



Dr. Indumathi M Nambi
Professor
Environmental & Water Resources Engineering
Department of Civil Engineering
Indian Institute of Technology Madras
Chennai – 600036, INDIA

E-mail: indunambi@iitm.ac.in
Phone : +91-44-22574289(O)
+91-44-22576289(R)

26th July 2018

To Whom It May Concern:

This is to certify that Ms. Nandhini J, Final year, M.E., Environmental Engineering, Thiagarajar College of Engineering, Madurai has done a summer internship at Indian Institute of Technology, Madras from May 28th, 2018 to July 26th, 2018 on "Characterisation and Anaerobic Digestion of Food waste" under my guidance and Ms. Catherine, Research Scholar.

The study involved the overall characterization of Food waste and Co-digestion of Food waste with Sewage Sludge. Ms. Nandhini J carried out the experimentation as well as analysis such as Proximate Analysis, Ultimate Analysis, COD Analysis, Determination of Alkalinity, VFA and Calorific Value during the course of her internship.

If you have any questions after reviewing this letter, please do not hesitate to contact me at indunambi@iitm.ac.in.

Sincerely,

Dr. Indumathi M: Nambi

Scanned by CamScanner

Scanned by CamScanner

CSIR- CENTRAL LEATHER RESEARCH INSTITUTE

(Council of Scientific & Industrial Research)



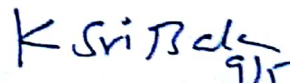
Adyar, Chennai - 600 020

Dr. K. Sri Bala Kameswari, M.E. (Env. Engg.), Ph.D (Env. Engg.)
Principal Scientist
Environmental Science & Engineering

Ph: ++ 91-44-24916351
Fax: ++ 91 44 24450234 / 24911589
Mobile: +919445264853
E.mail: sribala_k@yahoo.com

BONAFIDE CERTIFICATE

This is to certify that dissertation entitled "OPTIMIZATION OF UPFLOW ANAEROBIC SLUDGE BLANKET-SEQUENCING BATCH REACTOR SYSTEMS FOR TREATMENT OF DOMESTIC SEWAGE" submitted to the THIAGARAJAR COLLEGE OF ENGINEERING, in partial fulfillment of the requirements for the award of the degree of MASTER OF ENGINEERING in ENVIRONMENTAL ENGINEERING, is a record of original research work done by **Mr. I. ATHITHYAN (16EN002)** at Environmental Science and Engineering Division, Central Leather Research Institute (CLRI) during the period (December 2017-April 2018) of his study in the Department of Civil Engineering, Thiagarajar College of Engineering, Madurai under the guidance and supervision of **Dr. K. Sri Bala Kameswari** (Principal Scientist, CLRI) and the dissertation has not formed the basis for the award of any Degree / Diploma / Associateship / Fellowship or similar title to any candidate of any university.


Signature of the Guide 9/5/2018



सी.एस.आई.आर. - राष्ट्रीय पर्यावरण अभियांत्रिकी अनुसंधान संस्थान
CSIR - National Environmental Engineering Research Institute
(वैज्ञानिक तथा औद्योगिक अनुसंधान परिषद, / Council of Scientific & Industrial Research)
(वैज्ञानिक तथा औद्योगिक अनुसंधान परिषद, विज्ञान एवं प्रौद्योगिकी मंत्रालय, भारत सरकार के अंतर्गत स्वायत्त संघ) (Autonomous Organisation under the Dept. of Scientific and Industrial Research, Ministry of Science & Technology, Govt. of India)

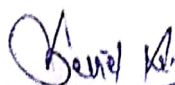


डॉ. सुनील कुमार
वरिष्ठ वैज्ञानिक
एवं
ए.सी.एस.आई.आर. समन्वयक
Dr. Sunil Kumar
Senior Scientist
&
AcSIR Co-ordinator

April 14, 2018

CERTIFICATE

This is to certify that **Mr. Manoj Prabakar R**, a student of M.E. Environment Engineering Thiagarajar College of Engineering, Madurai, Tamilnadu has worked on the project entitled **"Distillery Organic Sludge Utilization for Soil Amendment"** under my supervision and guidance in Solid and Hazardous Waste Management Division of CSIR-National Environmental Engineering Research Institute, Nagpur during December 22, 2017 to April 14, 2018. He had a good conduct during this period. I wish him a bright career.


Sunil Kumar 14/4/18

डॉ. सुनील कुमार / Dr. Sunil Kumar
वरिष्ठ वैज्ञानिक / Senior Scientist
दृढ़ एवं आश्रित प्रबंध प्रभाग
Solid & Hazardous Waste Mgt. Divn.
सी.एस.आई.आर.-नीरी / CSIR-NEERI
नेहरु मार्ग, नागपुर-20/Nehru Marg, Nagpur-20

THIAGARAJAR COLLEGE OF ENGINEERING

(A Govt. Aided, Autonomous Institution Affiliated to Anna University)

MADURAI – 625015



BONAFIDE CERTIFICATE

Certified that this Report titled “ASSESSMENT OF GROUNDWATER QUALITY IN AN URBAN WASTEWATER DISPOSAL ZONE” is the bonafide work of RAMYA R (16EN017) who carried out the work under my supervision. Certified further that to the best of my knowledge the work reported here in does not form part of any other thesis or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

