**NO OBJECTION CERTIFICATE**

  Date:

From

To

The Registrar

Annamalai University

Annamalainagar

Sir,

Sub: No Objection Certificate from the employer to register for Ph.D. Programme under Part time - External mode at Annamalai University – Reg.

This is to certify that Mr. / Ms. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ has been working as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_on regular basis from \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_in our Organization / Institution / Industry and that he/she is interested in pursuing Ph.D. Degree Programme at Annamalai University under Part-time mode.

We do not have any objection to him/her pursuing Ph.D. Degree   
Programme under Part-time mode at Annamalai University. The Organization is willing to depute the employee to Annamalai University as and when he/she undertakes course work and other related research work.

Signature and Seal of the

Authority Concerned



**ANNAMALAI UNIVERSITY**

(To be filled by co-supervisor (applicable for Part-time and Interdisciplinary research)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1. | Name of the Applicant | | |  | | | | | |
| 2. | Name of the Co-supervisor | | |  | | | | | |
| 3. | Date of Birth & Age | | |  | | | | | |
| 4. | Designation & Place of Work | | |  | | | | | |
| 5. | Contact Address with Phone/Mobile  e-mail: | | |  | | | | | |
| 6. | Qualifications | | | | | | | | |
| Name of Degree | Specialization (major) | | | College and University | | | Month & Year of Passing & Class | |
|  |  | | |  | | |  | |
|  |  | | |  | | |  | |
|  |  | | |  | | |  | |
|  |  | | |  | | |  | |
| 7. | Title of the Ph.D. thesis | |  | | | | | | |
| 8. | No. of research papers published in accredited/ indexed journals (enclose full list) | | | | | |  | | |
| 9. | No. of books published / invited chapters contributed (enclose list) | | | | | |  | | |
| 10. | Total research experience (enclose details) | | | | | | Years: Months: | | |
| 11. | Positions held: | | | | | | | | |
| Name of Institution | | | | | From | | To | |
|  | | | | |  | |  | |
|  | | | | |  | |  | |
| 12. | Subject / Discipline in which propose to guide the Ph.D. Scholar | | | | |  | | | |
| 13. | Whether already recognized as Ph.D. supervisor by any other institution, if so, give details. | | | | | | | |  |
| 14. | Total No. of candidates registered at present under you as co-supervisor at Annamalai University. | | | | | | | |  |

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**REQUEST FOR EXTENSION OF TIME**

|  |  |  |
| --- | --- | --- |
| Name of the Scholar | : |  |
| Roll No. | : |  |
| Programme | : | Ph.D. |
| Category of Registration | : | Full-Time / Part-Time |
| Faculty | : |  |
| Mobile No. | : |  |
| Email id | : |  |
| Date of Registration of the Programme | : |  |
| Supervisor Name & Address | : |  |
|  |  |  |
| Co-Supervisor Name & Address  (if applicable) | : |  |

Reason for Extension of time:

Synopsis Submitted : Yes / No

Extension of time : 1 year / months\* from … to …..

|  |  |
| --- | --- |
|  | **Signature of the Scholar** |
| **Signature of the Co-Supervisor** (Name with Seal)  (if applicable) | **Signature of the Supervisor** (Name with Seal) |
| **Signature of the Head of the Department** (Name with Seal) | **Signature of the Dean** (Name with Seal) |

Date :

Place :

|  |  |  |
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**MINUTES OF THE FIRST RESEARCH ADVISORY COMMITTEE MEETING**

The Research Advisory Committee Meeting of the Ph.D. Scholar,   
Mr./Ms. (Roll No. ) was held on at 11 a.m.in the Department of Botany.

The following members were present.

|  |  |  |
| --- | --- | --- |
|  |  | (Supervisor & Convener) |
|  |  | (Co-Supervisor, if applicable) |
|  |  | Head of the Department |
|  |  | (Member) |
|  |  | (Member) |

Mr./Ms. presented an overview of the proposed research work. The Research Advisory Committee approved the research topic as “......................................................................”. The Committee has recommended the scholar to undertake the following course work examinations based on the qualification of the candidate and the proposed research area.

|  |  |  |  |
| --- | --- | --- | --- |
| **Course Code** | **Course Title** | **Credits** | **Core Course/ Elective/ Special Elective** |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

Number of course works as applicable to the scholars

|  |  |
| --- | --- |
| **Member** (Signature with Name and Date) | **Member** (Signature with Name and Date) |
| **Co-Supervisor** (Signature with Name, Date and Seal) (if applicable) | **Supervisor** (Signature with Name, Date and Seal) |
| **Signature of Head of the Department** (Name with Seal) | |
| Date :  Place : | |

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**MINUTES OF THE RESEARCH ADVISORY COMMITTEE MEETING FOR CONFIRMATION OF PROVISIONAL REGISTRATION**

The Research Advisory Committee Meeting of the Ph.D. Scholar, Ms. Janani. A (Roll.No. Ph.D./191XXYY001/Part-Time) was held on at a.m./p.m. in the Department of History. The following members were present:

|  |  |
| --- | --- |
| Dr. Baskaran R | (Supervisor & Convener) |
| Dr. Kandasamy K | Co-Supervisor, if applicable |
| Dr. Abirami S | (Member) |
| Dr. Dhavachelvan P | (Member) |
| Dr. Jagadeesan R | Head of the Department |

Mr./Ms. Janani. A has successfully completed the following course work examinations recommended by the Research Advisory Committee. He/She has obtained the following grades in the course work.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Sl.No** | **Course Code** | **Course Title** | **Credits** | **Category** | **Grade / Marks** |
| 1. |  |  |  | Core |  |
| 2. |  |  |  | Core |  |
| 3. |  |  |  | Elective |  |
| 4. |  |  |  |  |  |
| 5. |  |  |  |  |  |
| 6. |  |  |  |  |  |
| 7. |  |  |  |  |  |
| 8. |  |  |  |  |  |
|  | | | | **CGPA** |  |
| Comprehensive Examination: Pass / Fail \* | | | | | |

**CoE signed result sheet of the course work duly attested by the Supervisor with seal should be enclosed along with this.**

The scholar completed the first seminar presentation on \_\_\_\_\_\_\_\_\_\_\_\_\_\_to the faculty members and research scholars. The attendees list is enclosed herewith. The committee also evaluated the research work carried out by the scholar and satisfied/not satisfied with the performance of the scholar. Hence, the Committee recommends/does not recommend the confirmation of provisional registration of the scholar in the Faculty of Arts (Department of History), and permits/does not permit the scholar to proceed with his/her research work.

|  |  |
| --- | --- |
| **Member** (Signature with Name and Date) | **Member** (Signature with Name and Date) |
| **Co-Supervisor** (Signature with Name, Date and Seal)  (if applicable) | **Supervisor** (Signature with Name, Date and Seal) |
| **Head of the Department** (Signature with Name, Date and Seal) | |

Date :

