

PROJECT REPORT

ON

“PREPARATION OF ACRYLIC EMULSION FOR WATER-BASED HIGH GLOSS COATINGS”

SUBMITTED TO

DEPARTMENT OF PAINT TECHNOLOGY

HARCOURT BUTLER TECHNICAL UNIVERSITY, KANPUR

SUBMITTED BY

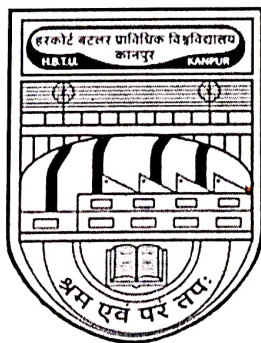
FINAL BTECH PAINT TECHNOLOGY

CHETAN SHARMA

RISHABH SHARMA

HARSHIT GAUR

TWINKLE VERMA



HARCOURT BUTLER TECHNICAL UNIVERSITY

NAWABGANJ, KANPUR -208002

UTTAR PRADESH, INDIA

CERTIFICATE

Certified that CHETAN SHARMA, RISHABH SHARMA, HARSHIT GAUR and TWINKLE VERMA students of final B.Tech. Chemical Technology- Paint Technology had carried out the work; presented in this report entitled " PREPARATION OF ACRYLIC EMULSION FOR WATER-BASED HIGH GLOSS COATINGS " is partial fulfillment of the requirements for the degree of B.Tech. in Chemical Technology- Paint Technology from Harcourt Butler Technical University, Kanpur under my supervision during the session 2023-2024. The report embodies results of original work carried out by students themselves and the contents of report do not form the basis for the award of any other degree to the candidate or to anybody else from this or any other University/Institution.



Mrs. Radha Sachan

Assistant Professor, Department of Paint technology
School of Chemical Technology
Harcourt Butler Technical University
Kanpur, India- 208002

A PROJECT REPORT (DISSERTATION REPORT)

ON

**CASTOR OIL BASED SHORT OIL ALKYD AS PLASTICIZER
FOR NC FINISH**

SUBMITTED FOR DEGREE of

BACHELOR OF TECHNOLOGY

CHEMICAL TECHNOLOGY-PAINT TECHNOLOGY

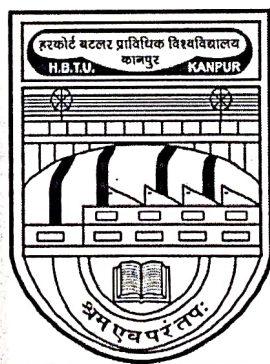
BY ADITYA PRAKASH, SARTHAK SINGH CHAUHAN & ISHANK
SINGH

UNDER GUIDANCE OF

. Dr. ARUN MAITHANI

Dr. PRAMOD KUMAR

Mr. SUNIL MEHROTRA



TO

THE DEPARTMENT OF PAINT TECHNOLOGY

SCHOOL OF CHEMICAL TECHNOLOGY HARCOURT BUTLER
TECHNICAL UNIVERSITY, KANPUR

CERTIFICATE

Certified that project work entitled "*Castor Oil Based Short Oil Alkyd As Plasticizer For NC Finish*" is a bona fide work carried out in the seventh semester by **Aditya Prakash, Sarthak Singh Chauhan & Ishank Singh** in partial fulfillment for the award of Bachelor of Technology in Chemical Technology-Paint Technology from Harcourt Butler Technical University, Kanpur during the academic year 2023-24.

Sd/-

Dr. Arun Maithani

(Head Of Department-Paint Technology)

WATER BASED ACRYLIC FLOOR COATING

A TECHNO-ECONOMIC FEASIBILITY REPORT

Submitted in partial fulfillment of the requirements

for the award of the degree of

BACHELOR OF TECHNOLOGY

in

PAINT TECHNOLOGY

by

Ankit Saxena (200112017)

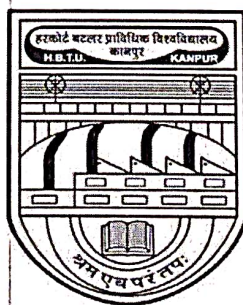
Abhinav Mishra (200111014)

Sujal Gaur (200113033)

Shivam Agrawal (200113031)

Under the supervision

of



Dr. Arun Maithani

DEPARTMENT OF PAINT TECHNOLOGY
HARCOURT BUTLER TECHNICAL UNIVERSITY
KANPUR, INDIA (208002)

CERTIFICATE

Certified that Mr. Ankit Saxena, Mr. Abhinav Mishra, Mr. Sujal Gaur and Mr. Shivam Kumar Agrawal, students of Final B.Tech. Chemical Technology- Paint Technology had carried out the work; presented in this Project Report titled "**WATER BASED ACRYLIC FLOOR COATING**" in partial fulfillment of the requirements for the degree of B.Tech. in Chemical Technology Paint Technology from Harcourt Butler Technical University, Kanpur under my supervision during the session 2023-2024. The report embodies results of original work carried out by students themselves and the contents of the report do not form the basis for the award of any other degree to the candidate or to anybody else from this or any other University/Institution.



(Dr. Arun Maithani)
(Professor & Head)

Paint Technology Department,
Harcourt Butler Technical University,
Kanpur, Uttar Pradesh, 208002

PROJECT REPORT ON PREPARATION OF EMULSION BASED ON CNSL OIL
A Techno-economic feasibility report submitted
in partial fulfillment of requirements
for the degree of

**BACHELOR OF TECHNOLOGY
CHEMICAL TECHNOLOGY-PAINT TECHNOLOGY
BY**

SHIVANSH GUPTA
(University roll no. 200113007)

KESHAV SHUKLA
(University roll no. 200113025)

Under the supervision of

DR. P.K. TRIPATHI
Professor, Department of Paint Technology



To

**THE DEPARTMENT OF PAINT TECHNOLOGY
SCHOOL OF CHEMICAL TECHNOLOGY
HARCOURT BUTLER TECHNICAL UNIVERSITY
KANPUR, INDIA-208002
2023-2024**

CERTIFICATE

Certified that **SHIVANSH GUPTA, KESHAV SHUKLA** students of final **B.Tech. Chemical Technology- Paint Technology** had carried out the work; presented in this techno-economic feasibility report entitled "**PROJECT REPORT ON PREPARATION OF EMULSION BASED ON CNSL OIL**" is partial fulfillment of the requirements for the degree of B.Tech. in Chemical Technology- Paint Technology from Harcourt Butler Technical University, Kanpur under my supervision during the session 2023-2024.

The report embodies results of original work carried out by students themselves and the contents of report do not form the basis for the award of any other degree to the candidate or to anybody else from this or any other University/Institution.



DR. P.K. TRIPATHI

Professor, Department of Paint technology
School of Chemical Technology
Harcourt Butler Technical University
Kanpur, India- 208002

PROJECT REPORT

ON

“PREPARATION OF EPOXY-PHENOLIC COATINGS FOR FOOD CAN”

SUBMITTED TO

DEPARTMENT OF PAINT TECHNOLOGY

HARCOURT BUTLER TECHNICAL UNIVERSITY, KANPUR

FOR

PARTIAL FULFILMENT OF THE REQUIREMENT OF B.TECH. PAINT TECHNOLOGY
DEGREE

SUBMITTED BY

FINAL BTECH PAINT TECHNOLOGY

AJAY BIND

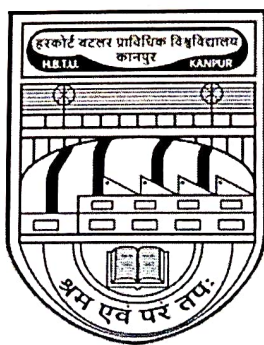
(University Roll No: 200113011)

PRINCE KUMAR

(University Roll No: 200113003)

PUNDRIK

(University Roll No: 200113030)



HARCOURT BUTLER TECHNICAL UNIVERSITY

NAWABGANJ, KANPUR -208002

UTTAR PRADESH, INDIA

CERTIFICATE

Certified that **AJAY BIND, PRINCE KUMAR AND PUNDRIK** students of final B.Tech. Chemical Technology- Paint Technology had carried out the work; presented in this techno-economic feasibility report entitled "**PROJECT REPORT ON PREPARATION OF EPOXY PHENOLIC COATING FOR FOOD CANS**" is partial fulfillment of the requirements for the degree of B.Tech. in Chemical Technology Paint Technology from Harcourt Butler Technical University, Kanpur under my supervision during the session 2023-2024.

The report embodies results of original work carried out by students themselves and the contents of report do not form the basis for the award of any other degree to the candidate or to anybody else from this or any other University/Institution.