Dr.B.Sivagurunathan

Associate Professor and Head

Department of Civil Engineering

Thiagarajar College of Engineering

Madurai - 625 015

Dr.S.Chandran

Associate Professor

Department of Civil Engineering

Thiagarajar College of Engineering

Madurai - 625 015

Submitted for the VIVA VOCE Examination of 14EN410 Project-II held at Thiagarajar College of Engineering, Madurai-625 015 on

INTERNAL EXAMINER

EXTERNAL EXAMINER

HOD NOMINEE

THIAGARAJAR COLLEGE OF ENGINEERING


(A Govt. Aided, ISO 9001: 2008 Certified, Autonomous Institution Affiliated to Anna University)

MADURAI – 625015



BONAFIDE CERTIFICATE

Certified that this report, “**ADSORPTIVE REMOVAL OF PHARMACEUTICALS FROM HOSPITAL WASTEWATER BY LOW-COST-ADSORBENTS**”, is the bonafide work of **S.NAGA LAKSHMI** (Reg. No: **16EN015**) who carried out project work under my supervision. Certified further that to the best of my knowledge the work reported herein does not form part of any other thesis or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.


Dr. B. Sivagurunathan

Head of the Department

Department of Civil Engineering

Thiagarajar College of Engineering

Madurai-625015


Mr. V. Ravisankar

Assistant Professor

Department of Civil Engineering

Thiagarajar College of Engineering

Madurai-625015

Submitted for Viva-Voce examination held at Thiagarajar College of Engineering, Madurai – 625015, on 12-05-2018.


INTERNAL EXAMINER


EXTERNAL EXAMINER


HOD NOMINEE

THIAGARAJAR COLLEGE OF ENGINEERING

(A Govt. Aided, Autonomous Institution Affiliated to Anna University)

MADURAI – 625015



BONAFIDE CERTIFICATE

Certified that this report, “OCCURRENCE AND FATE OF PPCPs IN FOUR STPs OF TAMILNADU AND THE TREATMENT OF TARGETED COMPOUND”, is the bonafide work of P.MIRACLIN PRAISY (Reg. No: 16EN014) who carried out project work under my supervision. Certified further that to the best of my knowledge the work reported herein does not form part of any other thesis or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

Dr. B. SIVAGURUNATHAN
Head of the Department
Department of Civil Engineering
Thiagarajar College of Engineering
Madurai-625015

Mr. V. RAVISANKAR
Assistant Professor
Department of Civil Engineering
Thiagarajar College of Engineering
Madurai-625015

Submitted for Viva-Voce examination held at Thiagarajar College of Engineering, Madurai – 625015, on 12.05.2018.

INTERNAL EXAMINER

EXTERNAL EXAMINER

HOD NOMINEE

THIAGARAJAR COLLEGE OF ENGINEERING

(A Govt. Aided, Autonomous Institution Affiliated to Anna University)

MADURAI - 625015



BONA FIDE CERTIFICATE

Certified that this report, "A STUDY ON RISK ASSESSMENT OF CROPS IRRIGATED USING WASTEWATER", is the bonafide work of J.BLESSY (Reg. No:16EN003) who carried out project work under my supervision. Certified further that to the best of my knowledge the work reported herein does not form part of any other thesis or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

[Signature]
Dr. B. Sivagurunathan,

Head of the Department,

Department of Civil Engineering,

Thiagarajar College of Engineering,

Madurai- 625015.

[Signature]
Mr.R.K.C Jeykumar,

Assistant Professor,

Department of Civil Engineering,

Thiagarajar college of Engineering,

Madurai- 625015.

Submitted for Viva-Voce examination held at Thiagarajar College of Engineering, Madurai - 625015, on 12/05/18.

[Signature]
INTERNAL EXAMINER

[Signature]
EXTERNAL EXAMINER

[Signature]
HOD NOMINEE

[Signature]
S. EVAMPARAN

12/05/18

THIAGARAJAR COLLEGE OF ENGINEERING

(A Govt. Aided, Autonomous Institution Affiliated to Anna University)

MADURAI – 625015

BONAFIDE CERTIFICATE

Certified that this Report titled “ASSESSMENT OF CHANGE DETECTION IN THE PERI-URBAN TANKS USING RS&GIS” is the bonafide work of ANITHA B (16EN001) who carried out the work under my supervision. Certified further that to the best of my knowledge the work reported herein does not form part of any other thesis or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.



Dr.B.Sivagurunathan

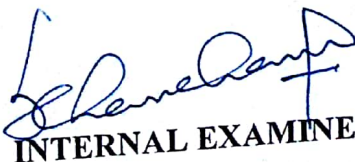
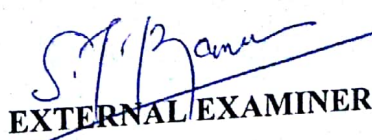
Associate Professor and Head
Department of Civil Engineering
Thiagarajar College of Engineering
Madurai - 625 015



Dr.S.Chandran

Associate Professor
Department of Civil Engineering
Thiagarajar College of Engineering
Madurai - 625 015

Submitted for the VIVA VOCE Examination of 14EN410 Project-II held at
Thiagarajar College of Engineering, Madurai-625 015 on ..12/05/18.


