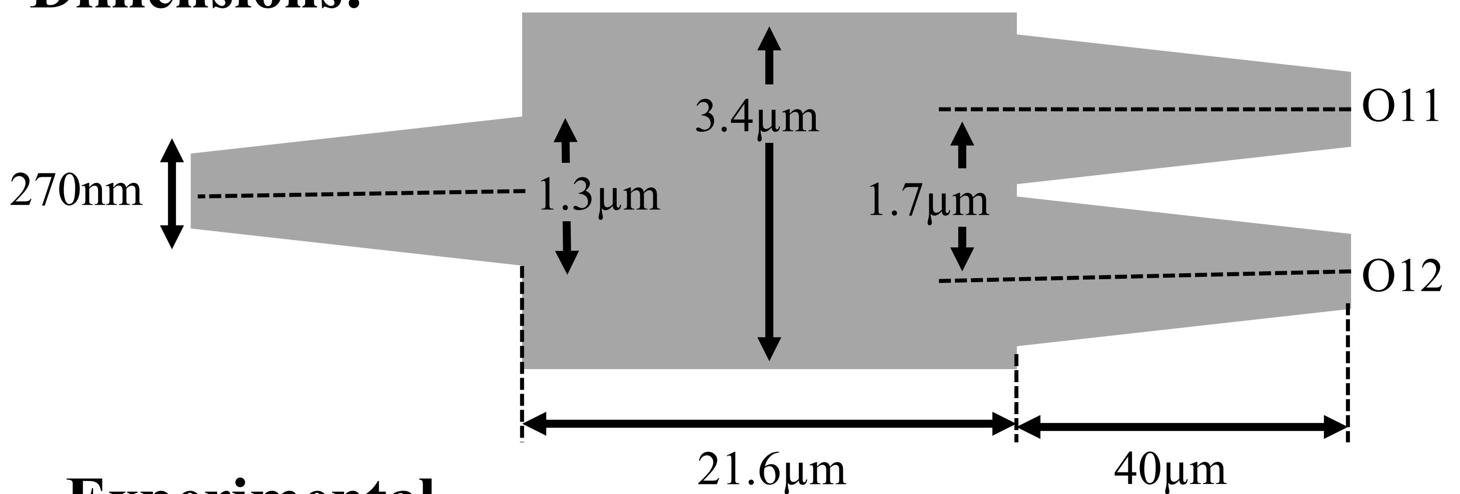
Simulations

Specification	
Insertion loss	-13.25 dB
3dB Bandwidth [nm]	28 (Simulated)
Fibre angle [degree]	22

