Optical Set-Up

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Progress Update

Beam Collimation - Current Set-Up

- Two plano-convex lenses
- Removed lenses from the lamp source and the monochromator

Beam Collimation - Current Set-Up

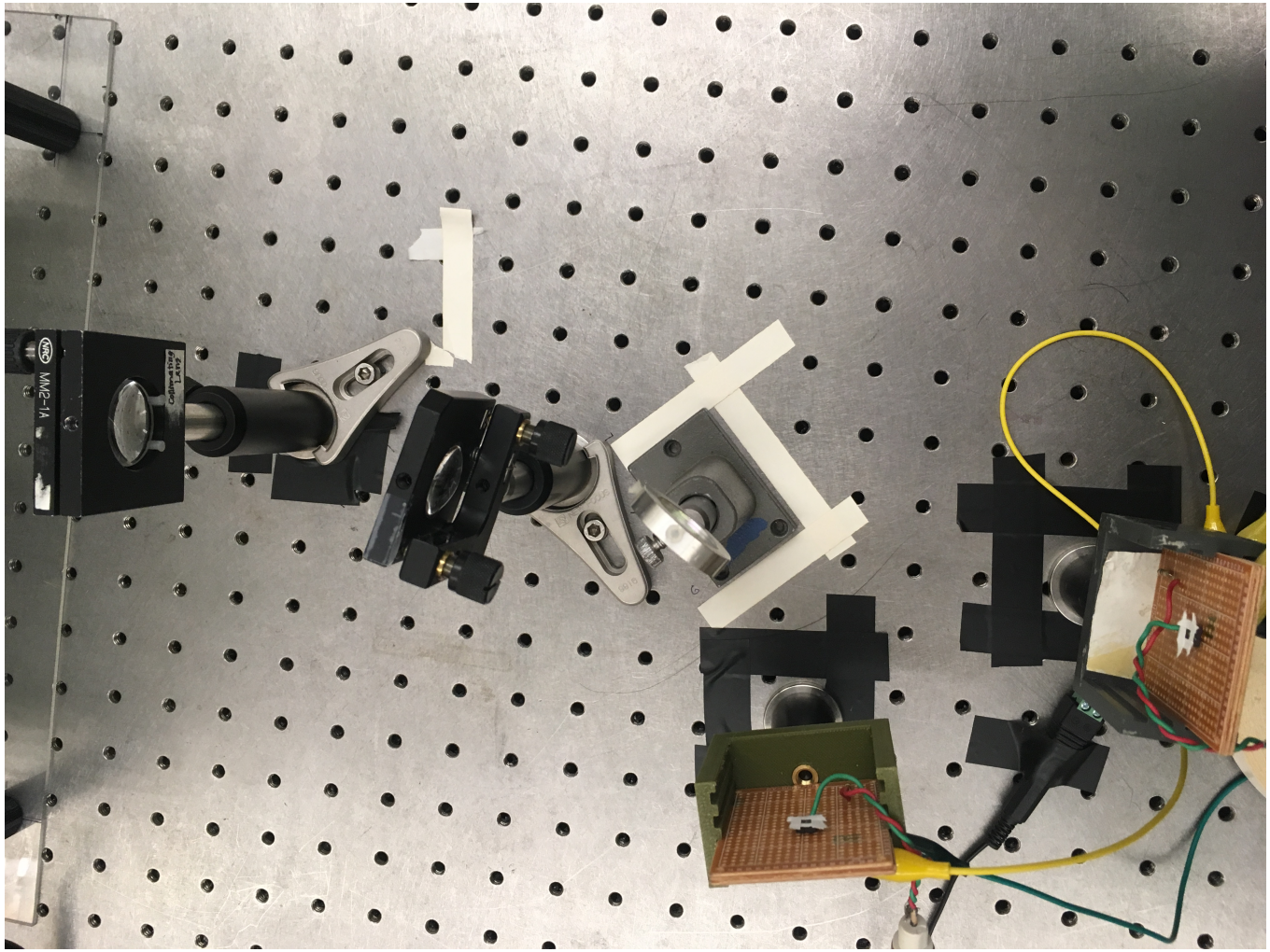


Figure: Collimating Light Beam with 2 Plano-Convex Lenses

Beam Collimation - Some Problems

- **Problem:** Imperfect alignment of lamp and monochromator
- **Potential Fix:** Build a more secure and versatile monochromator mount
- **Problem:** Lack knowledge of the optics
- **Potential Fix:** Use an iris to create a point source and use a plano-convex lens to collimate from there