DR. P.K. TRIPATHI

Professor, Department of Paint technology

School of Chemical Technology

Harcourt Butler Technical University

Kanpur, India- 208002

PROJECT REPORT ON PREPARATION OF ETHYL SILICATE BINDER FOR COATING

A Techno-economic feasibility report submitted
in partial fulfillment of requirements
for the degree of

BACHELOR OF TECHNOLOGY CHEMICAL TECHNOLOGY-PAINT TECHNOLOGY BY

HUZAIFA KHAN
(University roll no. 200101007)

RAJAT DIXIT
(University roll no. 200112028)

VARUN ANSHWANI
(University roll no. 200113036)

RAVI PANDEY
(University roll no. 200112031)

Under the supervision of

DR. P.K. TRIPATHI
Professor, Department of Paint Technology

DR. ARUN MAITHANI
Head, Department of Paint Technology



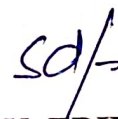
To

**THE DEPARTMENT OF PAINT TECHNOLOGY
SCHOOL OF CHEMICAL TECHNOLOGY
HARCOURT BUTLER TECHNICAL UNIVERSITY
KANPUR, INDIA-208002
2023-2024**

CERTIFICATE

Certified that **HUZAIFA KHAN, RAJAT DIXIT, VARUN ANSHWANI AND RAVI PANDEY** students of final **B.Tech. Chemical Technology- Paint Technology** had carried out the work; presented in this techno-economic feasibility report entitled "**PROJECT REPORT ON PREPARATION OF ETHYL SILICATE BINDER FOR COATINGS**" is partial fulfillment of the requirements for the degree of B.Tech. in Chemical Technology- Paint Technology from Harcourt Butler Technical University, Kanpur under my supervision during the session 2023-2024.

The report embodies results of original work carried out by students themselves and the contents of report do not form the basis for the award of any other degree to the candidate or to anybody else from this or any other University/Institution.



DR. P.K. TRIPATHI

Professor, Department of Paint technology
School of Chemical Technology
Harcourt Butler Technical University
Kanpur, India- 208002

PROJECT REPORT ON MANUFACTURING OF WATER- SOLUBLE ALKYD

A LITERATURE-SURVEY REPORT

Submitted in partial fulfillment of requirements for the degree of

BACHELOR OF TECHNOLOGY in PAINT TECHNOLOGY BY

SAUMYA KHANDELWAL
(200113006)

APURVA SINGH
(200113016)

AISHWARYA MISHRA
(200113010)

Under the supervision of

DR. ARUN MAITHANI
Professor & Head, Department of Paint Technology



To

**DEPARTMENT OF PAINT TECHNOLOGY
HARCOURT BUTLER TECHNICAL UNIVERSITY KANPUR,
INDIA-208002
2023-2024**

CERTIFICATE

This to certify that Miss Saumya Khandelwal (200113006), Miss Apurva Singh (200113016), Mr. Aishwarya Mishra (200113010), students of Final Year B.Tech. Chemical Technology- Paint Technology have carried out this work; presented in the Literary-Survey Report entitled "MANUFACTURING OF WATER- SOLUBLE ALKYD", in partial fulfillment of the requirements for the degree of B.Tech. in Chemical Engineering – Paint technology from Harcourt Butler Technical University under my supervision. The contents of the report do not form the basis for the award of any other degree or to anybody else from this or any other university.



DR. ARUN MAITHANI

Head of Department, Paint Technology
HBTU, Kanpur

PROJECT REPORT ON MANUFACTURING OF NATURAL WAX BASED EMULSION COATING

A Techno-economic feasibility report submitted in
partial fulfillment of requirements for the degree
of

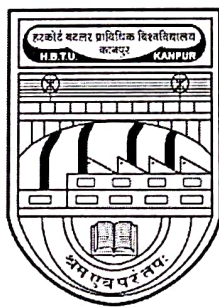
**BACHELOR OF TECHNOLOGY
CHEMICAL TECHNOLOGY-PAINT TECHNOLOGY
BY**

TANU SINGH (University roll no. 200113034)
HARSH MISHRA (University roll no. 200113020)
ANMOL KRISHNA (University roll no. 200113014)
NIKITA ARORA (University roll no. 200113028)

Under the supervision of

Mrs. Radha Sachan,

Assistant Professor, Department of Paint Technology



TO

**THE DEPARTMENT OF PAINT TECHNOLOGY
SCHOOL OF CHEMICAL TECHNOLOGY
HARCOURT BUTLER TECHNICAL UNIVERSITY KANPUR, INDIA-208002
2023-2024**

CERTIFICATE

Certified that **TANU SINGH, NIKITA ARORA, HARSH MISHRA AND ANMOL KRISHNA**, students of final B.Tech. Chemical Technology- Paint Technology had carried out the work; presented in this techno-economic feasibility report entitled "**PROJECT REPORT ON NATURAL WAX BASED EMULSION**" is partial fulfillment of the requirements for the degree of B.Tech. in Chemical Technology- Paint Technology from Harcourt Butler Technical University, Kanpur under my supervision during the session 2021-2022. The report embodies results of original work carried out by students themselves and the contents of report do not form the basis for the award of any other degree to the candidate or to anybody else from this or any other University/Institution.



Dr. Arun Maithani,

Head of Department, Paint Technology

School of Chemical Technology,

Harcourt Court Butler Technical University

Kanpur, Uttar Pradesh, 208002

**A Project Report
On
POLYURETHANE DISPERSIONS**

Submitted in partial fulfillment of requirements
for the degree of

**BACHELOR OF TECHNOLOGY
CHEMICAL TECHNOLOGY-PAINT TECHNOLOGY
BY**

Ananya Kakati

(University roll no. 200113040)

Shivam Sharma

(University roll no. 200113001)

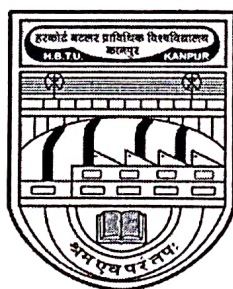
Abhishek Singh

(University roll no. 200113008)

Under the supervision of

Dr. Durgesh Kumar Soni

Assistant Professor, Department of Paint Technology



TO

**THE DEPARTMENT OF PAINT TECHNOLOGY
SCHOOL OF CHEMICAL TECHNOLOGY
HARCOURT BUTLER TECHNICAL UNIVERSITY
KANPUR, INDIA-208002
2023-2024**

CERTIFICATE

Certified that **Ananya Kakati, Shivam Sharma and Abhishek Singh**, students of Final B.Tech. Chemical Technology- Paint Technology had carried out the work; presented in this Project Report titled "**AQUEOUS POLYURETHANE DISPERSIONS**" in partial fulfillment of the requirements for the degree of B.Tech. in Chemical Technology Paint Technology from Harcourt Butler Technical University, Kanpur under my supervision during the session 2023- 2024. The report embodies results of original work carried out by students themselves and the contents of report do not form the basis for the award of any other degree to the candidate or to anybody else from this or any other University/Institution.



(Dr. Durgesh Kumar Soni)

Assistant Professor , Department of Paint technology
School of Chemical Technology
Harcourt Butler Technical University
Kanpur, Uttar Pradesh -208002

**A Project Report
On
PREPRATION OF EPOXYESTER RESIN**

Submitted in partial fulfilment of requirements
for the degree of

**BACHELOR OF TECHNOLOGY
CHEMICAL TECHNOLOGY-PAINTTECHNOLOGY
BY**

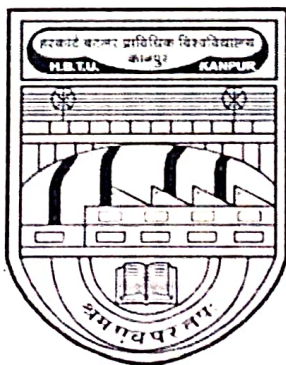
SANDEEP KUMAR AGARHARI
(UniversityRollno.200113005)

VISHAL VERMA
(UniversityRollno.200113038)

MAYANK DWIVEDI
(University Rollno.200113038)

Under the supervision of

Mr. Ghanshyam Das
Guest Faculty, Department of Paint Technology
HBTU, Kanpur 208002



To

**THE DEPARTMENT OF PAINT TECHNOLOGY
SCHOOL OF CHEMICAL TECHNOLOGY
HARCOURT BUTLER TECHNICAL UNIVERSITY
KANPUR,INDIA-208002
2023-2024**

CERTIFICATE

Certified that **Sandeep Kumar Agarhari ,Vishal Verma ,Mayank Dwivedi** students of **Final B.Tech. Chemical Technology- Paint Technology** had carried out the work presented in this Project Report titled "**PREPERATION OF EPOXY ESTER RESIN**" in partial fulfillment of the requirements for the degree of B.Tech. In Chemical Technology – Paint Technology from Harcourt Butler Technical University, Kanpur under my supervision during the session 2023-2024. The report embodies results of original work carried out by students themselves and the contents of report do not form the basis for the award of any other degree to the candidate orto anybody else from this or any other University/Institution.

Ghanshyam.

