



# MAHENDRA ARTS & SCIENCE COLLEGE (Autonomous)

Affiliated to Periyar University, Salem.

Accredited by NAAC with 'A' Grade & Recognized u/s 2(f) and 12(B) of the UGC Act 1956

Kalippatti - 637 501, Namakkal (Dt), Tamil Nadu.

## DEPARTMENT OF BIOTECHNOLOGY

### Students Undertaking Field Projects / Internships / In-plant Training / Student Projects

Programme : B.Sc. Biotechnology

S.No.	Reg. No.	Name	Field Projects	Internships	In-plant Training	Student Projects
1.	18BBT1001	ABISHEAK. V	-	-	-	✓
2.	18BBT1002	ADHI RAJAN M.R	-	-	-	✓
3.	18BBT1003	ANBUMANI .P	-	-	-	✓
4.	18BBT1004	ANBUSELVAN.P	-	-	-	✓
5.	18BBT1005	ARULNATHAN.R	-	-	-	✓
6.	18BBT1006	ASHOK.P	-	-	-	✓
7.	18BBT1007	ASHOKRAJ.K	-	-	-	✓
8.	18BBT1008	BALAKRISHNAN L	-	-	-	✓
9.	18BBT1011	BOOPATHI. G	-	-	-	✓
10.	18BBT1012	DHANAPAL M	-	-	-	✓
11.	18BBT1013	DHANRAJ M	-	-	-	✓
12.	18BBT1014	DHARANEESH.K	-	-	-	✓
13.	18BBT1015	DINESH. S.	-	-	-	✓
14.	18BBT1016	ELAVARASAN. M.	-	-	-	✓
15.	18BBT1017	ERUSAGOUNDER. P.	-	-	-	✓
16.	18BBT1018	GOKUL.C	-	-	-	✓
17.	18BBT1019	GOKULKANNAN. R.	-	-	-	✓
18.	18BBT1020	GOKULNANDHAKUMAR. R.	-	-	-	✓
19.	18BBT1021	GOWTHAM.P	-	-	-	✓
20.	18BBT1022	GOWTHAM R.A.	-	-	-	✓
21.	18BBT1023	HARIHARAN R.	-	-	-	✓
22.	18BBT1024	HARIKRISHNAN R.	-	-	-	✓
23.	18BBT1025	HARIPRASATH S	-	-	-	✓
24.	18BBT1026	JAGAN K	-	-	-	✓

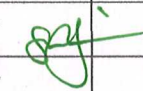
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(Autonomous)

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S.No.	Reg. No.	Name	Field Projects	Internships	In-plant Training	Student Projects
25.	18BBT1027	JOTHEESHWARAN.S	-	-	-	✓
26.	18BBT1028	KALAIYARASAN. S	-	-	-	✓
27.	18BBT1029	KARTHICK.V	-	-	-	✓
28.	18BBT1030	KASINATHAN.M	-	-	-	✓
29.	18BBT1031	KAVIN G	-	-	-	✓
30.	18BBT1032	KESAVAN.G	-	-	-	✓
31.	18BBT1033	LINGESHWARAN	-	-	-	✓
32.	18BBT1034	NANDHA KUMAR R.	-	-	-	✓
33.	18BBT1035	NAVEEN. B	-	-	-	✓
34.	18BBT1037	PRAKASH P.	-	-	-	✓
35.	18BBT1038	PRAVEEN.B	-	-	-	✓
36.	18BBT1039	PREMKUMAR.P	-	-	-	✓
37.	18BBT1040	RAGU PRASATH. A	-	-	-	✓
38.	18BBT1041	RAJA SEKAR. S.	-	-	-	✓
39.	18BBT1042	RAJESHKANNAN R	-	-	-	✓
40.	18BBT1043	RAMESH R	-	-	-	✓
41.	18BBT1044	RUBAN KUMAR V	-	-	-	✓
42.	18BBT1045	SAKTHIVEL. V.	-	-	-	✓
43.	18BBT1046	SANGAMESHWARAN. V.	-	-	-	✓
44.	18BBT1047	SANJEEV KUMAR.S	-	-	-	✓
45.	18BBT1048	SANKARANARAYANAN A	-	-	-	✓
46.	18BBT1049	SANTHOSHKUMAR.S	-	-	-	✓
47.	18BBT1051	SRI KRISHNADHARAN A	-	-	-	✓
48.	18BBT1052	SRIDHAR.M	-	-	-	✓
49.	18BBT1055	VIJAYA KUMAR.R	-	-	-	✓
50.	18BBT1057	YUVARAJ. S.	-	-	-	✓
51.	18BBT1058	ANISHA BANU. A	-	-	-	✓
52.	18BBT1059	ANITHA MARY. S.	-	-	-	✓
53.	18BBT1060	BHARATHI. S	-	-	-	✓
54.	18BBT1061	BHUVANESHWARI.S	-	-	-	✓
55.	18BBT1062	BRINDHA. S	-	-	-	✓
56.	18BBT1063	DIVYA SRI.N.	-	-	-	✓
57.	18BBT1064	GOMATHI. P.	-	-	-	✓

  
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S.No.	Reg. No.	Name	Field Projects	Internships	In-plant Training	Student Projects
58.	18BBT1066	JANANI G	-	-	-	✓
59.	18BBT1067	JAYANANDHINI.E	-	-	-	✓
60.	18BBT1068	JOTHIKA.S	-	-	-	✓
61.	18BBT1070	KEERTHANA. S.	-	-	-	✓
62.	18BBT1072	KOKILA. P.	-	-	-	✓
63.	18BBT1073	LAVANYA. S	-	-	-	✓
64.	18BBT1074	MENAGA. N.	-	-	-	✓
65.	18BBT1075	MONISHA. A	-	-	-	✓
66.	18BBT1076	MONISHA. R	-	-	-	✓
67.	18BBT1078	RAKSHANAPRIYA. P.	-	-	-	✓
68.	18BBT1079	SATHYA. A.	-	-	-	✓
69.	18BBT1080	SOWMITHRA. M	-	-	-	✓
70.	18BBT1081	SWETHA. P	-	-	-	✓
71.	18BBT1082	SWETHA S	-	-	-	✓
72.	18BBT1083	VASUKI. S.	-	-	-	✓

  
**Head of the Department**  
**HEAD OF THE DEPARTMENT**  
 Department of Biotechnology,  
 Mahendra Arts & Science College (Autonomous),  
 Kalippatti (Po) - 637 501, Tiruchengode (Tk),  
 Namakkal (Dt). Tamil Nadu, India.

