School of Physics and Astronomy

Proposed Project Title
First Year Report and Literature Review

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June 2009

Abstract

The abstract is a short concise outline of your project area, **of no more than 100 words**.

Signature: Date:

Supervisor: Dr. A.N. Other

Contents

1 Background

Outline the background of your subject area including the key initial References [1] and reference textbooks [2]. Also include some of the more readable articles in popular science journals [3], and, where appropriate, standard textbooks [4].

The exact length of this section will depend on your subject area, but will generally not exceed a page and will be aimed at the *general scientific reader*.

2 Review of Background Bibliography

In this section detail the main supporting references and articles [5] for your intended area of research and, most importantly, your critical evaluation of their relevance. Also where your subject draws from multiple disciplines, do not forget to include key reference from each discipline, even if they are relatively old [6].

This is the main part of your review and is the part that will be of use to you when preparing for your thesis. Here try and identify as many of the key references as possible, and enter then into a `BibTeX` file that you will use later. Remember that recording the page number, titles and details of these key articles *now* will save you hours of searching through *Web-of-Knowledge* the day before your submit your thesis!

This part should be written in standard scientific language, aimed at the *experts in the field*. This is the main part of your first year report, and is expected to be 10 pages in length.

3 Progress to Date

In this section you should detail your progress to date. The length of this section will depend on the type of research project you are undertaking.

4 Proposal

In this section, detail, as far as you are currently able, your research plan for the second and third years of your PhD, drawing from the key references [5] that you have highlighted in your review section. Here, try and illustrate your proposal, as in Figure 1 which is taken from the same paper as the illustration references.

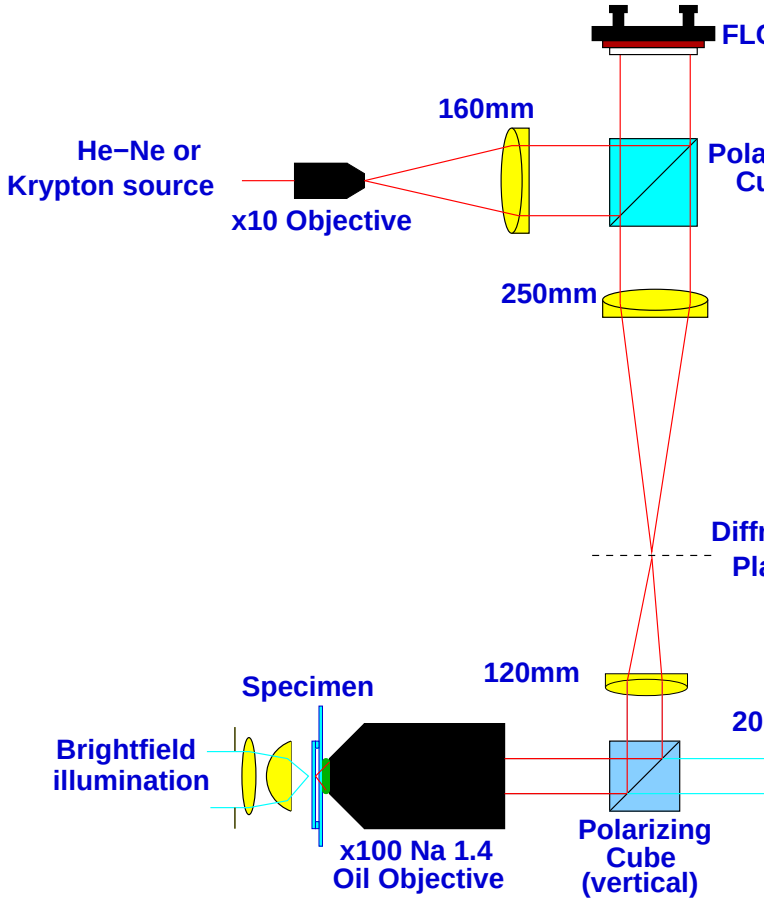

Figure 1: Here is the optical system from the same paper as the reference drawn in `xfig` and include to shown how such a figure in included.

At this stage it is *not* expected that this will be a fully-developed research proposal, but is your chance to show what you have extracted from the literature and how you see your own work will fit in. This section is not expected to exceed 2 pages.

5 Summary

As short section highlighting the key aspect of your proposal. At this stage this may be a bit uncertain and will be subject to charge as the work progresses.

References

[1] J.E. Bjorkholm A. Ashkin, J.M. Dziedzic and S. Chu. Observation of a single beam gradient force optical tap for dielectric particles. *Optics Letters*, pages 288–290, 1986.

[2] M Born and E Wolf. *Principles of Optics*. Cambridge University Press, 7 edition, 1999.

[3] G. Spalding K. Dholakia and M. MacDonald. Optical tweezers: the next generation. *Physics World*, 15, 10 2002.

[4] E. Hecht. *Optics*. Addison-Wesley, 4 edition, 1998.

[5] H.C. Blair S.M. Block and H.C. Berg. Compliance of bacterial flagella measured with optical tweezers. *Nature*, 388:514–516, 1989.

[6] H. Dammann and K. Gortler. High-efficiency in-line multiple imaging by means of multiple phase holograms. *Optics Communiation*, 3:312–318, 1971.