

MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY
(valid from 2018-2019)

Course of study for M. Pharm. III Semester

Common for all specialisations

Sr.No.	Course Code	Course	Contact Hours		Full Marks	Credit Points
			L	Project		
3	MPT-391	Discussion / Presentation (Proposal)		2	100	2
4	MPT-392	Research Work		28	100	14
SESSIONAL*						
1.	MPT-384	Research Methodology and Biostatistics*	4		100	4
2	MPT-381	Journal club		1	100	1
	Total		4	31		21

*Non University Exam




Prof. (Dr.) Samir Kumar Samanta
M. Pharm., Ph.D (J.U.)
Principal
Dr. B. C. Roy College of Pharmacy & AHS
Durgapur, West Bengal-713206

Syllabus of M. Pharm. IV Semester
(Effective for 2018-2019 Admission Session)

Course of study for M. Pharm. IV Semester
(Common for All Specializations)

Sr. No.	Course Code	Course Name	Contact Hours			Full Marks	Credit points
			L	T	P		
1	MPT-491	Discussion/Final Presentation			3	100	3
2	MPT-492	Research Work			31	100	16
Sessional							
3	MPT-481	Journal Club			1	100	1
4	MPT-482	Co-curricular Activities Participation in National Level seminar/Conference/Workshop/Symposium/Training Programs (related to the specialization of the student). Participation in International Level seminar/Conference/Workshop/Symposium/Training Programs (related to the specialization of the student). Academic Award/research Award from State Level/National Agencies. Academic Award/research Award from International Agencies. Research/Review Publication in National Journals (Indexed in Scopus/Web of Science). Research/Review Publication in International Journals (Indexed in Scopus/Web of Science).					3
Total			35				23




 Prof. (Dr.) Samir Kumar Samanta
 M. Pharm., Ph.D (J.U.)
 Principal
 Dr. B. C. Roy College of Pharmacy & AHS
 Durgapur, West Bengal-713206

Syllabus of M. Pharm. IV Semester

(Effective for 2018-2019 Admission Session)

SEMESTER	Credit Points
I	26
II	26
III	21
IV	23
Total	96


**Guidelines for Awarding Credit Points for Co-curricular Activities
(One 1 Credit & One 2 Credit Course to be chosen)**

Name of the Activity	Maximum Credit Points
	Eligible / Activity
Participation in National Level Seminar / Conference/ Workshop/ Symposium/ Training Programs (related to the specialization of the student)	01
Participation in international Level Seminar/Conference/Workshop/Symposium/ Training Programs (related to the specialization of the student)	02
Academic Award/Research Award from State Level/National Agencies	01
Academic Award/Research Award from International Agencies	02
Research / Review Publication in National Journals (Indexed in Scopus / Web of Science)	01
Research / Review Publication in International Journals (Indexed in Scopus / Web of Science)	02

Note: International Conference: Held Outside India

International Journal: The Editorial Board outside India




 Prof. (Dr.) Samir Kumar Samanta
 M. Pharm., Ph.D (J.U.)
 Principal
 Dr. B. C. Roy College of Pharmacy & AHS
 Durgapur, West Bengal-713206



A
Project Report on

Formulation Development Study of Oral Wafers of A Model Antidepressant Drug

Submitted by

MD MUSTAKIM MALLICK

University Regn. No. – 211892320310001 of 2021-23
Roll No. - 18920321001

Under the guidance of
Prof. (Dr). Subhabrata Ray
PG studies & Research
Dr. B.C. Roy College of Pharmacy & AHS

In partial fulfilment of the Requirement for the Degree of
Master of Pharmacy in Pharmaceutics

Submitted to
Maulana Abul Kalam Azad University of Technology
West Bengal

Dr. B. C. Roy College of Pharmacy and Allied Health Sciences
Durgapur 713206 Academic Year: 2022 – 2023



Prof. (Dr.) Samir Kumar Samanta
M. Pharm., Ph.D (J.U.)
Principal
Dr. B. C. Roy College of Pharmacy & AHS
Durgapur, West Bengal-713206

DECLARATION

I am hereby declared that the Project entitled "**Formulation Development Study of Oral Wafers of A Model Antidepressant Drug**" in partial fulfilment of the requirement for the award of Master of Pharmacy submitted to **Maulana Abul Kalam Azad University of Technology, West Bengal**, is an authentic record of bona fide work carried out by me under the guidance of **Prof. (Dr.) Subhabrata Ray**.

The matter embodied in this Project has not been submitted for the award of any other degree or diploma to any University / Institution.

Md. Mustakim mallick
Signature

Name of Candidate: Md. Mustakim mallick

Roll No: 18920321001

Date: 24/05/23

Place: Durgapur




Prof. (Dr.) Subhabrata Ray
M. Pharm., Ph.D (I.U.)
Principal
Dr. B. C. Roy College of Pharmacy & AHS
Durgapur, West Bengal-713205

CERTIFICATE

This is to certify that the Project entitled "Formulation Development Study of Oral Wafers of A Model Antidepressant Drug" by Md Mustakim Mallick in partial fulfilment for the MASTER OF PHARMACY (PHARMACEUTICS) under MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY, is a record of the original research work under our supervision and up to our satisfaction. To our knowledge, neither his/her thesis nor any part of it has been submitted for any other academic award anywhere before. The thesis is forwarded to Controller of Examination MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY for assessment.




Signature of Guide

Name of Guide: Prof. (Dr.) Subhabrata Ray

Date: 24/5/23

Place: Durgapur



PROF (DR.) SAMIR KR. SAMANTA
(PRINCIPAL)

Date:

Place: Durgapur


Signature

Name of External Examiner:

Date:

Place:




Prof. (Dr.) Kajal Ghosal
M. A. (Pharm.) (J. U.)
Principal
Dr. B. C. Roy College of Pharmacy & AHS
Durgapur, West Bengal-713206

_____ NA _____

Signature of Co-Guide

Name of Co-Guide: NA

Date: NA

Place: NA



MAULANA ABUL KALAM AZAD
UNIVERSITY OF TECHNOLOGY,
WEST BENGAL



A
Project Report on
**PREPARATION AND EVALUATION OF NICOTINAMIDE AND
CIPROFLOXACIN HYDROCHLORIDE LOADED FILMS FOR
BURN WOUND**

Submitted by
ABHISHEK MAITY

University Regn. No. -211892320310002

Roll No. -18920321002

Under the guidance of
MR. SAPTARSHI DUTTA

In partial fulfilment of the Requirement for the Degree of
Master of Pharmacy in Pharmaceutics