  
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Kalippatti - 637 501, Namakkal (Dt), Tamil Nadu.

## DEPARTMENT OF BIOTECHNOLOGY

### List of students completed projects - 2020 - 2021

Programme : B.Sc. Biotechnology

S.No.	Register No.	Name of the Student	Title of the Project
1.	18BBT1001	ABISHEAK. V	Preliminary phytochemical screening and their antibacterial activity of <i>Lantana camara</i>
2.	18BBT1002	ADHI RAJAN M.R	Preliminary phytochemical screening and their antibacterial activity of <i>Lantana camara</i>
3.	18BBT1003	ANBUMANI .P	Preliminary phytochemical screening and their antibacterial activity of <i>Lantana camara</i>
4.	18BBT1004	ANBUSELVAN.P	Phytochemicals analysis of <i>Hyptis salata</i> plant Extract and their antibacterial activity
5.	18BBT1005	ARULNATHAN.R	Phytochemical Analysis of <i>Hyptis salata</i> plant Extract and their Antibacterial Activity
6.	18BBT1006	ASHOK.P	Phytochemical Analysis of <i>Hyptis Allata</i> Plant Extract and Their Antibacterial Activity
7.	18BBT1007	ASHOKRAJ.K	Biosynthesis of silver nanoparticle from <i>Equus asinus</i>
8.	18BBT1008	BALAKRISHNAN L	Biosynthesis of silver nanoparticles from <i>Equus asinus</i>
9.	18BBT1011	BOOPATHI. G	Bio synthesis of silver nanoparticles from <i>Equus asinus</i>
10.	18BBT1012	DHANAPAL M	Algae Spirulina, Extraction, Estimation and Biotechnological Application
11.	18BBT1013	DHANRAJ M	Algae Spirulina, Extraction, Estimation and Biotechnological Application
12.	18BBT1014	DHARANEESH.K	Algae Spirulina, Extraction, Estimation and Biotechnological Application
13.	18BBT1015	DINESH. S.	Green synthesis of iron oxide nanoparticles using <i>Canthium coromandelicum</i> leaf extract and its antibacterial potential
14.	18BBT1016	ELAVARASAN. M.	Green synthesis of iron oxide nanoparticles using <i>Canthium coromandelicum</i> leaf extract and its antibacterial potential
15.	18BBT1017	ERUSAGOUNDER. P.	Green synthesis of iron oxide nanoparticles using <i>Canthium coromandelicum</i> leaf extract and its antibacterial potential
16.	18BBT1018	GOKUL.C	Biology and Repellency assessment of wheat weevil <i>Sitophilus granarius</i>
17.	18BBT1019	GOKULKANNAN. R.	Biology and Repellency assessment of wheat weevil <i>Sitophilus granarius</i>

  
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(Autonomous)

Kalippatti (PO) - 637 501, Namakkal (DT)

S.No.	Register No.	Name of the Student	Title of the Project
18.	18BBT1020	GOKULNANDHAKUMAR. R.	Biology and Repellency assessment of wheat weevil <i>Sitophilus granarius</i>
19.	18BBT1021	GOWTHAM.P	Extract of Medicinal Plants Impatiens balsamina and <i>Lantana camara</i> of Fresh leaves
20.	18BBT1022	GOWTHAM R.A.	Extract of Medicinal Plants Impatiens balsamina and <i>Lantana camara</i> of Fresh leaves
21.	18BBT1023	HARIHARAN R.	Extract Of Medicinal Plant Impatiens Balsamina And <i>Lantana Camara</i> Of Fresh Leaves
22.	18BBT1024	HARIKRISHNAN R.	Detection of Covid 19 by real time Polymerase Chain Reaction Assay
23.	18BBT1025	HARIPRASATH S	Detection of Covid 19 By real time Polymerase Chain Reaction Assay
24.	18BBT1026	JAGAN K	Detection of Covid 19 By real time Polymerase Chain Reaction Assay
25.	18BBT1027	JOTHEESHWARAN.S	Genetic improvement of <i>Paspalumscrobiculatum</i> land rasies through chemical mutagen
26.	18BBT1028	KALAIYARASAN. S	Genetic improvement of <i>Paspalumscrobiculatum</i> land raises through chemical mutagen
27.	18BBT1029	KARTHICK.V	Genetic Improvement of <i>Paspalumscrobiculatum</i> Land Raises Through Chemical Mutagen
28.	18BBT1030	KASINATHAN.M	Isolation of biosurfactant producing bacteria from garbage soil
29.	18BBT1031	KAVIN G	Isolation of biosurfactant producing bacteria from garbage soil
30.	18BBT1032	KESAVAN.G	Isolation of Biosurfactant producing bacteria from garbage soil
31.	18BBT1033	LINGESHWARAN	primary phytochemical analysis of <i>Calotropisgigantean</i> And their antibacterial activity
32.	18BBT1034	NANDHA KUMAR R.	primary phytochemical analysis of <i>Calotropisgigantean</i> and their antibacterial accivity
33.	18BBT1035	NAVEEN. B	Primary phytochemical analysis of <i>Calotropisgigantean</i> and their antibacterial activity
34.	18BBT1037	PRAKASH P.	Synthesis of Silver Nanoparticles From <i>Sidaacuta</i> Extract And Their Antibacterial Activity
35.	18BBT1038	PRAVEEN.B	Synthesis of silver nanoparticles from <i>Sidaacuta</i> extract and their antibacterial activity
36.	18BBT1039	PREMKUMAR.P	Biogenic Synthesis Characterization and Antibacterial Activity of Copper Nanoparticles synthesized From <i>Equusasinus</i>
37.	18BBT1040	RAGU PRASATH. A	Biogenic synthesis characterization and antibacterial activity of copper Nanaparticles synthesized from <i>Equusasinus</i>
38.	18BBT1041	RAJA SEKAR S.	Biogenic synthesis characterization and antibacterial activity of copper nanoparticles synthesized <i>Equusasinus</i>

