Week 10: Assignment 10

The due date for submitting this assignment has passed.

Due on 2021-10-06, 23:59 IST.

As per our records you have not submitted this assignment.

1) The power consumption to achieve π phase shift is independent of the length of thermo-optic phase shifter. *1 point*

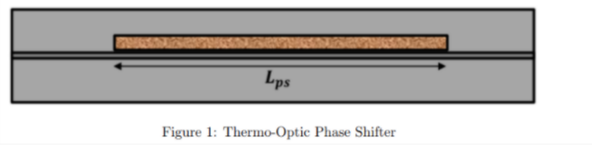

Figure 1: Thermo-Optic Phase Shifter

- True
- False

No, the answer is incorrect.
Score: 0
Accepted Answers:
True

2) Which of the following thermo-optic phase shifter has faster response time? *1 point*

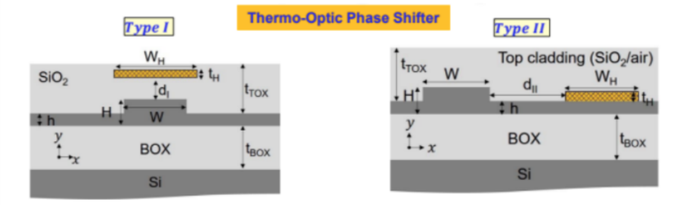

Figure 2: Thermo-optic Phase Shifter

- Type I
- Type II

No, the answer is incorrect.
Score: 0
Accepted Answers:
Type II

3) For a tunable basic unit (TBU), shown in Figure. 3, the phase at the output ports can be tuned without any effect on the amplitudes by tuning *1 point*

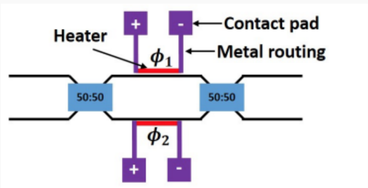

Figure 3: Tunable basic unit

- only ϕ_1 , but not ϕ_2
- only ϕ_2 , but not ϕ_1
- both ϕ_1, ϕ_2 by the equal amount
- both ϕ_1, ϕ_2 independently
- not possible

No, the answer is incorrect.
Score: 0
Accepted Answers:
both ϕ_1, ϕ_2 by the equal amount

Common data for questions 4 – 5: Consider a TBU integrated with microheaters in two different configurations as shown in Figure. 4.

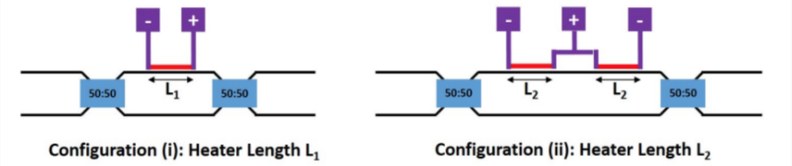

Figure 4: Tunable basic unit integrated with microheaters

4) If $L_2 < L_1$, the voltage required to apply π phase difference across the TBU arms is less for *1 point*

- configuration (i)
- configuration (ii)

No, the answer is incorrect.
Score: 0
Accepted Answers:
configuration (ii)

5) If $L_1 = L_2$, the power required to apply π phase difference across the TBU arms is same for the both configurations. *1 point*

- True
- False

No, the answer is incorrect.
Score: 0
Accepted Answers:
False

6) The thermal relaxation time of the integrated microheater is independent of the geometry of the microheater. *1 point*

- True
- False

No, the answer is incorrect.
Score: 0
Accepted Answers:
False