

## **Guidelines for the thesis writing of M.Phil/Ph.D associates.**

### **GUIDELINES FOR PREPARATION OF THESIS**

#### **1. Introduction**

- 1.1 Be brief, accurate and to the point.
- 1.2 Avoid repetition or duplication of ideas.
- 1.3 Spare and allow enough time for writing.
- 1.4 Use a simple, direct style which is condensed, but not so condensed as to be cryptic or sacrifices precision and clarity of results.
- 1.5 Organize the material in a logical sequence and not according to the order in which experiments were conducted.
- 1.6 Revise the manuscript until it has unity, coherence, emphasis and accuracy, and so clear that it cannot be miss-understood.
- 1.7 Avoid unnecessary details. However, give all the facts necessary for a trained person to repeat the experiment(s).
- 1.8 Design suitable headings, sub-headings and sub-sub-headings. The paragraphs and sentences should be short, to enable the reader to "skim" the thesis for its general subject matter and to locate quickly and detailed part he/she seeks or is interested.
- 1.9 Let tabular data and illustrations speak for themselves. Confine the text discussion to the meaning of the data.
- 1.10 Plan the illustrations and tables in relation to page dimensions.
- 1.11 Insert photographs that are glossy, have plenty of contrast and pertain to the text.
- 1.12 Avoid long and complex or undigested (unclassified) data or too many tables.
- 1.13 Arrange the tables to fit portrait or landscape on a page wherever possible and so cast these that they could be accommodated in the prescribed format.
- 1.14 Provide a complete and caption/title for every table, figure and illustration which is self-explanatory and nouns in the caption/title preferably should start in capital.

1.15 Provide clear and concise column headings and sub-headings.

1.16 Explain every symbol used in a table as a foot note of the same.

1.17 Avoid foot notes for the citation of references, if any, should be included in the text and quoted in the list of references at the end of thesis proceeding to appendices.

1.18 Include letters, survey forms, raw data, statistical computations and other materials which have been used or collected during the study in the appendices.

1.19 The thesis should be written in English. Quotations should normally be in English, with the original language included in a footnote where appropriate. Plagiarism test (by using Turn tin) is compulsory of every submitted thesis .The Complete thesis should be prepared on Standard A4 Size Paper.

## 2. REQUIRMENTS / SEQUENCES OF THESIS

Parts of the thesis should be ordered as follows:

2.1 Title page	Required
2.2 Certificate	Required
2.3 Declaration	Required
2.4 Abstract or executive summary	Required
2.5 Acknowledgements or dedications	Optional
2.6 Chapters (Topic , Sub Topic)	Required
2.7 List of Figures, Tables or Illustrations	Where required
2.8 List of Abbreviations	Where required
2.9 Body of the thesis	Required
2.10 Appendices	Where required
2.11 Glossary	Where required
2.12 Reference (APA )	Required
2.13 Bibliography	Required

## **2.1 Title Page**

The title of the thesis should be as concise as possible. It must occur consistently in every respect, including punctuation, capitalization, and hyphenation, on the abstract and approval forms. On the title page, the identical title must appear in all capital letters with each line centered on the page. The month in which the thesis is submitted, e.g., May, August, or January is to be printed at the bottom of the page. The title page is not numbered, but it is counted. The Specimen of the Title page is given in Annexure.

## **2.2 Certificate Page**

This is the most significant for thesis submission. It must be signed by the Supervisor and Supervisor (if selected). Without this the thesis will not be accepted.

## **2.3 Declaration Page**

This is also the most significant for thesis submission. It must be filled by students and if students have received outside assistance or involved the contributions of others, it must be acknowledged in written statement.

## **2.4 Abstract**

The abstract should provide a succinct, descriptive account of the thesis. The abstract should not exceed 600 words, should be double-spaced, and should adhere to the same style manual as the thesis manuscript. The abstract should include pertinent place names, names of persons, and other proper nouns. These are useful in automated retrieval. A lower-case Roman numeral is used on the abstract page.

## **2.5 Dedication (optional)**

The dedication is brief, single-spaced, and centered on the page (horizontally and vertically). No heading is used. The word "To" customarily begin the dedication.

## **2.6 Acknowledgement**

This section begins with the title ACKNOWLEDGEMENTS centered in all capital letters. This page is used to thank those persons who have been instrumental to the student in completing the degree requirements. Acknowledgement of grants and special funding received to support the research also may be made on this page.

## **2.7 Chapters (Topic , Sub Topic)**

The Table of Contents must include all chapter headings, the reference & bibliography, and appendices. Entries are 1.5 lines spaced. The headings of major sections (i.e., chapters, bibliography, reference, appendices) are written in all capital letters. Table of Contents headings must be identical to those in the text. Page numbers listed must be right- justified and connected to the appropriate entry by a line of evenly spaced dot leaders (periods). The words TABLE OF CONTENTS must be centered on the page two inches from the top of the first page only.