Submitted to
**MaulanaAbulKalam Azad University of Technology
West Bengal**

**Dr. B. C. Roy College of Pharmacy and Allied Health Sciences
Durgapur 713206
Academic Year: 2022-2023**



Prof. Saptarshi Dutta
M. Pharm. (Pharmaceutics) 2021-22
Dr. B. C. Roy College of Pharmacy and Allied Health Sciences
Durgapur, West Bengal - 713206

DECLARATION

I hereby declare that the Project entitled "**Preparation and evaluation of nicotinamide and ciprofloxacin hydrochloride loaded films for burn wound**" in partial fulfilment of the requirement for the award of Master of Pharmacy submitted to **Maulana Abul Kalam Azad University of Technology, West Bengal**, is an authentic record of bona fide work carried out by me under the guidance of ^{Mr.} **Saptarshi Dutta**.

The matter embodied in this Project has not been submitted for the award of any other degree or diploma to any University / Institution.

Abhishek Maity
Signature


Name of Candidate: **Abhishek Maity**

Roll No: **18920321002**

Date: **22.05.23**

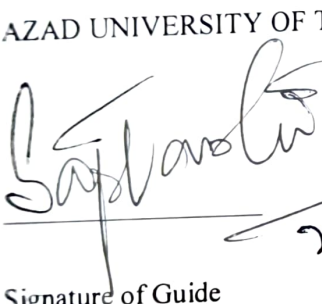
Place: **Durgapur**




Prof. (Dr.) Saptarshi Dutta
M. Pharm., Ph.D. (Pharm.)
Principal
Dr. B. C. Roy College of Pharmacy & HOS
Durgapur, West Bengal 713005

CERTIFICATE


This is to certify that the Project entitled "Preparation and evaluation of nicotinamide and ciprofloxacin hydrochloride loaded films for burn wound" by Abhishek Maity in partial fulfilment for the MASTER OF PHARMACY (PHARMACEUTICS) under MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY is a record of the original research work under our supervision and up to our satisfaction. To our knowledge, neither this thesis nor any part of it has been submitted for any other academic award anywhere before. The thesis is forwarded to Controller of Examination MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY for assessment.


Signature of Guide

Name of Guide:

Date:

Place:


PROF (DR.) Samir Kumar Samanta
(PRINCIPAL)

Date:

Place:

Signature

Name of External Examiner: Dr. Kajal Chhosal

Date:

Place:




Prof. (Dr.) Samir Kumar Samanta
M. Pharm., Ph.D (J.U.)
Principal
Dr. B. C. Roy College of Pharmacy & AHS
Durgapur, West Bengal - 713206



A

Project Report on

EXTRACTION AND EVALUATION OF TAMARIND GUM AS A NATURAL SUSPENDING AGENT

Submitted by

SAMIM KAZI

University Regn. No. -211892320310003 OF 2021-22

Roll No. -18920321003

Under the guidance of
MISS SANCHAREE MONDAL
ASSISTANT PROFESSOR
&
PROF (DR.) SUMAN ROY

In partial fulfilment of the Requirement for the Degree of
Master of Pharmacy in Pharmaceutics


Submitted to
Maulana Abul Kalam Azad University of Technology
West Bengal

Dr. B. C. Roy College of Pharmacy and Allied Health Sciences

Durgapur 713206

Academic Year: 2022 – 2023




Prof. (Dr.) Suman Roy
M. Pharmaceutics
Faculty of Pharmacy
Dr. B. C. Roy College of Pharmacy and Allied Health Sciences
Durgapur, West Bengal - 713206

DECLARATION

I hereby declare that the Project entitled "EXTRACTION AND EVALUATION OF TAMARIND GUM AS A NATURAL SUSPENDING AGENT" in partial fulfilment of the requirement for the award of Master of Pharmacy submitted to **Maulana Abul Kalam Azad University of Technology, West Bengal**, is an authentic record of bona fide work carried out by me under the guidance of **MISS SANCHAREE MONDAL And PROF (DR.) SUMAN ROY**.

The matter embodied in this Project has not been submitted for the award of any other degree or diploma to any University / Institution.

Samim kazi

Signature

Roll No: 18920321003

Date: 22-05-2023

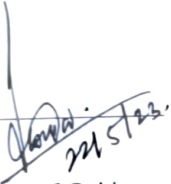
Place: Durgapur.

Samir Kumar Samanta
Prof. (Dr.) Samir Kumar Samanta
M. Pharm., Ph.D (J.U.)
Principal
Dr. B. C. Roy College of Pharmacy & AHS
Durgapur, West Bengal 713205



CERTIFICATE

This is to certify that the Project entitled "Extraction and evaluation of Tamarind gum as a natural suspending agent" by Samim Kazi in partial fulfilment for the MASTER OF PHARMACY (PHARMACEUTICS) under MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY is a record of the original research work under our supervision and up to our satisfaction. To our knowledge, neither this thesis nor any part of it has been submitted for any other academic award anywhere before. The thesis is forwarded to Controller of Examination MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY for assessment.



Signature of Guide

Name of Guide: *Sancharu Kherwal*

Date: *22/5/23*

Place: *Durgapur*




PROF (DR.) SAMIR KUMAR SAMANTA

(PRINCIPAL)

Date:

Place:


Prof. (Dr.) Samir Kumar Samanta
M. Pharm., Ph.D (J.U.)
Principal
Dr. B. C. Roy College of Pharmacy & M.S
Durgapur, West Ben-713206


Signature

Name of External Examiner: *DR. Kajal Ghosal*

Date:

Place:





A
Project Report on

**FORMULATION AND CHARACTERIZATION OF
SODIUM ALGINATE/FERULIC ACID CONJUGATED
FILMS FOR WOUND HEALING APPLICATIONS**

Submitted by

ROUNAK BHATTACHARYA
University Regn. No. – 211892320310004
Roll No. - 18920321004

Under the guidance of
Mr. SAPTARSHI DUTTA
Assistant Professor

In partial fulfilment of the Requirement for the Degree of
Master of Pharmacy in Pharmaceutics

Submitted to
**Maulana Abul Kalam Azad University of Technology
West Bengal**

**Dr. B. C. Roy College of Pharmacy and Allied Health Sciences
Durgapur 713206**

Academic Year: 2022 - 2023



Prof. (Dr. V. K. Saha) Sumanita
M. Pharm., Ph.D. (Ph.D.)
Principal, Dr. B. C. Roy College of Pharmacy & AHS
Durgapur, West Bengal-713206

DECLARATION

I am hereby declared that the Project entitled "**Formulation and characterization of sodium alginate/ferulic acid conjugated films for wound healing applications**" in partial fulfilment of the requirement for the award of Master of Pharmacy submitted to **Maulana Abul Kalam Azad University of Technology, West Bengal**, is an authentic record of bona fide work carried out by me under the guidance of **Mr. Saptarshi Dutta**.

