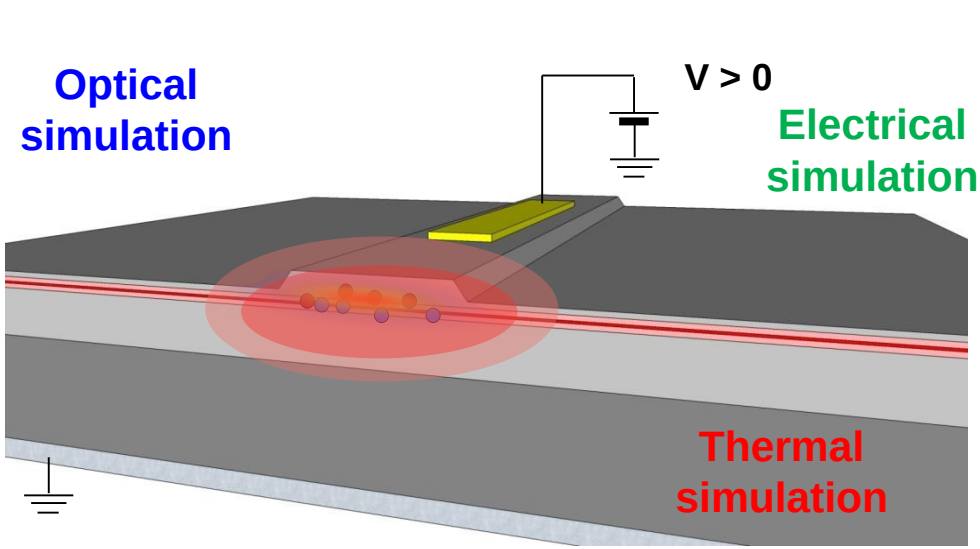
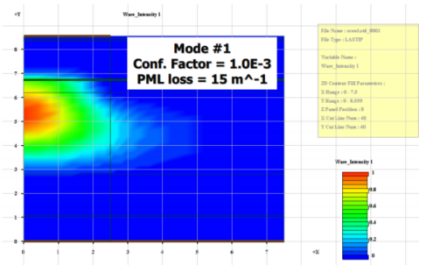
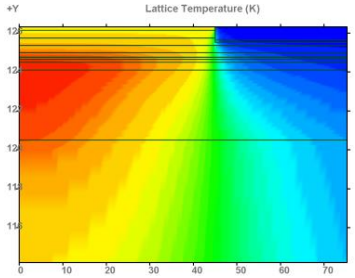
# HPLD Simulation Research

