

## 6. Procedure Synopsis Approval

The synopsis is to be considered as a detailed summary of the work with important results highlighting the original contributions in the thesis to be submitted. It should give an outline of the thesis. The review of earlier work is to be minimized with just enough to highlight the contributions in the research work to be reported in the thesis. It is expected that at the time of submission of the synopsis no work is yet to be completed except writing the thesis and all other academic requirements such as course work, comprehensive examinations and the suggestions and directions given by members of the Doctoral Committee have been fulfilled.

Eligibility to submit the synopsis:

1. Two research paper publication with ISSN/ISBN numbers (ISSN/ISBN).
2. One Conference/Seminar presentation (ISBN).
3. Coursework should have been completed and a valid coursework certificate should have been received by the student.
4. Student must have faced and successfully defended five RDCs.

Note:

- Research scholar has to send the PDF file of synopsis via mail prior to one month of submission of synopsis.
- The synopsis should be duly signed by guide.
- After approval of synopsis, a scholar has to submit the thesis within 2-6 months from the date of submission of synopsis
- The synopsis will be approved after a seminar, where the student shall present his work in front of the invited experts, students/scholars of the department as well as other faculties and deans of the University

## THE ARRANGEMENT OF PARTS OF THE SYNOPSIS OF A Ph.D. Synopsis

1. **Cover Page** : A Sample sheet is enclosed (Annexure 1)
2. **Title** : Should be as short as possible and accurate
3. **Introduction**: Outline briefly the Management/ Commerce/ Education/ Social Science relevance or significance of the research work is being reported
4. **Motivation**: The developments in the area, to emphasize the current status and importance of the research problem identified
5. **Objective(s) and Scope**: State clearly the questions for which answers are sought through this research. Define the conceptual, analytical and experimental and /or methodological boundaries within the exercise has been carried out
6. **Description of the research work** : Give brief, but sufficient, details regarding
  - a. The research problems
  - b. Solution methodologies, and
  - c. Interpretation of the results / output
7. **Conclusions / Limitations** : Highlight major (and not all) Conclusions / Limitations
8. **References**: List references as per APA (Other Disciplines) or IEEE (Computer Application & IT) referencing style
9. **Tables and figures**: All these must be captioned, serially numbered and referred to in the text.
10. **Proposed content of the Thesis**: Include only chapter and section titles.
11. List of publications based on the research work.
12. The style of presentation (fonts, chapter No., margins, section and sub section no., equation number, figures, tables, etc.) must be same as in the thesis.
13. The synopsis must be presented within a maximum of **30** pages (15 sheets back to back), excluding the cover page.

## **GUIDELINES FOR THE PREPARATION OF SYNOPSIS**

### **1. TITLE PAGE**

The title of the synopsis 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 synopsis 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.

### **2. PAGE DIMENSIONS AND MARGIN**

The synopsis 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 synopsis 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)

### **3. 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 back to back of each page.**

#### **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. Specific requirements for text presentation follow.

#### **3.1 Headings and Subheadings**

The scholar 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. Once the sequence is chosen, it must be followed consistently throughout the synopsis. Sections and sub-sections can be numbered using decimal points, e.g., 1.2, 1.2.1. Use only

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

**3.2 Introduction** shall justify and highlight the problem poser and define the topic and the aim and scope of the work presented in the synopsis. It may also highlight the significant contributions from the investigation.

**3.3 Review of Literature** shall present a critical appraisal of the previous work published in the literature pertaining to the topic of the investigation. The extent and emphasis of the Literature shall depend on the nature of the investigation.

**For Example,**

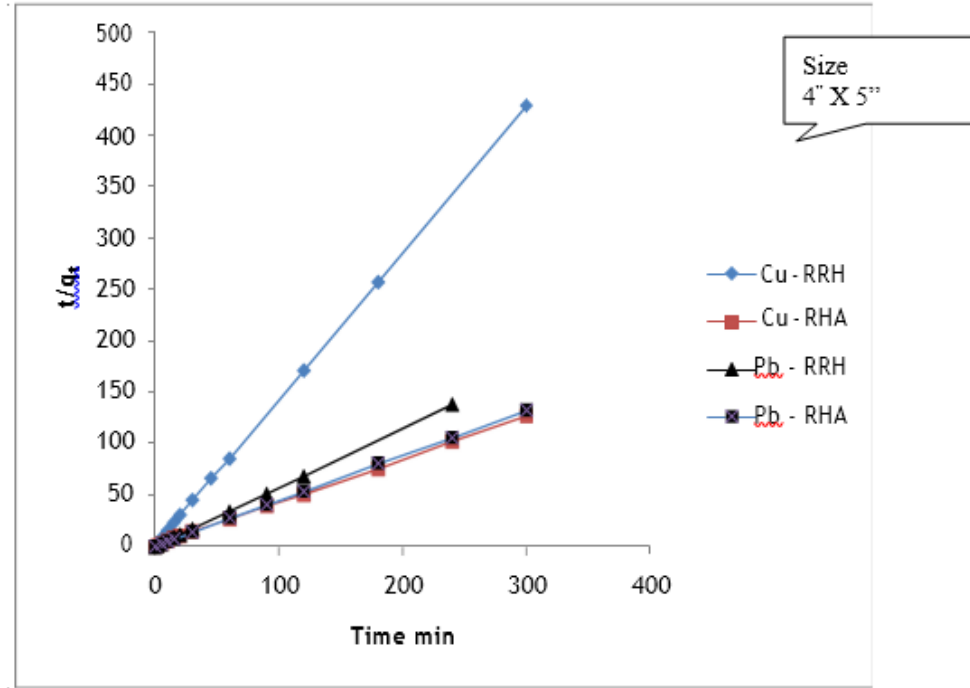
Several researchers attempted to develop mathematical models to simulate the activated sludge process. Some of these models simulate the organic removal mechanisms in wastewater treatment field, which were included in Jorgensen and Gromiec (1985), Henze (1986), Henze et al. (1987a), Tang et al. (1987) and Van Niekerk et al. (1988). The oxygen transfer mechanism has an important place in the activated sludge process. An estimation technique for the oxygen transfer capacity is investigated by Stenstrom et al. (1989).

