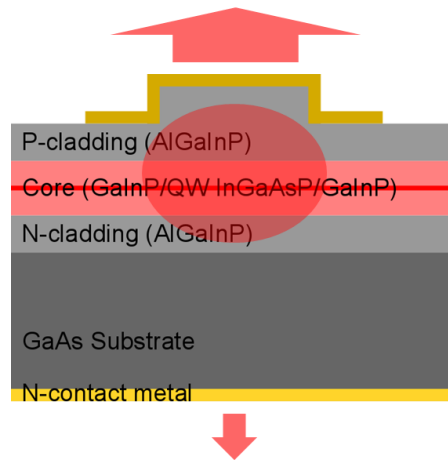
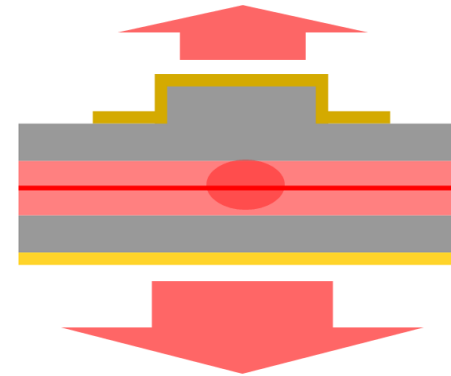


# High Power Laser Diodes

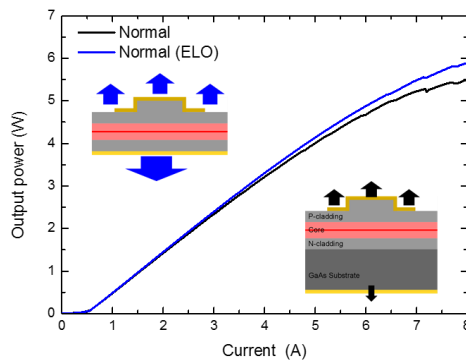
- High power laser diode (HPLD) with an improved heat-sinking structure
- Improved heat-sinking → Lower temperature → Higher LD performances



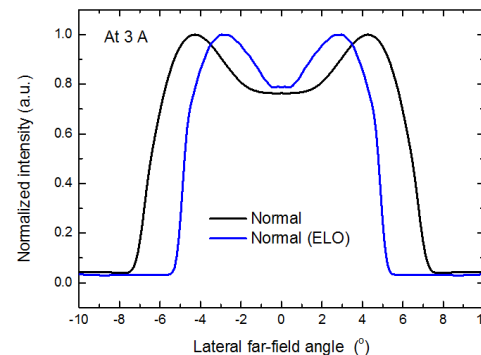
<Conventional HPLD>



<Proposed HPLD>



<L-I characteristics>

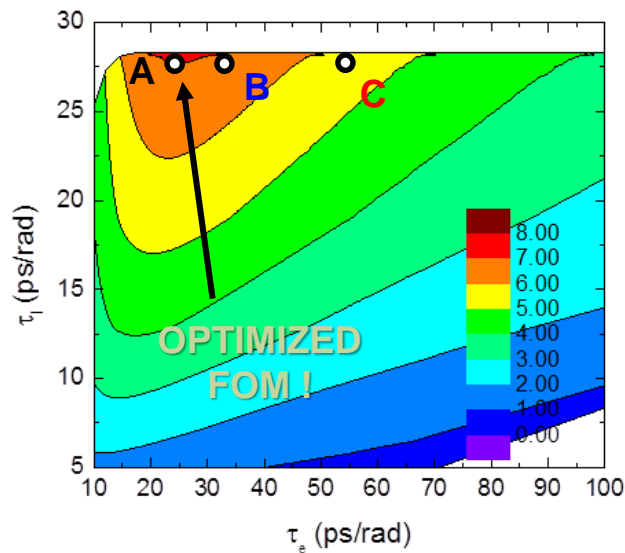
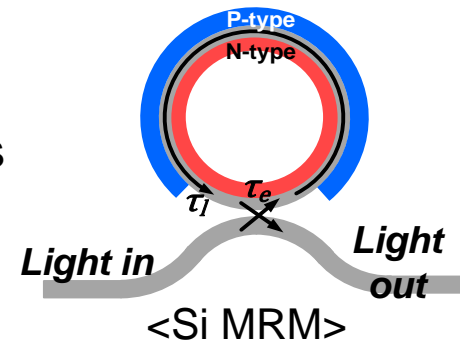


<Lateral far-field profile>

Improved performances !  
Conventional (Black)  
to Proposed (Blue) !

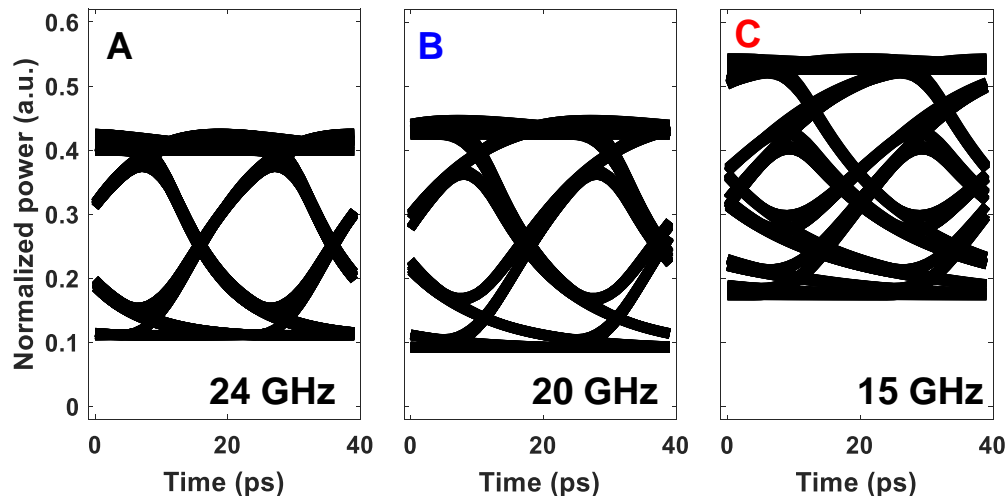
# Optimization of Si MRMs

- Optimizing Si MRM performance for 50-Gbps modulation
- Using modeling parameters ( $\tau_l$ ,  $\tau_e$ ) for universal relationships



<Modeling parameters vs. FOM>

## OPTIMIZED EYE DIAGRAM !



<Eye diagrams for 50-Gbps modulation speed>

Figure of merit (FOM) :  
Product of optical modulation amplitude and 3-dB bandwidth