The matter embodied in this Project has not been submitted for the award of any other degree or diploma to any University / Institution.

Rounak Bhattacharya


Name of Candidate: ROUNAK BHATTACHARYA

Roll No: 18920321004

Date: 22/05/2023

Place: Durgapur




Prof. (Dr.) Samir Kumar Samanta
M. Pharm., Ph.D (J.U.)
Principal
Dr. B. C. Roy College of Pharmacy & AHS
Durgapur, West Bengal-713206



A
Project Report on

Prediction and Implementation of Computational Simulation Approach on Enhancement of Solubility and Dissolution of Telmisartan by Cocrystallization Technique

Submitted by

DEBJOTY PAUL

University Regn. No. – 211892320310005

Roll No. - 18920321005

Under the guidance of

PROF. (DR.) SANTANU CHAKRABORTY

M. Pharm., Ph. D., F.I.C.

Professor

Divisional In-charge, Pharmaceutics

In partial fulfilment of the Requirement for the Degree of
Master of Pharmacy in Pharmaceutics

Submitted to

**Maulana Abul Kalam Azad University of Technology
West Bengal**

**Dr. B. C. Roy College of Pharmacy and Allied Health Sciences
Durgapur 713206**

Academic Year: 2022 - 2023



*Prof. (Dr.) Santanu Chakraborty
M. Pharm., Ph. D., F.I.C.
Principal
Dr. B. C. Roy College of Pharmacy and Allied Health Sciences
Durgapur, West Bengal-713206*

DECLARATION

I hereby declare that the Project entitled "**Prediction and Implementation of Computational Simulation Approach on Enhancement of Solubility and Dissolution of Telmisartan by Cocrystallization Technique**" in partial fulfilment of the requirement for the award of Master of Pharmacy submitted to **Maulana Abul Kalam Azad University of Technology, West Bengal**, is an authentic record of bona fide work carried out by me under the guidance of **Prof. (Dr.) Santanu Chakraborty**.

The matter embodied in this Project has not been submitted for the award of any other degree or diploma to any University / Institution.

Debjoy Paul

Signature

Name of Candidate: **Debjoy Paul**

Roll No: **18920321005**

Date: **23/05/2022**

Place: **Durgapur.**


Prof. (Dr.) Santanu Chakraborty
M. Pharm., Ph.D (J.U.)
Principal
Dr. B. C. Roy College of Pharmacy & AHS
Durgapur, West Bengal-713206



CERTIFICATE

This is to certify that the Project entitled "Prediction and Implementation of Computational Simulation Approach on Enhancement of Solubility and Dissolution of Telmisartan by Cocrystallization Technique" by **Debjoty Paul** in partial fulfilment for the MASTER OF PHARMACY (PHARMACEUTICS) under MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY is a record of the original research work under our supervision and up to our satisfaction. To our knowledge, neither this thesis nor any part of it has been submitted for any other academic award anywhere before. The thesis is forwarded to Controller of Examination MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY for assessment.

Santanu Chakraborty - 23/05/23

Signature of Guide

Name of Guide: **Prof. (Dr.) Santanu Chakraborty**
Prof. (Dr.) Santanu Chakraborty

Date: **M. Pharm., Ph.D., FIC**

Place: **DIC, Pharmaceutics Division**
Dr. B. C. Roy College of Pharmacy and AHS
Bidhannagar, Durgapur-713206

[Signature] - 23/05/23

PROF (DR.) SAMIR KR. SAMANTA

(PRINCIPAL)

Date:

Place:

[Signature] - 23/05/23
Prof. (Dr.) Samir Kumar Samanta
M. Pharm., Ph.D (J.U.)
Principal
Dr. B. C. Roy College of Pharmacy & AHS
Durgapur, West Bengal-713206

Signature

Name of External Examiner: **Dr. Kajal Chakraborty**

Date:

Place:



A THESIS

On

**“FORMULATION AND CHARACTERIZATION OF ELLAGIC ACID
LOADED COPPER NANOPARTICLES”**

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

Master of Pharmaceutical Technology

(PHARMACEUTICS)

by

ARNAB CHATTERJEE

2nd Year 4th Semester

University Reg. No.- 211892320310006 of 2021-2023, Roll No.- 18920321006

Under the guidance of

Mrs. Rituparna Chaki Ghosh

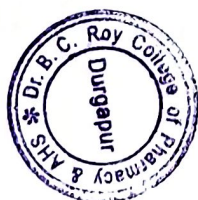
(Assistant Professor, Department of Pharmaceutics)


DR. B. C. ROY COLLEGE OF PHARMACY AND ALLIED HEALTH SCIENCES,

DURGAPUR -713206



AFFILIATED TO MAULANA ABUL KALAM AZAD UNIVERSITY OF
TECHNOLOGY, BENGAL




Prof. (Dr.) Pamir Kumar Samanta
M. Pharm., Ph.D (J.U.)
Principal
Dr. B. C. Roy College of Pharmacy & AHS
Durgapur, West Bengal-713206

DECLARATION

This is to certify that the dissertation entitled **“FORMULATION AND CHARACTERIZATION OF ELLAGIC ACID LOADED COPPER NANOPARTICLES”** in partial fulfilment for the award of the degree M.pharm(Pharmaceutics) submitted to Maulana Abul Kalam Azad University of Technology, West Bengal, is an authentic record of bonafide research work carried out by me under the supervision of Mrs. Rituparna Chaki Ghosh. The matter embodied in this Dissertation has not been submitted for the award of any other degree or diploma to any university/Institution.

