

Photoluminescence Measurements on GaAs Thin Film

Nick Townsend

Supervisor: Dr. Javadi

Gallium Arsenide (GaAs)

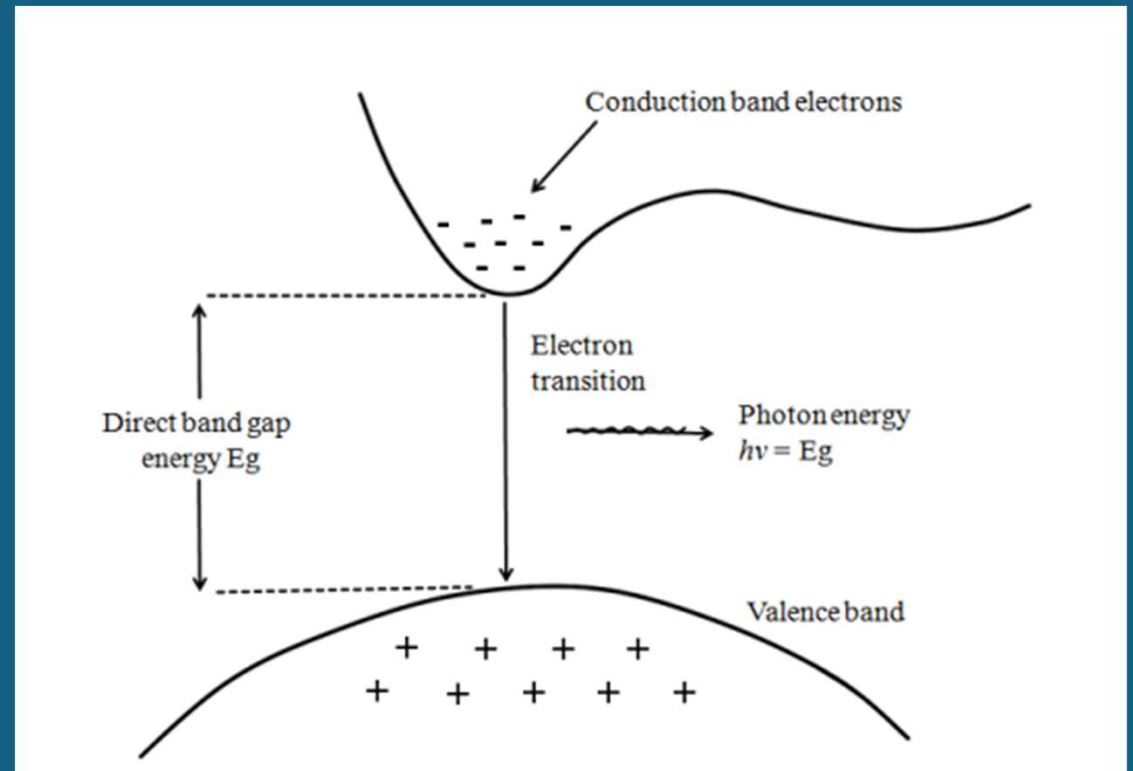
- Semiconductors
- Resistant to heat
- Low-noise