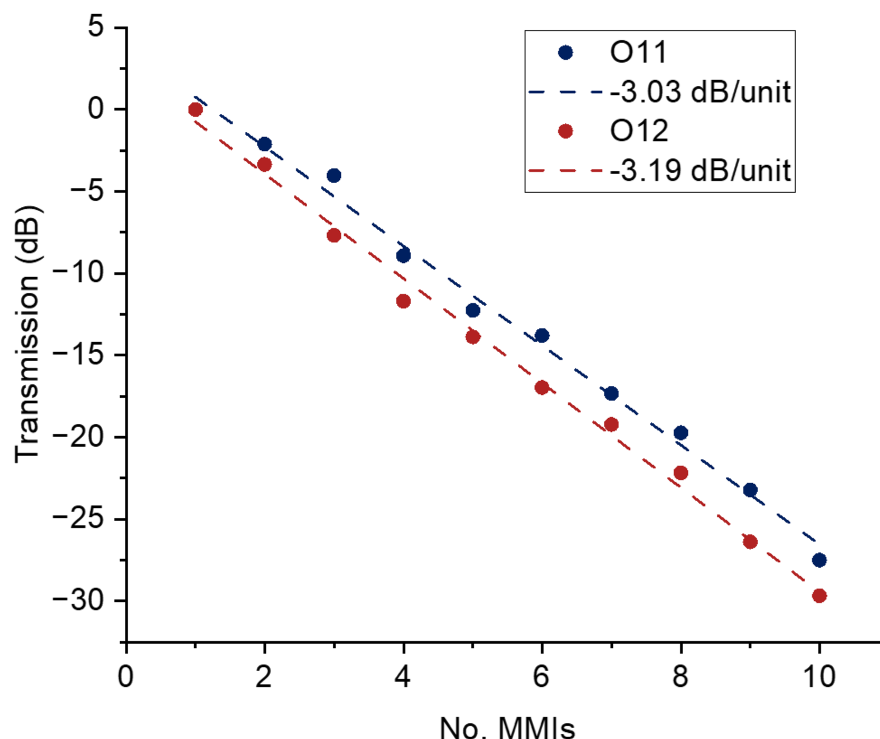
SiN200nm_520nm_TE_STRIP_1x2_MMI

Platform:	200 nm Si_3N_4
Wavelength:	520 nm
Etching depth:	200 nm
Polarization:	TE
Cell name in GDS lib:	SiN200nm_520nm_TE_STRIP_1x2_MMI

Dimensions:



Experimental



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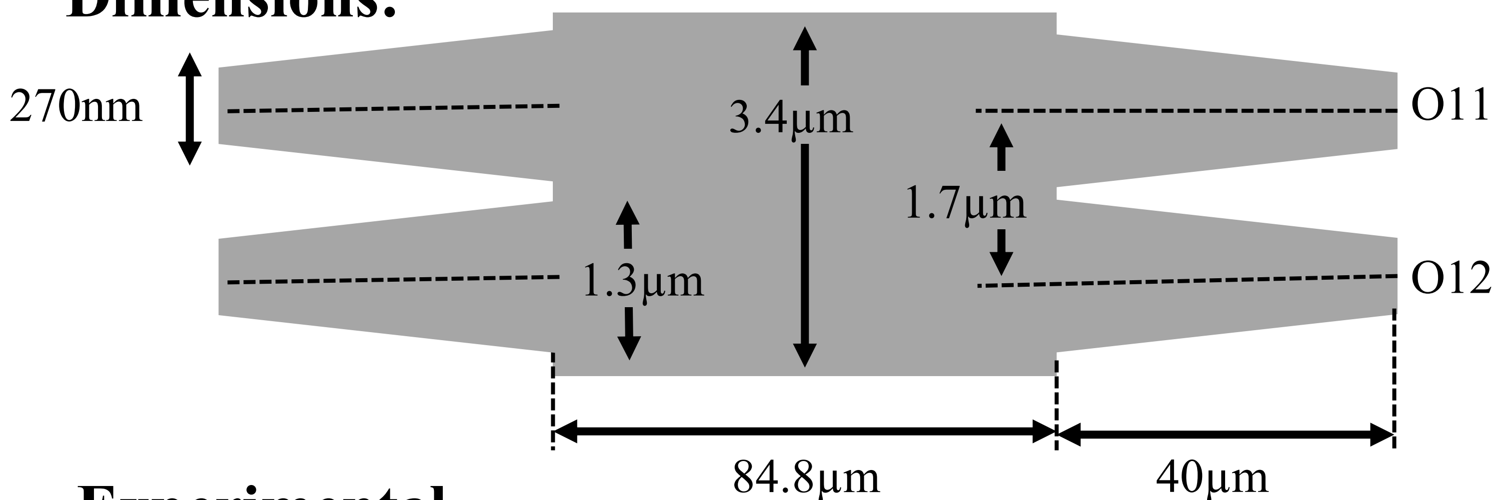
SiN200nm_520nm_TE_STRIP_2x2_MMI

Platform:	200 nm Si_3N_4
Wavelength:	520 nm
Etching depth:	200 nm
Polarization:	TE
Cell name in GDS lib:	SiN200nm_520nm_TE_STRIP_2x2_MMI

Dimensions:



Experimental