Photonics Society at UCSB
AN SPIE & IEEE PHOTONICS SOCIETY STUDENT CHAPTER

CSEP CNSI

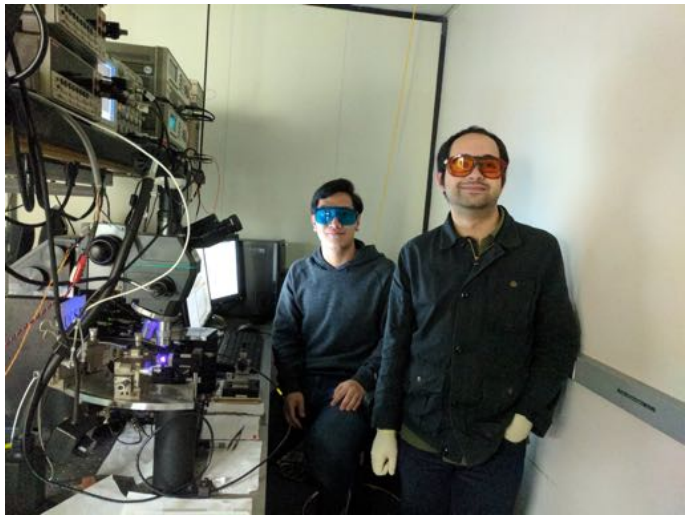
Physics of Lasers and Light

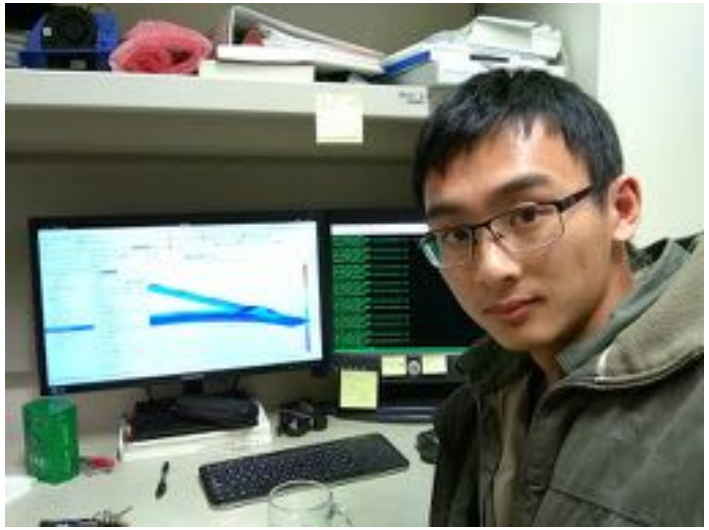
Introduction and Optical Communication

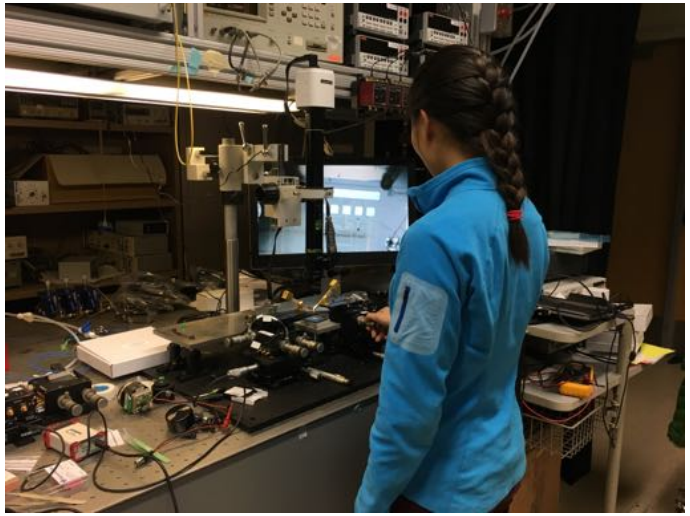
Instructors:

Victoria Rosborough, Philip R. Chan, Kareem Hamdy, Warren Jin, Takako Hirokawa

Instructors







Photonics: The science of generating, detecting and manipulating light.