Arbab Chatterjee

ARNAB CHATTERJEE

Roll No-18920321006

Date- 26 /05/2023



[Signature]
Prof. (Dr.) Sampat Kumar Samanta
M. Pharm., Ph.D (J.U.)
Principal
Dr. B. C. Roy College of Pharmacy & AHS
Durgapur, West Bengal-713206

CERTIFICATE

This is to certify that the Thesis entitled "FORMULATION AND CHARACTERIZATION OF ELLAGIC ACID LOADED COPPER NANOPARTICLES" in partial fulfilment for the award of Degree of Master Of Pharmacy (Pharmaceutics) submitted to Maulana Abul Kalam Azad University Of Technology, West Bengal, is an authentic record of bona fide research work carried out by Arnab Chatterjee, Roll No.-18920321006 under our guidance.

Rituparna
22/05/23
Mrs. Rituparna Chaki Ghosh

(Project guide)

Date: *22/05/23*

[Signature]
Prof (Dr.) Samir kumar Samanta

(Principal)

Date:

[Signature]
External Examiner: Dr. Kajal Ghosal.

Date :



[Signature]
Prof. (Dr.) Samir Kumar Samanta
M. Pharm., Ph.D (J.U.)
Principal
Dr. B. C. Roy College of Pharmacy & AHS
Durgapur, West Bengal-713206

University Regn. No. -211892320310007

Roll No. -18920321007

Under the guidance of

DR. HRIDAY BERA (Guide)

Associate Professor, BCRCP.

&

DR. SOUVIK BASAK (Co-guide)

Associate Professor, BCRCP.

In partial fulfilment of the Requirement for the Degree of
Master of Pharmacy in Pharmaceutics

Submitted to

**Maulana Abul Kalam Azad University of Technology
West Bengal**

**Dr. B. C. Roy College of Pharmacy and Allied Health Sciences
Durgapur 713206**

Academic Year: 2022 - 2023



Prof. (Dr.) Samir Kumar Samanta
M. Pharm., Ph.D (J.U.)
Principal
Dr. B. C. Roy College of Pharmacy & AHS
Durgapur, West Bengal-713206



A

Project Report on

**“Synthesis of coumeric acid/pullulan conjugates, their
nanoformulations and biological properties”**

Submitted by

SUVENDU MAITY

University Regn. No. -211892320310007

Roll No. -18920321007

Under the guidance of

DR. HRIDAY BERA (Guide)

Associate Professor, BCRCP.

&

DR. SOUVIK BASAK (Co-guide)

Associate Professor, BCRCP.

In partial fulfilment of the Requirement for the Degree of
Master of Pharmacy in Pharmaceutics

Submitted to

**Maulana Abul Kalam Azad University of Technology
West Bengal**

**Dr. B. C. Roy College of Pharmacy and Allied Health Sciences
Durgapur 713206**

Academic Year: 2022 - 2023

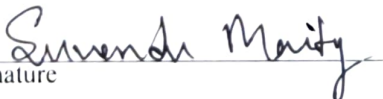


*Prof. (Dr.) Samir Kumar Samanta
M. Pharm., Ph.D (J.U.)
Principal
Dr. B. C. Roy College of Pharmacy & AHS
Durgapur, West Bengal-713206*

DECLARATION

I am hereby declared that the Project entitled “**Synthesis of coumeric acid/pullulan conjugates, their nanoformulations and biological properties**” in partial fulfilment of the requirement for the award of Master of Pharmacy submitted to **Maulana Abul Kalam Azad University of Technology, West Bengal**, is an authentic record of bona fide work carried out by me under the guidance of **DR. Hriday Bera**.

The matter embodied in this Project has not been submitted for the award of any other degree or diploma to any University / Institution.


Signature


Name of Candidate: Suvendu Maity

RollNo:18920321007

Date: 22.05.23

Place:Durgapur




Prof. (Dr.) M. Phari
M. Pharm., Ph.D. (J.C.)
Principal
Dr. B. C. Roy College of Pharmacy & AHS
Durgapur, West Bengal-713206

CERTIFICATE

This is to certify that the Project entitled “**Synthesis of coumeric acid/pullulan conjugates, their nanoformulations and biological properties**” by **suvendu maity** in partial fulfilment for the MASTER OF PHARMACY (PHARMACEUTICS) under MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY, is a record of the original research work under our supervision and up to our satisfaction. To our knowledge, neither his/her thesis nor any part of it has been submitted for any other academic award anywhere before. The thesis is forwarded to Controller of Examination MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY for assessment.



Signature of Guide

Name of Guide: Dr. Hriday bera

Date: 22.05.23

Place: Durgapur



PROF (DR.) SAMIR KR. SAMANTA

(PRINCIPAL)

Date: 22.05.23

Place: Durgapur

26/5/2023

Signature

Name of External Examiner: Dr. Kajal Ghosal

Date: 22.05.23

Place: Durgapur



Signature of Co-Guide

Name of Co-Guide: Dr. Souvik basak

Date: 22.05.23

Place: Durgapur



Prof. (Dr.) M. Prasad
M. Prasad, Ph.D.
Dr. B. C. Roy College of Pharmacy & AHS
Durgapur, West Bengal-713206





A
Project Report on

**DESIGN, DEVELOPMENT AND
CHARACTERISATION OF ALGINO-FENUGREEK
MUCOADHESIVE MICROSPHERES OF MODEL
ANTI-HYPERTENSIVE DRUG**

Submitted by

SANTANA MUKHOPADHYAY
University Regn. No. – 211892320310008
Roll No. - 18920321008

Under the guidance of
DR. MANAMI DHIBAR
M. Pharm, Ph.D.
Assistant Professor
Department of Pharmaceutics

In partial fulfilment of the Requirement for the Degree of
Master of Pharmacy in Pharmaceutics

Submitted to
**Maulana Abul Kalam Azad University of Technology
West Bengal**

Dr. B. C. Roy College of Pharmacy and Allied Health Sciences
Durgapur 713206
Academic Year: 2022 - 2023



Prof. (Dr.) Manami Dhibar
M. Pharm, Ph.D (J.U.)
Principal
Dr. B. C. Roy College of Pharmacy & AHS
Durgapur, West Bengal-713206

DECLARATION

I hereby declare that the Project entitled "**Design, Development and Characterisation of Algino-Fenugreek Mucoadhesive Microspheres of Model Anti-Hypertensive Drug**" in partial fulfilment of the requirement for the award of Master of Pharmacy submitted to **Maulana Abul Kalam Azad University of Technology, West Bengal**, is an authentic record of bona fide work carried out by me under the guidance of **Dr. Manami Dhibar**.

The matter embodied in this Project has not been submitted for the award of any other degree or diploma to any University / Institution.

