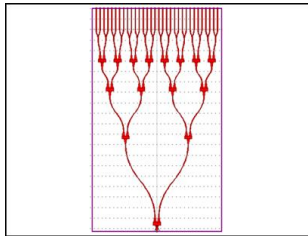
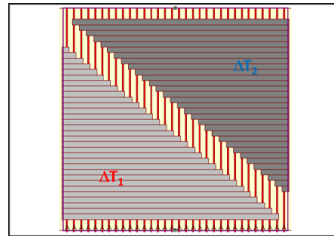


RSoft를 활용한 Lidar-On-Chip 설계

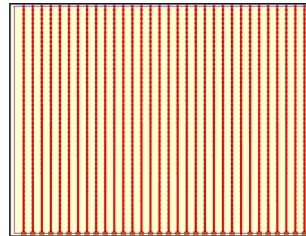
Lidar-On-Chip Design using RSoft Photonic Device Tools



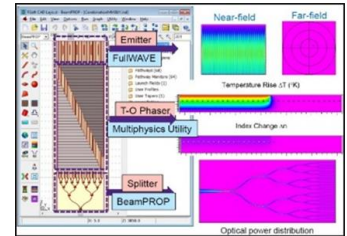
1x32 Power Splitter



Thermal-Optical Phase Shifter



Multi-Channel Gratings



Lidar-On-Chip Simulation

Design | 설계

- 다양한 구성 요소의 설계를 최적화하기 위한 다양한 시뮬레이션 툴 제공
 - FemSIM: Optical Waveguide의 Mode
 - BeamPROP: Waveguide에서 Optical Field 전파
 - FullWAVE: Omni-directional Wave 전파 시뮬레이션
 - Multi-Physics Utility: 열 또는 전기와 같은 물리적 효과가 Optical Wave에 미치는 영향 분석

Simulation | 시뮬레이션

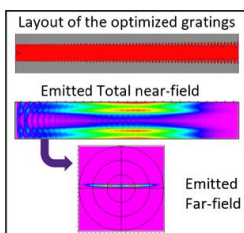
- BeamPROP BPM을 사용한 Splitter 시뮬레이션
- Multi-Physics Utility를 사용한 T-O Phase Shifter 시뮬레이션
- FullWAVE FDTD를 사용한 Emitter 시뮬레이션

Optimization | 최적화

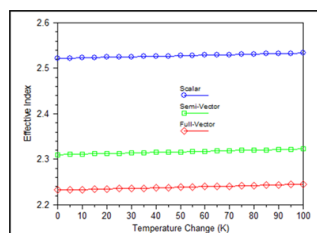
- Grating을 최적화하여 Emitting Power 최대화
- 최적화된 Power Splitter로 전력 균등 배분

Analysis | 분석 및 평가

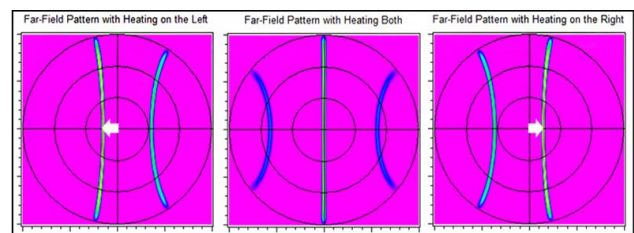
- Splitter의 Optical Power Distribution
- 온도 변화에 따른 Effective Index
- 방출되는 광의 Near/Farfield Pattern



Grating Optimization



Effective Index



Edge Emitting Far-Fields at Different Biases