  
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S.No.	Register No.	Name of the Student	Title of the Project
39.	18BBT1042	RAJESHKANNAN R	Antimicrobial activity of <i>Psidiumguajva</i> leaves extract against staphylococcus aureus using pure extracts
40.	18BBT1043	RAMESH R	Antimicrobial activity of <i>Psidiumguajva</i> leaves extract against staphylococcus aureus using pureextracts
41.	18BBT1044	RUBAN KUMAR V	Antimicrobial activity of <i>Psidiumguajva</i> leaves extract against staphylococcus aureus using pureextracts
42.	18BBT1045	SAKTHIVEL. V.	Phytosynthesis of zinc oxide nanoparticles using annona reticula leaf extraction and it's antibacterial activity
43.	18BBT1046	SANGAMESHWARAN. V.	Phytosynthesis of zinc oxide nanoparticles using <i>Annona reticula</i> leaf extraction and it's antibacterial activity.
44.	18BBT1047	SANJEEV KUMAR.S	Phytosynthesis of zinc oxide nanoparticles using <i>Annona reticula</i> leaf extraction and it's antibacterial activity.
45.	18BBT1048	SANKARANARAYANAN A	Study of life cycle and repellency assessment of confused flour beetle <i>Triboliumconfusum</i> .
46.	18BBT1049	SANTHOSHKUMAR.S	Study of life cycle and repellency assessment of confused flour beetle <i>Triboliumconfusum</i> .
47.	18BBT1051	SRI KRISHNADHARAN A	Study of life cycle and repellency assessment of confused flour beetle <i>Triboliumconfusum</i> .
48.	18BBT1052	SRIDHAR.M	Study of life cycle and repellency assessment of confused flour beetle <i>Triboliumconfusum</i> .
49.	18BBT1055	VIJAYA KUMAR.R	Research In Biocatalysis And Agriculture Biotechnology.
50.	18BBT1057	YUVARAJ. S.	Research In Biocatalysis And Agriculture Biotechnology.
51.	18BBT1058	ANISHA BANU. A	Research In Biocatalysis And Agriculture Biotechnology.
52.	18BBT1059	ANITHA MARY. S.	Genetic improvement of <i>Paspalumscrbiculatum</i> land raise through chemical mutagen.
53.	18BBT1060	BHARATHI. S	Genetic improvement of <i>Paspalumscrbiculatum</i> land raise through chemical mutagen.
54.	18BBT1061	BHUVANESHWARI.S	Genetic improvement of <i>Paspalumscrbiculatum</i> land raises through chemical mutagen.
55.	18BBT1062	BRINDHA. S	Biodiesel production from waste oil.
56.	18BBT1063	DIVYA SRI.N.	Biodiesel production from waste oil.
57.	18BBT1064	GOMATHI. P.	Biodiesel Production From Waste Cooking Oil
58.	18BBT1066	JANANI G.	In vitro antibacterial activity of and phytochemical analysis of <i>Soda acuta</i> plant extract
59.	18BBT1067	JAYANANDHINI.E	In vitro antibacterial activity and phytochemical analysis of <i>Soda Acuta</i> plant extract
60.	18BBT1068	JOTHIKA.S	Invitro antibacterial activity and phytochemical analysis of the <i>Sidaacuta</i> plant extract

S.No.	Register No.	Name of the Student	Title of the Project
61.	18BBT1070	KEERTHANA. S.	Sonochemical synthesis Of silver nanoparticles using <i>Manilkarazapota</i> milk extract and their antibacterial activity
62.	18BBT1072	KOKILA. P.	Sonochemical synthesis Of silver nanoparticles using <i>Manilkarazapotamilk</i> extract and their antibacterial activity
63.	18BBT1073	LAVANYA. S	Sonochemical synthesis Of silver nanoparticles using <i>Manilkarazapotamilk</i> extract and their antibacterial activity
64.	18BBT1074	MENAGA. N.	Eco-friendly biosynthesis and characterization of zinc oxide nanoparticles using <i>Equssasinus</i> and evaluated antibacterial activity
65.	18BBT1075	MONISHA.A	Eco-Friendly Biosynthesis And Characterization Of Zinc Oxide Nanoparticles Using <i>EqussAsinus</i> And Evaluated Antibacterial Activity
66.	18BBT1076	MONISHA. R	Eco-Friendly Biosynthesis And Characterization Of Zinc Oxide Nanoparticles Using <i>EqussAsinus</i> And Evaluated Antibacterial Activity
67.	18BBT1078	RAKSHANAPRIYA. P.	Production of biofertilizers from fruit waste for the crop improvements
68.	18BBT1079	SATHYA. A.	Production of Bio fertilizers from fruit waste for the crop improvements
69.	18BBT1080	SOWMITHRA. M	Production of Biofertilizer from fruit waste for the crop improvements
70.	18BBT1081	SWETHA. P	Bioinspired synthesis of zirconium oxide using <i>Anonareticulata</i> leaf extract and its antibacterial activity
71.	18BBT1082	SWETHA S	Bioinspired synthesis of zirconium oxide nanoparticles using <i>Anonareticulata</i> leaf extract and its antibacterial activity
72.	18BBT1083	VASUKI. S.	Bioinspired synthesis of ZrO <sub>2</sub> nanoparticles using <i>Annona reticulata</i> leaf extract

  
**Head of the Department**  
**HEAD OF THE DEPARTMENT**

Department of Biotechnology,  
Mahendra Arts & Science College (Autonomous),  
Kalippatti (Po) - 637 501, Tiruchengode (Tk),  
Namakkal (Dt). Tamil Nadu, India.

  
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**MAHENDRA ARTS & SCIENCE COLLEGE**  
(Autonomous)

Kalippatti (PO) - 637 501, Namakkal (DT)

# PRELIMINARY PHYTOCHEMICAL SCREENING AND THEIR ANTIBACTERIAL ACTIVITY OF LANTANA CAMARA

*Dissertation submitted in partial fulfillment of the requirement for  
the award of the Degree of*

**BACHELOR OF SCIENCE IN BIOTECHNOLOGY**

*Submitted by*

**ABISHEK.V Reg.No.:18BBT1001**

**ADHIRAJAN .M.RReg.No.:18BBT1002**

**ANBUMANI. P Reg.No.:18BBT1003**

*Under the Guidance of*

**DR.T. SELVANKUMAR M.SC., M.PHIL., PH.D.,**

**HEAD AND PROFESSOR**

**DEPARTMENT OF BIOTECHNOLOGY**




**PG & RESEARCH DEPARTMENT OF BIOTECHNOLOGY  
(DST-FIST Sponsored)**

**MAHENDRA ARTS AND SCIENCE COLLEGE (Autonomous)**

(Affiliated to Periyar University, Salem | Accredited with Grade 'A' by NAAC  
Recognized u/s 2(f) & 12(B) of UGC Act 1956 | 90<sup>th</sup> All India NIRF Ranking 2020)