Santana Mukhopadhyay

Signature

SANTANA MUKHOPADHYAY

Roll No: **18920321008**

Date: **22.05.2023**

Place: **Durgapur**

Manami Dhibar
Prof. (Dr.) **Samir Chandra Samanta**
M. Pharm., Ph.D. (I.I.T.)
Principal
Dr. B. C. Roy College of Pharmacy & M.S.
Durgapur, West Bengal-713208



CERTIFICATE

This is to certify that the Project entitled “**Design, Development and Characterisation of Algino-Fenugreek Mucoadhesive Microspheres of Model Anti-Hypertensive Drug**” by **Santana Mukhopadhyay** in partial fulfilment for the MASTER OF PHARMACY (PHARMACEUTICS) under MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY is a record of the original research work under our supervision and up to our satisfaction. To our knowledge, neither this thesis nor any part of it has been submitted for any other academic award anywhere before. The thesis is forwarded to Controller of Examination MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY for assessment.

Manami Dhibar

Signature of Guide

Dr. Manami Dhibar

Date: 22.05.2023

Place: Durgapur

Samir Kr. Samanta
22/5/23

Prof. (Dr.) Samir Kr. Samanta

(PRINCIPAL)

Date:

Place: Durgapur

Kajal Ochoyal
26/5/2023

Name of External Examiner: DR. Kajal Ochoyal.

Date:

Place: Durgapur



Samir Kr. Samanta
22/5/23
Prof. (Dr.) Samir Kr. Samanta
M. Pharm., F. II. D (J.U.)
Principal
Dr. B. C. Roy College of Pharmacy & AHS
Durgapur, West Bengal-713205



A
Project Report on

**Fabrication and Characterization of Multiparticulate
Drug Delivery System of Aceclofenac using *Dillenia
indica* Mucilage**

Submitted by

MADHURIMA KOTAL

University Regn. No. – 211892320310009

Roll No. - 18920321009

Under the guidance of

PROF. (DR.) SANTANU CHAKRABORTY

M. Pharm., Ph. D., F.I.C.

Professor

Divisional In-charge, Pharmaceutics

&

PROF. (DR.) SUBRATA CHAKRABORTY

M. Pharm., Ph.D., F.I.C.

Director

In partial fulfilment of the Requirement for the Degree of
Master of Pharmacy in Pharmaceutics

Submitted to

**Maulana Abul Kalam Azad University of Technology
West Bengal**

**Dr. B. C. Roy College of Pharmacy and Allied Health Sciences
Durgapur 713206**

Academic Year: 2022 - 2023



*Prof. (Dr.) Sanjay Kumar Samanta
M. Pharm., Ph.D (U.U.)
Principal
Dr. B. C. Roy College of Pharmacy & AHS
Durgapur, West Bengal - 713206*

DECLARATION

I hereby declare that the Project entitled "Fabrication and Characterization of Multiparticulate Drug Delivery System of Aceclofenac using *Dillenia indica* Mucilage" in partial fulfilment of the requirement for the award of Master of Pharmacy submitted to Maulana Abul Kalam Azad University of Technology, West Bengal, is an authentic record of bona fide work carried out by me under the joint guidance of Prof. (Dr.) Santanu Chakraborty & Prof. (Dr.) Subrata Chakraborty.

The matter embodied in this Project has not been submitted for the award of any other degree or diploma to any University / Institution.

Madhumima Kotal

Signature


Name of Candidate: Madhumima Kotal

Roll No: 18920321009

Date: 23/05/2023

Place: Durgapur




Prof. (Dr.) Santanu Chakraborty
M. Pharm., Ph.D. (I.O.)
Principal
Dr. B. C. Roy College of Pharmacy & AHS
Durgapur, West Bengal - 713205

CERTIFICATE

This is to certify that the Project entitled "Fabrication and Characterization of Multiparticulate Drug Delivery System of Aceclofenac using *Dillenia indica* Mucilage" by Madhurima Kotal in partial fulfilment for the MASTER OF PHARMACY (PHARMACEUTICS) under MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY is a record of the original research work under our supervision and up to our satisfaction. To our knowledge, neither this thesis nor any part of it has been submitted for any other academic award anywhere before. The thesis is forwarded to Controller of Examination MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY for assessment.

Sanjib Chakraborty 23/5/23

Signature of Guide

Name of Guide:

Prof. (Dr.) Sanjib Chakraborty

M. Pharm., Ph.D., FIC

Dir., Pharmaceutics Division

Dr. B. C. Roy College of Pharmacy and AHS
Kalyanagar, Durgapur-713206

Samir Kr. Samanta

PROF. (DR.) SAMIR KR. SAMANTA

(PRINCIPAL)

Date:

Place:

Subrata Chakraborty

Signature of Co-Guide

Name of Co-Guide:

Prof. (Dr.) Subrata Chakraborty

Date: 23/5/2023

Place: Durgapur,

Kajal Ghosal 26/5/23

Signature

Name of External Examiner: Dr. Kajal Ghosal

Date:

Place:



Samir Kr. Samanta
Prof. (Dr.) Samir Kr. Samanta
M. Pharm., Ph.D. (I.U.)
Principal
Dr. B. C. Roy College of Pharmacy & AHS
Durgapur, West Bengal-713206



A

Project report on

**PREPARATION AND EVALUATION OF
NICOTINAMIDE AND OFLOXACIN LOADED
FILMS FOR WOUND HEALING**

Submitted by

SAYAN KUNDU

UNIVERSITY REGISTRATION NO.-211892320310010

ROLL.NO. -18920321010

Under the joint guidance of

Prof (Dr.) Subhabrata Ray

PG In-Charge and Professor

Mr. Saptarshi Dutta

Assistant professor

In partial fulfilment of the Requirement for the Degree of

Master of Pharmacy in Pharmaceutics

Submitted to

**MaulanaAbulKalam Azad University of Technology
West Bengal**

**Dr. B. C. Roy College of Pharmacy and Allied Health Sciences
Durgapur 713206**



Academic Year: 2022 - 2023

Prof. (Dr.) Samir K. Ghosh
M. Pharm., Ph.D (J.U.)
Principal
Dr. B. C. Roy College of Pharmacy & AHS
Durgapur, West Bengal - 713206

DECLARATION

I hereby declare that the Project entitled "**Preparation and Evaluation of Nicotinamide and Ofloxacin loaded Films for Burn Wound Healing**" in partial fulfilment of the requirement for the award of Master of Pharmacy submitted to **Maulana Abul Kalam Azad University of Technology, West Bengal**, is an authentic record of bona fide work carried out by me under the guidance of **DR. subhabrata ray and Mr Saptarshi Dutta**.

