Status of OSU Opto-pack/Opto-board

K.K. Gan

The Ohio State University

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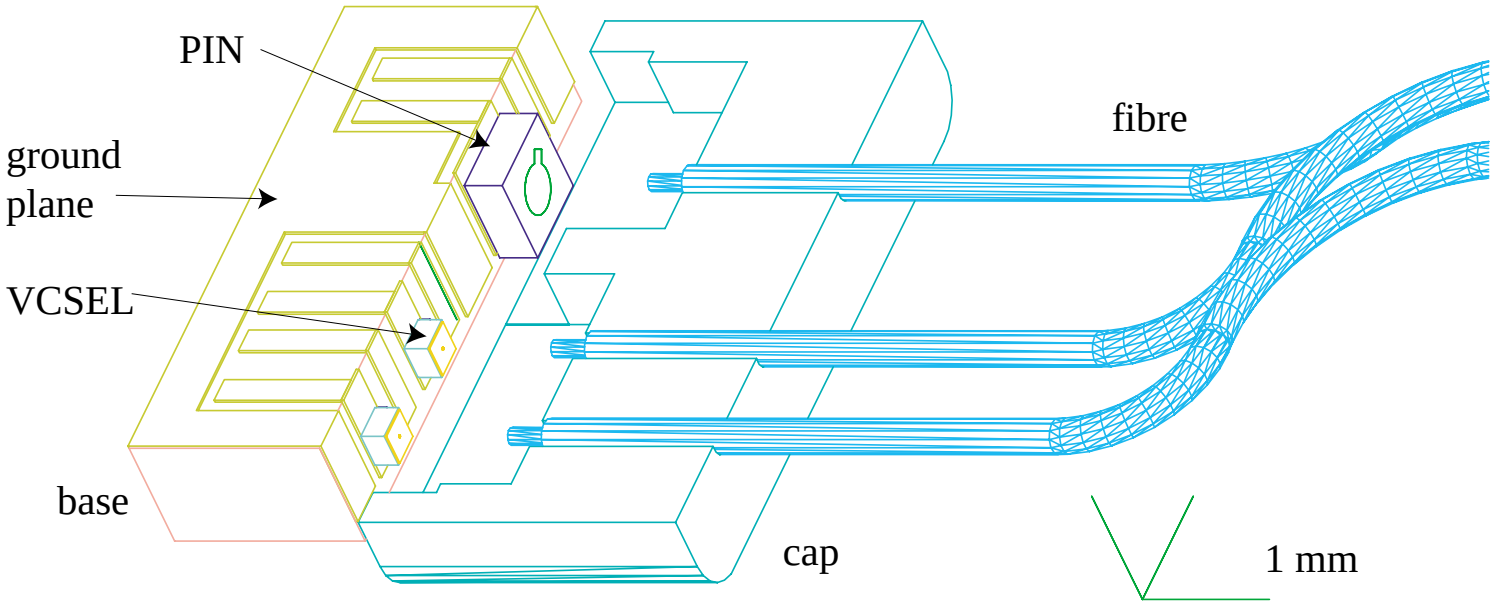
Outline