Place :

\* Strike off whichever is not applicable

|  |  |  |
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**CHECKLIST FOR THE CONFIRMATION OF Ph.D. REGISTRATION**

|  |  |  |
| --- | --- | --- |
| 1. | Research Advisory Committee meeting **Minutes and Research Performance Assessment** signed by all the RAC members | **YES/NO** |
| 2. | No. of Courses attended .........(not applicable for M.Phil. scholars) | **YES/NO** |
| 3. | Photocopy of mark sheets of the course works signed by COE attested by the Supervisor | **YES/NO** |
| 4. | Original copy of the certificate for the seminar presentation | **YES/NO** |
| 5. | Attendance particulars for the seminar presentation  (Applicable to all scholars irrespective of year of registration) | **YES/NO** |
| 6. | Comprehensive examination result mentioned in the RAC minutes | **YES/NO** |
| 7. | Approval of Research Advisory Committee members for change of course work/ course code/course title | **YES/NO** |
| 8. | For scholars with M.Phil. qualification, attested copy of M.Phil. degree certificate  Mode of completion of M.Phil. degree: Full-time/ Part-time/Distance mode | **YES/NO** |
| 9. | Faculty for confirmation is same as that of Provisional Registration | **YES/NO** |

**Checked and found Correct**

|  |  |
| --- | --- |
| **Co-Supervisor** (Signature with Name, Date and Seal)  (if applicable) | **Supervisor** (Signature with Name, Date and Seal) |
| **Head of the Department** (Signature with Name, Date and Seal) | |

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**Research Progress Report**

(To be submitted every six months from date of Registration)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1. | Name and Roll No. of the Scholar | : | |  |
| 2. | Programme | : | | Ph.D. FT/PT (Internal /External) |
| 3. | Title of research work | : | |  |
| 4. | Date of previous RAC meeting | : | |  |
| 5. | Brief report of the research work carried out between previous and present RAC meetings. Mention the objectives completed: | | | |
| 6. | List research paper published/accepted for publication/communicated for publication / patents (National /International) filed / approved: | | | |
| 7. | National / International Conference/Symposia attended (Give details such as Name of the Conference, venue, title, period): | | | |
| 8. | Overall assessment and comments about the progress of the research scholar: | | | |
| **Member** (Signature with Name and Date) | | | **Member** (Signature with Name and Date) | |
| **Co-Supervisor** (Signature with Name, Date and Seal)  (if applicable) | | | **Supervisor** (Signature with Name, Date and Seal) | |
| **Head of the Department** (Signature with Name, Date and Seal) | | | | |

**Note:** Research Performance Assessment restricted to maximum 2 pages should be submitted along with the minutes of RAC meeting duly signed by RAC members.

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**MINUTES OF THE RESEARCH ADVISORY COMMITTEE MEETING FOR SUBMISSION OF SYNOPSIS**

The Research Advisory Committee Meeting of the Ph.D. Scholar,   
Mr./Ms.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_(Roll No.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_) was held on\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_at a.m./p.m. in the Department of\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. The following members were present.

|  |  |  |
| --- | --- | --- |
|  |  | (Supervisor & Convener) |
|  |  | (Co-Supervisor, if applicable) |
|  |  | Head of the Department |
|  |  | (Member) |
|  |  | (Member) |

The Research Advisory Committee critically reviewed the research work entitled “…….................................................................” carried out by Mr./Ms. and the contents of the draft Synopsis. The scholar completed the pre-synopsis presentation on ……… to the faculty members and research scholars. The attendees list is enclosed herewith. The scholar has ..... publications in the journals (SCI/UGC listed) from his/her research work.

The scholar has the following publications in the listed journals.

1. .......................................... (Accepted/Published)
2. .......................................... (Accepted/Published)

It is also certified that the Paper/Papers mentioned above are within the scope of the Journal and the paper/papers is/are relevant to the Ph.D. work carried out by the scholar.

The Committee is satisfied with the research performance of the scholar, the quality and quantum of research work and approves the Synopsis submission. The Committee also recommends the panel of Indian and Foreign Examiners for the evaluation of the Thesis.

|  |  |
| --- | --- |
| **Member** (Signature with Name and Date) | **Member** (Signature with Name and Date) |
| **Co-Supervisor** (Signature with Name, Date and Seal)  (if applicable) | **Supervisor** (Signature with Name, Date and Seal) |

|  |  |  |  |
| --- | --- | --- | --- |
| **Head of the Department** (Signature with Name, Date and Seal) | | | |
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**CERTIFICATE FOR SUBMISSION OF SYNOPSIS**

**AFTER COMPLETION OF MINIMUM DURATION**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Name of the Research Scholar | : |  |
|  | Roll No. | : |  |
|  | Date of Provisional Registration& Confirmation | : |  |
|  | Faculty & Department | : |  |
|  | Category of Registration | : | Full-Time / Part-Time |
|  | Date of RAC meeting for synopsis submission | : |  |
|  | Break of study availed (if any) mention the period | : |  |
| 8. | Duration of research period from the date of submission of synopsis excluding the break of study period | : | Year Month |
| 9. | Synopsis submitted within the minimum duration | : | Yes / No |
| 10. | If Yes, whether the scholar has two publications as per the Annamalai University norms | : | Yes / No |

|  |  |
| --- | --- |
| **Co-Supervisor** (Signature with Name, Date and Seal)  (if applicable) | **Supervisor** (Signature with Name, Date and Seal) |
| **Head of the Department** (Signature with Name, Date and Seal) | |

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**PRE-SYNOPSIS SEMINAR PRESENTATION**

List of attendees for the Pre-Synopsis seminar Presentation of   
**Mr. K. RATNAVELU, Department of Computer Science & Engineering,** held on 15.03.2021 at 10.00 a.m. in the Seminar Hall, Department of Electronics and Communication Engineering, Annamalai University, Annamalainagar – 608 002.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Sl.No.** | **Name** | **Designation & Address** | | **Signature** | |
| 1. | Dr. P. Aruna, RAC Member. | Professor and Head, Department of CS & E | |  | |
| 2. | Dr. S. Pasupathy, Supervisor. | Associate Professor, Department of CS & E | |  | |
| 3. | Dr. M. Balasubramanian, RAC Member. | Associate Professor, Department of CS & E | |  | |
| 4. | Dr. V. Srinivasan, RAC Member. | Professor, Department of Information Technology | |  | |
| 5. . . . |  |  | |  | |
| 24. |  |  | |  | |
| 25. |  |  | |  | |
| **Member** (Signature with Name and Date) | | | **Member** (Signature with Name and Date) | |
| **Co-Supervisor** (Signature with Name, Date and Seal)  (if applicable) | | | **Supervisor** (Signature with Name, Date and Seal) | |
| **Head of the Department** (Signature with Name, Date and Seal) | | | | |

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**PROFORMA FOR SUBMISSION OF SYNOPSIS**