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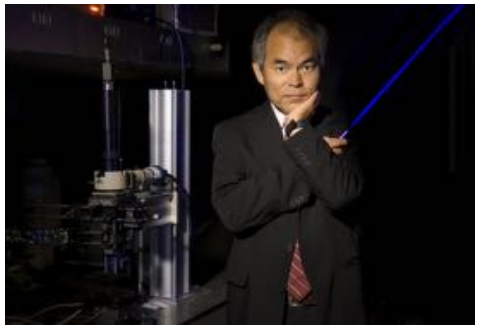
Photonics in Santa Barbara

LOCKHEED MARTIN



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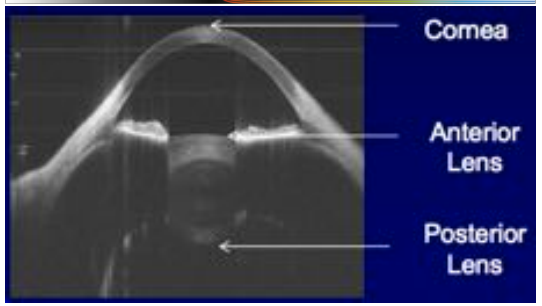
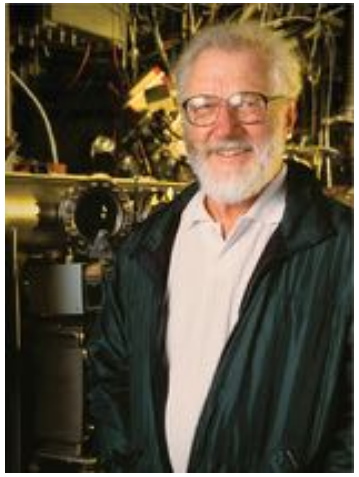
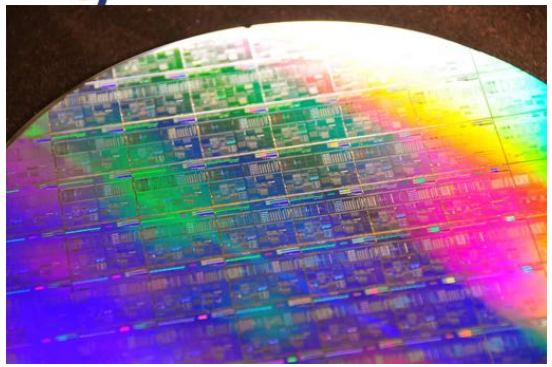
PRAEVIUM RESEARCH