(Mr. Ghanshyam Das)

Guest Faculty, Department of Paint Technology
School of Chemical Technology

**A Project Report
On
HEXAMETHOXYMETHYL MELAMINE RESIN**

Submitted in partial fulfillment of requirements
for the degree of

**BACHELOR OF TECHNOLOGY
CHEMICAL TECHNOLOGY-PAINT TECHNOLOGY
BY**

Mohit Singh Chauhan

(University roll no. 200113026)

Alok Dubey

(University roll no. 200113012)

Aman Lakhotia

(University roll no. 190113005)

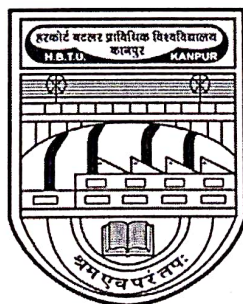
Aditya Kumar Trivedi

(University roll no. 200110014)

Under the supervision of

Mr. Brajendra Mohan Singh

Guest Faculty, Department of Paint Technology



TO

**THE DEPARTMENT OF PAINT TECHNOLOGY
SCHOOL OF CHEMICAL TECHNOLOGY
HARCOURT BUTLER TECHNICAL UNIVERSITY
KANPUR, INDIA-208002
2023-2024**

CERTIFICATE

Certified that **Mohit Singh Chauhan, Alok Dubey, Aman Lakotiya and Aditya Kumar Trivedi**, students of Final B.Tech. Chemical Technology- Paint Technology had carried out the work; presented in this Project Report titled "**HEXAMETHOXYMETHYL MELAMINE RESIN**" in partial fulfillment of the requirements for the degree of B.Tech. in Chemical Technology Paint Technology from Harcourt Butler Technical University, Kanpur under my supervision during the session 2023- 2024. The report embodies results of original work carried out by students themselves and the contents of the report do not form the basis for the award of any other degree to the candidate or to anybody else from this or any other University/Institution.



(Mr. Brajendra Mohan Singh)

Guest Faculty, Department of Paint technology
School of Chemical Technology
Harcourt Butler Technical University
Kanpur, Uttar Pradesh - 208002

**PROJECT ON
“PREPERATION OF
WATER-BASED THERMOSETTING
ACRYLIC COATINGS”**

SUBMITTED BY:

SULABH MISHRA [200113002]

ANJALI TIWARI [200113013]

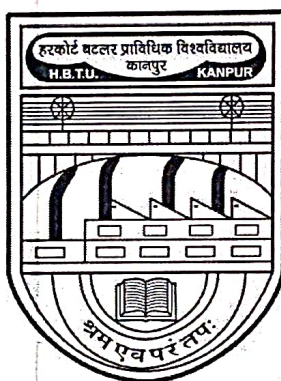
GAURAV TIWARI [200113019]

UNDER GUIDANCE OF:

DR. RADHA SACHAN

ASSISTANT PROFESSOR

DEPARTMENT OF PAINT TECHNOLOGY



Submitted to

DEPARTMENT OF PAINT TECHNOLOGY

SCHOOL OF CHEMICAL TECHNOLOGY

HARCOURT BUTLER TECHNICAL UNIVERSITY KANPUR, INDIA-208002

CERTIFICATE

Certified that **Sulabh Mishra, Gaurav Tiwari, Anjali Tiwari** students of **Final B.Tech. Chemical Technology- Paint Technology** had carried out the work presented in this Project Report titled "**PREP PREPERATION OF WATER-BASED THERMOSETTING ACRYLIC COATINGS** " in partial fulfillment of the requirements for the degree of B.Tech. In Chemical Technology - Paint Technology from Harcourt Butler Technical University, Kanpur under my supervision during the session 2023-2024. The report embodies results of original work carried out by students themselves and the contents of report do not form the basis for the award of any other degree to the candidate or to anybody else from this or any other University/Institution.

Radha
22.12.23

DR. RADHA SACHAN

ASSISTANT PROFESSOR
Department of Paint technology
School of Chemical Technology

Harcourt Butler Technical University
Kanpur, India- 208002

**A TECHNO ECONOMIC FEASIBILITY REPORT
On
MANUFACTURE OF HEXAMETHOXYMETHYL MELAMINE RESIN**

**Submitted in partial fulfilment of requirements for the degree of
BACHELOR OF TECHNOLOGY CHEMICAL TECHNOLOGY-
PAINT TECHNOLOGY**

**BY
MOHIT SINGH CHAUHAN
(University roll no. 200113026)**

**ALOK DUBEY
(University roll no. 200113012)**

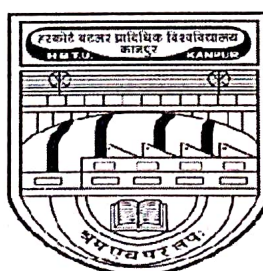
**ADITY KUMAR TRIVEDI
(University roll no. 200110014)**

**AMAN LAKHOTIA
(University roll no. 190113005)**

For year 2023-24

Under the supervision of

**MR. BRAJENDRA MOHAN SINGH
Guest Faculty, Department of Paint Technology**



To

**THE DEPARTMENT OF PAINT TECHNOLOGY
SCHOOL OF CHEMICAL TECHNOLOGY
HARCOURT BUTLER TECHNICAL UNIVERSITY
KANPUR, INDIA-208002**

CERTIFICATE

Certified that **MOHIT SINGH CHAUHAN, ADITYA KUMAR TRIVEDI, ALOK DUBEY AND AMAN LAKHOTIA**, students of Final B.Tech. Chemical Technology- Paint Technology had carried out the work; presented in this Project Report titled "**MANUFACTURE OF HEXAMETHOXYMETHYL MELAMINE RESIN**" in partial fulfillment of the requirements for the degree of B.Tech. In Chemical Technology - Paint Technology from Harcourt Butler Technical University, Kanpur under my supervision during the session 2023- 2024. The report embodies results of original work carried out by students themselves and the contents of report do not form the basis for the award of any other degree to the candidate or to anybody else from this or any other University/Institution.



(**Mr. Brajendra Mohan Singh**)

Guest Faculty, Department of Paint technology
School of Chemical Technology

Harcourt Butler Technical University
Kanpur, India- 208002

A
PROJECT REPORT
On
“Production of Refined Rice Bran Wax”

Submitted by
PRASHANT SINGH (200111006)
SACHIN KUMAR (200111011)

Partial fulfillment of the requirement of B.TECH
OIL TECHNOLOGY DEGREE
Of



HARCOURT BUTLER TECHNICAL UNIVERSITY
KANPUR-
208002,
UTTAR PRADESH

CERTIFICATE

Certified that this project report on **“PRODUCTION OF REFINED RICE BRAN WAX”** is the work of **PRASHANT SINGH, SACHIN KUMAR** who carried out the project work under my supervision.

SIGNATURE

Dr. R.K TRIVEDI (supervisor)

Oil Technology

Harcourt Butler Technical

University

Kanpur – 208002

A REPORT
ON
“PRODUCTION OF ESSENTIAL OILS PRESENT IN
CARDAMOM ”

Session- 2023-24
SUBMITTED TO
DEPARTMENT OF OIL TECHNOLOGY
HARCOURT BUTLER TECHNICAL UNIVERSITY, KANPUR

Under The Supervision of

Mr. Gaurav Singh

Submitted By :

SRIJAN SINGH (200111036)

KSHITIJ SINGH (200111030)

FINAL B.TECH OIL TECHNOLOGY



HARCOURT BUTLER TECHNICAL UNIVERSITY
NAWABGANJ, KANPUR - 208002

DEPARTMENT OF OIL
TECHNOLOGY SCHOOL OF
CHEMICAL TECHNOLOGY
HARCOURT BUTLER TECHNICAL
UNIVERSITY KANPUR



CERTIFICATE

This is to certify that this report entitled “Production of Essential oil present in cardamom ” is a bonafide record of the project submitted by

1. Srijan Singh , Roll No. 200111036
2. Kshitij Singh, Roll No. 200111030

under my guidance towards the partial fulfillment of the requirements for the award of Bachelor of Technology in Oil Technology from Harcourt Butler Technical University, Kanpur.

Mr. Gaurav Singh
ASSISTANT PROFESSOR
Department of Oil Technology

Production of Fatty Acid Dimers

Project Report

Submitted in partial fulfilment of the requirements for the award of the
degree of

BACHELOR OF TECHNOLOGY

In

**CHEMICAL TECHNOLOGY WITH SPECIALIZATION IN
OIL TECHNOLOGY**

Submitted by

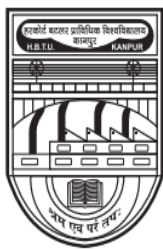
**Avnish Mani Mishra (190111011)
Khushi Dixit (200111003)**

Under the supervision of

Mr. Gaurav Singh (Assistant Professor)



DEPARTMENT OF OIL TECHNOLOGY
HARCOURT BUTLER TECHNICAL UNIVERSITY
NAWABGANJ, KANPUR- 208002 (INDIA)



हरकोर्ट बटलर प्राविधिक विश्वविद्यालय

नवाबगंज, कानपुर - 208002, उ.प्र., भारत

HARCOURT BUTLER TECHNICAL UNIVERSITY

NAWABGANJ, KANPUR - 208002, U.P., INDIA

(Formerly Harcourt Butler Technological Institute, Kanpur)

Phone : +91-0512-2534001-5, 2533812, website : <http://www.hbtu.ac.in>, Email : vc@hbtu.ac.in

100 YEARS
1921 - 2021

CERTIFICATE

This is to certify that the dissertation entitled “**Production of fatty acid dimers**” for the partial fulfillment of the degree of B.Tech. in Chemical Technology (with specialization in Oil Technology) from Harcourt Butler Technical University, Kanpur is being submitted by **Mr. Avnish Mani Mishra** and **Khushi Dixit** under my supervision and guidance during session 2023-2024.