1. Registration Details:

|  |  |  |  |
| --- | --- | --- | --- |
| Name of the Scholar:  Contact No.:  Email ID: | | Roll No.: | |
| Name of the Supervisor:  Contact No.:  Email ID: | | Name of the Co-Supervisor:  Contact No.:  Email ID: | |
| Category at the time of Registration |  | Change of Category, if any |  |
| Month and Year of Registration |  | Period of break of study granted, if any |  |
| Date of Confirmation |  | Date of Completion of minimum period |  |
| Faculty and Department as per the Provisional Registration Order | |  | |
| Date of completion of maximum period |  | Extension of period approved (mention date) | upto: |
| Date of Research Advisory Committee meeting for approval of Synopsis |  | Date of submission of Synopsis |  |

1. Semester Fee Payment Details:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Month and Year |  |  |  |  |  |  |  |  |
| Amount Paid |  |  |  |  |  |  |  |  |
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1. Course Work Details:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Course Code** | **Course Title** | **Credits** | **Core Course/Elective/Special Elective** | **Grade/Marks** |
|  |  |  |  |  |
|  |  |  |  |  |
| **CGPA** | | | |  |
| **Comprehensive Examination** | | | | Pass/Fail |

1. Progress Report:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Period** | **Jan-Jun** | **Jul-Dec** | **Jan-Jun** | **Jul-Dec** | **Jan-Jun** | **Jul-Dec** | **Jan-Jun** | **Jul-Dec** |
| Date of Submission |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |

1. Proof for Confirmation & Change of Category (if any) :
2. Proof for the Seminar Presentations (attach the Circular copies) :
3. Publication Details:

|  |  |
| --- | --- |
| **Journal** | **Published** |
| National |  |
| International |  |

Enclose photo copy of the papers published.

1. Details of Synopsis Fee:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Amount (Rs.)** | **D.D. No.** | **D.D. Date** | **Name of the Bank** | **Branch** |
|  |  |  |  |  |

1. Whether Synopsis submitted within the maximum duration: **YES/NO**

If No, copy of the Extension order should be enclosed:

Certify that the information furnished above is true and correct to the best of my knowledge.

**Signature of the   
Research Scholar**

|  |  |  |
| --- | --- | --- |
| **Signature of the  Co-Supervisor** | **Signature of the Supervisor** | **Signature of the  Head of the Department** |
| (Name with Seal) (if applicable) | (Name with Seal) | (Name and Seal) |

(for Office use only) Checked and Accepted

**Dealing Hand**

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**CHECKLIST WHILE SUBMITTING Ph.D. SYNOPSIS**

|  |  |  |
| --- | --- | --- |
| 1. | Proforma for submission of Synopsis | **YES/NO** |
| 2. | Whether change of Supervisor is approved  a.) if yes, attach a copy of the letter  b.) Whether the scholar has completed a minimum of one year with the  new Supervisor | **YES/NO** |
| 3. | One copy of the Synopsis with soft copy as per Annamalai University Regulations | **YES/NO** |
| 4. | Original Minutes of the Research Advisory Committee signed by all the members | **YES/NO** |
| 5. | Panel of Examiners (both Indian and Foreign) **with complete and correct postal address** including Phone No, Mobile No, Fax No and correct Official E-mail ID (**typed only**)in a closed cover | **YES/NO** |
| 6. | Recent publications list of all Foreign and Indian examiners in the last 5 years in a closed cover | **YES/NO** |
| 7. | The panel of Foreign Examiners should not be of Indian origin | **YES/NO** |
| 8. | Photocopy of the Provisional Registration Confirmation order | **YES/NO** |
| 9. | Photocopies of UG and PG Degree Certificates attested by HOD | **YES/NO** |
| 10. | Synopsis fee of Rs.\_\_\_\_\_\_\_\_\_\_\_\_\_ may be paid in the University Cash Counter / Bank. | **YES/NO** |
| 11. | Photo copy of the Journal publications | **YES/NO** |
| 12. | Photo Copy of the fee challan for all the years till the submission of Synopsis | **YES/NO** |
| 13. | Certificate for submission of synopsis after the completion of minimum duration | **YES/NO** |
| 14. | a.) Whether the Synopsis is submitted within the maximum duration  b.) If No, enclosed copy of the Extension order | **YES/NO** |
| 15. | Photo Copy of the circular for the pre-synopsis presentation | **YES/NO** |
| 16. | Attendance particulars for the pre-synopsis presentation  (Applicable to all scholars irrespective of year of registration) | **YES/NO** |
| 17. | Report from “URKUND” Software attached for all Published / accepted Papers listed in Synopsis | **YES/NO** |

|  |  |  |
| --- | --- | --- |
| **Signature of the  Co-Supervisor**  (if applicable) | **Checked and found Correct Signature of the Supervisor** | **Signature of the  Head of the Department** |

**PANEL OF INDIAN EXAMINERS / FOREIGN EXAMINERS FOR**

**Ph.D. THESIS EVALUATION**

|  |  |  |
| --- | --- | --- |
| Name and Roll No. of the Scholar | **:** |  |
| Programme | **:** | Ph.D. FT/PT (Internal / External) |
| Title of the Thesis | **:** |  |
| Faculty& Dept. as per PG Qualification | **:** |  |
| Name of the Supervisor | **:** |  |
| Name of the Co-Supervisor (if applicable) | **:** |  |

|  |  |  |
| --- | --- | --- |
| **Sl. No.** | **Name with full postal address with Pin code** | **Name with full postal address with Zip code** |
| **PANEL OF INDIAN EXAMINERS  (Preferably from IITs, NITs, Universities and Government Institutions)**  **(Not less than Associate Professor)** | | **PANEL OF FOREIGN EXAMINERS** |
| 1. | Name :  Designation :  Department :  Address :  Mobile : Official E-mail: | Name :  Designation :  Department :  Address :  Mobile : Official E-mail: |
| 2. | Name :  Designation :  Department :  Address :  Mobile : Official E-mail: | Name :  Designation :  Department :  Address :  Mobile : Official E-mail: |
| 3. | Name :  Designation :  Department :  Address :  Mobile : Official E-mail: | Name :  Designation :  Department :  Address :  Mobile : Official E-mail: |
| 4. | Name :  Designation :  Department :  Address :  Mobile : Official E-mail: | Name :  Designation :  Department :  Address :  Mobile : Official E-mail: |
| 5. | Name :  Designation :  Department :  Address :  Mobile : Official E-mail: | Name :  Designation :  Department :  Address :  Mobile : Official E-mail: |

**Note:** For each expert, the list of publications in reputed Journals indexed with Scopus/Web of Science/Thomson Reuters/ISI with impact factor during the last five years to be enclosed.

|  |  |
| --- | --- |
|  | **Supervisor** (Signature with Name, Date and Seal) |
|  | **Head of the Department** (Signature with Name, Date and Seal) |
|  | **Dean** (Signature with Name, Date and Seal) |

