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DISSERTATION / DOCTORAL THESIS

Titel der Dissertation / Title of the Doctoral Thesis

Thesis Title

verfasst von / submitted by

Full Name M.Sc.

angestrebter akademischer Grad / in partial fulfilment of the requirements for the degree of

Doktor der Naturwissenschaften (Dr. rer. nat.)

Wien — Vienna, 2027

Studienkennzahl lt. Studienblatt /
degree programme code as it appears on
the student record sheet:

UA 796 605 411

Dissertationsgebiet lt. Studienblatt /
degree programme as it appears on
the student record sheet:

Physik

Betreut von / Supervisor:

Univ.-Prof. Dr. Full Name

Acknowledgements

Optional.

Contribution Statement

In this chapter, the following questions have to be answered

- What was your contribution to each article/manuscript/result? (see the form “Statement of own contribution“ submitted at the start of the writing-up phase of the dissertation)
- Where was the work done (institutes/laboratories at partner institutions e.g. ÖAW, AIT, synchrotrons)?
- Which licenses apply?
- Which software packages were used for translation, plagiarism prevention or improving the fluency and grammar of the text?
- Was AI used in any other way? Indicate which model(s) were used for which type of research, discussion or writing. It is not necessary to include prompts.

Remarks on the declaration of the use of AI

The PhD candidate has to disclose the use of AI-assisted tools by providing information of the following nature “The author of the thesis used the AI-assisted tool Name, e.g. u:ai to correct grammar and spelling of the manuscript, improve readability, and/or enhance consistency of terminology and formatting.” Furthermore, information on AI-assisted tools has to be added in case of use in data analysis and coding support, literature discovery, and references, etc.

The PhD candidate is obliged to end with a final statement on the lines of: “Following the guidelines on the use of AI-assisted tools of the University of Vienna, all AI-generated suggestions were critically reviewed and carefully revised by the author of the thesis. The intellectual contributions, analysis, and final decisions lie firmly with the author. The author assumes full editorial responsibility for the text’s integrity and accuracy.”

In case no AI tool was used the PhD candidate has to explicitly declare this in this section.

Abstract

Abstract of the thesis, 1-2 pages recommended.

Zusammenfassung

Abstract in German.

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Chapter 1

Preamble

Optional: seperate Introdcution/ State-of-the-art / Aims.

Recommended number of pages: 8 – 15+

Content:

- Brief introduction into the research field in the broader context of general physics.
- Description of the state-of-the-art in the research field.
- Presentation of the overarching research question of the dissertation.
- Summary of the specific aims and goals of the dissertation project.

This chapter will be different from introductions included in publications/manuscripts that focus on specific subtopics. It must be originally written by the PhD candidate and must not copy introduction part from included publication/manuscripts.

This is a citation to literature [1] and this to Fig. 1.1.



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Figure 1.1: **Example figure.** This figure is an example.

See below for Table 1.1 for an example of a table.

Table 1.1: **Example table.** This is an example of a table.

a (nm)	b (eV)	c (m/s)
5.0	3.2	3.0×10^8
5.0	3.2	3.0×10^8

Remarks on copyrights and licenses

In accordance with university law, the PhD candidate

- Is obliged to publish the print version of their thesis as required by the university guidelines
- Decides voluntarily whether the full text of the electronic version of their thesis is published on the internet.

In case of serious legal or economic interests e.g. pending patent applications or embargos by publishing houses, the PhD candidate can request the exclusion of the use of the print copies for a maximum period of five years. However, an embargo of the thesis does not resolve any copyright issues.

The PhD candidate is obliged to

- Check for copyrights and licenses of published results, and to clarify permissions with publishers as needed.
- Use appropriate attribution and licensing information for all figures, tables, photos, visualisations etc. included in the thesis e.g. “Figure reproduced from the supporting information [REFERENCE 8] of [REFERENCE 9] under a CC BY 4.0 license [REFERENCE 7]. / Figure reprinted with permission from ‘PUBLISHER’, ‘CITATION’, Copyright: YEAR, PUBLISHER.”

