

SCUOLA DI INGEGNERIA INDUSTRIALE E DELL'INFORMAZIONE

Title

MASTER'S THESIS IN ENGINEERING PHYSICS

Author: Matteo Venturelli

Student ID: 995709

Advisor: Prof. Giacomo Claudio Ghiringhelli

Co-advisors: Matilda Fransson Academic Year: 2023-2024



Abstract

Here goes the Abstract in English of your thesis followed by a list of keywords.

Keywords: here, the keywords, of your thesis



Abstract in lingua italiana

Qui va l'Abstract in lingua italiana della tesi seguito dalla lista di parole chiave.

Parole chiave: qui, vanno, le parole chiave, della tesi



Contents

| \mathbf{A} | bstract | i | | | |
|-----------------|--|---------------|--|--|--|
| \mathbf{A} | Abstract in lingua italiana i Contents | | | | |
| C | | | | | |
| | | | | | |
| In | troduction | 1 | | | |
| 1 | Lithium-Ion Batteries 1.1 Section one | 3 3 | | | |
| 2 | Synchrotron X-Ray Imaging | 5 | | | |
| 3 | 4D data Segmentation | 7 | | | |
| 4 | Conclusions and future developments | 9 | | | |
| | | | | | |
| \mathbf{A} | Appendix A | 11 | | | |
| В | Appendix B | 13 | | | |
| List of Figures | | | | | |
| \mathbf{Li} | List of Tables | | | | |
| Li | List of Symbols | | | | |
| A | Acknowledgements | | | | |



Introduction

Here goes the Introduction of your thesis.



1 | Lithium-Ion Batteries

Here goes the first chapter of your thesis.

1.1. Section one

1.1.1. Subsection one



2 | Synchrotron X-Ray Imaging



3 | 4D data Segmentation



| Conclusions and future developments

A final chapter containing the main conclusions of your research/study and possible future developments of your work have to be inserted in this chapter.



A | Appendix A

If you need to include an appendix to support the research in your thesis, you can place it at the end of the manuscript. An appendix contains supplementary material (figures, tables, data, codes, mathematical proofs, surveys, ...) which supplement the main results contained in the previous chapters.



$\mathbf{B} \mid$ Appendix B

It may be necessary to include another appendix to better organize the presentation of supplementary material.



List of Figures



List of Tables



List of Symbols

| Variable | Description | SI unit |
|--------------------|--------------------|---------|
| u | solid displacement | m |
| \boldsymbol{u}_f | fluid displacement | m |



Acknowledgements

Here you might want to acknowledge someone.