**PROFORMA FOR SUBMISSION OF Ph.D. THESIS**

**I. Registration Details:**

|  |  |  |  |
| --- | --- | --- | --- |
| Name of the Scholar: Contact No: Email ID: | | Roll No: | |
| Name of the Supervisor: Contact No : Email ID : | | Name of the Co-Supervisor: Contact No : Email ID : | |
| Category at the time of Registration |  | Change of category, if any |  |
| Month and Year of Registration |  | Period of break of study granted, if any |  |
| Date of confirmation |  | Date of completion of minimum period |  |
| Date of completion of Maximum period |  | Extension of period approved (mention date) | upto: |
| Date of RAC meeting for  Approval of synopsis |  | Date of submission of thesis |  |

**II.** Extension of time for thesis submission beyond **3 months** after the submission of synopsis (if any):

Late fee details:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Amount (Rs.)** | **D.D. No.** | **D.D. Date** | **Name of the bank** | **Branch** |
|  |  |  |  |  |

**III. Whether No Dues Certificate is enclosed:**

Certified that the information furnished above is true and correct to the best of my knowledge.

**Signature of the Scholar**

|  |  |
| --- | --- |
| **Co-Supervisor** (Signature with Name, Date and Seal) (if applicable) | **Supervisor** (Signature with Name, Date and Seal) |
| **Head of the Department** (Signature with Name, Date and Seal) | |

(For Office use only) Checked and Accepted

**Dealing Hand**

|  |  |  |
| --- | --- | --- |
| **C:\Users\LENOVO\Desktop\deepak\Annamalai-University-Logo.jpg** | **DIRECTORATE OF ACADEMIC RESEARCH (DARE)**  **ANNAMALAI UNIVERSITY**  **ANNAMALAINAGAR – 608002** | **D:\Au-logo\90th Birth Annuversiry Logo-New.jpg** |

**CHECK LIST WHILE SUBMITTING Ph.D. THESIS**

|  |  |  |
| --- | --- | --- |
| 1. | Five Copies of the Thesis (with soft copy of the Thesis in PDF format with each copy) prepared as per the guidelines of Annamalai University | **YES/NO** |
| 2. | (a) Whether the thesis is submitted within the maximum duration | **YES/NO** |
|  | (b) if no, enclose copy of the extension order | **YES/NO** |
| 3. | Whether the thesis is submitted within three months from the synopsis meeting | **YES/NO** |
| 4. | Proforma for submission of thesis | **YES/NO** |
| 5. | No dues certificate (original) | **YES/NO** |
| 6. | Checked for language and grammar | **YES/NO** |
| 7. | Report from “URKUND” software attached | **YES/NO** |
|  |  |  |

**Synopsis and Thesis titles are the same.**

**Checked and found correct**

|  |  |
| --- | --- |
| **Co-Supervisor** (Signature with Name, Date and Seal) (if applicable) | **Supervisor** (Signature with Name, Date and Seal) |
| **Head of the Department** (Signature with Name, Date and Seal) | |

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**NO DUES CERTIFICATE**

**(To be submitted along with Thesis to   
the Director, DARE, Annamalai University, Annamalainagar)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Name of the Scholar | | | **:** |  | |
| Programme | | | **:** | Ph.D. FT/PT (Internal / External) | |
| Roll No | | | **:** |  | |
| Department and Faculty | | | **:** |  | |
| Month & Year of Submission of Thesis | | | **:** |  | |
| **Sl. No.** | **Details** | **No Dues Certificate** | | | **Signature**  **(Name with Seal)** |
| 1. | University Library |  | | |  |
| 2. | Department Library |  | | |  |
| 3. | D1- Section |  | | |  |
| 4. | Department of the Supervisor and Scholar |  | | |  |
| 5. | Department Store |  | | |  |
| 6. | Hostel Office |  | | |  |
| **7.** | **Project Section (G/CRD)** |  | | |  |
| **8.** | **Scholarship Section (H)** |  | | |  |
| 9. | Director, DARE  **(For Office use Only)** |  | | |  |

**\* Strike off whichever is not applicable**

**Declaration**

I hereby declare that in the event of any due from me found at a later date, I shall pay the same to the Institution.

**Signature of the Scholar**

|  |  |
| --- | --- |
| **Co-Supervisor** (Signature with Name, Date and Seal) (if applicable) | **Supervisor** (Signature with Name, Date and Seal) |
| **Head of the Department** (Signature with Name, Date and Seal) | |

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**MINUTES OF THE RESEARCH ADVISORY COMMITTEE MEETING FOR RESUBMISSION OF THESIS**

The Research Advisory Committee Meeting of the Ph.D. Scholar,   
Mr./Ms.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_(Roll No.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_) was held on\_\_\_\_\_\_\_\_ at \_\_\_\_\_\_\_ a.m./p.m. in the Department. of\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ The following members were present:

|  |  |  |
| --- | --- | --- |
|  |  | (Supervisor & Convener) |
|  |  | (Co-Supervisor, if applicable) |
|  |  | Head of the Department |
|  |  | (Member) |
|  |  | (Member) |

The Comments given by the examiners have been reviewed by the Research Advisory Committee, and the committee certifies that the corrections were carried out by the scholar as suggested by the examiner(s).

He/She is permitted to resubmit the thesis.

Title of the Thesis “ ”.

|  |  |
| --- | --- |
| **Member** (Research Advisory Committee) | **Member** (Research Advisory Committee) |
| **Co-Supervisor** (Signature with Name, Date and Seal)  (if applicable) | **Supervisor** (Signature with Name, Date and Seal) |
| **Head of the Department** (Signature with Name, Date and Seal) | |

|  |  |  |
| --- | --- | --- |
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**CIRCULAR**

**Ph.D. Public Viva-Voce Examination**

|  |  |  |
| --- | --- | --- |
| Name of the Scholar | : |  |
| Roll Number | : |  |
| Category of Registration | : | Full-time/Part-time (Internal/External) |
| Faculty & Department | : |  |
| Title of the Thesis | : |  |
| Date and Time of Viva-voce Examination | : |  |
| Venue | : |  |
| Name and address of the Supervisor | : |  |
| Name and address of the Indian Examiner | : |  |

**All are cordially invited**

|  |  |
| --- | --- |
| **Supervisor** (Signature with Name, Date and Seal) | **Head of the Department** (Signature with Name, Date and Seal) |

Copy to:

1. The Controller of Examinations.
2. The Deans of Faculties.
3. The Heads of Departments with request to display in the Department Notice Board.
4. The Director, Directorate of Academic Research (DARE).
5. The Director, Academic Affairs.
6. The Director, Directorate Research and Development (DRD).
7. The University Librarian.
8. The Heads of Departments of other Universities/Colleges/IIT/NIT/IIM with request to display in their Department Notice Board.
9. P.S to Vice-Chancellor.
10. P.A to Registrar.