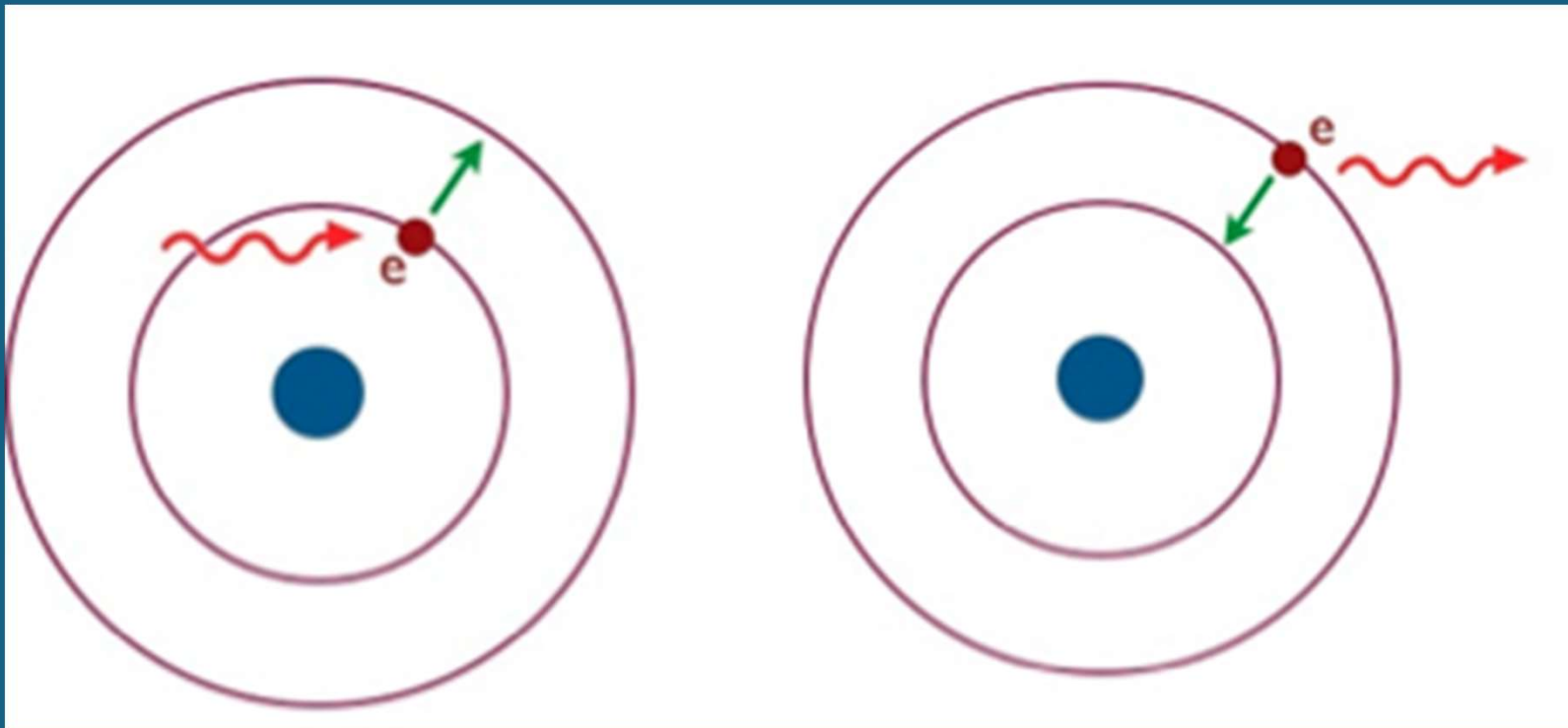
<https://www.waferworld.com/post/what-are-the-applications-of-gallium-arsenide-semiconductors>

Band Gap Energy

- GaAs has a high band gap energy
- Good for high voltages and frequencies (GHz)