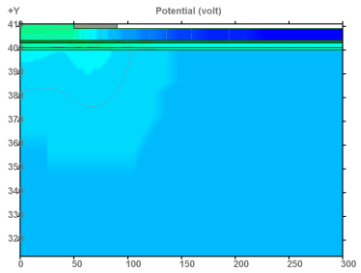


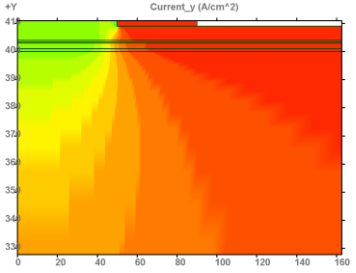

<Near-field pattern>




<Temperature>




<Potential>




<Current>

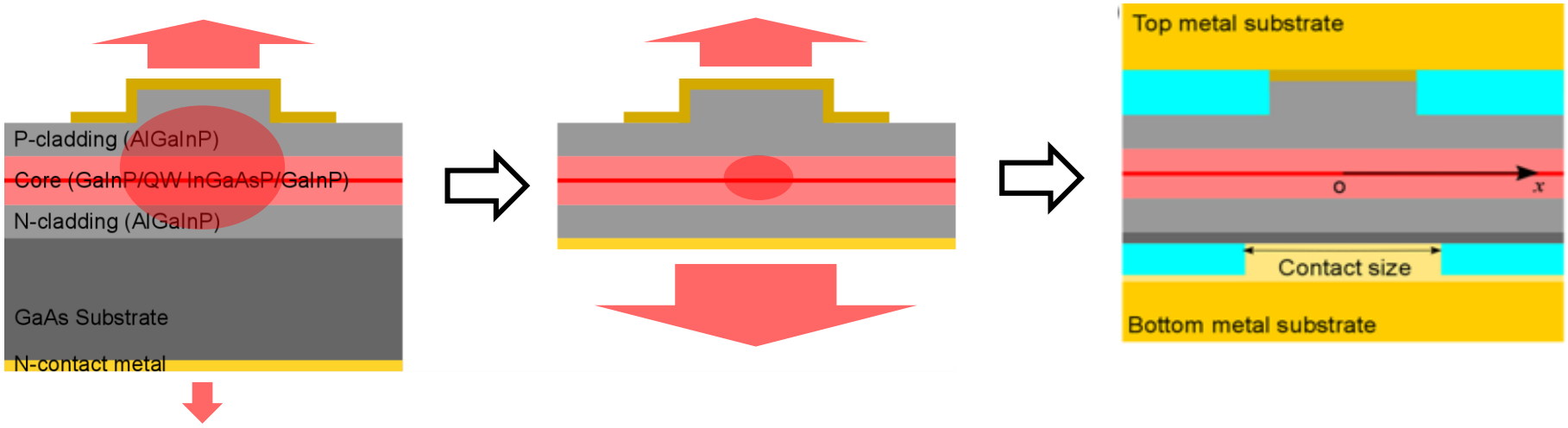
**Self-consistent simulation**

**LASTIP of CROSSLIGHT INC.**

# Previous Works (1)

- Improved heat-sink using ELO (Epitaxial Lift Off) technique
  - 2018 SPIE Photonics West (2018)

- Improved LD performance with a DP (Double Pedestal) structure
  - Japanese Journal of Applied Physics **58**, 042004 (2019)