**GUIDELINES FOR THE PREPARATION OF   
SYNOPSIS AND THESIS**

**Appendix – I**

**GUIDELINES FOR THE PREPARATION OF SYNOPSIS**

Synopsis should outline the research problem, the methodology it and the summary and conclusion of the findings. The size of the Synopsis should not exceed 15 pages of typed matter reckoned from the first page to the last page including the list of references and list of publications of the scholar. The sequence in which the synopsis should be arranged is as follows with references and list of publications in separate pages.

1. Cover page and title page (as shown in the Annexure I)
2. Text divided into suitable headings (numbered consecutively)
3. References (not more than 12)
4. List of publications (those published/accepted for publications. Mention the impact factor of the journal- only Web of science or Scopus impact factor)

Standard A4 size (297 mm x 210 mm) bond paper may be used for preparing the synopsis. The synopsis should have the following page margins:

|  |  |  |
| --- | --- | --- |
| Top edge | : | 30 to 35 mm |
| Bottom edge | : | 25 to 30 mm |
| Left side | : | 35 to 40 mm |
| Right side | : | 20 to 25 mm |

The synopsis should be prepared using good quality white paper preferably not lower than 80 GSM. One and half line spacing should be used for typing the general text. The general text shall be typed in Font Style Times New Roman and   
Font Size 13. One or two tables/figures may be included at appropriate places in the text of the synopsis and they should conform to the margin specification. All page numbers (Arabic numbers) should be typed without punctuation on the upper right hand corner 20 mm from top with the last digit in line with the right hand margin. Synopsis should be soft bound with black calico cloth and using flexible cover of thick white art paper. The cover should be printed in black letters and the text for printing should be identical to what has been prescribed for the title page. The references such as journals, books, E-books, conference proceedings, patents, etc should be typed following the International standard.

**A typical Specimen of Cover page and Title Page**

<Font style Times New Roman>

**SELECTIVE CATALYTIC REDUCTION OF NOx ON NEW CATALYTIC SYSTEMS**

<Font Size 18><1.5 line spacing>

**A SYNOPSIS** <Font Size14>

***Submitted by*** <Font Size 14><Italic>

**GOVINDARAJAN K R** <Font Size 16>

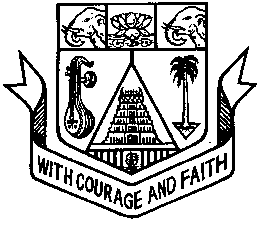
***in partial fulfillment of the requirements for the award of the degree of***

*<Font Size 14><Italic><1.5 line spacing>*

**DOCTOR OF PHILOSOPHY** <Font size 16>

**IN** <Font size 14>

**CHEMICAL ENGINEERING** <Font size 14>

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**DEPARTMENT OF CHEMICAL ENGINEERING**

**ANNAMALAI UNIVERSITY**

**ANNAMALAINAGAR 608 002** <Font Size 16><1.5 line spacing>

**APRIL 2021** <Font Size 14>

**SELECTIVE CATALYTIC REDUCTION OF NOx ON NEW CATALYTIC SYSTEMS**

**A SYNOPSIS**

***Submitted by***

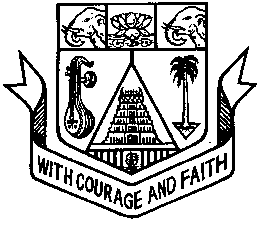
**GOVINDARAJAN K R**

***in partial fulfillment of the requirements for the award of the degree of***

**DOCTOR OF PHILOSOPHY** <Font size 16>

**IN** <Font size 14>

**CHEMICAL ENGINEERING** <Font size 14>

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**DEPARTMENT OF CHEMICAL ENGINEERING**

**ANNAMALAI UNIVERSITY**

**ANNAMALAINAGAR 608 002**

**APRIL 2021**

**Appendix – II**

**GUIDELINES FOR THE PREPARATION OF THESIS**

The scholars are expected to read the guidelines carefully, and meticulously follow them in the preparation of the thesis. Non-compliance with any of these instructions may lead to the rejection of the thesis submitted.

1. GENERAL

This Manual is intended to provide general guidelines to the research scholars in the preparation of the thesis. In general, the thesis shall report, in an organized and scholarly fashion, an account of original research work of the research scholar leading to the discovery of new facts or techniques or correlation of facts already known (analytical, experimental hardware oriented, etc.). Thesis shall demonstrate quality as to make a definite contribution to the advancement of knowledge and the research scholar’s ability to undertake sustained research and present the findings in an appropriate manner with actual accomplishments of the work.

2. SIZE OF THE THESIS

The size of the thesis shall be normally between 100 and 300 pages of typed matter reckoned from the title page to the last page of thesis including the reference section.

3. ARRANGEMENT OF THE CONTENTS OF THE THESIS

The sequence in which the thesis material should be arranged and bound as follows:

1. Cover page and Title page (as shown in Annexure I)
2. Certificate (as shown in Annexure II)
3. Declaration by the Scholar (Annexure III)
4. Abstract
5. Acknowledgement (one page only)
6. Table of contents (Annexure IV)
7. List of Tables (Annexure V)
8. List of Figures (Annexure VI)
9. List of Abbreviations and Symbols (Annexure VII)
10. Chapters
11. Appendices (if applicable)
12. References
13. List of Publications

The Tables and Figures should be included subsequently after referring to them in the text of the thesis. The thesis starting from chapters should be printed on both sides.

4. QUALITY OF PAPER AND MARGIN SPECIFICATIONS

The thesis should be prepared using good quality white paper preferably not lower than 80 GSM. Standard A4 size bond paper may be used for preparing the thesis. The dimensions of the final bound thesis (5 copies) should be 290 mm x 205 mm.

The following page margins should be followed while preparing the thesis:

|  |  |  |
| --- | --- | --- |
| Top edge | : | 30 to 35 mm |
| Bottom edge | : | 25 to 30 mm |
| Left side | : | 35 to 40 mm |
| Right side | : | 20 to 25 mm |

The Tables and figures should also conform to the margin specifications. Large size figures should be photographically or otherwise reduced to the appropriate size.

5. MANUSCRIPT PREPARATION

While preparing the thesis manuscript, attention should be paid to ensure that all textual matter is typewritten in the same format to the extent possible. Hence, some of the information required for the final typing of the thesis is presented in this section. The headings of all items from 2 to 12 listed in section 3 should be typed in upper case letters without punctuation and centered 50 mm below the top of the page. The text should start 4 spaces below the heading. The page numbering from 1 to 8 should be done using lower case Roman numerals and the pages from 9 to 12 should be numbered using Arabic numerals.

1.1 Cover Page and title Page

A specimen copy of the cover page and title page for the thesis is given in Annexure II.