## **2.8 List of Tables (if tables appear in document)**

The heading, LIST OF TABLES, appears centered on the page two inches from the top of the first page only. All table numbers and captions are listed exactly as they appear in the text.

## **2.9 List of Figures (if figures appear in document)**

The heading, LIST OF FIGURES, appears centered on the page two inches from the top of the first page only. All figure numbers and captions are listed exactly as they appear in the text.

## **2.10 Other Lists (nomenclature, definitions, glossary of terms, etc.)**

The appropriate title in all capital letters is centered two inches from the top of the first page only.

## **3. PAGE DIMENSIONS AND MARGIN**

The thesis should be prepared on good quality white paper preferably not lower than 80 gsm. Standard A4 size (210 mm X 297 mm) paper should be used for preparing the copies. The final thesis should have the following page margins:

Top edge : 1 inch (25 mm)

Left side : 1 ½ inch (38 mm)

Bottom edge : 1 inch (25 mm)

Right side : 1 inch (25 mm)

## **4. TYPE-SETTING, TEXT PROCESSING AND PRINTING**

The text shall be printed employing Laserjet or Inkjet printer, the text having been processed using a standard text processor. The standard font shall be **Times New Roman of 12 pts with 1.5 line spacing**. The text must be 1.5 lines spaced and printed on only one side of each page.

## **4.1 Text**

The text must be divided into a logical scheme that is followed consistently throughout the document. The larger divisions and more important minor divisions are indicated by suitable, consistent headings. Chapter organization as practiced by the discipline should be followed. The student and the academic department are responsible for the quality and content of the text. Specific requirements for text presentation are given below.

### **4.1.1 Headings and Subheadings**

The student may use headings and subheadings to subdivide chapters or sections, but a consistent sequence of headings as identified in the style guide selected must be followed. The student may not change the sequence and style of headings from chapter to chapter. Once the sequence is chosen, it must be followed consistently throughout the thesis.

### **4.1.2 Pagination**

Lower-case Roman numerals are used to number all pages preceding the text. Although the preliminary paging begins with the title page, no number appears on that page. The page immediately following the title page is numbered with a lower- case Roman numeral. Beginning with the first page of the text, all pages are to be numbered with Arabic numerals consecutively throughout the thesis document, including the appendix and the bibliography or list of references. The Arabic numerals must be positioned at the bottom of the page, centered between the margins. Page headers or running heads may not be used in the thesis.

### **4.1.3 Tables and Figures**

The term "table" refers to a columnar arrangement of information, often data sets, organized to save space and convey relationships at a glance. The term "figure" refers to graphs, drawings, diagrams, charts, maps, or photographs. All such details should be inserted in the text near where they are first mentioned. A table or figure may appear on the same page as the text that refers to it or on a separate page. Each figure or table must be numbered and have a caption. Captions are placed below figures and pictures and above tables. Captions may be single-or double-spaced.

### **4.1.4 Illustrations**

Each illustration must be referred to in the text and it must be placed after, and as near as possible to, the first reference to it in the text. All illustrative materials in the thesis must be prepared on paper that is the same weight (or stronger) and use the same font type as elsewhere in the manuscript. If illustrations are mounted, dry mounting must be used. Illustrations may not be mounted with rubber cement, staples, mucilage, or photomounting corners. Illustrative material must be drawn or computer-generated in black. Material may be laser-printed or drawn in waterproof, permanent ink. Color will reproduce in microfilm as shades of grey. Color should be used only if it is essential to the thesis.

### **4.1.5 Photographs**

It is recommended that the student use a high quality, high contrast copying machine to reproduce photographic material for submission in lieu of photographs. If original photographs are used, they should be printed on single-weight, fiber-based paper with a matte finishes. All prints must be processed for nationally established standards for chemical permanence. Blackand-white prints are preferable. Photograph page number placement follows the standard pagination requirements.

#### **4.1.6 Appendix or Appendices**

The appendix (or a series of appendices) immediately follows the main text. The appendix includes material that may be helpful to the reader of the thesis but may be too long for inclusion in the text or footnotes. The title, APPENDIX, appears only on the first page of the section, in capital letters centered two inches from the top. Examples of such material include questionnaires, letters, original data, sample forms, and vitae. Reference should be made in the text to the inclusion of these materials in the Appendix. Each appendix is a separate subdivision of the text and must begin on a separate page. Each appendix must be listed in the Table of Contents.