Changed Photodiode Circuit

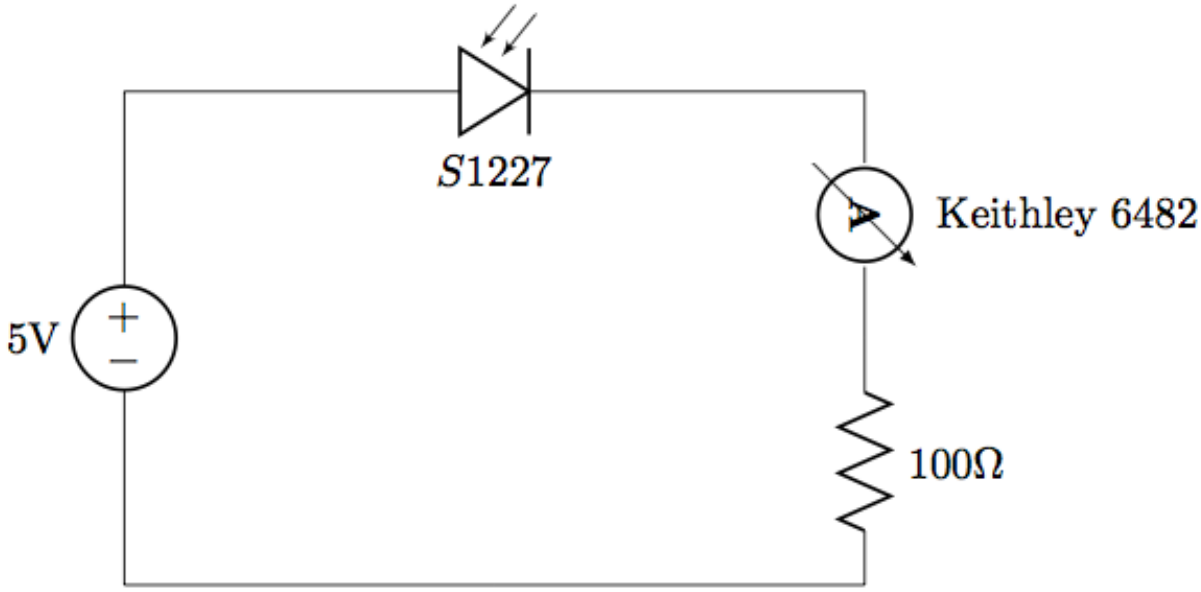


Figure: New Photodiode Circuit

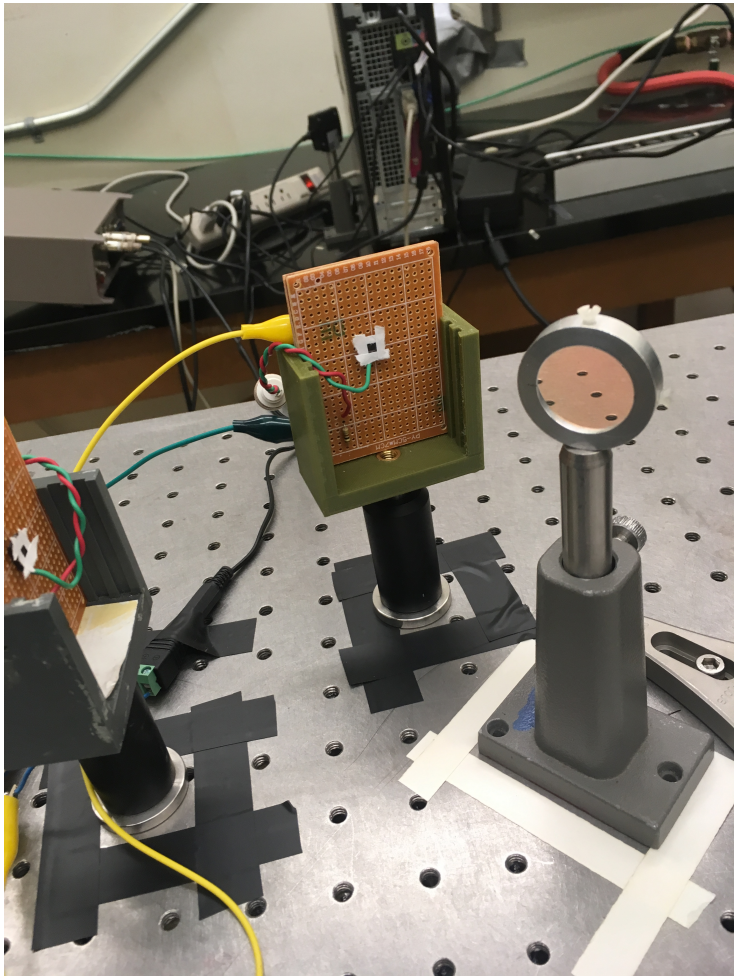
Repetition of Experiment 0: Current Across Photodiode as a Function of Wavelength