INTERNAL EXAMINER
EXTERNAL EXAMINER
HOD NOMINEE

THIAGARAJAR COLLEGE OF ENGINEERING

(A Govt. Aided, Autonomous Institution Affiliated to Anna University) MADURAI

- 625015



BONAFIDE CERTIFICATE

Certified that this report, "RISK ASSESSMENT OF EMERGING CONTAMINANTS IN WATER ENVIRONMENT OF MADURAI CITY", is the bonafide work of R.RAJAPRIYA (Reg. No: 16EN016) who carried out project work under my supervision. Certified further that to the best of my knowledge the work reported herein does not form part of any other thesis or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

Dr. B. SIVAGURUNATHAN

Head of the Department

Department of Civil Engineering

Thiagarajar College of Engineering

Madurai-625015

Mr. V. RAVISANKAR

Assistant Professor

Department of Civil Engineering

Thiagarajar College of Engineering

Madurai-625015

Submitted for Viva-Voce examination held at Thiagarajar College of Engineering, Madurai - 625015, on 12.05.2018.

INTERNAL EXAMINER

EXTERNAL EXAMINER

HOD NOMINEE

INDUSTRIAL EFFLUENT TREATMENT BY PHYTOREMEDIATION

14EN410 PROJECT

Submitted by

S.JOAN SAVITHA (16EN012)

Submitted in partial fulfilment for the requirement of

MASTER OF ENGINEERING

IN

ENVIRONMENTAL ENGINEERING



**DEPARTMENT OF CIVIL ENGINEERING
THIAGARAJAR COLLEGE OF ENGINEERING**

(A Govt. Aided, Autonomous Institution Affiliated to Anna University)

MADURAI – 625 015

MAY 2018

THIAGARAJAR COLLEGE OF ENGINEERING

(A Govt. Aided, Autonomous Institution Affiliated to Anna University)

MADURAI – 625015



BONAFIDE CERTIFICATE

Certified that this report, “INFLUENCE OF PAC, CHITOSAN AND BANANA STEM JUICE AS FLUX ENHANCER ON MEMBRANE BIOREACTOR OF DAIRY WASTEWATER”, is the bonafide work of I.R.ISHEEBA (Reg. No:16EN010) who carried out project work under my supervision. Certified further that to the best of my knowledge the work reported herein does not form part of any other thesis or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

Dr. B. Sivagurunathan

Head of the Department

Department of Civil Engineering

Thiagarajar College of Engineering

Madurai-625015

Ms. K. Keerthy

Assistant Professor

Department of Civil Engineering

Thiagarajar College of Engineering

Madurai-625015

Submitted for Viva-Voce examination held at Thiagarajar College of Engineering, Madurai – 625015, on 12-5-2018.

INTERNAL EXAMINER

EXTERNAL EXAMINER

HOD NOMINEE

12/05/18

THIAGARAJAR COLLEGE OF ENGINEERING

(A Govt. Aided, Autonomous Institution Affiliated to Anna University)

MADURAI – 625015



BONAFIDE CERTIFICATE

Certified that this report, “DEFLUORIDATION OF GROUND WATER”, is the bonafide work of N.FAUSTINA (Reg. No:16EN008) who carried out project work under my supervision. Certified further that to the best of my knowledge the work reported herein does not form part of any other thesis or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

Dr. B. Sivagurunathan

Head of the Department

Department of Civil Engineering

Thiagarajar College of Engineering

Madurai-625015

Dr. T. Vel Rajan

Professor

Department of Civil Engineering

Thiagarajar College of Engineering

Madurai-625015

Submitted for Viva-Voce examination held at Thiagarajar College of Engineering, Madurai – 625015, on 12-05-2018.

INTERNAL EXAMINER

EXTERNAL EXAMINER

HOD NOMINEE

12/05/18

THIAGARAJAR COLLEGE OF ENGINEERING

(A Govt. Aided, Autonomous Institution Affiliated to Anna University)

MADURAI – 625015



BONAFIDE CERTIFICATE

Certified that this report, "GASOLINE COMPOUNDS REMOVAL FROM WASTEWATER BY UV&UV/H₂O₂ PROCESS", is the bonafide work of M.DHIVAKAR (Reg. No:16EN005) who carried out project work under my supervision. Certified further that to the best of my knowledge the work reported herein does not form part of any other thesis or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

Dr. B. Sivagurunathan
Head of the Department
Department of Civil Engineering
Thiagarajar College of Engineering
Madurai-625015

Dr. T. Vel Rajan
Professor
Department of Civil Engineering
Thiagarajar College of Engineering
Madurai-625015

Submitted for Viva-Voce examination held at Thiagarajar College of Engineering, Madurai – 625015, on 12/5/18.

INTERNAL EXAMINER
EXTERNAL EXAMINER
HOD NOMINEE