### **5. ORGANISATION OF THE THESIS**

The thesis shall be presented in a number of *chapters*, *starting* with introduction and ending with Summary and Conclusions. Each of the other chapters will have precise title reflecting the contents of the chapter. A chapter can be subdivided into *sections*, *sub-sections* and *sub subsections* as to present the content discretely and with due emphasis. Each chapter shall begin on a fresh page.

#### **5.1 Chapter and Section format**

The title of **Chapter 1** shall be **Introduction**. It shall justify and highlight the problem poser and define the topic and the aim and scope of the work presented in the thesis. It may also highlight the significant contributions from the investigation. Use only Arabic Numerals. Chapter Numbering should be centered on the top of the page using large bold print. Example:

## **CHAPTER 1**

### **5.2 Sections**

A chapter can be divided into **Sections, Sub-sections and Sub-sub-sections** so as to present different concepts separately. Sections and sub-sections can be numbered using decimal points, e.g., 2.2 for the second Section in Chapter 2 and 2.3.4 for the fourth Subsection in third Section of Chapter 2. Use only Arabic Numerals with decimals. Section numbering should be left justified using large bold print.

Example:

#### **1.1 GENERAL**

#### **1.2 ADSORPTION**

### **5.3 Sub Sections**

Use only Arabic Numerals with two decimals. Sub section numbering should be left justified using large bold print.

Example:

#### **1.1.1 Adsorption Isotherms**

#### **1.1.2 Langmuir Isotherms**

### **5.4 Table / Figure Format**

As far as possible tables and figures should be presented in portrait style. Small size table and figures (less than half of writing area of a page) should be incorporated within the text, while larger ones may be presented in separate pages. Table and figures shall be numbered chapter – wise. For example, the fourth figure in Chapter 5 will bear the number **Figure 5.4** or *Fig.5.4* Table number and title will be placed above the table while the figure number and caption will be located below the figure. Reference

for Table and Figures reproduced from elsewhere shall be cited in the last and separate line in the table and figure caption, e.g. (after McGregor [12]).

## 5.5 Equations

All the equations should be typed in equation editor and should be properly numbered For Example, X

$\Delta \propto X t$

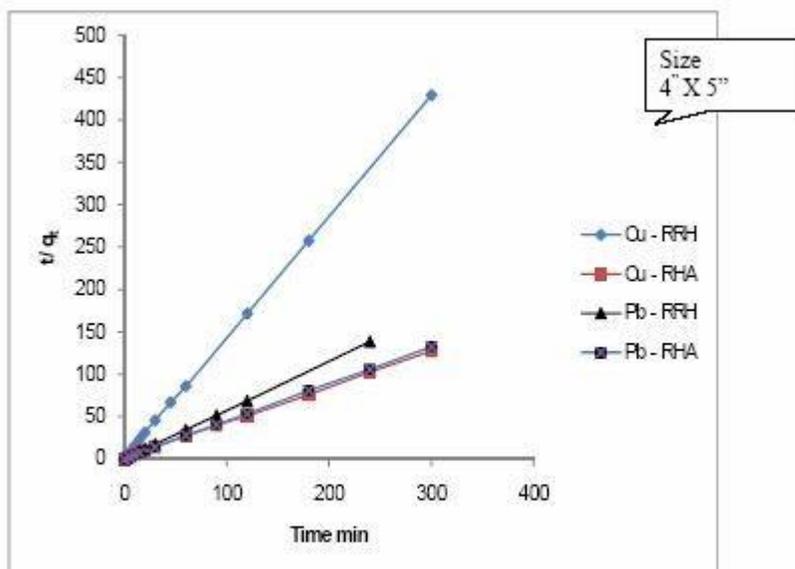


Fig. 10. Pseudo Second order plot for Copper and Lead on RRH and RHA

Table 5 Desorption Study

Cycle	Metal/ Adsorbent	Copper		Lead	
		RRH	RHA	RRH	RHA
1	Adsorption	73%	97.5%	81%	98%
	Desorption	99%	99.5%	98.5%	99%
2	Adsorption	40%	30%	80%	38%
	Desorption	99%	99%	98%	99%

## 5.6 Summary and Conclusions

This will be the final chapter of the thesis. A brief report of the work carried out shall form the first part of the Chapter. Conclusions derived from the logical analysis presented

in the Results and Discussions Chapter shall be presented and clearly enumerated, each int stated separately. Scope for future work should be stated lucidly in the last part of the Chapter.

