This is to certify that research work undertaken in this dissertation titled "Advance Oxidation Process for Wastewater Treatment" is carried out by Mr. Suthar Mukeshkumar Dhudabhai (Enrollement No. 1926002001) studying at Environmental Engineering Department of Swarrnim Institute of Technology for partial fulfillment of Master of Environment Engineering degree to be awarded by Swarrnim Stratup and Innovation University. This research work has been carried out under my guidance and supervision and it is up to my satisfaction.

Date: 28.06.2020

Place: Gandhinagar

Prof. Kalpana Saini

**Assistant Professor** 

Department of Environmental Engineering

Swarrnim Institute of Technology

Swarrnim Startup and Innovation

University Gandhinagar

Dr. N K Patel

Principal

Swarrnim Institute of Technology

Swarrnim Stratup and Innovation

University Gandhinagar.



This is to certify that research work undertaken in this dissertation titled "APRAISAL FOR GROUNDWATER QUALITY ANALYSIS OF AHMEDABAD CITY" is carried out by Mr. DESAI VIRAL KAUSHIKBHAI (Enrollment No. 1926002002) studying at Environmental Engineering Department of Aadishwar college of Technology for partial Fulfillment of Master of Environmental Engineering Degree to be awarded by Swarrnim Startup & Innovation University. This Reserch work has been carried out under my guidance and Supervision and it is up to my Satisfaction.

Date: 29106121

Place: Gandhinagar

Prof. Kalpana Saini

Assistant Professor.

Environmental Engineering Dept.

Swarrnim Institute of Technology,

Swarrnim Startup & innovation University.

Gandhinagar.

K Patel

Principal

Swarmim Institute of Technology,

Swarmim Startup & innovation University.

Gandhinagar.



Seal of the Institute.

## Metallic Scrap Processing with Bar Untangling Machine Designing

#### **CERTIFICATE**

This is to certify that research work undertaken in this dissertation titled "Metallic Scrap Processing with Bar Untangling Machine Designing" was completely executed by Darshal Patel (Enrolment No. 1926002003) at Swarrnim Institute of Technology, Swarrnim Startup and Innovation University, Gandhinagar for partial fulfilment of course work in Environmental Engineering under Master of Technology degree program to be awarded by Swarrnim Startup & Innovation University. This research work has been carried out under my guidance and supervision and it is up to the expectations.

Date: 29/04/21

Place: Swarrnim Institute of Technology,

Swarrnim Startup and trace a pleas University, Gandhinagar

Prof. Kalpana Saini
Assistant Professor,
Swarrnim Institute of Technology
Swarrnim Startup and Innovation
University, Gandhinagar

Principal. Dr. N K Patel Swarrnim Institute of Technology Swarrnim Startup and Innovation University, Gandhinagar

Seal of the Institute

# WASTE MANAGEMENT OF CONSTRUCTION AND DEMOLITION CERTIFICATE

This is to certify that research work undertaken in this dissertation title waste management of construction and demolition is carried out by Mr Meet Dilipkumar Kadia (enrolment number 1926002004) studying at environmental engineering department of Aadishwar College of technology for partial fulfilment of master of environmental engineering degree to be awarded by Swarrnim startup and innovation University this research work has been carried out under my guidance and supervision and it is up to my satisfaction

Date: 29/06/21

Place: Gandhinagar

Prof. Kalpna Saini
Head of department,
Environmental Engineering Dept.
Swarrnim Institute of technology
Swarrnim Startup and Innovation
University

University Gandhinagar Principal. Dr. N K Patel

Swarrnim Institute of technology Swarrnim Startup and Innovation

University Gandhinagas

This is to certify that research work undertaken in this dissertation titled "TREATMENT OF HAZARDOUS POLLUTANT - PHENOL BY ADSORPTION" is carried out by BHARGAV BHARATKUMAR PATEL (Enrolment No. 1926002005) studying at Environmental Engineering Department of Swarrnim Institute of Technology for Partial Fulfilment of Master of Environmental Engineering Degree to be awarded by Swarrnim Startup and Innovation University. This research work has been carried out under my guidance and supervision and it is up to my satisfaction.

Date: 29/06/2021

Place: Gandhinagar

Prof. Kalpana Saini

Head of Department,

Environmental Engineering Dept.