**KALIPPATTI 637 501**

**July - 2021**

  
**PRINCIPAL**  
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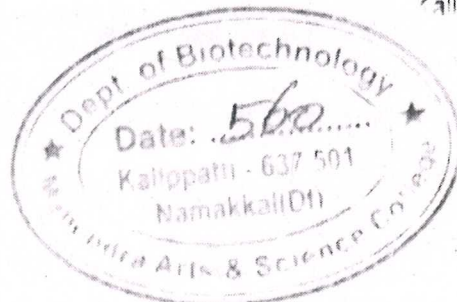
This is to certify that the dissertation entitled "Preliminary phytochemical screening and their antibacterial activity of *Lantana camara*" Submitted in partial fulfillment of the requirement for the award of the degree of Bachelor of Science in **Biotechnology** to the **Mahendra Arts & Science College (Autonomous)**, Kalippatti is a record of bonafide research work carried out by **Abishek V (Reg.No.:18BBT1001)**, **Adhirajan M R (Reg.No.:18BBT1002)**, **Anbumani P (Reg.No.:18BBT1003)** under my supervision and guidance and that no part of the dissertation has been submitted for the award of any degree, diploma, fellowship or other similar titles or prizes and that the work has not been published in part or full in any scientific or popular journals or magazines

Signature of the Guide

Dr. T. Selvankumar, M.Sc., M.Phil., Ph.D.  
Head and Professor  
Department of Biotechnology  
Mahendra Arts and Science College (Autonomous)  
Kalippatti

Examiner 1

Examiner 2



Head of the Department

**HEAD OF THE DEPARTMENT**  
Department of Biotechnology,  
Mahendra Arts & Science College (Autonomous),  
Kalippatti (Po) - 637 501, Tiruchengode (Tk),  
Namakkal (Dt), Tamil Nadu, India.

Signature  
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Kalippatti (PO) - 637 501, Namakkal (Dt)

**PHYTOCHEMICAL ANALYSIS OF HYPTIS ALLATA PLANT EXTRACT AND  
THEIR ANTIBACTERIAL ACTIVITY**

*Dissertation submitted in partial fulfillment of the requirement for  
the award of the Degree of*

**BACHELOR OF SCIENCE IN BIOTECHNOLOGY**

*Submitted by*

**ANDUSHILWAN PP (18BBT1004)**

**ARULNATHAN R (18BBT1005)**

**ASHOK P (18BBT1006)**

*Under the Guidance of*

**Mrs. R.RATHIKA, M.Sc., M.Phil., Ph.D.**



**PG & RESEARCH DEPARTMENT OF BIOTECHNOLOGY  
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Recognized u/s 2(f) & 12(B) of UGC Act 1956 | 90<sup>th</sup> All India NIRF Ranking 2020)

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**PRINCIPAL**  
**MAHENDRA ARTS & SCIENCE COLLEGE**  
(Autonomous)  
Kalippatti (PO) - 637 501, Namakkal (DT)

This is to certify that the dissertation entitled  
**“PHYTOCHEMICAL ANALYSIS OF HYPTIS ALLATA PLANT  
EXTRACT AND THEIR ANTIBACTERIAL ACTIVITY ”** Submitted in  
partial fulfillment of the requirement for the award of the degree of Bachelor of  
Science in **Biotechnology** to the **Mahindra Arts & Science College  
(Autonomous)**, Kalippatti is a record of bonafide research work carried out by  
**ANBUSELVAN P ( 18BBT1004)** under my supervision and guidance and that no  
part of the dissertation has been submitted for the award of any degree, diploma,  
fellowship or other similar titles or prizes and that the work has not been  
published in part or full in any scientific or popular journals or magazines.

*R. Rathika*

**Mrs. R.RATHIKA, M.Sc., M.Phil., Ph.D.**

Associate Professor  
Department of Biotechnology  
Mahindra Arts and Science College (Autonomous)  
Kalippatti.

**Signature of the Guide**

*[Handwritten Signature]*

**Head of the Department  
HEAD OF THE DEPARTMENT**

Department of Biotechnology,  
Mahendra Arts & Science College (Autonomous),  
Kalippatti (Po) - 637 501, Tiruchengode (Tk),  
Namakkal (Dt), Tamil Nadu, India.

Examiner 1

*[Handwritten Signature]*

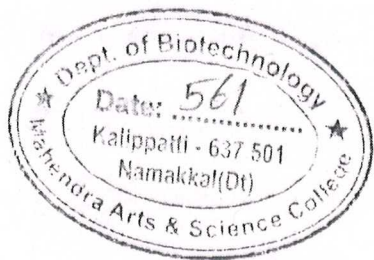
Examiner 2

*R. Rathika*

*[Handwritten Signature]*

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*[Handwritten Signature]*

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MAHENDRA ARTS & SCIENCE COLLEGE  
(Autonomous)**

Kalippatti (PO) - 637 501, Namakkal (DT)

**BIOSYNTHESIS OF SILVER NANOPARTICLES FROM EQUUS  
ASINUS AND  
ANTIBACTERIAL ACTIVITY AGAINST HUMAN PATHOGENS**

*Dissertation submitted in partial fulfillment of the requirement for  
the award of the Degree of*

**BACHELOR OF SCIENCE IN BIOTECHNOLOGY**

*Submitted by*

**Ashokraj.k 18BBT1007**

**Balakrishnan.L 18BBT1008**

**Boopathi.G 18BBT1011**

*Under the Guidance of*

**Name and Qualification**



**PG & RESEARCH DEPARTMENT OF BIOTECHNOLOGY  
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(Affiliated to Peryar University, Salem | Accredited with Grade 'A' by NAAC  
Recognized u/s 2(f) & 12(B) of UGC Act 1956 | 90<sup>th</sup> All India NIRF Ranking 2020)

**KALIPPATTI 637 501**

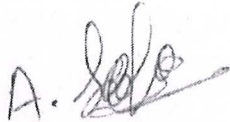
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**JULY - 2021 MAHENDRA ARTS & SCIENCE COLLEGE  
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## CERTIFICATE

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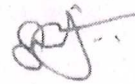


**Dr. Sengottaiyan, M.Sc., M.Phil., Ph.D.**

Associate Professor  
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**Signature of the Guide**