# **TITLE OF THE THESIS FOR Ph.D/M.Phil**



**A Synopsis Submitted By: Aijaz Ahmed**

**RESEARCH SUPERVISOR: Dr.Imran Khan**  
(University of Pishawar Associate Professor)

**CO-SUPERVISOR: Dr.Karim Bux**  
(University of Peshawar Associate Professor)

**DEPARTMENT OF: MEDIA STUDIES**

**(July 2015)**

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Shaheed Benazir Bhutto University, Shaheed Benazirabad, Civil Line Nawabshah, Pakistan 67450  
Ph-244-9370527 , Fax,+92-244-9370521, web: [www.sbbusba.edu.pk](http://www.sbbusba.edu.pk)

## DECLARATION BY CANDIDATES

We hereby declare that this thesis/project is a presentation of our own work and that it has not been submitted anywhere for any award. We also warrant, that we have not received outside assistance or involved the external contributions, if received/involved we will acknowledge in written statement to authorities, otherwise we will be liable for the cancellation of our thesis thereby the degree that will be awarded.

✓Tick the following

We have received outside assistance/involved the contributions of others	Yes	No	<input type="checkbox"/>	<input type="checkbox"/>
We have acknowledged by submitting written statement (IF YES)	Yes	No	<input type="checkbox"/>	<input type="checkbox"/>

**Name:**                      **Signature**

Dated: \_\_\_\_\_

# CERTIFICATE

This is to certify that the thesis entitled **TITLE OF THE THESIS** submitted by

**Name**

to the **Institute name** is a bonafide record of the work done by Him/Her under my supervision. The contents of this thesis, in full or in parts, have not been submitted to any other Institute or University for the award of any degree or diploma.

\_\_\_\_\_  
Signature of Supervisor

\_\_\_\_\_  
Signature of Co-Supervisor

Dated:

## TABLE OF CONTENTS

Title	Page No.
ABSTRACT .....	i
ACKNOWLEDGEMENTS .....	ii
TABLE OF CONTENTS .....	iii
LIST OF TABLES .....	v
LIST OF FIGURES .....	vi
<b>CHAPTER 1 INTRODUCTION</b>	
1.1 General .....	1
1.2 Objectives .....	2
<b>CHAPTER 2 LITERATURE REVIEW</b>	
2.1 Membrane .....	3
2.2 Membrane Separation Technology .....	3
2.3 Types of Membranes .....	3
2.4 Membrane Separation Process .....	3
2.5 Liquid Emulsion Membrane .....	4
2.6 Types of Extraction Mechanism .....	6
<b>CHAPTER 3 METHODOLOGY</b>	
3.1 Materials .....	7
3.1.1 Span 80 .....	7
3.1.2 n- Hexane .....	8
3.1.3 Sodium hydroxide .....	8
3.2 Experimental Procedure .....	9
3.2.1 Emulsion preparation .....	9
3.2.2 Extraction process .....	10

3.3	Operating Conditions.....	11
-----	---------------------------	----

#### **CHAPTER 4 RESULTS AND DISCUSSION**

4.1	General.....	14
4.2	Effect of Span 80 .....	14
4.3	Effect of NaOH Concentration .....	15
4.4	Effect of n-Hexane.....	17
4.5	Effect of Stirring Speed During Extraction .....	18
4.6	Effect of Feed Concentration.....	19

#### **CHAPTER 5 SUMMARY AND CONCLUSION**

5.1	Summary.....	21
5.2	Conclusions .....	21
5.3	Scope for Future Work .....	21

<b>REFERENCES</b>		<b>23</b>
-------------------	--	-----------

## LIST OF TABLES

Table No.	Title	Page No.
3.1	Experimental Scheme for Dye Extraction .....	12

## LIST OF FIGURES

Figure No.	Title	Page No.
2.1	Water/ Oil/ Water System .....	4
2.2	Nature of Surfactant .....	5
2.3	Extraction Mechanism- Type I .....	6
2.4	Extraction Mechanism- Type II .....	6
3.1	Structure of Span 80 .....	7
3.2	Reaction Mechanism for Span 80 .....	7
3.3	Structure of n-Hexane .....	8
3.4	Structure of Crystal Violet .....	9
3.5	Schematic Diagram of the Experimental Work .....	10

## ABBREVIATIONS

AI	Artificial Intelligence
AR	Autoregressive Model
ARMA	Autoregressive Moving Average Model
ARMAX	ARMA with external input
ARX	AR with external input
ASM1	Activated Sludge Model 1
ASM2	Activated Sludge Model 2
ASM3	Activated Sludge Model 3
ASP	Activated Sludge Process

## NOTATIONS

$K$	Specific substrate utilization rate constant
$k_d$	Microbial decay coefficient
$K_s$	Substrate concentration when growth rate is half of maximum
$Q$	Rate of wastewater flow to the aeration tank
$q$	Specific substrate utilization rate
$Q_e$	Effluent flow rate
$q_m$	Maximum specific substrate utilization rate
$Q_r$	Rate of recycle sludge
$Q_w$	Rate of sludge wasting from the reactor
$R$	Recirculation ratio