AIM photonics

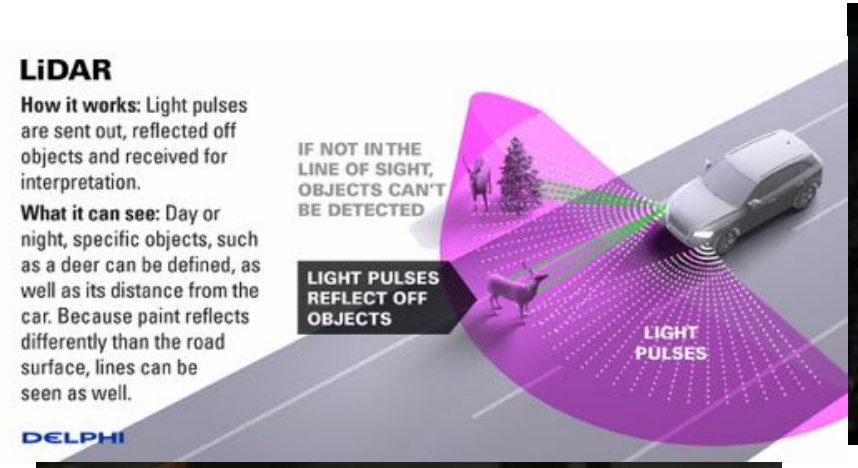


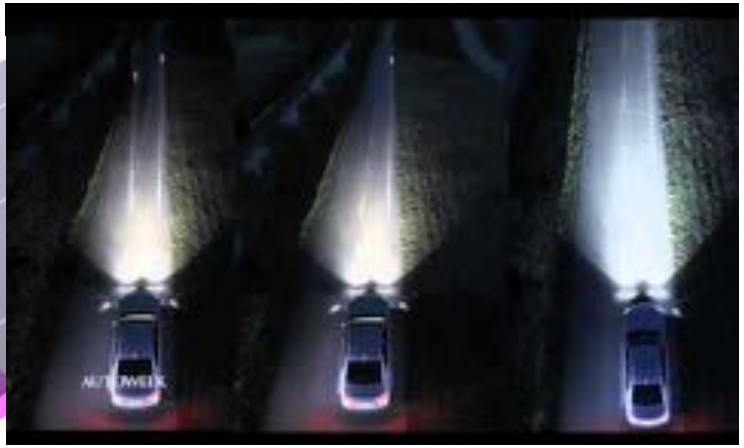
SORAALASER

FLIR®

What are some light-based technologies that improve our lives?

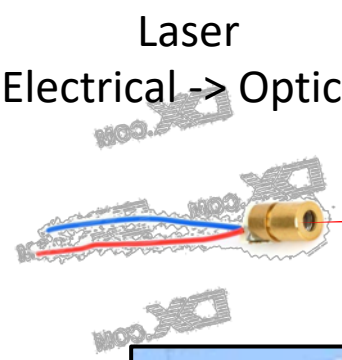
Applications





How does the internet work?

Laser
Electrical -> Optical



Photodiode
Optical -> Electrical

Optical Fiber Communications

Okay Fred, find the bad cable!

I wonder how many mega-bites are in here…

SST Course Outline

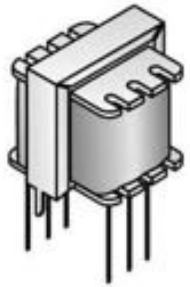
- Day 2 – Waveguides
- Day 3 – Lasers and LEDs (optical transmitters)
- Day 4 – Photodiodes and Solar Cells (optical receivers)
- Day 5 – Lab tours

Laser Transmitter Test Setup

Music Player

Audio Jack

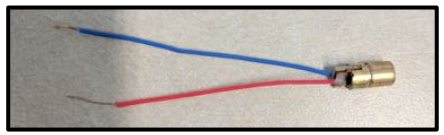
Audio Transfomer



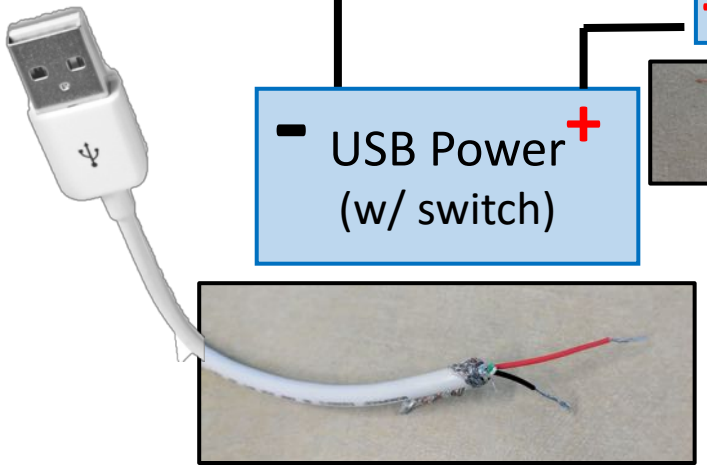
Headphone Jack

LASER

Photoresistor



USB Power (w/ switch)



Battery

Preview of next week – Waveguides

Write on your notecard

- What are you most excited about learning in this course?
- What three components are needed for an optical communication link?