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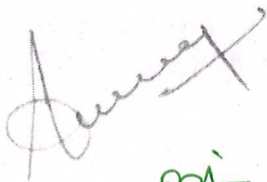


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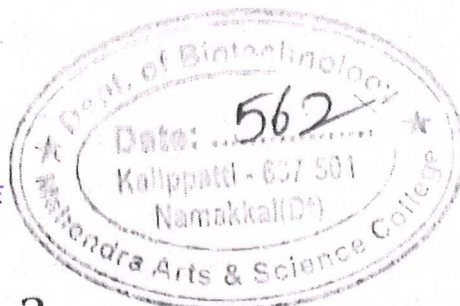
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**ALGAE SPIRULINA, EXTRACTION, ESTIMATION AND  
BIOTECHNOLOGICAL APPLICATION**

*Dissertation submitted in partial fulfillment of the requirement for the  
award of the Degree of*

**BACHELOR OF SCIENCE IN BIOTECHNOLOGY**

*Submitted by*

Dhanabal M (Reg.No.: 18BBT1012)

Dhanraj M (Reg.No.: 18BBT1013)

Dharaneesh K (Reg.No.: 18BBT1014)

*Under the Guidance of*

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**Department of BioTechnology**



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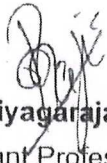
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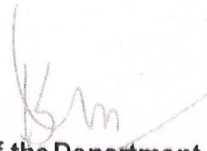
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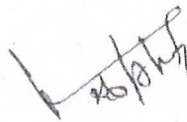
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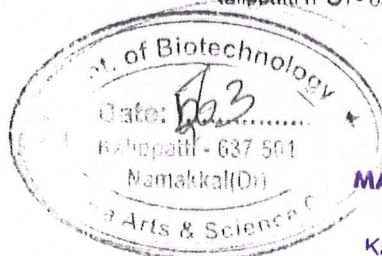
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Green synthesis of iron oxide nanoparticles using  
*Candium coromandelicum* leaf extract and its antibacterial  
potential

*Dissertation submitted in partial fulfillment of the requirement for  
the award of the Degree of*

**BACHELOR OF SCIENCE IN BIOTECHNOLOGY**

*Submitted by*

**S. Dinnesh - 18BBT1015**

**M. Elavarasan - 18BBT1016**

**P. Erusagounder - 18BBT1017**

*Under the Guidance of*

**Dr. K. Selvan, M.Sc., M.Phil., Ph.D.,**

**Assistant Professor in Biotechnology**



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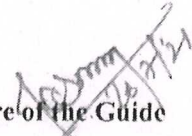
**July-2021**

  
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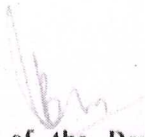


CERTIFICATE

This is to certify that the dissertation entitled "Green synthesis of iron oxide nanoparticles using *Canthium coromandelicum* leaf extract and its antibacterial potential" submitted in partial fulfillment of the requirement for the award of the degree of Bachelor of Science in **Biotechnology** to the **Mahendra Arts & Science College (Autonomous)**, Kalippatti is a record of bonafide research work carried out by S. **Dinnesh - 18BBT1015, M. Elavarasan - 18BBT1016, P. Erusagounder - 18BBT1017** under my supervision and guidance and that no part of the dissertation has been submitted for the award of any degree, diploma, fellowship or other similar titles or prizes and that the work has not been published in part or full in any scientific or popular journals or magazines.

  
Signature of the Guide

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Kalippatti

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**BIOLOGY AND REPELLENCY ASSESSMENT OF GRANARY WEEVIL,  
SITOPHILUS GRANARIUS (L.)**

*Dissertation submitted in partial fulfillment of the requirement for  
the award of the Degree of*

**BACHELOR OF SCIENCE IN BIOTECHNOLOGY**

*Submitted by*

**C.Gokul (Reg.No. 18BBT1018)**

**R.Gokul Kannan (Reg.No. 18BBT1019)**

**R. Gokul Nandhakumar (Reg.No. 18BBT1020)**

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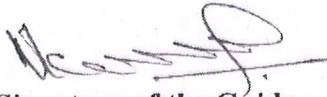
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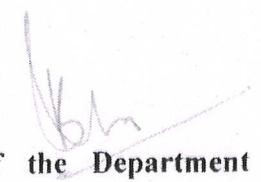
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This is to certify that the dissertation entitled "**BIOLOGY AND REPELLENCY ASSESSMENT OF GRANARY WEEVIL SITOPHILUS GRANARIUS (L.)**" Submitted in partial fulfillment of the requirement for the award of the degree of Bachelor of Science in **Biotechnology** to the **Mahendra Arts & Science College (Autonomous)**, Kalippatti is a record of bonafide research work carried out by **C.Gokul (Reg.No. 18BBT1018)**, **R.Gokul Kannan (Reg.No. 18BBT1019)** and **R. Gokul Nandhakumar (Reg.No. 18BBT1020)** under my supervision and guidance and that no part of the dissertation has been submitted for the award of any degree, diploma, fellowship or other similar titles or prizes and that the work has not been published in part or full in any scientific or popular journals or magazines.



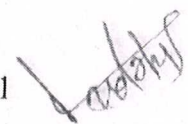
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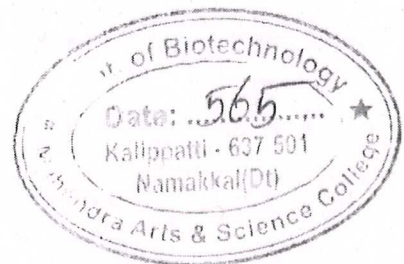
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**Green Synthesis of Silver Nanoparticles by Using *Tinospora Cordifolia*  
and Its Antibacterial Activity**

*Dissertation submitted in partial fulfillment of the requirement  
for the award of the Degree of*

**BACHELOR OF SCIENCE IN BIOTECHNOLOGY**

*Submitted by*

**Gowtham.P 18BBT1021  
Gowtham.R.A 18BBT1022  
Hariharan.R 18BBT1023**

*Under the Guidance of*

**Dr. Sudhakar, M.Sc., M.Phil., Ph.D.**

**Assistant Professor**

**Department of Biotechnology**



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This is to certify that the dissertation entitled "Green Synthesis of Silver Nanoparticles by Using *Tinospora Cordifolia* and Its Antibacterial Activity" Submitted in partial fulfillment of the requirement for the award of the degree of Bachelor of Science in **Biotechnology** to the **Mahendra Arts & Science College (Autonomous)**, Kalippatti is a record of bonafide research work carried out by Goutham.P 18BBT1021, Gowtham.R.A 18BBT1022, Hariharan.K 18BBT1023 under my supervision and guidance and that no part of the dissertation has been submitted for the award of any degree, diploma, fellowship or other similar titles or prizes and that the work has not been published in part of full in any scientific or popular journals or magazines.