The matter embodied in this Project has not been submitted for the award of any other degree or diploma to any University / Institution.

Sayan Kundu

Signature

Name of Candidate: SAYAN KUNDU

Roll No: 18920321010

Date: 22/05/2023

Place: Durgapur



Saimir Kumar Samanta
22/05/23
Prof. (Dr.) Saimir Kumar Samanta
M. Pharm., Ph.D (J.U.)
Principal
Dr. B. C. Roy College of Pharmacy & AHS
Durgapur, West Bengal-713206

CERTIFICATE

This is to certify that the Project entitled "Preparation and Evaluation of Nicotinamide and Ofloxacin loaded Films for Burn Wound Healing" by Sayan Kundu in partial fulfilment for the MASTER OF PHARMACY (PHARMACEUTICS) under MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY is a record of the original research work under our supervision and up to our satisfaction. To our knowledge, neither this thesis nor any part of it has been submitted for any other academic award anywhere before. The thesis is forwarded to Controller of Examination MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY for assessment.



Signature of Guide

Name of Guide: Prof. (Dr.) Subhabrata Ray

Date: 22/05/2023

Place: Durgapur



PROF (DR.) SAMIR KR. SAMANTA

(PRINCIPAL)

Date:

Place:

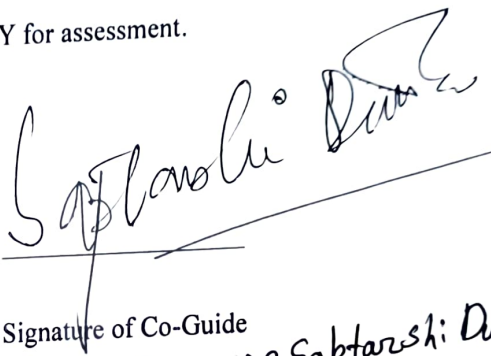
Signature

Name of External Examiner: Dr. Kajal Ghosal

Date:

Place:






Signature of Co-Guide

Name of Co-Guide: Mr. Saptarshi Dutta

Date: 22/05/23

Place: Durgapur


Prof. (Dr.) Samir Kumar Samanta
M. Pharm., Ph.D. (J.U.)
Principal
Dr. B. C. Roy College of Pharmacy & AHS
Durgapur, West Bengal - 713239



A

Project Report on

**FERULIC ACID-g-TAMARIND GUM/GUAR GUM
BASED *IN SITU* GEL FORMING POWDERS AS
WOUND DRESSINGS**

Submitted by

SUMAN BARAI

University Regn. No. – 211892320310011

Roll No. – 18920321011

Under the guidance of

Dr. Hriday Bera

Associate Professor

In partial fulfilment of the Requirement for the Degree of
Master of Pharmacy in Pharmaceutics

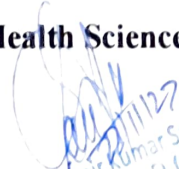
Submitted to

**Maulana Abul Kalam Azad University of Technology
West Bengal**

**Dr. B. C. Roy College of Pharmacy and Allied Health Sciences
Durgapur 713206**

Academic Year: 2022-2023




Prof. (Dr.) Smitir Kumar Samanta
M. Pharm., Ph.D. (J.U.)
Principal
Dr. B. C. Roy College of Pharmacy & AHS
Durgapur, West Bengal - 713206

DECLARATION

I hereby declare that the Project entitled "**FERULIC ACID-g-TAMARIND GUM/GUAR GUM BASED *IN SITU* GEL FORMING POWDERS AS WOUND DRESSINGS**" in partial fulfilment of the requirement for the award of Master of Pharmacy submitted to **Maulana Abul Kalam Azad University of Technology, West Bengal**, is an authentic record of bona fide work carried out by me under the guidance of **DR. HRIDAY BERA**.

The matter embodied in this Project has not been submitted for the award of any other degree or diploma to any University / Institution.

Suman Bera

Signature

Name of the Candidate

Roll No. 18920321011

Date: 22-05-2023

Place: Durgapur



[Signature]
22/05/23
Prof. (Dr.) Samir Kumar Samanta
M. Pharm., Ph.D (J.U.)
Principal
Dr. B. C. Roy College of Pharmacy & AHS
Durgapur, West Bengal-713206

CERTIFICATE

This is to certify that the Project entitled "FERULIC ACID-g-TAMARIND GUM/GUAR GUM BASED *IN SITU* GEL FORMING POWDERS AS WOUND DRESSINGS" by Suman Barai in partial fulfilment for the MASTER OF PHARMACY (PHARMACEUTICS) under MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY is a record of the original research work under our supervision and up to our satisfaction. To our knowledge, neither this thesis nor any part of it has been submitted for any other academic award anywhere before. The thesis is forwarded to Controller of Examination MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY for assessment.



Signature of Guide

Name of Guide DR. HRIDAY BERA

Date: 22.05.2023

Place: Durgapur, W.B.

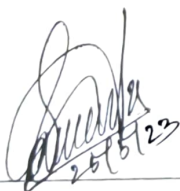
NA

Signature of Co-Guide

Name of Co-Guide

Date:

Place:




PROF (DR.) SAMIR KR. SAMANTA

(PRINCIPAL)

Date:

Place:

 26/5/2023

Signature


Name of External Examiner

Dr. Kajal Ghosal.

