

Ministry of Education and Science of Ukraine  
V.N. Karazin Kharkiv National University

School of Physics  
Department of Solid State Physics

«Approved for defense»

Head of Department of Solid State  
Physics prof. Z. Zyman

«        » June 2024 y.

Grade «        »

The Head of Examination  
Board

«        » June 2024 y.

**WANG Xiaoming(LAST name First name)**

**Bachelor Thesis topic**

Qualification work for obtaining an  
educational degree "Bachelor" by  
specialty 104 - "physics and  
astronomy"  
Educational and professional  
program "Physics"

Research supervisor - PhD, associate  
professor Goncharenko Anton  
**PhD, assoc. prof. ZHOU Jielun**

The referee: PhD, associate professor  
Volodymyr PETROV

Kharkiv 2024

ABSTRACT (needs a separate page)  
(Times New Roman 14pt, separated by 1 line below)

Body (Times New Roman 14pt, 1.5 line spacing, paragraph indent -1.25 cm)

Key words: (Times New Roman 14pt)

(separated by 1 line above)

**Content** (Times New Roman 14pt, separated by 1 line below) (needs a separate page)

INTRODUCTION.....1

CHAPTER I×× .....2

    1.1 ××.....10

    1.2 ××.....20

CHAPTER II××.....32

    2.1 ××.....33

    2.2 ××.....33

    2.3 ××.....33

CHAPTER III××.....33

    3.1 ××.....33

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CONCLUSION.....33

REFERENCE.....33

APPENDICES .....60

INTRODUCTION (needs a separate page)  
(Times New Roman 14pt, separated by 1 line below)

Body (Times New Roman, 14pt, 1.5 line spacing, paragraph indent -1.25 cm)

## **Chapter I** (needs a separate page)

(Times New Roman 14pt)

**TITLE** (Times New Roman 14pt, separated by 1 line below)

**1.1 title**×× (Times New Roman 14pt, separated by 1 line below)

Body (Times New Roman 14pt, Indent the first line by 2 characters and 1.5 line spacing)

Naming of pictures: Name it in the center below the picture, Figure 1.1.  
(Examples: The first image in Chapter 1 is called Figure 1.1, and the tenth image in Chapter 2 is Figure 2.10) (Times New Roman 14pt)

Chapter II (needs a separate page)

TITLE

2.1 TITLE××

Each chapter needs a separate page

Chapter III (needs a separate page)

TITLE

3.1 TITLE××

Each chapter needs a separate page

## CONCLUSION (needs a separate page)

(Times New Roman 14pt, separated by 1 line below, 1.5 line spacing)

- 1.
- 2.
- 3.
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- 8.



## REFERENCE (needs a separate page)

(Times New Roman 14pt, separated by 1 line below, at least 15)

( Multiple authors are separated by commas.)

1. Name (Abbreviation). Surname. Title of book (date of publication). Publishing house, Year, Page.
2. Name (Abbreviation). Surname. Article title. Journal title. Volume, Year, pages.  
**Times New Roman 14pt)**
- 3.
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- 50.

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<b>Volume</b>	<p>The volume of the main text of the thesis should equal to 25-40 printed pages.</p> <p>The text is printed on one side of a sheet of A4 format (297x210 mm).</p> <p>When designing the work, the Word editor for Windows, the usual font Times New Roman 14, the spacing between lines -1.5, margins: left -30 mm, right - 15 mm, top and bottom 20 mm. Page numbering is given in Arabic numerals in the upper right corner of the page without a period at the end. The first page of the work is the title page, but it is not numbered.</p>
<b>Interval</b>	<p>The dissertation should be printed on one sides of a sheet of white paper in A4 format (210x297 mm) with 1.5 line spacing</p>
<b>Font</b>	<p>Times New Roman (14 typographic points). It is allowed to prepare the dissertation in the LaTeX format with the appropriate style</p>
<b>Fields</b>	<p>The text of the dissertation must be printed with the leaving of fields of the following sizes: left - 30 mm. right - 15 mm. top - 20 mm. bottom - 20 mm</p>