  
**Dr. Sudhakar, M.Sc., M.Phil., Ph.D.**

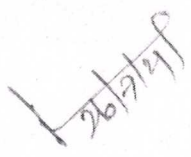
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**DETECTION OF COVID 19 BY REAL TIME POLYMERASE CHAIN  
REACTION ASSAY**

*Dissertation submitted in partial fulfillment of the requirement for  
the award of the Degree of*

**BACHELOR OF SCIENCE IN BIOTECHNOLOGY**

*Submitted by*

**Harikrishnan (Reg.No.: 18BBT1024)**

**Hariprasath S (Reg.No.: 18BBT1025)**

**Jagan (Reg.No.: 18BBT1026)**

*Under the Guidance of*

**Dr. R. Yuvarajan M.Sc., M.Phil., Ph.D.,**

**Assistant Professor**



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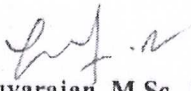
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**Dr. Yuvarajan, M.Sc., M.Phil., Ph.D.**

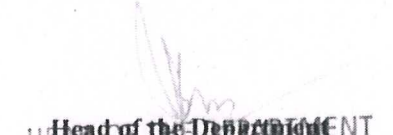
Associate Professor

Department of Biotechnology

Mahendra Arts and Science College (Autonomous)

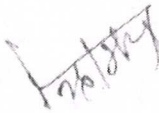
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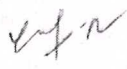


**Head of the Department**  
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Namakkal (Dt), Tamil Nadu, India.

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Kalippatti (PO) - 637 501, Namakkal (DT)

# GENETIC IMPROVEMENT OF *PASPALUM SCROBICULATUM* LAND RAISES THROUGH CHEMICAL MUTAGEN

*Dissertation submitted in partial fulfillment of the requirement for  
the award of the Degree of*

**BACHELOR OF SCIENCE IN BIOTECHNOLOGY**

*Submitted by*

**Jotheeshwaran.S 18BBT1027**

**Kalaiyarasan.S 18BBT1028**

**Karthick.V 18BBT1029**

*Under the Guidance of*

**Dr.R.KARTHIKA,M.Sc.,M.Phil., Ph.D.,**

**Assistant Professor**



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**Dr. R.Karthika, M.Sc., M.Phil., Ph.D.,**

Assistant Professor  
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Signature of the Guide

Head of the Department

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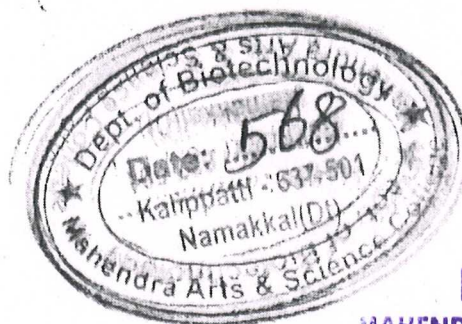
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Kalippatti (PO) - 637 501, Namakkal (DT)

**ISOLATION OF BIOSURFACTANT PRODUCING  
BACTERIA FROM GARBAGE SOIL**

*Dissertation submitted in partial fulfillment of the requirement for  
the award of the Degree of*

**BACHELOR OF SCIENCE IN BIOTECHNOLOGY**

*Submitted by*

**M. Kasinathan (Reg No: 18BBT1030)**

**G. Kavin (Reg No: 18BBT1031)**

**G. Kesavan (Reg No: 18BBT1032)**

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**Assistant Professor in Biotechnology**



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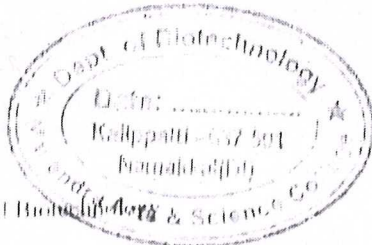
# CERTIFICATE

This is to certify that the dissertation entitled "ISOLATION OF BIOSURFACTANT PRODUCING BACTERIA FROM GARBAGE SOIL." submitted in partial fulfillment of the requirement for the award of the degree of Bachelor of Science in **Biotechnology** to the **Mahendra Arts & Science College (Autonomous)**, Kalippatti is a record of bonafide research work carried out by **M. Kasinathan (RegNo: 18BBT1030)**, **G. Kavln (Reg No: 18BBT1031)**, **G. Kesavan (Reg No: 18BBT1032)** under my supervision and guidance and that no part of the dissertation has been submitted for the award of any degree, diploma, fellowship or other similar titles or prizes and that the work has not been published in part of full in any scientific or popular journals or magazines.

Signature of the Guide

Mrs. P. Nirmala M.Sc., M.phil.,

Associate professor, Department of Biotechnology,  
Mahendra Arts and Science College (Autonomous), Kalippatti



Signature of the Head of the Department

**HEAD OF THE DEPARTMENT**

Department of Biotechnology,  
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Namakkal (Dt), Tamil Nadu, India.

Signature of Examiner 1

**Examiner 1**

Signature of Examiner 2

**Examiner 2**

Signature of the Principal

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Kalippatti (PO) - 637 501, Namakkal (DT)



Signature of the Principal

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MAHENDRA ARTS & SCIENCE COLLEGE  
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Kalippatti (PO) - 637 501, Namakkal (DT)

*Primary phytochemical analysis of Calotropis gigantean and their antibacterial activity*

**BACHELOR OF SCIENCE IN BIOTECHNOLOGY**

*Submitted by*

**M.Lingeshwaran(18BBT1033)**

**R.Nandhakumar(18BBT1034)**

**B.Naveen(18BBT1035)**

*Under the Guidance of*

**Dr.K.Selvankumar Msc,M.Phil,Ph.**

**Head of the Department**



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Kalippatti (PO) - 637 501, Namakkal (DT)

## CERTIFICATE (14")

This is to certify that the dissertation entitled *Primary phytochemical analysis of Calotropis gigantean and their antibacterial* Submitted in partial fulfillment of the requirement for the award of the degree of Bachelor of Science in **Biotechnology** to the **Mahendra Arts & Science College (Autonomous)**, Kalippatti is a record of bonafide research work carried out by **M.Lingeshwaran(18BBT1033), R.Nandhakumar(18BBT1034), B.Naveen(18BBT1035)** under my supervision and guidance and that no part of the dissertation has been submitted for the award of any degree, diploma, fellowship or other similar titles or prizes and that the work has not been published in part or full in any scientific or popular journals or magazines.