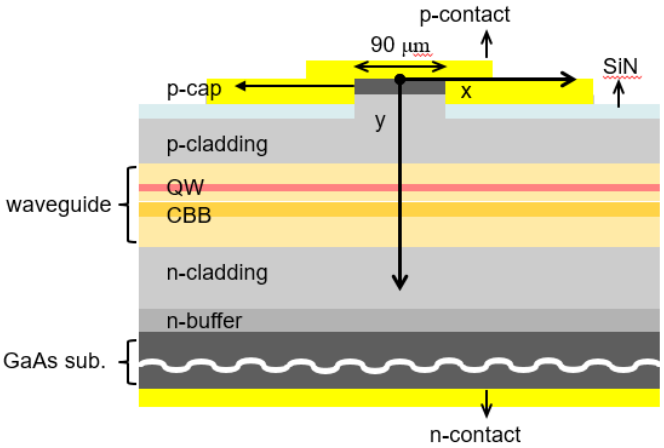


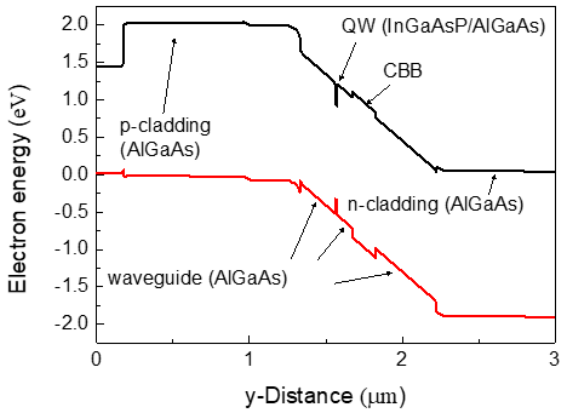

Ref.: Kim.Y.H. *SPIE*, Vol. 10514

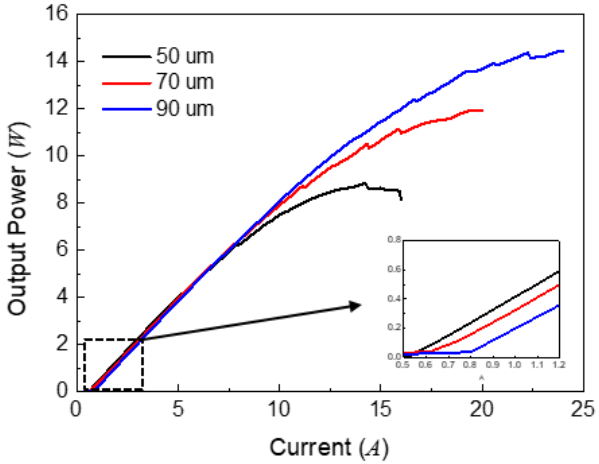
Ref.: Kim.Y.H. *JJAP*, Vol. 58

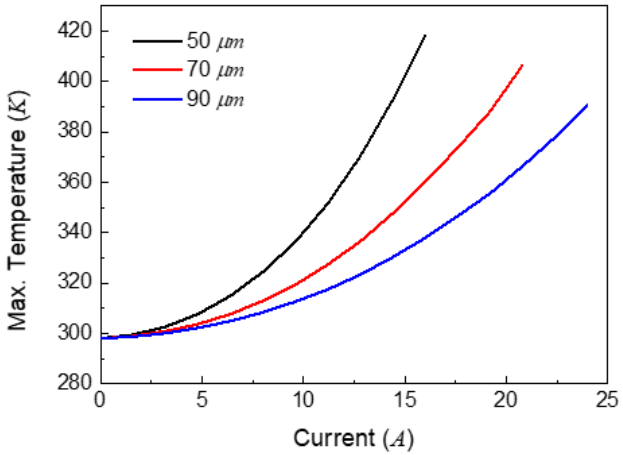
# Previous Works (2)

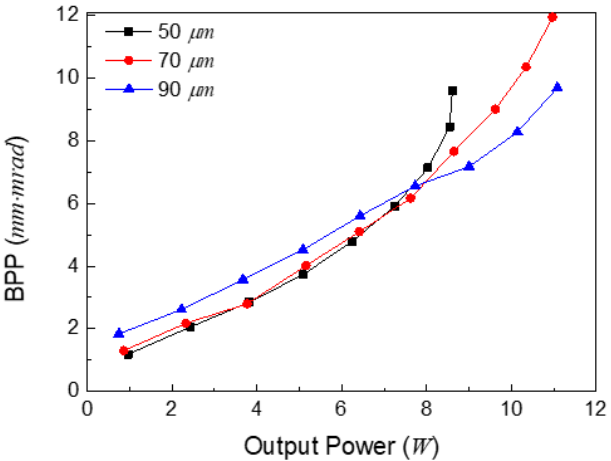
- Influence of Emitter Width on 975 nm InGaAsP/AlGaAs HPLD
  - 2018 Photonics Conference (2018)
  - 2019 SPIE Photonics West (2019)
  - Current Optics and Photonics (2019 accepted)



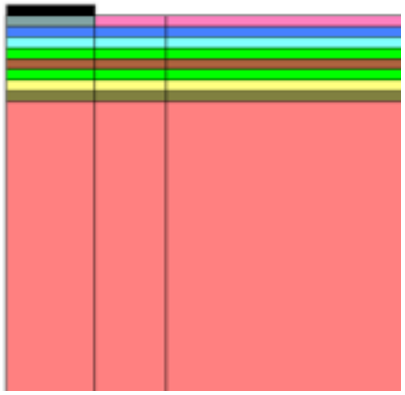



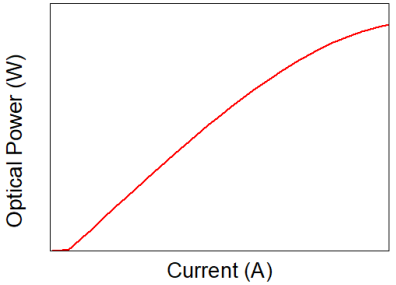



# Work in Progress

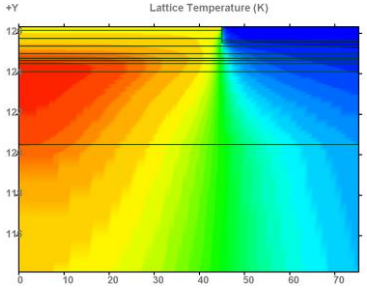
- Design laser diode (LD) ($\lambda$= 850 nm)



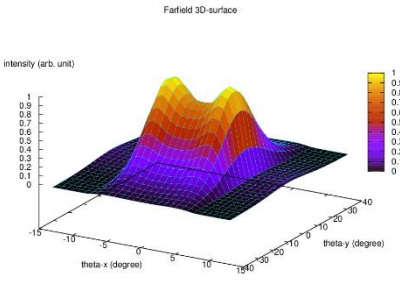
Design structure




L-I curve




Temperature




Field pattern

Analysis

- Fabrication designed laser diode (co-work with QSI)


Measurement