Chapter 2

Methods & Results

Optional: separate Methods / Results; optional additional separate chapter e.g. Materials.

The following three options apply to the chapters Methods and Results. In case of option 1, this will be a combined chapter. In case of option 2 and option 3, Methods and Results can be either combined in a single chapter, or they can be two separate chapters.

Option 1: Cumulative thesis

Requirements

The PhD candidate has (co-)authored at least four publications on the overarching topic of the dissertation that have been published or accepted in peer-reviewed journals. For at least two of these publications the PhD candidate must be the first author. The publications have to be original pieces (no reviews, comments, book contributions, contributions in conference proceedings, etc.) which have been created by the PhD candidate to a great extent independently – as indicated in the form “Statement of own contribution” submitted at the start of the writing-up phase of the dissertation.

Format

The publications have to be bound in the style of the journals keeping in mind the rules and regulations concerning licenses and copyrights (see Contribution Statement). The formal structure has to follow the guidelines for cumulative dissertations of the Büro Studienpräses.

Each chapter has to start with a short preface which contains

- A brief description of the research project and how the work relates to the overarching research question of the thesis.
- Information on the license of the article.

Option 2: Partially cumulative thesis

This option allows any errors in publications to be clarified or open questions from reviewers that were not resolved when the publication was written to be supplemented with new results. It also opens up the possibility to include unpublished work or pre-prints.

Requirements

The PhD candidate does not fulfill the requirements of Option 1, yet has several manuscripts (pre-prints or otherwise) on the overarching topic of the dissertation including e.g. publications that are currently under review or that are to be submitted to a peer-reviewed journal or where the candidate is not first author of the publications.

Format

The publications have to be included as sections of the dissertation in the same monograph style throughout the dissertation. It is also possible to include only specific sections of the publications by the doctoral candidate.

Each section has to start with a short preface which contains

- A brief description of the research project and how the work relates to the overarching research question of the thesis.
- The processing / development status of the manuscript e.g. “This chapter follows in great parts the publication xyz, cc-license” or “This chapter follows in great parts the publication which –at the time of the submission of the thesis- was accepted in (date of the letter of acceptance) / submitted to (date of the acknowledgement of receipt) / in preparation...”.

Option 3: Full Monography

Requirments

In a monography, the publications of the doctoral candidate serve as sources for the dissertation and have to be treated as any other references. There are no requirements concerning the number

of publications and their publication status or concerning first authorship. For many purposes, the monograph is the best option, because it is closest to what international reviewers would know. Also: some prize awarding committees would prefer this style.

Format

The thesis is written as a monograph in the same style throughout the dissertation.

Chapter 3

Discussion

Recommended number of pages: The PhD candidate should discuss with their supervisor and their mentor what is sufficient. The text should be sufficiently comprehensive to allow the reader to understand the physics and the achievements of the doctoral project without additional literature.

Content

The concluding discussion refers to the dissertation in its entirety.

This chapter will be different from the discussions included in publications/manuscripts that focus on specific subtopics. It must be originally written by the PhD candidate and must not copy discussion parts from included publications/manuscripts.

Chapter 4

Summary & Outlook

Recommended number of pages: 2 – 3+

Content:

- Overall summary of the dissertation project and its implication for the research field.
- Why are you proud of your achievements?
- Outlook for future studies/pathways arising from the dissertation.

This chapter must be originally written by the PhD candidate and must not be a copy of summary and outlook of the individual papers included in the dissertation.

Bibliography

- [1] A. Molle, C. Grazianetti, D. Chiappe, E. Cinquanta, E. Ciani, G. Tallarida, M. Fanciulli, Hindering the oxidation of silicene with non-reactive encapsulation, *Advanced Functional Materials* 23 (35) (2013) 4340–4344. [doi:10.1002/adfm.201300354](https://doi.org/10.1002/adfm.201300354).

Table of Abbreviations

IA – If Applicable

Appendix

Optional, e.g., for supplementary materials, or for published work that does not fit in the overarching topic of the dissertation.