**4. Tables, Figures and equations Format**

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. 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. For example, Figure 1 or Fig.1 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]).

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

$$\Delta X \propto X \Delta t \quad (1)$$



▲ Fig. 1. Pseudo Second order plot for Copper and Lead on RRH and RHA

**Table 1. 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. Results and Discussions:** This shall form the penultimate the synopsis and shall include a thorough evaluation of the investigation carried out and bring out the contributions from the study. The discussion shall logically lead to inferences and conclusions as well as scope for possible further future work.

**6. Summary and Conclusions:** A brief report of the work carried out shall form the first part of the Summary and Conclusions. Conclusions derived from the logical analysis presented in the Results and Discussions shall be presented and clearly enumerated, each point stated separately. Scope for future work should be stated lucidly in the last part of the Summary and Conclusions.

**7. Pagination**

Lower-case Roman numerals are used to number all pages preceding the text. Beginning with the first page of the text, all pages are to be numbered with Arabic numerals consecutively throughout the synopsis document, including the 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 synopsis.

**8. Binding**

The synopsis shall be soft cover bound in leather or rexin with the black edge soft binding

**9. Front Covers**

**Annexure 1**

**Synopsis Of**

Size - 14 points  
(Bold Centre)

**[Research Title]**

Size - 13 points  
(Centre)

**Submitted by**

**[Scholar Name]**

Size - 16 points  
(Bold Centre)

**Under the Guidance of**

Size - 13 points  
(Centre)

**[Guide Name]**

**AND**

**[Co-Guide Name] (If any)**

Size - 16 points  
(Bold Centre)

**for the award of the degree of**

Size - 13 points  
(Centre)

**Doctor of Philosophy**

Size - 16 points  
(Bold Centre)



**School of Doctoral Research And Innovation,  
GLS University,  
Ahmedabad, Gujarat**

Size - 15 points  
(Bold Centre)

**April, 2018**

### LIST OF PAPERS SUBMITTED ON THE BASIS OF THE THESIS

The papers based on the research work reported in the synopsis could be listed under the broad headings “Journals” and “Conferences” indicating their current status (published / accepted) within parenthesis at the end of each section.

#### **1. REFEREED JOURNALS**

- I. **Chen, J. and M.B. Beck** (1993) Modeling control and offline estimation of Activated sludge bulking. *Water Sci. Technology*, **28**, 249-256.
- II. **Anderson, J. S., H. Kim, T. J. Mc Avoy and O. J. Hao** Control of an Alternating Aerobic-anoxic Activated Sludge System-I; Development of a Linearization-based Modeling Approach. *Control Engineering Practice* (Accepted).

#### **2. PRESENTATIONS IN CONFERENCES**

- I. **Rosen, C. and J. A. Lennox** (2001) Multivariate and multiscale monitoring of wastewater treatment operation. International Conference on Software Engineering, Cape Town, South Africa, May, 2008.

**Note: publications in any unrefereed journals, magazines, volumes etc. should not be listed)**



## QUICK REFERENCE

### PAGE DIMENSIONS AND MARGIN

Paper size : 80 gsm. Standard A4 size (210 mm X 297 mm)

#### 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)

Print out : Laserjet or Inkjet printer, **printed on both sides**

Font size (regular Text) : Times New Roman of 12 pts/ Calibri of 11 pts/Arial of 11 pts

Spacing : 1.5 line spacing

Sections : 12 pts bold left aligned (Capital Letters)

Subsections : 12 pts bold left aligned (Title case)

Page numbers : Bottom – centered – 12 pts (1, 2, 3...)

Binding : Soft binding (edge with black color strip)

#### Number of copies

Ph.D. 7 Copies