They took keen interest in his work and prepared this project work with their own efforts and the work is not presented anywhere else.

I wish them a bright and brilliant future and success throughout their career.

Date :

Place :

Mr. Gaurav Singh

Assistant Professor

Department of Oil Technology

HBTU Kanpur

DECLARATION BY SCHOLARS

**A
Project
Report on
Production of Specialty Soaps
Submitted
In Partial Fulfilment of the Requirement for the Degree of
Bachelor of Technology in Oil Technology**

Submitted by
Suraj Kumar (200111012)
Aditya Singh (200111016)

Under the Guidance of
Mr. Sanjay Kumar
Assistant Professor



**Department Of Oil
Technology School Of
Chemical Technology**
Harcourt Butler Technical University, Kanpur
208002 April 2024

DEPARTMENT OF OIL TECHNOLOGY

SCHOOL OF CHEMICAL TECHNOLOGY

HARCOURT BUTLER TECHNICAL UNIVERSITY KANPUR



CERTIFICATE

This is to certify that this report entitled “Production of Specialty soaps” is a bonafide record of the project submitted by:

1. Suraj Kumar, Roll No. 200111012
2. Aditya Singh, Roll No. 200111016

under my guidance towards the partial fulfilment of the requirements for the award of Bachelor of Technology in Oil Technology from Harcourt Butler Technical University, Kanpur

Mr. Sanjay Kumar

Assistant Professor

Department of Oil
Technology

A
Project Report
On
“PRODUCTION OF OLEOCHEMICALS FROM CASTOR OIL”
Submitted

To

Harcourt Butler Technical University, Kanpur in partial fulfillment of the requirements
of

Bachelor of Technology in Oil Technology

Submitted By

AYUSH YADAV (200111002)

ARVIND KUMAR (200111039)

Under the guidance of

Dr. R.K Trivedi,

Professor

Department of Oil Technology



HARCOURT BUTLER TECHNICAL UNIVERSITY, KANPUR -208002

2023-2024



Date: 20/04/2024

CERTIFICATE

This is to certify that this Report entitled, "Production of Oleochemicals from Castor Oil" submitted by Ayush Yadav (200111002) And Arvind Kumar (200111039), in partial fulfillment of his requirements for the award of a Bachelor of Technology Degree in Oil Technology at Harcourt Butler Technical University, Kanpur is prepared by them under my supervision and guidance.

Name & Signature of Supervisor

(Prof. R.K Trivedi)

A
Project Report
On
Manufacture of Floor Cleaners
A Partial Fulfilment of the Requirement for the Degree of
Bachelor of Technology in Oil Technology

Submitted By
Jatin Lalwani (200111027)
Gaurav Wadhwani (200111026)

Under the guidance of
Dr Vineeta Gautam
Assistant Professor



Department of Oil Technology
(School of
Chemical Technology)
HARCOURT BUTLER TECHNICAL
UNIVERSITY, KANPUR 208022
April 2024

Certificate
DEPARTMENT OF OIL TECHNOLOGY
SCHOOL OF CHEMICAL TECHNOLOGY
HARCOURT BUTLER TECHNICAL UNIVERSITY
KANPUR



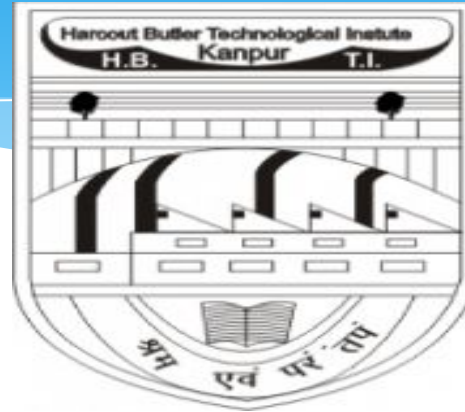
This is to certify that this report entitled “Manufacture of Floor Cleaners” is a bonafide record of the project submitted by

1. Jatin Lalwani, Roll No. 200111027
2. Gaurav Wadhwani, Roll No. 200111026

under my guidance towards the partial fulfilment of the requirements for the award of Bachelor of Technology in Oil Technology from Harcourt Butler Technical University, Kanpur

Dr. Vineeta Gautam
Assistant Professor
Department of Oil Technology

Fractionation of Palm Oil



BACHELOR OF TECHNOLOGY IN OIL TECHNOLOGY

HARCOURT BUTLER TECHNICAL UNIVERSITY

Vaibhav Mishra (200111037)
Vishal Rajbhar (200111008)
Final Year, Oil Technology

Production of Fatty Acid Dimers

Project Report

Submitted in partial fulfilment of the requirements for the award of the
degree of

BACHELOR OF TECHNOLOGY

In

CHEMICAL TECHNOLOGY WITH SPECIALIZATION IN
OIL TECHNOLOGY

Submitted by

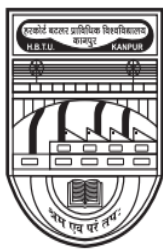
Avnish Mani Mishra (190111011)
Khushi Dixit (200111003)

Under the supervision of

Mr. Gaurav Singh (Assistant Professor)



DEPARTMENT OF OIL TECHNOLOGY
HARCOURT BUTLER TECHNICAL UNIVERSITY
NAWABGANJ, KANPUR- 208002 (INDIA)



हरकोर्ट बटलर प्राविधिक विश्वविद्यालय

नवाबगंज, कानपुर - 208002, उ.प्र., भारत

HARCOURT BUTLER TECHNICAL UNIVERSITY

NAWABGANJ, KANPUR - 208002, U.P., INDIA

(Formerly Harcourt Butler Technological Institute, Kanpur)

Phone : +91-0512-2534001-5, 2533812, website : <http://www.hbtu.ac.in>, Email : vc@hbtu.ac.in

100 YEARS
1921 - 2021

CERTIFICATE

This is to certify that the dissertation entitled “**Production of fatty acid dimers**” for the partial fulfillment of the degree of B.Tech. in Chemical Technology (with specialization in Oil Technology) from Harcourt Butler Technical University, Kanpur is being submitted by **Mr. Avnish Mani Mishra** and **Khushi Dixit** under my supervision and guidance during session 2023-2024.

They took keen interest in his work and prepared this project work with their own efforts and the work is not presented anywhere else.

I wish them a bright and brilliant future and success throughout their career.

Date :

Place :

Mr. Gaurav Singh

Assistant Professor

Department of Oil Technology

HBTU Kanpur

DECLARATION BY SCHOLARS

A
Project Report
on
Production of Eucalyptus oil through steam distillation method
Submitted

**In Partial Fulfillment of the Requirement for the Degree of
Bachelor of Technology in Oil Technology**

Submitted by
Ashutosh Singh (200111024)
Munaf Ahamad (200111010)

Under the Guidance of
Mr. Gaurav Singh
(Assistant Professor)



Department Of Oil Technology
School Of Chemical Technology
Harcourt Butler Technical University, Kanpur 208002

DEPARTMENT OF OIL TECHNOLOGY
SCHOOL OF CHEMICAL TECHNOLOGY
HARCOURT BUTLER TECHNICAL UNIVERSITY
KANPUR



CERTIFICATE

This is to certify that this report entitled “Production of Eucalyptus oil through steam distillation method” is a bonafied record of the project submitted by

1. Ashutosh Singh, (Roll No.200111024)
2. Munaf Ahamad, (Roll No.200111010)

Under my guidance towards the partial fulfillment of the requirements for the award of Bachelor of Technology in Oil Technology from Harcourt Butler Technical University, Kanpur

Mr. Gaurav Singh
(ASSISTANT PROFESSOR)
Department of Oil Technology

A
PROJECT REPORT ON
PRODUCTION OF SPREAD FATS

Submitted In Partial Fulfilment of the Requirement for the
Degree of Bachelor of Technology in Oil Technology

Submitted by

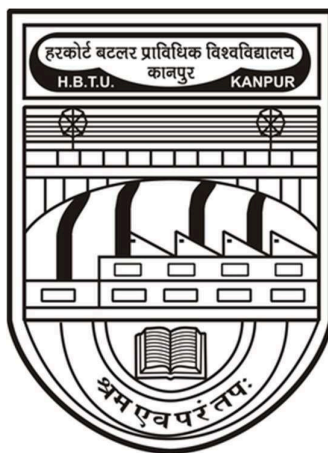
Anup Kumar Gupta (200111022)

Amartesh Singh (200111019)

Under the Guidance of

Dr R.K. Trivedi

Professor

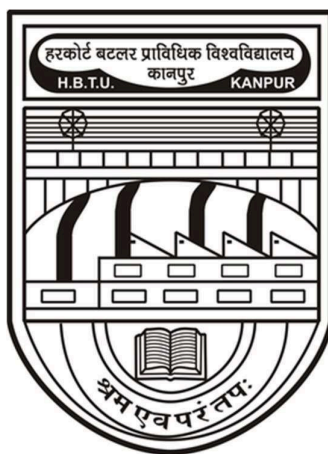


Department Of Oil
Technology School Of
Chemical Technology

Harcourt Butler Technical University, Kanpur 208002

April 2024

DEPARTMENT OF OIL
TECHNOLOGY SCHOOL OF
CHEMICAL TECHNOLOGY
HARCOURT BUTLER TECHNICAL UNIVERSITY
KANPUR



CERTIFICATE

This is to certify that this report entitled “Production of Spread Fats” is a bonafide record of the project submitted by

1. Anup Kumar Gupta, Roll No. 200111022
2. Amartesh Singh, Roll No. 200111019

under my guidance towards the partial fulfillment of the requirements for the award of Bachelor of Technology in Oil Technology from Harcourt Butler Technical University, Kanpur.