Date:

Place:




Prof. (Dr.) Samir Kumar Samanta
M. Pharm., Ph.D (I.I.T.)
Principal
Dr. B. C. Roy College of Pharmacy & H.S.S.
Durgapur, West Bengal - 726106



A
Project Report on

**SYNTHESIS OF CAFFEIC ACID-g-XANTHAN GUM
BASED HYDROGELS AND CHARACTERIZATION
OF THEIR ANTIOXIDANT AND SOL GEL
TRANSITION PROPERTIES**

Submitted by

ANIK LAYEK

University Reg. No. - 211892320310012

Roll No. - 18920321012

Under the joint guidance of

DR. HRIDAY BERA

(ASSOCIATE PROFESSOR)

&

Dr. PARTHASARATHI PANDA

(ASSISTANT PROFESSOR)

In partial fulfilment of the Requirement for the Degree of
Master of Pharmacy in Pharmaceutics

Submitted to

**Maulana Abul Kalam Azad University of Technology
West Bengal**

**Dr. B. C. Roy College of Pharmacy and Allied Health Sciences
Durgapur, 713206**

Academic Year: 2022 – 2023



*Prof. (Dr.) Parthasarathi Panda
M. Pharm. (Pharmaceutics) (U.)
Dr. B. C. Roy College of Pharmacy & AHS
Durgapur, West Bengal-713206*

DECLARATION

I hereby declare that the Project entitled “**Synthesis of Caffeic acid-g-Xanthan gum-based hydrogels and characterization of their antioxidant and sol gel transition properties**” in partial fulfilment of the requirement for the award of Master of Pharmacy submitted to **Maulana Abul Kalam Azad University of Technology, West Bengal**, is an authentic record of bona fide work carried out by me, under the guidance of **Dr. Hriday Bera** and Co-guidance under **Dr. Parthasarathi Panda**.

The matter embodied in this Project has not been submitted for the award of any other degree or diploma to any University / Institution.

Anik Layek


Signature

Name of Candidate: Anik Layek

Roll no: 18920321012

Date : 22/05/2023

Place : Durgapur


Prof. (Dr.) Samir Kumar Samanta
M. Pharm., Ph.D. (I.U.)
Principal
Dr. B. C. Roy College of Pharmacy & AHS
Durgapur, West Bengal-713206



CERTIFICATE

This is to certify that the Project entitled "Synthesis of Caffeic acid-g-Xanthan gum-based hydrogels and characterization of their antioxidant and sol gel transition properties" by Anik Layek in partial fulfilment for the MASTER OF PHARMACY (PHARMACEUTICS) under MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY is a record of the original research work under our supervision and up to our satisfaction. To our knowledge, neither this thesis nor any part of it has been submitted for any other academic award anywhere before. The thesis is forwarded to Controller of Examination MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY for assessment.



Signature of Guide

Name of Guide: Dr. Hriday Bera

Date:

22/5/23

Place: Durgapur



Signature of Co-Guide

Name of Co-Guide: Dr. Parthasarathi Panda

Date:

22/5/2023

Place: Durgapur



PROF (DR.) SAMIR KUMAR SAMANTA

(PRINCIPAL)

Date:

Place: Durgapur


26/5/2023

Signature

Name of External Examiner: Dr. Kajal Ghosal

Date:

Place: Durgapur



Prof. (Dr.) Samir Kumar Samanta
M. Pharm., Ph.D. (J.U.)
Principal
Dr. B. C. Roy College of Pharmacy & AHS
Durgapur, West Bengal-713205





MAULANA ABUL KALAM AZAD
UNIVERSITY OF TECHNOLOGY,
WEST BENGAL



A

Project Report on

**DESIGN, DEVELOPMENT AND PHYSICO-
CHEMICAL CHARACTERIZATION OF
VALSARTAN COCRYSTALS**

Submitted by

BISHAL SARKAR

University Regn. No. –211892320310013 OF 2021-22

Roll No. –18920321013

Under the joint guidance of

Prof. (Dr.) Santanu Chakraborty

M. Pharm., Ph.D., FIC

Professor

Divisional In-charge, Pharmaceutics

Dr. Manami Dhibar

M. Pharm., Ph.D.

Assistant Professor

Department of Pharmaceutics

In partial fulfilment of the Requirement for the Degree of

Master of Pharmacy in Pharmaceutics

Submitted to

**Maulana Abul Kalam Azad University of Technology
West Bengal**

**Dr. B. C. Roy College of Pharmacy and Allied Health Sciences
Durgapur 713206**

Academic Year: 2022 – 2023



*(Dr.) Samir Kumar Samanta
M. Pharm., Ph.D (J.U.)
Principal
Dr. B. C. Roy College of Pharmacy & AHS
Durgapur, West Bengal-713206*

DECLARATION

I hereby declare that the Project entitled "**Design, Development and Physico-Chemical Characterization of Valsartan Cocrystals**" in partial fulfilment of the requirement for the award of Master of Pharmacy submitted to **Maulana Abul Kalam Azad University of Technology, West Bengal**, is an authentic record of bona fide work carried out by me under the joint-guidance of **Prof. (Dr.) Santanu Chakraborty**, Professor, Divisional In-charge, Pharmaceutics, Dr. B. C. Roy College of Pharmacy and AHS, Durgapur and **Dr. Manami Dhibar**, Assistant Professor, P.G Department of Pharmaceutics, Dr. B. C. Roy College of Pharmacy and AHS, Durgapur.

The matter embodied in this Project has not been submitted for the award of any other degree or diploma to any University / Institution.

Bishal Sarkar


Signature

BISHAL SARKAR

Roll No: 18920321013

Date: 22/05/23

Place: Durgapur


Prof. (Dr.) Santanu Chakraborty
M. Pharm., Ph.D. (U.I.T.)
Dr. B. C. Roy College of Pharmacy & AHS
Durgapur, West Bengal-713206



CERTIFICATE

This is to certify that the Project entitled "Design, Development and Physico-Chemical Characterization of Valsartan Co-crystals" by Bishal Sarkar in partial fulfilment for the MASTER OF PHARMACY (PHARMACEUTICS) under MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY is a record of the original research work under our supervision and up to our satisfaction. To our knowledge, neither this thesis nor any part of it has been submitted for any other academic award anywhere before. The thesis is forwarded to Controller of Examination MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY for assessment.

Santanu Chakraborty
22/05/23

Signature of Guide

PROF. (DR.) SANTANU CHAKRABORTY

Professor, Divisional **Prof. (Dr.) Santanu Chakraborty**
M. Pharm., Ph.D., FIC

Date:

Place: Durgapur

Santanu Chakraborty
22/05/23

PROF. (DR.) SAMIR KR. SAMANTA

(Principal)

Date:

Place: Durgapur

Signature

Name of External Examiner: Dr. Kajal Ghosal

Date:

Place: Durgapur



Manami Dhibar
22/05/2023

Signature of Co-Guide

DR. MANAMI DHIBAR

Assistant Professor

Date:

Place: Durgapur

Samir Kumar Samanta
22/05/23
Prof. (Dr.) Samir Kumar Samanta
M. Pharm., Ph.D (J.U.)
Principal
Dr. B. C. Roy College of Pharmacy & AHS
Durgapur, West Bengal-713206