- Realized that the placement of each device (e.g. lamp, lenses, etc.) affected the final graph
- Noticed that the position of the photodiode needed to be adjusted to accomodate for bending of light at different wavelengths
- Generally, the current-against-wavelength graph seems to be a curve concaving down

Experiment 1 - Purpose

- To study the transmission of the beam splitter at different wavelengths
- Also to compare current response of two photodiodes and determine whether they behaved similarly

Experiment 1 - Current Set-Up



Experiment 1 - Some Test Results

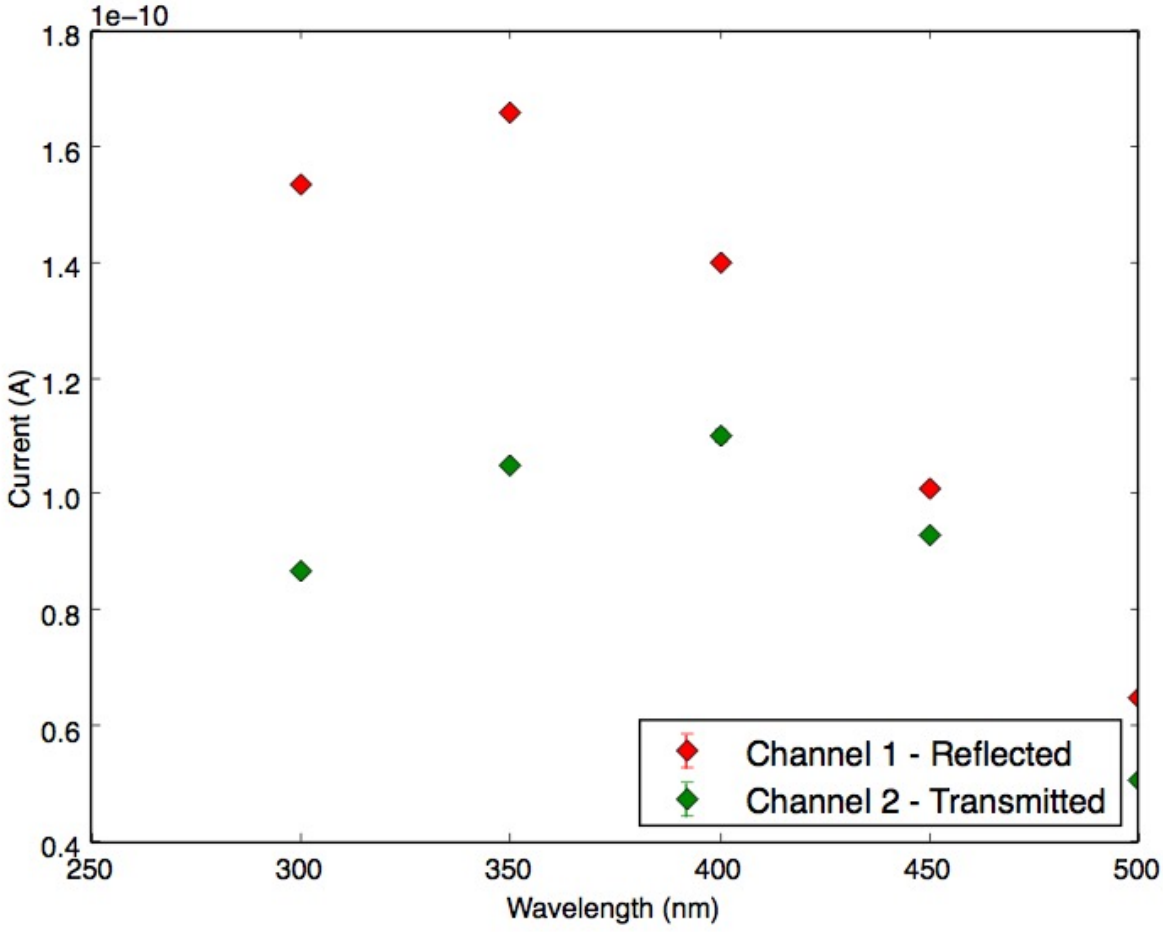


Figure: Trial 1

Experiment 1 - Some Test Results

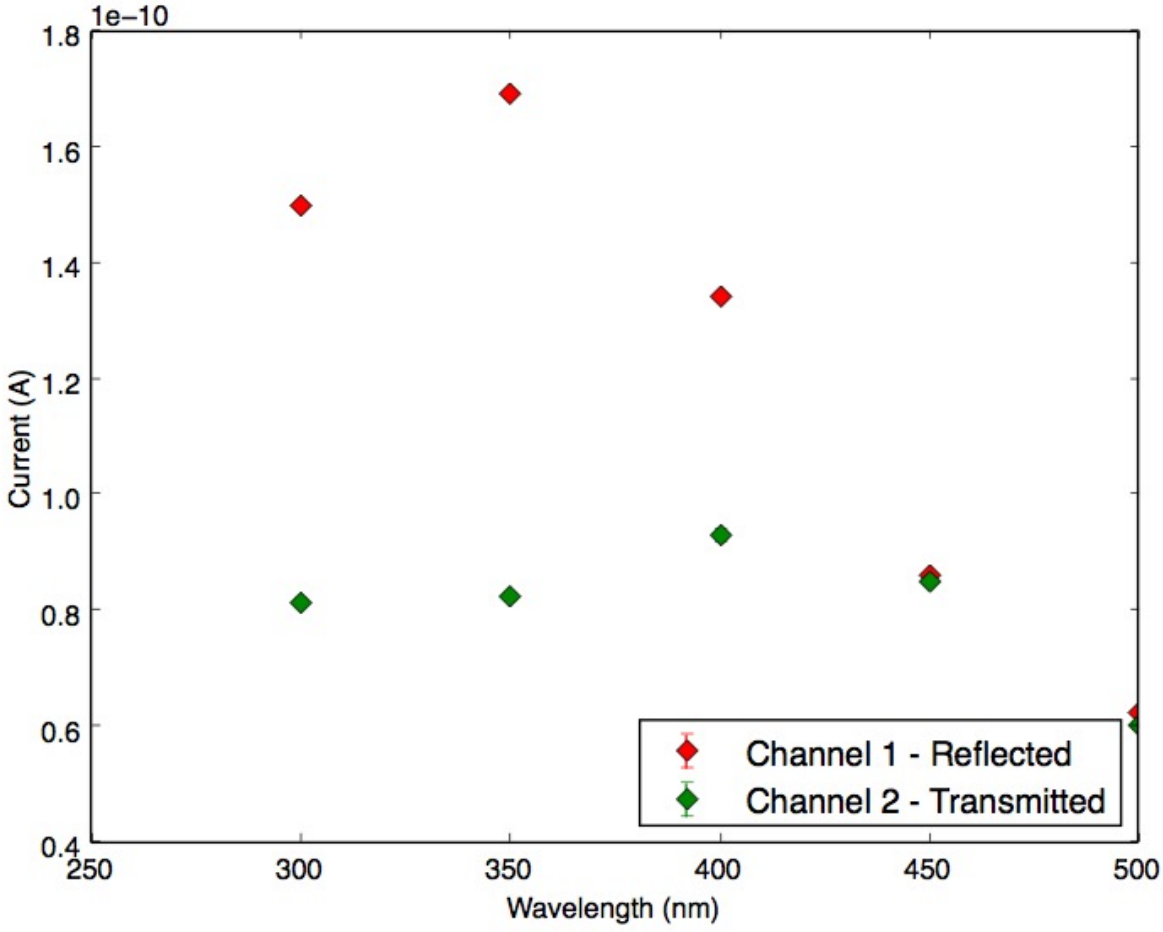


Figure: Trial 2

Next Steps

Some Next Steps...

- Acquiring and building new equipment
- Practicing and perfecting the experimental procedure