Dr. R.K. Trivedi
PROFESSOR
Department of Oil
Technology

A
Project Report
on
PRODUCTION OF GREEN SURFACTANT
Submitted
In Partial Fulfilment of the Requirement for the Degree of
Bachelor of Technology in Oil Technology

Submitted by

Khyati Sinha (200111004)

Kalash Pathak (200111028)

Under the Guidance of

Prof. Praveen Yadav

Professor



Department Of Oil Technology

School Of Chemical Technology

Harcourt Butler Technical University, Kanpur 208002

May 2024



हरकोर्ट बटलर प्राविधिक विश्वविद्यालय

नवाबगंज, कानपुर – 208002, उ.प्र., भारत

HARCOURT BUTLER TECHNICAL UNIVERSITY

NAWABGANJ, KANPUR - 208002, U.P., INDIA

(Formerly Harcourt Butler Technological Institute, Kanpur)

Phone : +91-0512-2534001-5, 2533812, website : <http://www.hbtu.ac.in>, Email : vc@hbtu.ac.in

100 YEARS
1921 - 2021

CERTIFICATE

This is to certify that this report entitled “Production of Green Surfactant” is a bonafide record of the project submitted by

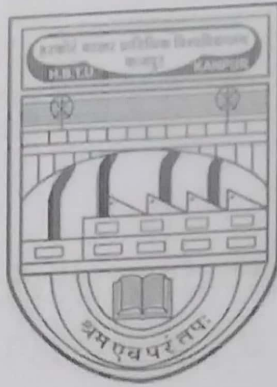
1. Kalash Pathak, Roll No. 200111028
2. Khyati Sinha, Roll No. 200111004

under my guidance toward the partial fulfillment of the requirements for the award of a Bachelor of Technology in Oil Technology from Harcourt Butler Technical University, Kanpur.

Prof. Praveen Yadav

Supervisor

Department of Oil Technology



A Project Report on

“Manufacturing of multilayer films for oil packaging”

Submitted in partial fulfilment for the
award of the

Degree of
Bachelor of Technology in
Plastic Technology (Session: 2023-24)

Under the guidance of
Dr. Soma Banerjee

Presented By:

Ruchit Arora

Aditi Sachan

Harsh Mani Tripathi

Aishwary Mishra

Submitted to: Department of Plastic
Technology Harcourt Butler Technical
University, Kanpur, Uttar Pradesh-
208002

A
RESEARCH PROJECT
REPORT ON

**Synthesis and Characterization of Nanofiller
containing Polyacrylate by Emulsion
Polymerization**

BY:

ASHU VISHWAKARMA (200112019)

AKSHAT KASERA (200112014)

ABHISHEK KUMAR (200112010)



UNDER THE GUIDANCE OF

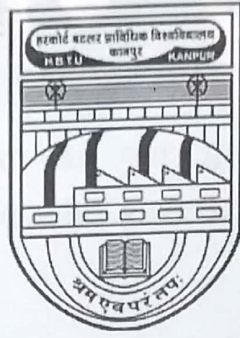
PROF. INDIRA NIGAM

SCHOOL OF CHEMICAL TECHNOLOGY

DEPARTMENT OF PLASTIC TECHNOLOGY

HARCOURT BUTLER TECHNICAL UNIVERSITY, KANPUR

UTTAR PRADESH-208002



A Project Report on
**“Manufacturing of Epoxy Resin for
Marine Coatings”**

Submitted in Partial fulfillment for the award of
Degree of

Bachelor of Technology

Plastic Technology (Session: 2020-2024)

Under the guidance of

Prof. (Dr.) Deepak Srivastava

By-

Disha Budholiya

Gracy Singh

Utkarsh Pandey

Akash Singh

Submitted to: Department of Plastic Technology
Harcourt Butler Technical University, Kanpur (208002)
Uttar Pradesh (India)

DETERMINATION OF LEACHATE POLLUTION INDEX

Submitted in partial fulfilment for award of the degree

Of

BACHELOR OF TECHNOLOGY

In

Civil Engineering

By

VANSH VASU (200102082)

RANJEET KUMAR (210002008)

SHASHWAT TIWARI (200102060)

SHALABH AGARWAL (200102058)

Under the supervision of

Dr. RAJIV GANGULY

Associate Professor



Department of Civil Engineering

HARCOURT BUTLER TECHNICAL UNIVERSITY, KANPUR

Kanpur-208002

WATER QUALITY ASSESSMENT OF RIVER GANGA IN KANPUR

AMRITA YADAV

YUVRAJ SINGH

SUDHEER CHAUDHARY

PRINCE KUMAR YADAV

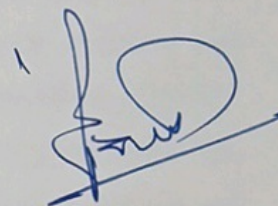


Department of Civil Engineering
HARCOURT BUTLER TECHNICAL UNIVERSITY KANPUR
Kanpur-208002 May,2024

CERTIFICATE

This is to certify that **Amrita Yadav** (200102014), **Yuvraj singh** (200102069), **Sudheer Chaudhary** (200102078), **Prince Kumar Yadav** (210002007) have carried out their B.Tech. project titled as “ **WATER QUALITY ASSESSMENT OF RIVER GANGA IN KANPUR**” presented in this report for the award of **Bachelor of Technology in Civil Engineering** from **Harcourt Butler Technical University, Kanpur** under my supervision during the period 2023-2024. The report embodies results of original work carried out by these students and the contents of this study have not been presented anywhere for the award of any other degree/ diploma.

Date: 03.06-2024



Dr. Pradeep Kumar

Professor

Civil Engineering Department

H.B.T.U. Kanpur

Dr. Pradeep Kumar
Professor
Department of Civil Engg.
H.B. Technical University
Kanpur-208002

**PLANNING AND DESIGNING OF MULTISTOREY
HOSPITAL BUILDING**

Submitted by

**ROHIT CHAUDHARY
ASHUTOSH MAURYA
RITESH YADAV
AYUSH KUMAR SINGH**



**Department of Civil Engineering
HARCOURT BUTLER TECHNICAL UNIVERSITY, KANPUR**

May. 2024

CERTIFICATE

This is certified that **Rohit Chaudhary** (200102052), **Ashutosh Maurya** (200102020), **Ritesh Yadav** (200102051), **Ayush Kumar Singh** (210002003) have carried out their B.Tech. project titled as "**Planning and Designing of Multistorey Hospital Building**" presented in this report for the award of **Bachelor of Technology in Civil Engineering** from **Harcourt Butler Technical University, Kanpur** under my supervision during the period 2023-2024. The report embodies results of original work carried out by these students and the contents of this study have not been presented anywhere for the award of any other degree/diploma.

Date: 31-05-2024



(Dr. Sunil Kumar)

Professor

Civil Engineering Department

H.B.T.U., Kanpur

REAL TIME TRAFFIC DATA ANALYSIS AT TWO MAJOR INTERSECTIONS OF KANPUR

Submitted in partial fulfilment for award of the degree of

BACHELOR OF TECHNOLOGY

in

Civil Engineering

by

SAURABH SINGH (200102056)

NIKHIL YADAV (200102035)

ARYAN DEV (210002002)

MOHAMMAD ASHRAF (200102003)

Under the Supervision of

Dr. PRADEEP KUMAR

Professor



Department of Civil Engineering

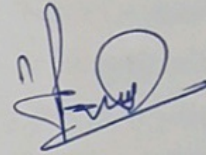
HARCOURT BUTLER TECHNICAL UNIVERSITY, KANPUR

Kanpur-208002 May, 2024

CERTIFICATE

This is to certify that **Saurabh Singh** (200102056), **Nikhil Yadav** (200102035), **Aryan Dev** (210002002), **Md.Ashraf** (200102003) have carried out their B.Tech project titled as “**Real Time Traffic Data Analysis At Two Major Intersections Of Kanpur**” presented in this report for the award of **Bachelor of Technology in Civil Engineering** from **Harcourt Butler Technical University, Kanpur** under my supervision during the period 2023-2024. The report embodies results of original work carried out by these students and the contents of this study have not been presented anywhere for the award of any other degree/ diploma.