A
Project Report on
**FORMULATION DEVELOPMENT OF SILVER
NANOCARRIERS OF NARINGIN**
Submitted by

SHAH ALAM
University Regn. No. -211892320310014
Roll No. -18920321014

Under the guidance of
Mrs. RITUPARNA CHAKI GHOSH
(Assistant Professor, Department of Pharmaceutics)
&
Dr. SOUVIK BASAK
(Associate Professor, Department of Chemistry)

In partial fulfilment of the Requirement for the Degree of
Master of Pharmacy in Pharmaceutics / Pharmacology

Submitted to
Maulana Abul Kalam Azad University of Technology
West Bengal

Dr. B. C. Roy College of Pharmacy and Allied Health Sciences
Durgapur 713206

Academic Year: 2022 - 2023



[Handwritten signature]
[Handwritten date: 17/11/23]
[Handwritten text: Durgapur, West Bengal]

DECLARATION

I am hereby declared that the Project entitled "**Formulation Development of Silver Nanocarriers Of Naringin**" in partial fulfilment of the requirement for the award of Master of Pharmacy submitted to **Maulana Abul Kalam Azad University of Technology, West Bengal**, is an authentic record of bona fide work carried out by me under the guidance of Mrs. Rituparna Chaki Ghosh & Dr. Souvik Basak.

The matter embodied in this Project has not been submitted for the award of any other degree or diploma to any University / Institution.

Shah Alam

Signature


Name of Candidate: **SHAH ALAM**

Roll No: **18920321014**

Date: **22/05/2023**

Place: **Durgapur**




Prof. (Dr.) Samir Kumar Samanta
M. Pharm., Ph.D. (J.U.)
Principal
Dr. B. C. Roy College of Pharmacy & AHS
Durgapur, West Bengal-713206

CERTIFICATE

This is to certify that the Project entitled "Formulation Development of Silver Nanocarriers of Naringin" by Shah Alam in partial fulfilment for the MASTER OF PHARMACY (PHARMACEUTICS) under MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY, is a record of the original research work under our supervision and up to our satisfaction. To our knowledge, neither his/her thesis nor any part of it has been submitted for any other academic award anywhere before. The thesis is forwarded to Controller of Examination MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY for assessment.

Rituparna
22/05/2023

Souvik Bose
22/05/2023

Signature of Guide

Name of Guide: Rituparna Chakri Ghosh

Date: 22/05/2023

Place: Durgapur



PROF. (DR.) SAMIR KR. SAMANTA

(PRINCIPAL)

Date:

Place:

Kg
26/5/23


Signature

Name of External Examiner: Dr. Kajal Ghosal

Date:

Place:




Prof. (Dr.) Samir Kumar Samanta
M. Pharm., Ph.D. (I. U.)
Prin. IPST
Dr. B. C. Roy College of Pharmacy & AHS
Durgapur, West Bengal-713226



A
Project Report on

**SYNTHESIS OF OXIDIZED STERCULIA
GUM/COUMARIC ACID-g-GELATIN BASED
SPONGES AND EVALUATION OF THEIR WOUND
HEALING POTENTIALS**

Submitted by

MANONAYAN SINGHA

University Regn. No. – 211892320310015

Roll No. – 18920321015

Under the joint guidance of

PROF. (DR.) SUBHABRATA RAY

Professor-in-Charge (PG Studies & Research), BCRCP

DR. HRIDAY BERA

Associate Professor, BCRCP

In partial fulfilment of the Requirement for the Degree of
Master of Pharmacy in Pharmaceutics

Submitted to

**Maulana Abul Kalam Azad University of Technology
West Bengal**

**Dr. B. C. Roy College of Pharmacy and Allied Health Sciences
Durgapur 713206**

Academic Year: 2022 - 2023



*Prof. (Dr.) Samir Kumar Samanta
Pharm., Ph.D (J.U.)
Principal
Dr. B. C. Roy College of Pharmacy & AHS
Durgapur - 713206*

DECLARATION

I hereby declare that the Project entitled "SYNTHESIS OF OXIDIZED STERCULIA GUM/COUMARIC ACID-g-GELATIN BASED SPONGES AND EVALUATION OF THEIR WOUND HEALING POTENTIALS" in partial fulfilment of the requirement for the award of Master of Pharmacy submitted to **Maulana Abul Kalam Azad University of Technology, West Bengal**, is an authentic record of bona fide work carried out by me under the joint guidance of **PROF. (DR.) SUBHABRATA RAY** and **DR. HRIDAY BERA**.

The matter embodied in this Project has not been submitted for the award of any other degree or diploma to any University / Institution.

Manonayan Singha

Signature


Name of Candidate: MANONAYAN SINGHA

Roll No: 18920321015

Date: 22.05.2023

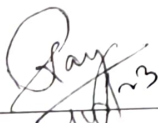
Place: Durgapur - 06 .




Prof. (Dr.) Samir Kumar Samanta
M. Pharm., Ph.D. (J.U.)
Principal
Dr. B. C. Roy College of Pharmacy & AHS
Durgapur, West Bengal - 713206

CERTIFICATE


This is to certify that the Project entitled "SYNTHESIS OF COUMARIC ACID-g-GELATIN/OXIDIZED STERCULIA GUM BASED SPONGES AND EVALUATION OF THEIR WOUND HEALING POTENTIALS" by MANONAYAN SINGHA in partial fulfilment for the MASTER OF PHARMACY (PHARMACEUTICS) under MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY is a record of the original research work under our supervision and up to our satisfaction. To our knowledge, neither this thesis nor any part of it has been submitted for any other academic award anywhere before. The thesis is forwarded to Controller of Examination MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY for assessment.


Signature of Guide

Name of Guide: PROF. (DR.) SUBHABRATA RAY

Date: 22/05/2023

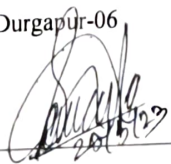
Place: Durgapur-06


Signature of Co-Guide

Name of Co-Guide: DR. HRIDAY BERA


Date: 22/05/23

Place: Durgapur-06


PROF (DR.) SAMIR KUMAR SAMANTA
(PRINCIPAL)

Date: / /

Place: Durgapur-06


Signature of External Examiner
Name of External Examiner: Dr. Kajal Choudhary

Date: / /

Place: Durgapur-06


Prof. (Dr.)
M. Pharmacy
Dr. B. C. Roy College of Pharmacy & A.S.T
Durgapur, West Bengal-713005