1.2 Certificate

The certificate shall be typed in double line spacing using font style Times New Roman and Font size 12 as per the format shown in Annexure III. The certificate shall be signed by the Supervisor and shall be followed by the supervisor’s name academic designation, department and full address of the institution where the supervisor has guided the scholar. Signature of the co-supervisor with details should be included wherever applicable.

1.3 Abstract

Abstract should be an essay type of description not exceeding four pages outlining the research problem, methodology used and summary of the findings. This shall be typed in one and a half line spacing using Font style Times New Roman and Font size 12.

1.4 Acknowledgement

It should be very brief and restricted to one page only when typed in one and a half line spacing. The scholar’s signature shall be affixed at the bottom right end above the scholar’s name typed in capitals.

1.5 Table of contents

The title page, certificate and acknowledgement will not find a place among the items listed in the Table of Contents, but the page numbers of which are in lower case Roman letters. One and a half line spacing should be adopted for typing the matter under this head. A specimen copy of the table of contents for the thesis is given in Annexure IV.

1.6 List of Tables

The list should use exactly the same captions as they are written above the tables in the text. One and a half line spacing should be used for typing under this heading.

1.7 List of Figures

The list should use exactly the same captions as they appear below the figures in the text. One and a half line spacing should be used for typing under this heading.

1.8 List of symbols and abbreviations

One and a half line spacing shall be used for typing the matter under this heading. Standard symbols, abbreviations, etc., shall be used.

1.9 Chapters

The chapters may be broadly classified into three parts: (i) introduction,   
(ii) the main theme of the thesis and (iii) results, discussion, summary and conclusion. The main chapters may be divided into several sections, divisions and sub-divisions. Each chapter should be given appropriate title. Titles and figures in a chapter should be placed in the immediate vicinity of the reference where they are cited.

1.10 Appendices

Appendices are provided to give supplementary information, which if included in the main text may serve as a distraction and spoil the central theme of the thesis. Appendices shall be numbered using Arabic numerals, e.g. Appendix 1, Appendix 2, etc. Tables and references in appendices should be numbered and referred at appropriate places just as in the case of chapters. Appendices shall carry the title of the work reported and the same title shall be included in the table of contents.

1.11 List of References

Any works of other researchers, if used either directly or indirectly, the origin of the material thus referred to should be indicated at appropriate places in the thesis. Such references in the form of research articles, monographs, books, review articles, patents and proceedings shall be cited in the thesis following the international standard. A citation should be placed wherever appropriate, preferably at the end of a sentence. All the citations shall be in the same font as the main text. The list of references should be typed 4 spaces below the heading “REFERENCES” in single line spacing using Font style Times New Roman and Font size 13.

1.12 List of Publications

The list of publications (those already published/accepted for publication in journals and papers presented in conferences/symposia) made by the research scholar during the period of research shall be reported in the table of contents.

1.13 Tables and Figures

Table means tabulated data in the body of the thesis as well as in the appendices. Others such as charts, graphs, maps, photographs and diagrams may be designated as figures. The table or figure including caption should be accommodated within the prescribed margin limits and should appear on the following page where their first reference is made. All tables and figures should be typed on the same quality paper used for the preparation of the text of the thesis. Two or more small tables or figures may be grouped and typed in a single page, if necessary. Wherever possible, the photograph(s) shall be reproduced on a full sheet of photographic paper or standard A4 size paper.

2. TYPING INSTRUCTIONS

**2.1 General:** The impressions on the typed/printed copies should be black in colour. One and a half line spacing should be used for typing the general text. The general text shall be typed in Font style Times New Roman and Font size 13. Long tables, long quotations, foot notes, multiline captions and references should be typed in single line spacing.

**2.2 Chapters:** The format for typing headings, division headings and sub-division headings are as follows

|  |  |  |
| --- | --- | --- |
| Chapter heading | : | CHAPTER 1  INTRODUCTION |
| Division heading | : | 1.1 OUTLINE OF THESIS |
| Sub-division heading | : | 1.1.1 Literature Review  1.1.1.1 Romanian views on archaeology |

The word CHAPTER without punctuation should be centered 50 mm down from the top of the page. Two spaces below, the title of the chapter should be typed centrally in capital letters. The text should commence 4 spaces below this title, the first letter of the text starting 20 mm inside from the left hand margin.

The division and sub-division captions along with their numbering should be left justified. The typed material directly below division or sub-division heading should commence 2 spaces below it and should start typing 20 mm from the left hand margin. Within division or sub-division paragraphs are permitted and they should also commence 3 spaces below the last line of the preceding paragraph, with offset from the left hand margin by 20 mm.

3. NUMBERING INSTRUCTIONS

3.1 Page Numbering

All page numbers (whether it be in Roman or Arabic numbers) should be typed without punctuation on the upper right hand corner 20 mm from the top with the last digit in line with the right hand margin. The preliminary pages such as title page, acknowledgement, table of contents, etc. should be numbered in lower case Roman numerals. Pages of the main text starting with Chapter 1 should be consecutively numbered using Arabic numerals till the end of the thesis.

3.2 Numbering of Chapters, divisions and Sub-Divisions

The numbering of chapters, divisions and sub-divisions should be done using Arabic numerals only and further decimal notation should be used for numbering the divisions and sub-divisions within a chapter. For example sub-division 2 under division 4 belonging to chapter 3 should be numbered as 3.2.4. The caption for the sub-division should immediately follow the number assigned to it. Appendices, if any, should also be numbered in an identical manner starting with appendix 1.

3.3 Numbering of tables and figures

Tables and figures appearing anywhere in the thesis should have appropriate numbers. For example, if a Figure in Chapter 4 happens to be fifth, then assign 4.5 to that figure. Similar rules apply for tables. For example, if a table in chapter 3 happens to be second, then assign 3.2 to that table. If Figures or Tables appear in Appendices, then Table 3 in Appendix 1 will be designated as Table A1.3. Similarly for Figures.

3.4 Numbering of Equations

Equations appearing in each chapter or appendix should be numbered serially, the numbering should commence afresh for each chapter or appendix. Thus for example, an equation appearing in chapter 3, if it happens to be the fourth equation in that chapter should be numbered as (3.4) thus:

y’ + a(t) y = b(t) (3.4)

While referring to this equation in the body of the thesis it should be referred to as equation (3.4).

4. BINDING SPECIFICATIONS

Thesis side pinning/stitching, covered with wrapper printed on 300 GSM white art card and outer side gloss laminated, adhesive binding. The cover should be printed in black letters and the text for printing should be identical to what has been prescribed for the title page.