Swarrnim Institute of Technology,

Swarrnim Startup and Innovation

University

Gandhinagar

Dr. N. K. Patel

North

Principal,

Swarrnim Institute of Technology,

Swarrnim Startup and Innovation

University

Gandhinagar

Seal of the Institute

This is to certify that work embodied in this dissertation entitled "COPPER REMOVAL FROM WASTEWATER BY ORANGE PEEL" was carried out by Mr. Khorasiya Parthkumar Shantilal (Enrolment No. 1926002006), at Swarrnim Startup & Innovation University, An Autonomous Institution for partial fulfilment of Master of Technology with Specialization in Environmental Engineering degree to be awarded by Swarrnim Startup & Innovation University. This work has been carried out under our supervision meets the requirement of Swarrnim Startup & Innovation University. This research work has been carried out under my guidance and supervision and it is up to my satisfaction.

Date: 29 06 2021

Place: Gandhinagar

Head, Environment Engineering (Prof. Kalpana Saini)

Head of Department
Environmental Engineering Department
Swarrnim Institute of Technology
Swarrnim Startup and Innovation University
Gandhinagar

Principal
(Dr. N K Patel)

Principal
Swarrnim Institute of Technology
Swarrnim Startup and Innovation University
Gandhinagar

TECHNOLO:

This is to certify that research work embodied in this thesis entitled "An integrated approach to solid waste management in Gandhinagar - Current practices, challenges and opportunities" was carried out by Ms. Dharati Acharya (Enroll No.1926002007) at Swarrnim Institute of Technology for partial fulfillment of Master of Technology degree in Environmental Engineering to be awarded by Swarrnim Start up & Innovation University. She has worked upon the comments given during the Dissertation phase -1 and Mid Semester Review. This Research work has been carried out under my supervision and is to my satisfaction.

Date: 29/06/2021 Place: Gandwinagar

Prof. Kalpana Saini

Internal Guide

Environmental Engineering Department Swarrnim Start up & Innovation University

Dr. Nilesh K. Patel,

Principal,

Swarnim Institute of Technology

varnim Start up & Innovation University

This is to certify that research work undertaken in this dissertation titled "VOC CONTROL MEASURES IN PROCESS STACK" is carried out by Mr. Jayesh Kanubhai Kathrotiya (Enrollment No. 1926002008) studying at Environmental Engineering Department of Swarrnim Institute of Technology for partial fulfillment of Master of Technology degree in Environmental Engineering to be awarded by Swarrnim Stratup and Innovation University. This research work has been carried out under my guidance and supervision and it is up to my satisfaction.

Date: 29/6/21

Place: Gandhinagar

Prof. Kalpana Saini

Assistant Professor

Department of Environmental Engineering

Swarrnim Institute of Technology

Swarmim Stratup and Innovation University

Gandhinagar

Dr. N K Patel

Principal

Swarrnim Institute of Technology

Swarrnim Stratup and Innovation

University

Gandhinagar



Seal of Institute

This is to certify that research work embodied in this dissertation titled "RETROFITTING OF EXISTING INDUSTRIAL ESTATE INTO ECO INDUSTRIAL PARK IN GUJARAT" is carried out by Mr. Rathod Punamchandra Ranchhodbhai (Enrollment No. 1926002009) at Environmental Engineering Department of Swarrnim Institute of Technology for Partial Fulfillment of Master of Environmental Engineering Degree to be awarded by Swarrnim Startup & Innovation University, Gandhinagar. This research work has been carried out under my guidance and supervision and it is up to my satisfaction.

Date: 17/07/2021

Place: Gandhinagar

Prof. Kalpana D. Saini

(Internal Guide)
Assistant Professor

Environmental Engineering 1 - 21 - 21

Swarrnim Institute of Toolog Roger Swarrnim Startup & Innovation of the Page

Gandhinagar

Prof. S. M. Usman (External Guide)

Prof. (Dr.) Nilesh K. Patel

Principal

Swarrnim Institute of Technology Swarrnim Startup & Innovation University

Gandhinagar

This is to certify that research work undertaken in this dissertation titled "REMOVAL OF TOXIC PHENOL BY PSEUDOMONAS BACTERIA" is carried out by Mr. UDAY SHASHINCHANDRA DESAI (Enrollment No. 1926002010) studying at Environmental Engineering Department of Swarrnim Institute of Technology for partial Fulfillment of Master of Technology degree in Environmental Engineering Degree to be awarded by Swarrnim Startup & Innovation University. This Research work has been carried out under my guidance and Supervision and it is up to my Satisfaction.

