General Physics Laboratory I

Week 14: Report Guideline

Experiment 15. Wave Optics

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General Report Guideline

1. You can use either Korean or English.
2. I suggest you to write a report with a language with which you can write rigorously. (There is no need to be shy about writing in Korean)
3. However, do not mix two languages. (ex: newton's law는 다음과 같이… → X)
4. No more than 5 pages. The font size must be greater than 9 pts.
5. Only *.doc, *.docx, *.hwp extensions are allowed.
6. Do not make a cover page.
7. **Do not repeat the details in the manual.**
8. Make the report simple but it should contain rigorous answers. / **You should merge different data in one plot.**
9. **If you suggest the origin of the error, please show your systematic justification. (No explanation → No points)**
10. You have to cite every source of theory and information beyond the manual.
11. Clarify a theme and a purpose of each part.

15. Wave Optics

1. Abstract (5pts, < 300 words)
2. Introduction (10pts): Show your conceptual understanding about the subject.
3. Theoretical Background (10pts)
   - ✓ (5pts) Write down the equation of the Malus' law and explain it.
   - ✓ (5pts) Write down the equations about diffraction.
4. Methods (5pts): Please write down the experimental parameters which you used in the report.
5. Results (20pts) : Take data from the simulation on GenPhyLab site. Also you can get a cup of coffee if you participate in the survey.
   - ✓ (5pts) Show the example of the diffraction pattern image from various slit types. (single slit, double silts, multiple slits, circular, rectangular, triangular)
   - ✓ (15pts) Summary the experimental parameters in each slit type. (D, wavelength, distance between peaks, slit distance, number of slits)
   - ✓ Each graph should include **the axis labels**. When you introduce trendlines, you should show **equations and R square values**.
6. Discussion (30pts)
   - ✓ (10pts) Check the parameters follows the equations (single, double, multiple slits, circular)
   - ✓ (10pts) Explain why the shape of the diffractions pattern of rectangular aperture is different from the others.
   - ✓ (10pts) Multiple Slits: Explain why there are patterns not that bright compared to the bright interference patterns. (N = 2, 4, 10, 20)
   - ✓ (Additional) Discuss about your own question and analysis.
7. Conclusion (10pts): Summarize the report effectively.
8. References (10pts)