Absorption & Emission

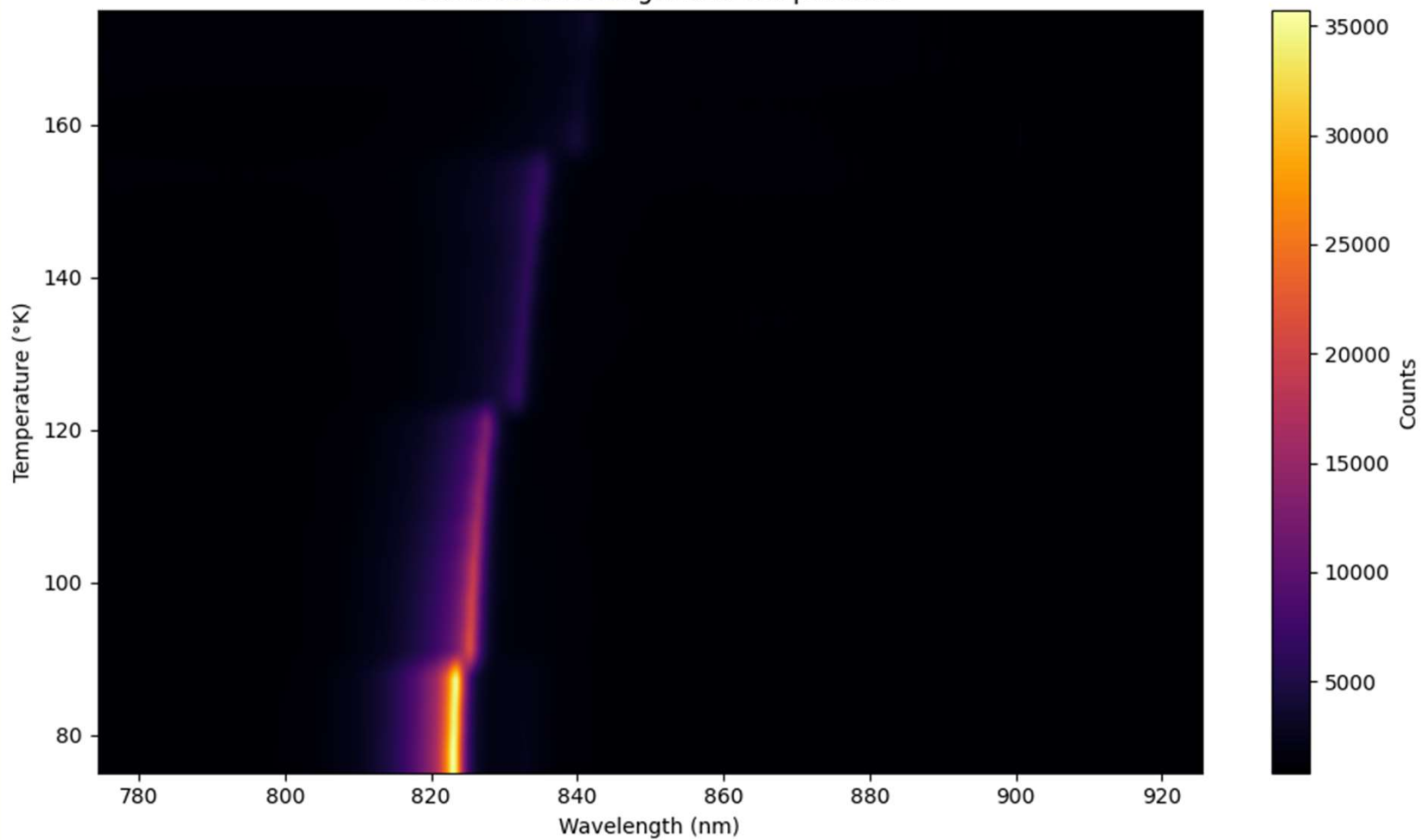


My Setup:

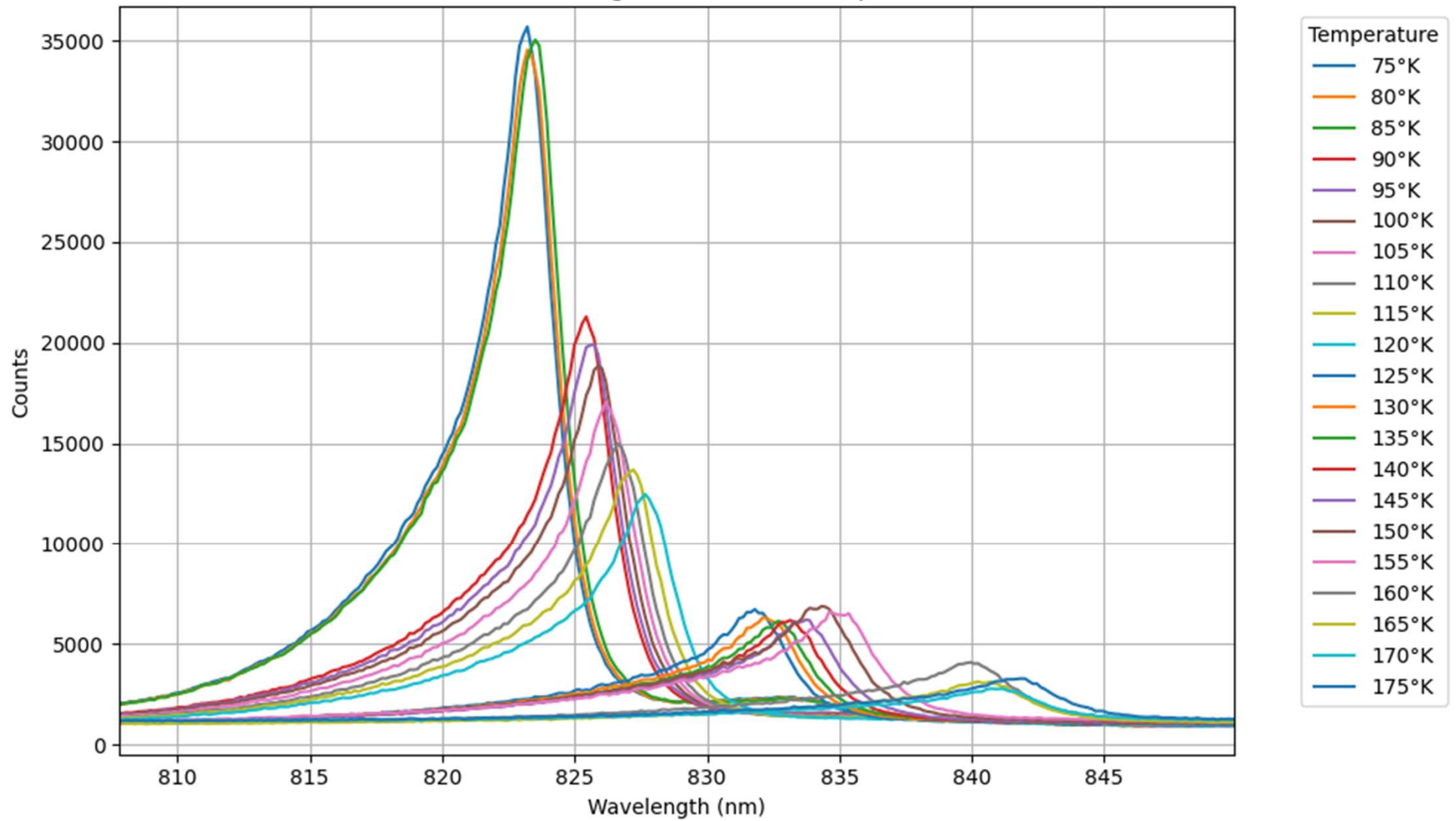
- Chamber w/ sample
- Laser
- Camera
- Beamsplitter
- Spectrometer
- Temperature Controller