Date: 28.05.2024



(Dr. Pradeep Kumar)

Professor

Civil Engineering Department

H.B.T.U. Kanpur

Dr. Pradeep Kumar
Professor
Department of Civil Engg.
H.B. Technical University
Kanpur-208002

AIR QUALITY ASSESMENT DURING HOLIKA DAHAN AND EFFECT OF VEGETATION ALONG ROADS IN KANPUR

Submitted in Partial fulfilment of the requirements for the Degree of

BACHELOR OF TECHNOLOGY

in

Civil Engineering

by

Ram Janam Yadav

Devanshu Pratap Singh

Prashant Kumar

Shubham Kumar

Under the guidance of

Mrs. Kajol Priya

Assistant Professor



Department of Civil Engineering

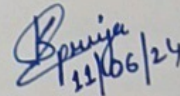
Harcourt Butler Technical University, Kanpur- 208002

MAY 2024

CERTIFICATE

This certifies that **Devanshu Pratap Singh, Ram Janam Yadav, Prashant Kumar, and Shubham Kumar** students of 4th year **B.Tech. in Civil Engineering** at **Harcourt Butler Technical University, Kanpur**, have diligently worked on the project titled '**Air Quality Assessment During Holika Dahan and Effect of Vegetation Along Roads in Kanpur**' under my guidance. Their commitment, sincere efforts, and active participation throughout the project report preparation are commendable. I extend my best wishes to them for their future endeavours. Their dedication and enthusiasm reflect positively on their academic pursuits, and I am confident in their potential to excel in their future academic and professional ventures. I endorse their hard work and wish them continued success.

Date: 11.06.2024



(Mrs. Kajol Priya)

Assistant Professor
Civil Engineering Department
H.B.T.U. Kanpur

**WATER QUALITY ASSESSMENT OF WASTEWATER AT
VARIOUS TREATMENT UNITS IN KANPUR**

Submitted in partial fulfilment for award of the degree
of

**BACHELOR OF TECHNOLOGY IN
CIVIL ENGINEERING**

By:

TANISHA SINGH (200102004)

DEEPAK KUMAR SHARMA (210002004)

PAWAN KUMAR (210002006)

SANIDHYA PALIWAL (200112035)

LOKESH ADHANA (200102032)

Under the guidance of

MR. MANISH KUMAR
(Assistant professor)



**DEPARTMENT OF CIVIL ENGINEERING
HARCOURT BUTLER TECHNICAL UNIVERSITY
KANPUR 208002**

May, 2024

CERTIFICATE

This is to certify that the following students of the Civil Engineering Department at HBTU Kanpur have completed a **“WATER QUALITY ASSESSMENT OF WASTEWATER AT VARIOUS TREATMENT UNITS IN KANPUR”**, project report as a part of their final year B.Tech curriculum.

TANISHA SINGH (200102004)

DEEPAK KUMAR SHARMA (210002004)

PAWAN KUMAR (210002006)

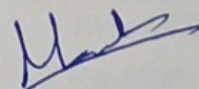
SANIDHYA PALIWAL (200112035)

LOKESH ADHANA (200102032)

The students have demonstrated exemplary dedication, diligence, and technical proficiency throughout the project. Their commitment to environmental sustainability and their thorough investigation of sewage water showcase their commendable skills and knowledge in the field of Civil Engineering.

This certificate is awarded as recognition of their outstanding efforts and contributions to the field of civil engineering.

Date:



Mr. Manish Kumar

(Assistant Professor)

Civil Engineering Department

HBTU Kanpur

EFFECT OF TYPES OF FUEL USAGE ON THE INDOOR AND OUTDOOR AIR QUALITY

Submitted in partial fulfilment for award of the degree of

BACHELOR OF TECHNOLOGY

IN

CIVIL ENGINEERING

by

ADITYA AWASTHI

PRATEEK PATEL

SATYENDRA KUMAR PATEL

AYUSH DIXIT

Under the Supervision of

Dr. DIPTEEK PARMAR

Head of Department



Department of Civil Engineering

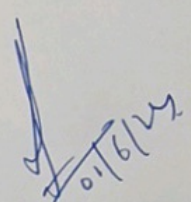
HARCOURT BUTLER TECHNICAL UNIVERSITY, KANPUR

May, 2024

CERTIFICATE

This is to certify that **Aditya Awasthi** (200102011), **Prateek Patel** (200102041), **Satyendra Patel** (200102055), and **Ayush Dixit** (200102023) have carried out their B.Tech. Project titled as “**Effect of Types of Fuel Usage on the Indoor and Outdoor air quality**” presented in this report for the award of **Bachelor of Technology in Civil Engineering** from **Harcourt Butler Technical University, Kanpur** under my supervision during the period 2023-2024. The report embodies results of original work carried out by these students and the contents of this study have not been presented anywhere for the award of any other degree/ diploma.

Date: 01/6/24


(DIPTEEK PARMAR)

Head of Department
Civil Engineering Department
H.B.T.U. Kanpur

**“ASSESSMENT OF CURRENT MUNICIPAL SOLID WASTE
MANAGEMENT IN KANPUR CITY”**

A project report

Submitted in partial fulfilment for award of the degree of

BACHELOR OF TECHNOLOGY

IN

Civil Engineering

by

Aman Haider (210002001)

Kumud Pal (200102077)

Rajeev Yadav (200102047)

Shubh Trivedi (200102062)

Under the guidance of

Dr. Rajiv Ganguly

Associate Professor,



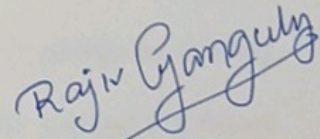
Department of Civil Engineering

Harcourt Butler Technical University, Kanpur- 208002

May 2024

CERTIFICATE

It is to certify that **Shubh Trivedi** (200102062), **Aman Haider** (210002001), **Kumud Pal** (200102077) and **Rajeev Yadav** (200102047) final year undergraduate of **Bachelor of Technology in Civil Engineering (2020-2024)** is carrying out the project work entitled "**Assessment Of Current Municipal Solid Waste Management In Kanpur City**" under my supervision and guidance with full earnestness and diligence. He is showing keen interest in all the activities regarding the project. I appreciate his sincerity and efforts.



Dr. Rajiv Ganguly

Associate Professor,

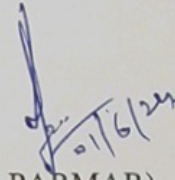
Dept. of Civil Engineering,

HBTU Kanpur

CERTIFICATE

This is to certify that **Abdul Aleem Siddiqui** (200102005), **Rishabh Tripathi** (200102050), **Mohit Bajaj** (200102072), have carried out their B.Tech. project titled as “**Water Quality Modelling Using Machine Learning**” presented in this report for the award of **Bachelor of Technology in Civil Engineering** from **Harcourt Butler Technical University, Kanpur** under my supervision during the period 2023-2024. The report embodies results of original work carried out by these students and the contents of this study have not been presented anywhere for the award of any other degree/ diploma.

Date: 01/6/24,


(DIPTEEK PARMAR)

Head of Department


Civil Engineering Department

H.B.T.U. Kanpur

CERTIFICATE

This is to certify that **Ashish Kumar (200102019)**, **Vidhushi Shrivastava (200101022)**, **Nikhil Singh Patel (200102074)**, **Ratnesh Verma (200102049)**, **Gulam Rasool (200102080)** have carried out research work presented in this report entitled “**MAPPING AND DESIGNING OF A SPORTS COMPLEX AT H.B.T.U. KANPUR**” for the award of Bachelor of Technology from Harcourt Butler Technical University, Kanpur under my supervision. The report embodies result of original work and studies carried out by the student himself and the content of this report do not form the basis for the award of any other degree to the candidate or to the candidate or to anybody else from this or any other University/Institution.

Date:


(Dr. Sunil Kumar)

Professor

Civil Engineering Department

H.B.T.U. Kanpur

**ASSESSEMENT OF ENGINEERING AND MECHANICAL
PROPERTIES OF SOIL BELOW OPEN DUMPING**

Submitted in partial fulfilment for award of the degree of
BACHELOR OF TECHNOLOGY
in
Civil Engineering

Submitted by
AZAD YADAV (200102025)
AMRITANSH DUBEY (200102015)
MILIND PRIDARSHI (200102034)
AMIT SINGH (200102073)

Under the supervision of
Dr. KAVITA TANDON
Assistant Professor
Dept. of Civil Engineering



Department of Civil Engineering
HARCOURT BUTLER TECHNICAL UNIVERSITY, KANPUR

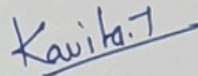
May, 2024

CERTIFICATE

This is to certify that **Azad yadav(200102025), Amritansh dubey(200102015), Milind pridarshi(200102034), Amit singh(200102073)**, have carried out their B.Tech project titled as "**Assesment of Engineering and Mechanical Properties of Soil Below Open Dumping** " presented in this report for the award of Bachelor of Technology in Civil Engineering from Harcourt Butler Technical University, Kanpur under my supervision during the period 2023-2024.

The report embodies results of original work carried out by these student and the contents of this study have not been presented anywhere for the award of any other degree/diploma.