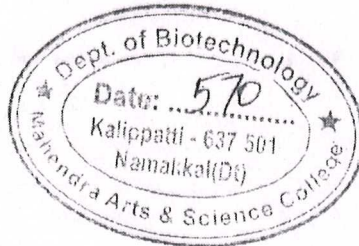
Signature of the Guide

Dr. T. Selvankumar, M.Sc., M.Phil., Ph.D.  
Associate Professor & Head,  
Department of Biotechnology  
Mahendra Arts and Science College  
(Autonomous)  
Kalippatti.

E:

Examiner 2

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**BIOGENIC SYNTHESIS CHARACTERIZATION AND  
ANTIBACTERIAL ACTIVITY OF COPPER  
NANOPARTICLES SYNTHESIZED FROM EQUUS ASINUS**

*Dissertation submitted in partial fulfillment of the requirement for  
the award of the Degree of*

**BACHELOR OF SCIENCE IN BIOTECHNOLOGY**

*Submitted by*

*Prem Kumar. P Reg.No.:18BBT1039*

*Ragu prasath.A Reg.No.:18BBT1040*

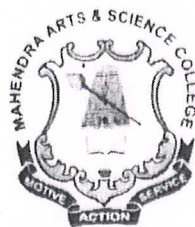
*Rajasekar. S Reg.No.: 18BBT1041*

*Under the Guidance of*

**Dr.A.Sengottaiyan M.Sc.,M.phil.,Ph.D.,**

**Associate Professor**

**Department of Biotechnology**



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(Autonomous)**

**Kalippatti (PO) - 637 501, Namakkal (DT)**

**CERTIFICATE**

This is to certify that the dissertation entitled "**BIOGENIC SYNTHESIS CHARACTERIZATION AND ANTIBACTERIAL ACTIVITY OF COPPER NANOPARTICLE SYNTHESIZED FROM EQUUS ASINUS**" Submitted in partial fulfillment of the requirement for the award of the degree of Bachelor of Science in **Biotechnology** to the **Mahendra Arts & Science College (Autonomous), Kalippatti** is a record of bonafide research work carried out by Prem kumar. P (18BBT1039) Ragu Prasath. A (18BBT1040) Raja sekar. S (18BBT1041) under my supervision and guidance and that no part of the dissertation has been submitted for the award of any degree, diploma, fellowship or other similar titles or prizes and that the work has not been published in part or full in any scientific or popular journals or magazines.

Signature of the guide

Dr. A. Sengottaiyan, M.Sc., M.Phil., Ph.D

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Mahendra Arts and Science College

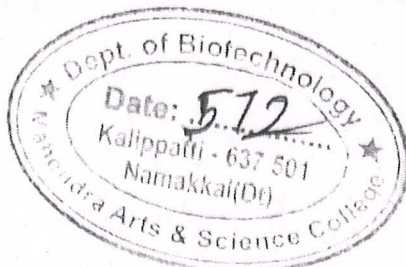
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**ANTIMICROBIAL ACTIVITY OF PSIDIUM GUAJAVA  
LEAVES EXTRACT AGAINST STAPHYLOCOCCUS AUREUS  
USING PURE EXTRACTS**

**Dissertation submitted in partial fulfillment of the requirement for  
the award of the Degree of**

**BACHELOR OF SCIENCE IN BIOTECHNOLOGY**

**Submitted by**

**Rajesh kannan.R(18BBT1042)**

**Ramesh.R(18BBT1043)**

**Ruban kumar.V(18BBT1044)**

**Under the Guidance of**

**Mr. P. Thiyagarajan, M.Sc., M.Phil.,(Ph.D).**

**Assistant Professor in Biotechnology**



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**July-2021**

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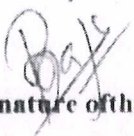
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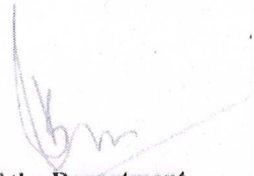
This is to certify that the dissertation entitled "ANTIMICROBIAL ACTIVITY OF PSIDIUM GUAJAVA LEAVES EXTRACT AGAINST STAPHYLOCOCCUS AUREUS USING PURE EXTRACTS" Submitted in partial fulfillment of the requirement for the award of the degree of Bachelor of Science in Biotechnology to the Mahendra Arts & Science College (Autonomous), Kalippatti is a record of bonafide research work carried out by Rajesh Kannan.R(Reg.No:18BBT1042),Ramesh.R(Reg No:18BBT1044),Ruban kumar.V(18BBT1044) under my supervision and guidance and that no part of the dissertation has been submitted for the award of any degree, diploma, fellowship or other similar titles or prizes and that the work has not been published in part or full in any scientific or popular journals or magazines.



Signature of the Guide

Mr.P.Thiyagarajan, M.Sc., M.Phil.,(Ph.D).

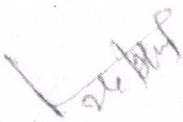
Associate Professor,  
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Head of the Department

**HEAD OF THE DEPARTMENT**  
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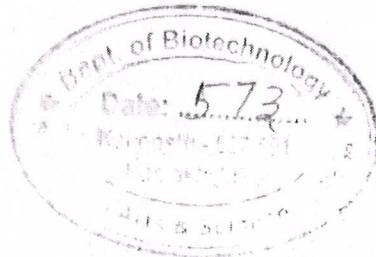
Examiner1



Examiner2



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**Phytosynthesis of zinc oxide nanoparticles using  
*Annona reticulata* leaf extract and its antibacterial activity**

*Dissertation submitted in partial fulfillment of the requirement for  
the award of the Degree of*