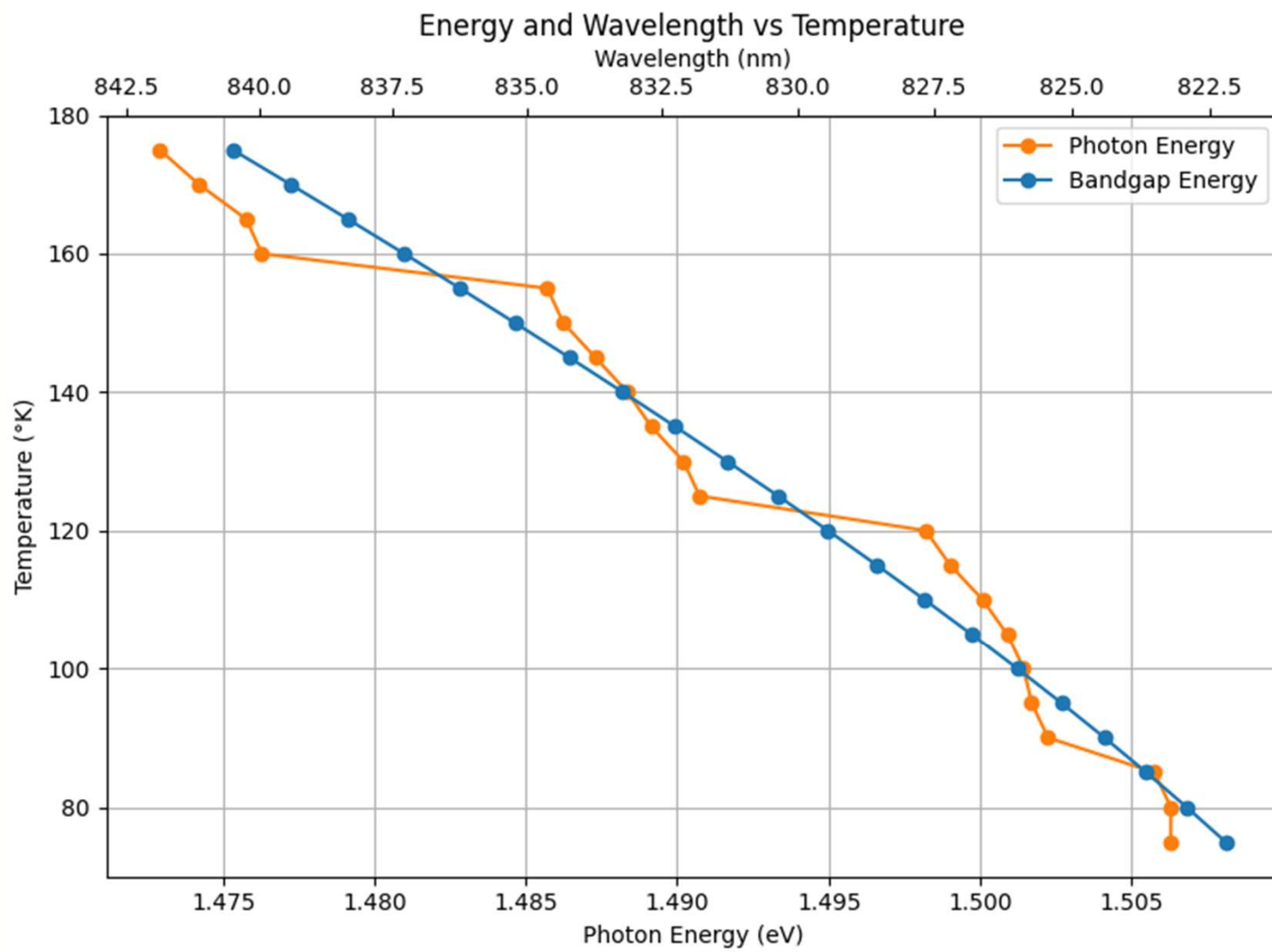


Counts vs Wavelength and Temperature



Counts vs Wavelength at Different Temperatures





Next?

- Cuprous Oxide (Cu_2O)