Date : 03.06.24



(Dr. Kavita Tandon)

Assistant Professor

Civil engineering department

HBTU , Kanpur

DELAY MEASUREMENT AND ANALYSIS OF PEDESTRIAN BEHAVIOUR

Submitted in partial fulfilment for award of the degree

of

**BACHELOR OF TECHNOLOGY
in**

Civil Engineering

by

LAXMI KUMARI (210002005)

ABHAY KUMAR (200102006)

SHANTANU SINGH (200102059)

ABHAY VISHWAKARMA (200102007)

Under the Supervision of

Dr. DEEPESH SINGH

(Professor)



**Department of Civil Engineering
Harcourt Butler Technical University
Kanpur-208002**

2023-2024

CERTIFICATE

This is to certify that **Laxmi Kumari** (210002005), **Abhay Kumar**(200102006), **Shantanu Singh** (200102059), **Abhay Vishwakarma** (200102007) have carried out their B.Tech project titled as “**Delay Measurement and Analysis of Pedestrian Behaviour**” presented in this report for the award of **Bachelor of Technology in Civil Engineering** from **Harcourt Butler Technical University**, Kanpur under my supervision during the period 2023-2024. The report embodies results of original work carried out by these students and the contents of this study have not been presented anywhere for the award of any other degree/ diploma.

Date: 28.05.2024



Dr. Deepesh Singh
Professor
Civil Engineering Department
H.B.T.U. Kanpur

**GROUNDWATER QUALITY ASSESSMENT AT SELECTED LOCATIONS OF
KANPUR CITY**

Submitted In Partial fulfillment for the award of the degree of

BACHELOR OF TECHNOLOGY

in

CIVIL ENGINEERING

by

HIMALAYA SINGH (200102029)

ABHIJEET SINGH (200102008)

AKHILESH YADAV (200102001)

VIKAS (190102038)

Under guidance of

Mr. JAIPRAKASH NAYAK

Assistant professor



Department of Civil Engineering

HARCOURT BUTLER TECHNICAL UNIVERSITY, KANPUR

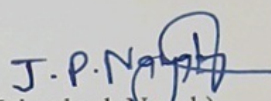
KANPUR – 208002

May, 2024

CERTIFICATE

This is to certify that **Himalaya Singh** (200102029), **Akhilesh Yadav** (200102001), **Abhijeet Singh** (200102008) and **Vikas** (190102038) have carried out their B.Tech project titled as “**Groundwater Quality Assessment at selected locations of Kanpur City**” presented in this report for the award of **Bachelor of Technology in Civil Engineering** from **Harcourt Butler Technical University, Kanpur** under my supervision during the period 2023-2024. The report embodies results of original work carried out by these students and the contents of this study have not been presented anywhere for the award of any other degree/diploma.

Date:


(Jaiprakash Nayak)

Assistant professor
Civil Engineering Department
H.B.T.U Kanpur

EXPLORATION OF NATURAL FIBERS AS STABILIZED FILTER BEDS
FOR WASTEWATER TREATMENT

A Project report

Submitted in partial fulfilment of the requirement for the award of degree of

BACHELOR OF TECHNOLOGY

in

Civil Engineering

Submitted By

Anurag Basu 200107006

Samradhha Gupta 200102053

Ayush Chandel 200107012

Narendra Patel 200107017

Under the guidance of

Ms. Shivani Koshtha

Assistant Professor

Civil Engineering Department

H.B.T.U, Kanpur



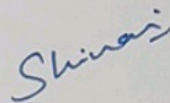
Department of Civil Engineering

Harcourt Butler Technical University, Kanpur 208002

CERTIFICATE

This is to certify that Anurag Basu (200107006), Narendra Patel (200107017), Sammradha Gupta (200102053), Ayush Chandel (200107012) have carried out their B. Tech project titled as "EXPLORATION OF NATURAL FIBERS AS STABILIZED FILTER BEDS FOR WASTEWATER TREATMENT" presented in this report for the award of Bachelor of Technology in Civil Engineering from Harcourt Butler Technical University, Kanpur under my supervision during the period 2023-2024. The report embodies the results of the original work carried out by these students and the contents of this study is not presented anywhere for award of any other degree/ diploma.

Date: 29/05/2024



Ms. Shivani Koshtha
Assistant professor
Civil Engineering Department
H.B.T.U. Kanpur

DETERMINATION OF LEACHATE POLLUTION INDEX

Submitted in partial fulfilment for award of the degree

Of

BACHELOR OF TECHNOLOGY

In

Civil Engineering

By

VANSH VASU (200102082)

RANJEET KUMAR (210002008)

SHASHWAT TIWARI (200102060)

SHALABH AGARWAL (200102058)

Under the supervision of

Dr. RAJIV GANGULY

Associate Professor



Department of Civil Engineering

HARCOURT BUTLER TECHNICAL UNIVERSITY, KANPUR

Kanpur-208002

CERTIFICATE

This is to be certified that **Shashwat Tiwari** (200102060), **Shalabh Agarwal** (200102058), **Ranjeet Kumar** (210002008), **Vansh vasu** (200102082) has carried out seminar work presented in this report entitled as "**DETERMINATION OF LEACHATE POLLUTION INDEX**" for the award of **Bachelor of Technology** from **Harcourt Butler Technical University in Civil Engineering Kanpur** under my supervision. This report embodies results of original work and studies carried out by the student himself and the contents of this report do not form the basis for the award of any other degree to the candidate or to anybody else from this or any other University/Institution.

Date- 03/06/2024

Place- Kanpur

R. Ganguly
03/6/24

Dr. Rajiv Ganguly

Associate Professor

Civil Engineering Department

H.B.T.U. Kanpur

ANALYSIS OF TRAFFIC VOLUME FLOW OF URBAN ROAD UNDER HETEROGENEOUS TRAFFIC CONDITIONS

Submitted in partial fulfilment for award of the degree

BACHELOR OF TECHNOLOGY

in

Civil Engineering

by

ABHISHEK JHA (200102009)

ADITYA TIWARI (200102012)

ATISHAY JAIN (200102022)

PRANJAL DHAR DWIWEDI (200102039)

TUSHAR GARG (200102066)

Under the Supervision of

Dr. DEEPESH SINGH

Professor



Department of Civil Engineering

HARCOURT BUTLER TECHNICAL UNIVERSITY, KANPUR

Kanpur-208002

May, 2024

CERTIFICATE

This is to certify that **Abhishek Jha** (200102009), **Atishay Jain** (200102022), **Aditya Tiwari** (200102012), **Pranjal Dhar Dwivedi** (200102039), **Tushar Garg** (200102066) have carried out their B.Tech project titled as **“ANALYSIS OF TRAFFIC VOLUME FLOW OF URBAN ROAD UNDER HETEROGENEOUS TRAFFIC CONDITIONS”** presented in this report for the award of **Bachelor of Technology in Civil Engineering** from **Harcourt Butler Technical University**, Kanpur under my supervision during the period 2023-2024. The report embodies results of original work carried out by these students and the contents of this study have not been presented anywhere for the award of any other degree/ diploma

Date: 29.05.2024

(Dr. Deepesh Singh)
Professor
Civil Engineering Department
H.B.T.U. KANPUR

**REAL TIME TRAFFIC DATA ANALYSIS AT TWO MAJOR
INTERSECTIONS OF KANPUR**

Submitted in partial fulfilment for award of the degree of

BACHELOR OF TECHNOLOGY

in

Civil Engineering

by

SAURABH SINGH (200102056)

NIKHIL YADAV (200102035)

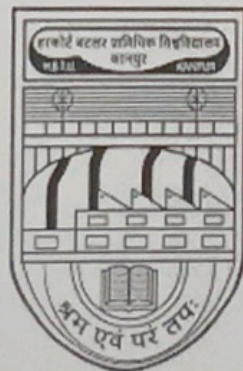
ARYAN DEV (210002002)

MOHAMMAD ASHRAF (200102003)

Under the Supervision of

Dr. PRADEEP KUMAR

Professor



Department of Civil Engineering


HARCOURT BUTLER TECHNICAL UNIVERSITY, KANPUR

Kanpur-208002 May, 2024

CERTIFICATE

This is to certify that **Saurabh Singh** (200102056), **Nikhil Yadav** (200102035), **Aryan Dev** (210002002), **Md.Ashraf** (200102003) have carried out their B.Tech project titled as “**Real Time Traffic Data Analysis At Two Major Intersections Of Kanpur**” presented in this report for the award of **Bachelor of Technology in Civil Engineering** from **Harcourt Butler Technical University, Kanpur** under my supervision during the period 2023-2024. The report embodies results of original work carried out by these students and the contents of this study have not been presented anywhere for the award of any other degree/ diploma.