**Annexure – I**

**A typical Specimen of Cover page and Title Page**

<Font style Times New Roman>

**SELECTIVE CATALYTIC REDUCTION OF NOx ON NEW CATALYTIC SYSTEMS**

<Font Size 18><1.5 line spacing>

**A THESIS** <Font Size14>

***Submitted by*** <Font Size 14><Italic>

**GOVINDARAJAN K R** <Font Size 16>

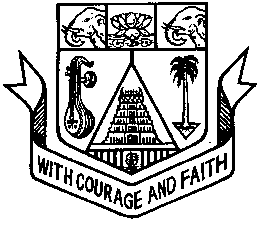
***in partial fulfillment of the requirements for the award of the degree of***

*<Font Size 14><Italic><1.5 line spacing>*

**DOCTOR OF PHILOSOPHY** <Font size 16>

**IN** <Font size 14>

**CHEMICAL ENGINEERING** <Font size 14>

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**DEPARTMENT OF CHEMICAL ENGINEERING**

**ANNAMALAI UNIVERSITY**

**ANNAMALAINAGAR 608 002** <Font Size 16><1.5 line spacing>

**APRIL 2021** <Font Size 14>

**SELECTIVE CATALYTIC REDUCTION OF NOx ON NEW CATALYTIC SYSTEMS**

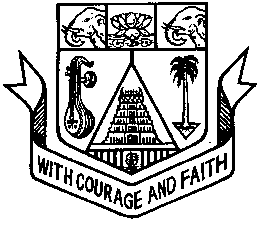
**A THESIS**

***Submitted by***

**GOVINDARAJAN K R**

***in partial fulfillment of the requirements for the award of the degree of***

**DOCTOR OF PHILOSOPHY**



**DEPARTMENT OF CHEMICAL ENGINEERING**

**ANNAMALAI UNIVERSITY**

**ANNAMALAINAGAR 608 002**

**APRIL 2021**

**Annexure – II**

**ANNAMALAI**  **UNIVERSITY**

**Dr. V. VENKATESALU** Annamalainagar 608 002

Professor Tamil Nadu, INDIA

Department of Botany Mobile : +91-9842998740

E-mail: venkatesalu@yahoo.com

CERTIFICATE

This is to certify that the thesis entitled “ISOLATION AND CHARACTERIZATION OF MOSQUITO LARVICIDAL COMPOUND(S) FROM SOME MEDICINAL PLANTS AGAINST *Aedes aegypti, Anopheles stephensi* and *Culex quinquefasciatus*” is a bona fide record of research work done by **Mr. SOFI IMTIYAZ ALI (Roll No. 1519030011),** Research Scholar, Department of Botany, Annamalai University, Annamalainagar, under my guidance during the period **2015-2018,** and that this thesis has not previously formed the basis for the award of any degree, diploma, associateship, fellowship or other similar title to this candidate or any other candidate.

This is also to certify that the thesis represents the independent work of the candidate.

Place :(Dr. V. VENKATESALU)

Date : Research Supervisor

**Annexure – III**

DECLARATION

I, **SOFI IMTIYAZ ALI,** Research Scholar in the Department of Botany, declare that the work embodied in this Ph.D. thesis entitled “ISOLATION AND CHARACTERIZATION OF MOSQUITO LARVICIDAL COMPOUND(S) FROM SOME MEDICINAL PLANTS AGAINST *Aedes aegypti, Anopheles stephensi* and *Culex quinquefasciatus*” is the result of my own   
bona fide work carried out with my personal effort and submitted by me under the supervision of **Dr. V. VENKATESALU,** Professor, Department of Botany, Annamalai University, Annamalainagar. The contents of this thesis have not formed the basis for the award of any Degree/Diploma/ Fellowship/Titles in this University or any other University or similar Institutions of higher learning.

I declare that I have faithfully acknowledged and given credit and referred to the researchers wherever their works have been cited in the body of the thesis. I further declare that I have not willfully copied others’ data/work/results, etc. reported in the journals, magazines, books, reports, dissertations, theses, Internet, etc. and claimed as my own work.

Place:

Date: Signature of the Research Scholar

Roll No.: 1519030011

**Annexure –IV**

**TABLE OF CONTENTS**

| **Chapter No.** | **Title** | | | | **Page No.** |
| --- | --- | --- | --- | --- | --- |
|  | **ABSTRACT** | | | |  |
|  | **LIST OF TABLES** | | | |  |
|  | **LIST OF FIGURES** | | | |  |
|  | **LIST OF ABBREVIATIONS AND SYMBOLS** | | | |  |
| **1.** | **INTRODUCTION** | | | |  |
|  | 1.1. | POLLUTION | | |  |
|  | 1.2. | TYPES OF POLLUTION | | |  |
|  |  | 1.2.1. | Water Pollution | |  |
|  |  | 1.2.2. | Soil Pollution | |  |
|  |  | 1.2.3. | Noise Pollution | |  |
|  | 1.3. | SOURCES OF AIR POLLUTION | | |  |
|  |  | 1.3.1. | Natural Sources | |  |
|  |  | 1.3.2. | Anthropogenic Sources | |  |
|  | 1.4. | EFFECTS OF AIR POLLUTION | | |  |
|  |  | 1.4.1. | Green Houses Gases | |  |
|  |  | 1.4.2. | Indoor Air Quality | |  |
|  |  | 1.4.3. | Accidents due to Air Pollutants | |  |
|  |  | 1.4.4. | Health Effects | |  |
|  |  |  | 1.4.4.1. | Effects on respiratory and cystic fibrosis |  | |
|  |  |  | 1.4.4.2. | Effects on children |  | |
|  | 1.5. | AIR POLLUTANTS SOURCES AND EFFECTS | | |  |
|  |  | 1.5.1. | Sources of NOX | |  |
|  |  |  | 1.5.1.1. | Thermal NOX |  |
|  |  |  | 1.5.1.2. | Fuel NOX |  |
|  |  | 1.5.2. | Sources of Sulfur Dioxide | |  |
|  |  |  | 1.5.2.1. | Effects of sulphur dioxide emissions |  |
|  | 1.6. | AUTOMOBILE EXHAUST AND THEIR EFFECTS | | |  |
|  |  | 1.6.1. | CI Engine and Emission Control Techniques | |  |
|  |  | 1.6.2. | Basic Operation Principles of CI Engine | |  |
|  |  | 1.6.3. | Various Methods to Reduce Automobile Pollutants | |  |
|  |  |  | 1.6.3.1. | Exhaust gas recirculation and deNOXsystem |  |
|  |  |  | 1.6.3.2. | Diesel particulate filters/catalysts |  |
|  |  |  | 1.6.3.3. | Humid air motor system |  |
|  | 1.7. | DEFINITION AND CHEMISTRY OF NOX | | |  |
|  | 1.8. | OVERVIEW OF THE EMISSION NORMS IN INDIA | | |  |
|  |  | 1.8.1. | Control of Emissions | |  |
|  |  |  | 1.8.1.1. | Cleaning up the emissions |  |
|  | 1.9. | CATALYTIC CONVERTERS | | |  |
|  |  | 1.9.1. | Two-way Catalytic Converters | |  |
|  |  | 1.9.2. | Three-way Catalytic Converters | |  |
|  |  |  | 1.9.2.1. | Oxygen storage in three-way converters |  |
|  | 1.10. | COMPONENTS OF A CATALYTIC CONVERTER | | |  |
|  |  | 1.10.1. | Core or Substrate | |  |
|  |  | 1.10.2. | Wash Coat | |  |
|  | 1.11. | SCOPE AND OBJECTIVES OF THE PRESENT INVESTIGATION | | |  |
| **2.** | **EXPERIMENTAL METHODS** | | | |  |
|  | 2.1. | MATERIALS AND METHODS | | |  |
|  |  | 2.1.1. | Materials | |  |
|  |  | 2.1.2. | Synthesis of Mesoporous MCM-41 | |  |
|  | 2.2. | CHARACTERIZATION OF THE PREPARED CATALYSTS | | |  |
|  |  | 2.2.1. | X-Ray Diffraction Study | |  |
|  |  | 2.2.2. | Nitrogen Adsorption and Desorption Study | |  |
|  |  | 2.2.3. | Electron Paramagnetic Resonance Spectoscopy | |  |
|  | 2.3. | CATALYTIC STUDIES | | |  |
|  |  | 2.3.1. | Catalytic Reduction of NO with Acetone | |  |
|  |  | 2.3.2. | Catalytic Reduction of NO with Methane Vapour | |  |
| **3.** | **COPPER CONTAINING MICROPOROUS H-ZSM-5 ZEOLITE FOR THE REDUCTION OF NOX IN THE EXHAUST FLUE GAS** | | | |  |
|  | 3.1. | CHARACTERIZATION OF THE PREPARED CATALYSTS | | |  |
|  |  | 3.1.1. | X-Ray Diffraction | |  |
|  |  | 3.1.2. | Nitrogen Adsorption and Desorption Study | |  |
|  | 3.2. | CATALYTIC REDUCTION OF NOX USING ACETONE VAPOUR AS THE REDUCING AGENT | | |  |
| **4.** | **COPPER CONTAINING MESOPOROUS MCM-41 MATERIALS FOR THE REDUCTION OF NOX IN THE EXHAUST FLUE GAS** | | | |  |
|  | 4.1. | IMPORTANCE OF MESOPOROUS Cu-MCM-41 CATALYSTS | | |  |
|  | 4.2. | CHARACTERIZATION OF MESOPOROUS CATALYSTS | | |  |
|  |  | 4.2.1. | X-Ray Diffraction | |  |
|  |  | 4.2.2. | Nitrogen Adsorption and Desorption Study | |  |
| **5.** | **SUPPORTED CeO2-ZrO2 CATALYSTS FOR THE SELECTIVE CATALYTIC REDUCTION OF NOX** | | | |  |
|  | 5.1. | INTRODUCTION | | |  |
|  | 5.2. | CATALYSTS CHARACTERIZATION | | |  |
|  |  | 5.2.1. | X-Ray Diffraction | |  |
|  |  | 5.2.2. | Nitrogen Adsorption and Desorption Study | |  |
| **6.** | **SUMMARY AND CONCLUSION** | | | |  |
|  | **REFERENCES** | | | |  |
|  | **LIST OF PUBLICATIONS** | | | |  |