Date: 29/06/21

Place: Gandhinagar

Assist. Prof. Kalpana Saini

Assistant Professor,

Environmental Engineering Dept.

Swarrnim Institute of Technology,

Swarrnim Startup & innovation University

Gandhinagar.

Dr. N.K. Patel

Principal,

Swarmirn Institute of Technology,

Swammin Startup & innovation University

Gandhinagar.



Seal of the Institute.

This is to certify that research work undertaken in this dissertation titled "PERFORMANCE EVALUATION OF COMMON EFFLUENT TREATMENT PLANT - TEXTILE INDUSTRIES" is carried out by Ms. Nidhi Ashishkumar Mehta (Enrolment No. 1926002012) studying at Environmental Engineering Department of Swarnim College of Technology for Partial Fulfilment of Master of Environmental Engineering Degree to be awarded by Swarrnim Startup and Innovation University. This research work has been carried out under my guidance and supervision and it is up to mysatisfaction.

Date: 20-6-2021

Place: Gandhinagar

Prof. Kalpana Saini

Assistant Professor,

Environmental Engineering Dept.

Swarrnim Institute of Technology,

SwarrnimStartup and Innovation

University

Gandhinagar

Dr. N.K.Patel

Principal,

warrnim Institute of Technology,

SwarrnimStartup and Innovation

University

Gandhinagar

Seal of the Institute

This is to certify that research work embodied in this dissertation titled "Continuous Emission Monitoring System Installations & Emission Trading Scheme for Particulate Matter - A Pilot Project in Surat" was carried out by Manali Shishirkumar Bhatt (Enrollment No.1926002013) at Swarrnim Institute of Technology for partial fulfillment of Master of Engineering degree in Environmental Management to be awarded by SwarrnimStartup & Innovation University. This research work has been carried out under my guidance and supervision and it is up to my satisfaction.

Date: 30/6/2021

Place: Gandhinagar

Manali S. Bhatt

(Enrollment No.: 1926002013)

Prof. Kalpana Saini

(Internal Guide)
Assistant professor

Department of Environmental Engineering

Swarrnim Institute of Technology

Swarrnim Startup & Innovation University

Prof. S. M. Usman

(External Guide) CEO -CETP AHSPA Danilimda



This is to certify that research work embodied in this thesis entitled "A Comparative study on removal of CU(II) using Activated carbon and low cost adsorbent from Textile wastewater" was carried out by VANKANI DHARMENDRA C (ENROLMENT NO: 1926002016) studying at "SWARRNIM INSTITUTE OF TECHNOLOGY, GANDHINAGAR" for partial fulfilment of Mid Sem Review (MSR) M.Tech. (ENVIRONMENTAL) degree to be awarded by Swarnim Start-up and Innovation University, Gandhinagar (Gujarat). This work has been carried out under my guidance and supervision and it is up to my satisfaction.

Date: 30 / 06/2021

Place: Gandhinagar

Prof. Kalpana Saini

Assistant Professor

Department of Environmental Engineering

Swarrnim Institute of Technology

Swarrnim Startup and Innovation

University Gandhinagar

Dr. NK Patel

Principal

Swarrnim Institute of Technology

Swarrnim Stratup and Innovation

University Gandhinagar.

**Seal of Inst** 



This is to certify that work embodied in this dissertation entitled "Pesticides Wastewater Treatment by Fenton Activated Carbon Catalytical Oxidation (FACCO) using Two Different (Fe(ii) And Fe(iii)) Iron" was carried out by En.No: 1926002017: Bala Venkata Praveen Inala, at Swarrnim Startup & Innovation University, An Autonomous Institution for partial fulfilment of Master of Technology with Specialization in Environmental Engineering degree to be awarded by Swarrnim Startup & Innovation University. This work has been carried out under our supervision meets the requirement of Swarrnim Startup & Innovation University.

Date: 29106121

Place: Gandwiner Cur

Head, Environment Engineering (Prof. Kalpana Saini) Principal

(Dr. N K Patel)