- Introduction
- Opto-pack prototypes
- Opto-board prototype
- Plans

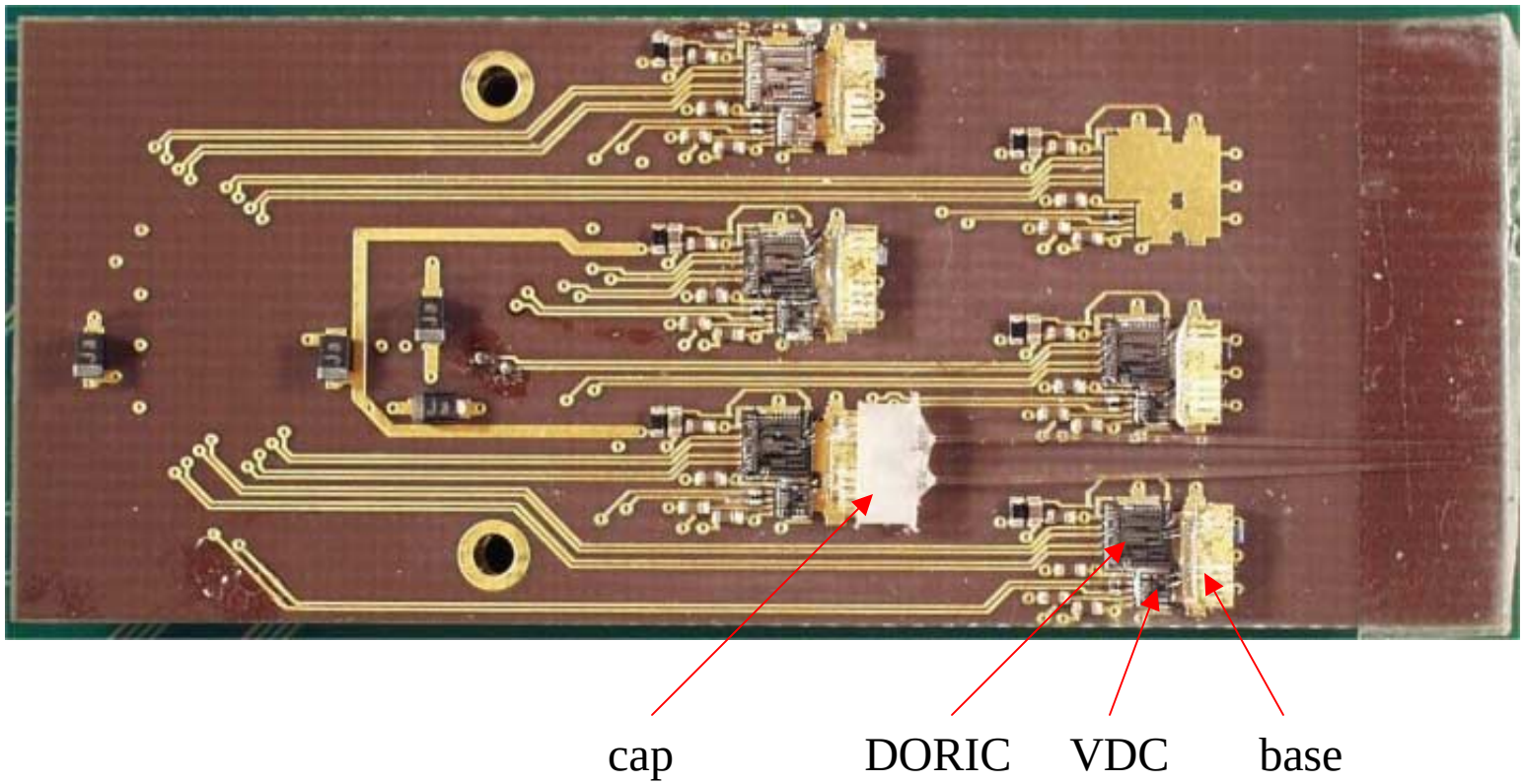
OSU Opto-pack



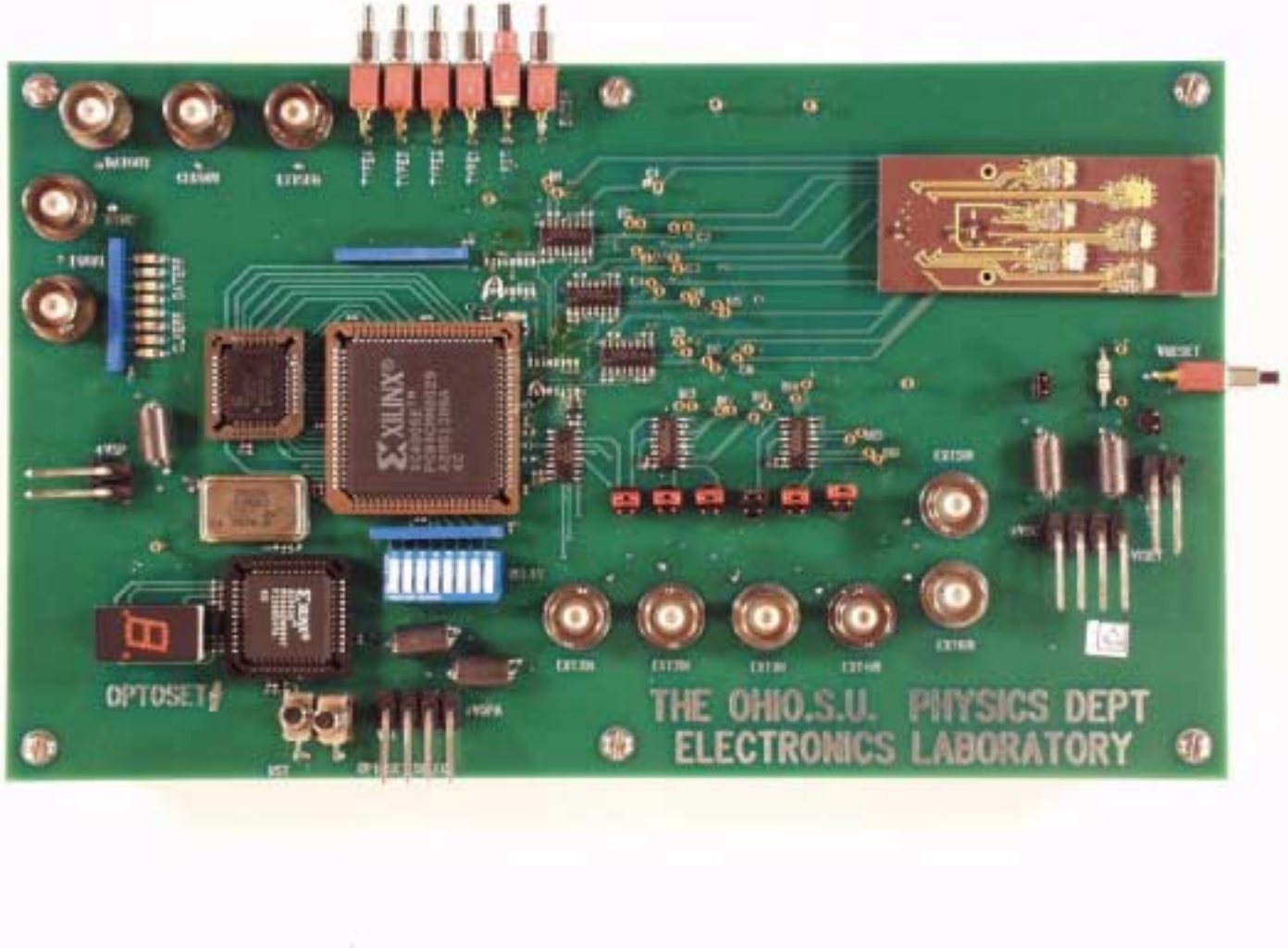
Prototype Result

- December Pixel Week: 11 packages produced with 9 having coupled power > 300 μW in both VCSELs simultaneously
- have fabricated 5 more packages with 1 package having poor coupled power (~ 300 μW):
  - ☆ two packages with Truelight VCSELs
  - ☆ three packages with Mitel VCSELs