Date: 28.05.2024



(Dr. Pradeep Kumar)

Professor

Civil Engineering Department

H.B.T.U. Kanpur
Dr. Pradeep Kumar
Professor
Department of Civil Engg.
H.B. Technical University
Kanpur-208002

**PARTIAL REPLACEMENT OF COARSE
AGGREGATE BY JHAMA BRICKS IN CONCRETE**

A Project Report

Submitted in partial fulfilment for award of the Degree Of

BACHELOR OF TECHNOLOGY

in

Civil Engineering

by

SHWETA KUMARI

(21000009)

SACHIN UMARVAISHYA

(190102023)

VAIBHAV SINGH CHAUHAN

(200102067)

SARIKA SINGH

(200102054)

Under the supervision of

MS. KAJOL PRIYA

Assistant Professor



Department of Civil Engineering

HARCOURT BUTLER TECHNICAL UNIVERSITY

UTTAR PRADESH, KANPUR

MAY, 2024

CERTIFICATE

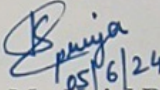
This is to certify that **Shweta Kumari (210002009)**, **Sachin Umarvaishya (190102023)**, **Vaibhav Singh Chauhan (200102067)**, **Sarika Singh (200102054)** have carried out research work presented in this report entitled **“PARTIAL REPLACEMENT OF COARSE AGGREGATE BY JHAMA BRICKS IN CONCRETE”** for the award of Bachelor of Technology from Harcourt Butler Technical University, Kanpur under my supervision. The report embodies result of original work and studies carried out by the student himself and the content of this report do not form the basis for the award of any other degree to the candidate or to the candidate or to anybody else from this or any other University/Institution.

Prof. Diptee Parmar

Head

**Civil Engineering Department
Department**

Date -


Ms. Kajol Priya

Assistant Professor

Civil Engineering

Date - 05/06/24.

ENERGY AUDIT OF CIVIL ENGINEERING DEPARTMENT

A Project Report

Submitted in partial fulfillment for Award of the Degree

Of

BACHELOR OF TECHNOLOGY

In

Civil Engineering

By

SONIYA CHOUDHARY (200102064)

MANAS TRIPATHI (200102033)

KHUSHI SONKER (200102031)

ASHWANI KANNAUJIYA (200102021)

SUDHANSHU KATHERIYA (200102065)

Under the supervision of

Ms. Shivani Koshtha

Assistant Professor



Department of Civil Engineering

HARCOURT BUTLER TECHNICAL UNIVERSITY, KANPUR

Kanpur-208002

CERTIFICATE

This is to be certify that **Soniya Choudhary** (200102064), **Khushi Sonker** (200102031), **Ashwani Kannaujiya** (200102021), **Sudhanshu Katheriya** (200102065) and **Manas Tripathi** (200102033) have carried out research work presented in this report entitled as "**ENERGY AUDIT OF CIVIL ENGINEERING DEPARTMENT**" for the award of **Bachelor of Technology** from **Harcourt Butler Technical University, Kanpur** in **Civil Engineering** under my **supervision**. This report embodies results of original work and studies carried out by the student himself and the contents of this report do not form the basis for the award of any other degree to the candidate or to anybody else from this or any other University/Institution.

Shivani
29/04/24

Ms. Shivani Koshtha
Assistant Professor
Civil Engineering Department

**SEISMIC ANALYSIS OF A SEVEN STOREY OFFICE
BUILDING**

Submitted in partial fulfilment for award of the degree

Of

BACHELOR OF TECHNOLOGY

In

Civil Engineering

By

ARCHIT DWIVEDI (200102017)

DEVESH KUMAR CHATURVEDI (200102027)

AMAN (200102013)

SHIVAM KUMAR (190102028)

Under the supervision of

Mr. MANISH KUMAR

Assistant Professor



Department of Civil Engineering

HARCOURT BUTLER TECHNICAL UNIVERSITY, KANPUR

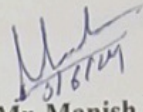
Kanpur-208002

May, 2024

CERTIFICATE

This is to certify that **Archit Dwivedi(200102017)** **Devesh Kumar Chaturvedi (200102027)** **Aman(200102013)** **Shivam Kumar(190102028)** have carried out research work presented in this report entitled **"SEISMIC ANALYSIS OF A SEVEN STOREY OFFICE BUILDING"** for the award of **Bachelor of Technology** from **Harcourt Butler Technical University, Kanpur** under my supervision. The report embodies result of original work and studies carried out by the student himself and the content of this report do not form the basis for the award of any other degree to the candidate or to the candidate or to anybody else from this or any other University/Institution.

Date:


(Mr. Manish Kumar)

Assistant Professor
Civil Engineering Department
H.B.T.U. Kanpur

**“SURFACE WATER QUALITY ASSESSMENT OF MOTIJHEEL
LAKE ”**

**A project report
submitted in
partial fulfillment of requirement
for the degree
BACHELOR OF TECHNOLOGY
In
CIVIL ENGINEERING**

by:-

Aryan (200102018)

Vedant Katiyar (200102068)

Pramod Gautam(200102038)

Akash Chaudhary(200105011)

Abhishek kumar Vishwakarma(200112011)

Under the guidance of
Mr. Jaiprakash Nayak



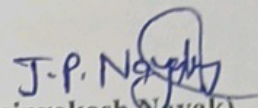
**HARCOURT BUTLER TECHNICAL UNIVERSITY,
KANPUR,UTTAR PRADESH**

May,2024

CERTIFICATE

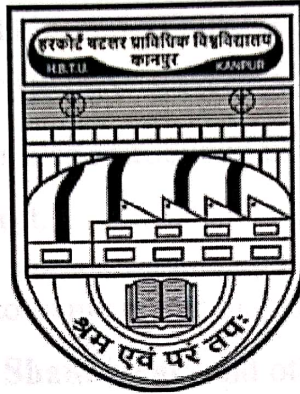
This is to certify that **Vedant Katiyar** (200102068), **Akash Chaudhary** (200105011), **Abhishek Kumar Vishwakarma** (200112011), **Pramod Gautam** (200102038) and **Aryan** (200102018) have carried out their B.Tech project titled as “**Surface Water Quality Assessment Of Motijheel Lake**” presented in this report for the award of **Bachelor of Technology in Civil Engineering** from **Harcourt Butler Technical University, Kanpur** under my supervision during the period 2023-2024. The report embodies results of original work carried out by these students and the contents of this study have not been presented anywhere for the award of any other degree.

Date: 04/06/2024


(Jaiprakash Nayak)

Assistant Professor,
Dept. of Civil Engineering,
HBTU, Kanpur.

DEPARTMENT OF ELECTRONICS ENGINEERING
HARCOURT BUTLER TECHNICAL UNIVERSITY
KANPUR



CERTIFICATE

This is to certify that this report entitled **“INTEGRATED LIBRARY SYSTEM”** is a bonafide record of the project submitted by:

Aayushi Singh (200106014)

Mohd Sameer(200106045)

Priyanshu Singh(200106055)

Vishant Singh(200106070)

under my guidance towards the partial fulfilment of the requirements for the award of Bachelor of Technology in Department of Electronics Engineering of Harcourt Butler Technical University, Kanpur.

Date: 18-05-2024

Place: Kanpur

(Dr. Nand Kishore)

Department of Electronics Engineering
Harcourt Butler Technical University,
Kanpur

CERTIFICATE

This is to certify that this report entitled “Wireless Temperature Sensing and Controlling Using Arduino” is a bonafide record of the project submitted by:

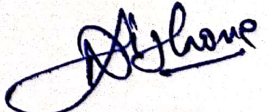
1. Alok Singh- 20010106027
2. Anuj Singh- 200106076
3. Vikash Singh- 210006009
4. Priyanshu Bhushan- 200106054

under my guidance towards the partial fulfilment of the requirements for the award of Bachelor of Technology in Electronics Engineering from Harcourt Butler Technical University, Kanpur.

Date: 20-05-2024
Place: HBTU KANPUR

(Dr. Krishna Raj)
Professor

Department of Electronics Engineering
Harcourt Butler Technical University, Kanpur

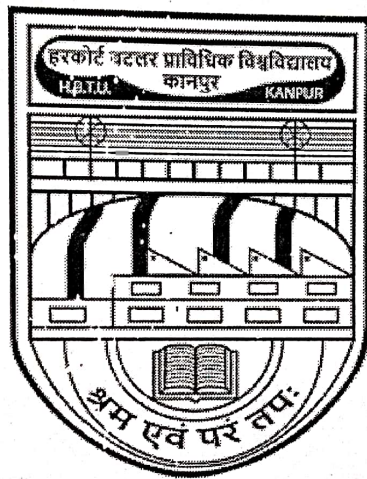

(Dr. Nand Kishore)
Assistant Professor

Department of Electronics Engineering
Harcourt Butler Technical University, Kanpur

A Project Report on
**Design and Simulation of 2X2 Patch Array
Antenna for 2.45 GHz**

Submitted in partial fulfilment of the requirements for the degree in

**Bachelor of Technology
in
Electronics Engineering**



Session:2023-2024

Submitted By

Priyank Gupta(200106053)

Sachin Pal(210006006)

Piyush Kumar Chaudhary(190106029)

Ishan Chauhan(200106040)

Under the guidance of

Dr. Nand Kishore

Assistant Professor

Electronics Engg. Dpt.

HBTU, Kanpur

Department of Electronics Engineering
Harcourt Butler Technical University, Kanpur