**Annexure – V**

**LIST OF TABLES**

|  |  |  |
| --- | --- | --- |
| **Table No.** | **Title** | **Page No.** |
| 1.1. | Indian emission standards for 4-wheel vehicles |  |
| 3.1. | Physico-chemical characteristics of the prepared materials |  |
| 4.1. | Physico-chemical characteristics of nano and composite materials |  |
| 5.1. | BET surface area and crystallite size of the catalysts |  |

**Annexure – VI**

**LIST OF FIGURES**

|  |  |  |
| --- | --- | --- |
| **Figure No.** | **Title** | **Page No.** |
| 1.1. | Operating cycle for a four-stroke CI engine |  |
| 1.2. | General composition and typical diesel particle |  |
| 1.3. | Typical diesel particle size and distribution |  |
| 2.1. | Schematic representation of the experimental set-up for the reduction of NOX with acetone vapour |  |
| 2.2. | Schematic representation of the experimental set-up for the reduction of NOX with methane vapour |  |
| 3.1. | XRD patterns of H-ZSM-5 |  |
| 3.2. | XRD patterns of Cu-ZSM-5 |  |
| 3.3. | N2 adsorption-desorption isotherm of H-ZSM-5 |  |
| 4.1. | XRD patterns of MCM-41 |  |
| 4.2. | XRD patterns of Al-MCM-41 (50) |  |
| 4.3. | XRD patterns of Cu-MCM-41 (50) |  |
| 5.1. | XRD patterns of (a) CeO2 (b) ZrO2, (c) CeO2-ZrO2, (d) CeO2-ZrO2/SiO2, (e) CeO2-ZrO2/Al2O3 and (f) CuO/ CeO2-ZrO2 |  |
| 5.2. | Raman Spectra of (a) CeO2-ZrO2/SiO2and (b) CeO2-ZrO2/Al2O3 |  |
| 5.3. | TGA and derivative curve of CeO2-ZrO2/Al2O3 |  |

**Annexure – VII**

**LIST OF ABBREVIATIONS AND SYMBOLS**

**ABBREVIATIONS**

|  |  |  |
| --- | --- | --- |
| AES | – | Atomic Emission Spectroscopy |
| AIR | – | Air Injection Reactor |
| BET | – | Brunauer-Emmet-Teller |
| CFC | – | Chlorofluorocarbon |
| cm3/min | – | Cubic Centimetre per minute |
| cm3/g | – | Cubic Centimetre per gram |
| CNG | – | Compressed Natural Gas |
| DRS UV-Vis | – | Diffuse Reflectance Ultraviolet Visible |
| EDX | – | Energy Dispersive X-Ray |
| EPR | – | Electron Paramagnetic Resonance |
| FT-IR | – | Fourier Transform Infra-Red |
| GC | – | Gas Chromatography |
| IUPAC | – | International Union of Pure and Applied Chemistry |
| KHz | – | Kilo Hertz |
| LPG | – | Liquid Petroleum Gas |
| m | – | Micrometre |
| nm | – | Nanometre |
| C | – | Degree Celsius |
| RT | – | Retention Time |
| RH | – | Relative Humidity |
| PCR | – | Polymerase Chain Reaction |
| UNDP | – | United Nations Development Programme |
| WTO | – | World Trade Organisation |
| FRBM | – | Fiscal Responsibility and Budget Management |
| BE | – | Budget Estimate |
| RE | – | Revised Estimate |

**SYMBOLS**

|  |  |  |
| --- | --- | --- |
|  | – | Absolute frequency |
|  | – | Density of the fluid |
|  | – | Direction of wave propagation |
|  | – | Frequency of the waves |
|  | – | Potential function |
|  | – | Alpha |
| Å | – | Angstrom |
|  | – | Beta |
| % | – | Percentage |
|  | – | Surface tension |
|  | – | Theta |
|  | – | Wavelength |
|  | – | Psi |