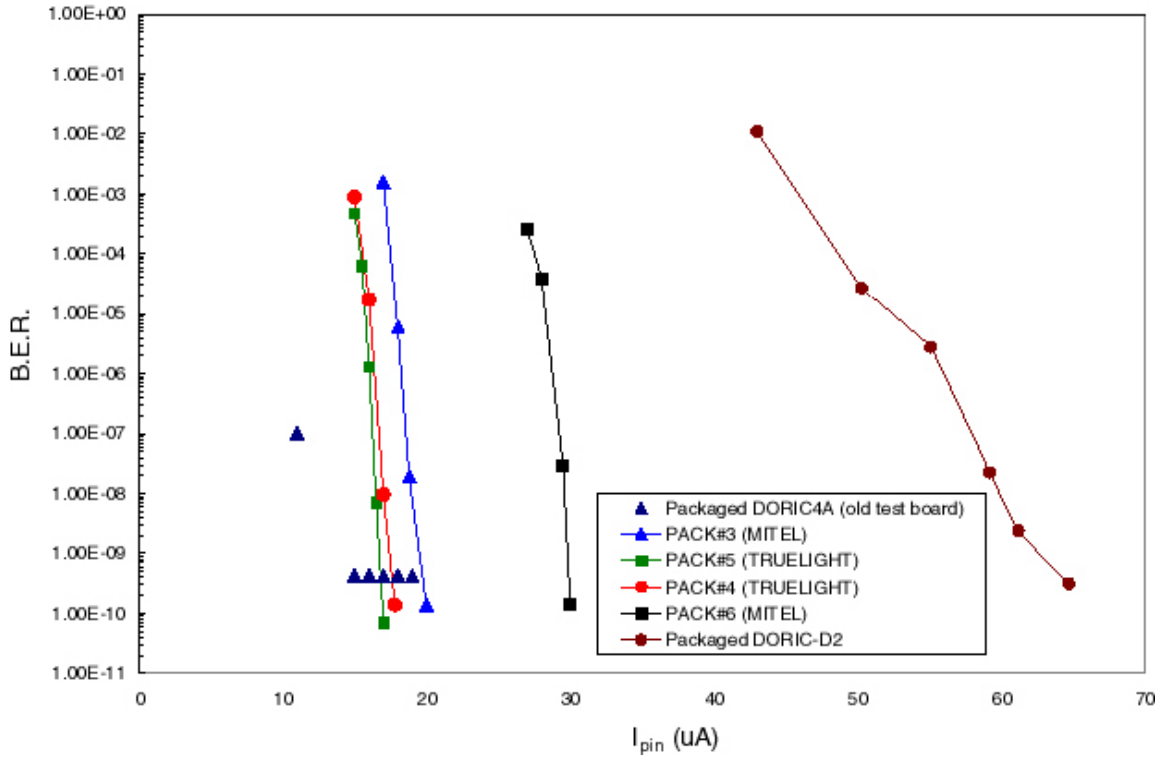
Opto-Board Prototype



Test Board for Opto-board



Binary Error Rate

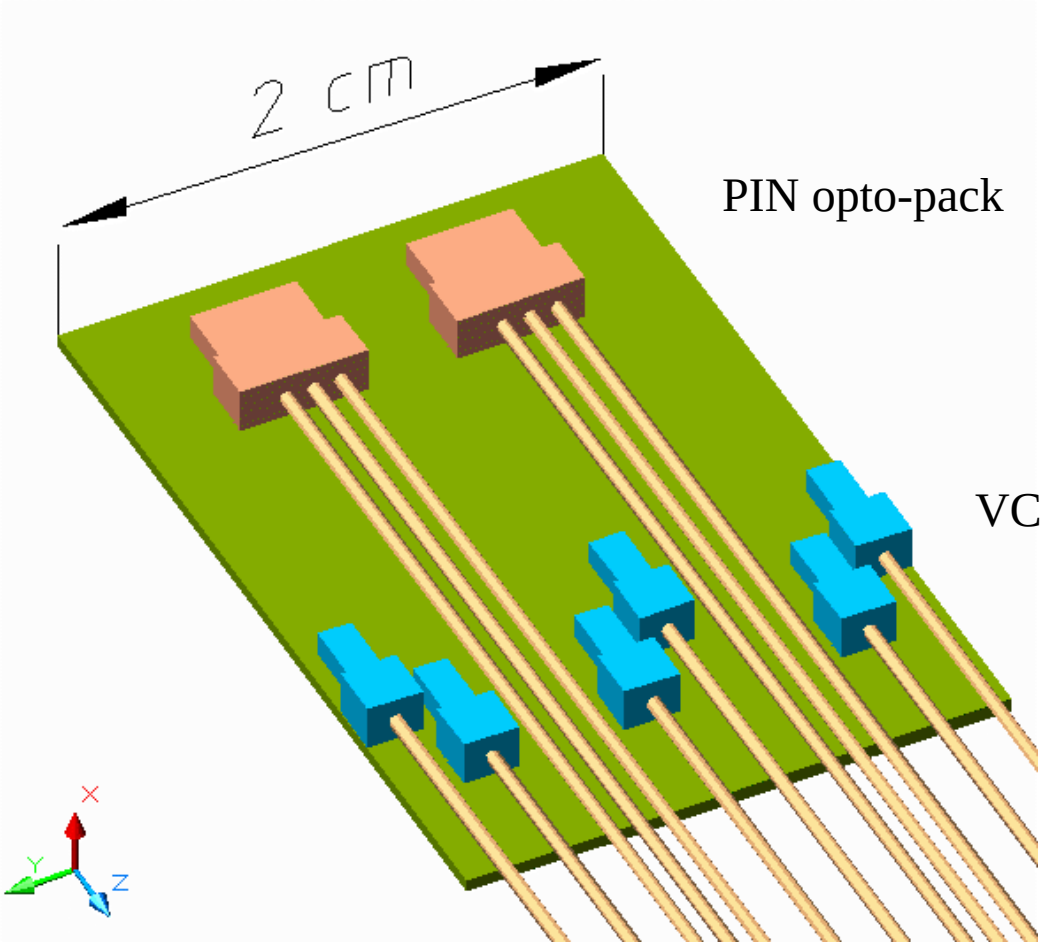


- placing DORIC-D2 in close proximity to PIN yields lower BER

New Opto-Packs for Smaller Opto-Board

- separate packages for VCSEL and PIN
  - 1 VCSEL per VCSEL opto-pack
  - 3 or 4 PINs per PIN opto-pack
- small penalty for fabricating more VCSEL opto-packs
- advantages:
  - ease of fabrication
  - reduce cross talk between VCSEL and PIN
  - limited number of PIN/VCSEL per package to reduce loss
  - select VCSEL opto-packs of similar coupled power for appropriate I_{set}

New Opto-Packs for Smaller Opto-Board



Summary and Plans

- first prototype opto-board fabricated and successfully tested
  - ☆ opto-board has low noise
  - ☆ more detailed study in progress
- fabricating opto-packs/opto-boards of new design
- prepare opto-board for April irradiation