**BACHELOR OF SCIENCE IN BIOTECHNOLOGY**

*Submitted by*

**Sakthivel V (Reg. No.: 18BBT1045)**

**Sangameshwaran V (Reg. No.: 18BBT1046)**

**Sanjeev Kumar S. (Reg. No.: 18BBT1047)**

*Under the Guidance of*

**Dr. K. Selvam, M.Sc., M.Phil., Ph.D.,**

**Assistant Professor in Biotechnology**



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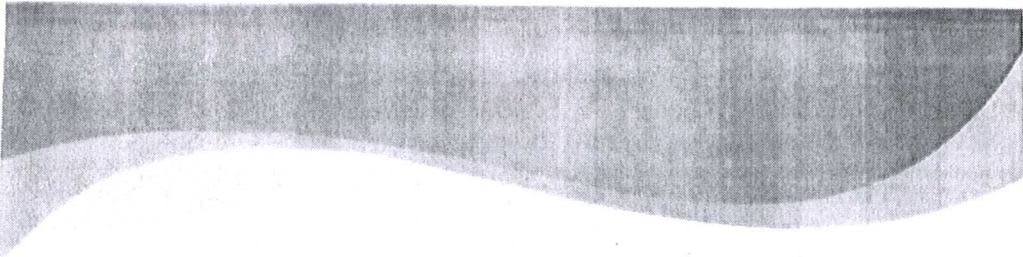


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CERTIFICATE

This is to certify that the dissertation entitled "Phytosynthesis of zinc oxide nanoparticles using *Annona reticulata* leaf extract and its antibacterial activity" submitted in partial fulfillment of the requirement for the award of the degree of Bachelor of Science in Biotechnology to the Mahendra Arts & Science College (Autonomous), Kalippatti is a record of bonafide research work carried out by Sakthivel V (Reg. No.: 18BBT1045), Sangameshwaran V (Reg. No.: 18BBT1046), Sanjeev Kumar S (Reg. No.: 18BBT1047) under my supervision and guidance and that no part of the dissertation has been submitted for the award of any degree, diploma, fellowship or other similar titles or prizes and that the work has not been published in part or full in any scientific or popular journals or magazines.

Signature of the Guide

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Kalippatti.

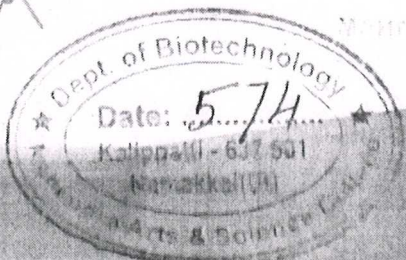
Examiner 1

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Examiner 2

*[Handwritten signature]*

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**STUDY OF LIFE CYCLE AND REPELLENCY ASSESSMENT OF  
CONFUSED FLOUR BEETLE *TRIBOLIUM CONFUSUM* (J.)**

*Dissertation submitted in partial fulfillment of the requirement for  
the award of the Degree of*

**BACHELOR OF SCIENCE IN BIOTECHNOLOGY**

*Submitted by*

**A.Sankaranarayanan**

**(Reg.No. 18BBT1048)**

**S.Santhoshkumar**

**(Reg.No. 18BBT1049)**

**A. Srikrishnadharan**

**(Reg.No. 18BBT1051)**

**M. Sridhar**

**(Reg.No. 18BBT1052)**

*Under the Guidance of*

**Dr. N. Kannan, M.Sc., M.Phil., M.Phil., B.Ed., Ph.D., SET.**

**Assistant Professor**



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CERTIFICATE

This is to certify that the dissertation entitled "STUDY OF LIFE CYCLE AND REPELLENCY ASSESSMENT OF CONFUSED FLOUR BEETLE TRIBOLIUM CONFUSUM (J.)" Submitted in partial fulfillment of the requirement for the award of the degree of Bachelor of Science in **Biotechnology** to the **Mahendra Arts & Science College (Autonomous)**, Kalippatti is a record of bonafide research work carried out by **A.Sankaranarayanan (Reg.No.18BBT1048), S.Santhoshkumar (Reg.No.18BBT1049), A. Srikrishnadharan (Reg.No. 18BBT1051) , M. Sridhar (Reg.No. 18BBT1052)** under my supervision and guidance and that no part of the dissertation has been submitted for the award of any degree, diploma, fellowship or other similar titles or prizes and that the work has not been published in part or full in any scientific or popular journals or magazines.



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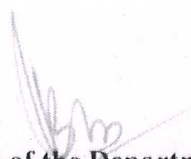
Dr. N. Kannan, M.Sc., M.Phil., M.Phil., B.Ed., Ph.D.,

Assistant Professor

Department of Biotechnology

Mahendra Arts and Science College (Autonomous)

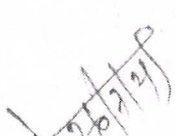
Kalippatti.



Head of the Department

**HEAD OF THE DEPARTMENT**

Department of Biotechnology,  
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Kalippatti (Po) - 637 501, Tiruchengode (Tk),  
Namakkal (Dt), Tamil Nadu, India.



Examiner 1




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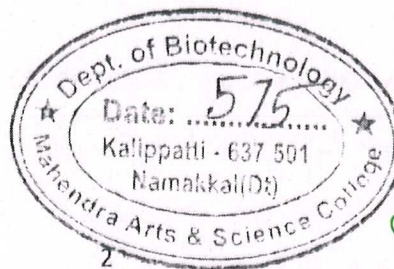
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(Autonomous)

Kalippatti (PO) - 637 501, Namakkal (DT)

**RESEARCH IN BIOCATALYSIS AND AGRICULTURE  
BIOTECHNOLOGY**

*Dissertation submitted in partial fulfillment of the requirement for the award of the degree of*

**BACHELOR OF SCIENCE IN BIOTECHNOLOGY**

Submitted by

**Vijayakumar.R (Reg.No:18BBT1055)**

**Yuvaraj.S (Reg.No:18BBT1057)**

**Anishabanu.A (Reg.No:18BBT1058)**

Under the Guidance of

**Dr. R. Yuvarajan M.Sc., M.Phil., Ph.D.,**

Assistant Professor



**PG & RESEARCH DEPARTMENT OF BIOTECHNOLOGY  
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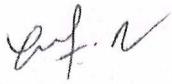
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## CERTIFICATE

This is to certify that the dissertation entitled “**Research in BIOCATALYSIS AND AGRICULTURE BIOTECHNOLOGY**” Submitted in partial fulfillment of the requirement for the award of the degree of Bachelor of science in **Biotechnology** to the **Mahendra Arts & science college (Autonomous) Kalippatti** is a record of bonafied research work carried out by **Vijayakumar.R (REG.NO:18BBT1057), Yuvaraj.S(Reg.No:18BBT1057) and AnishaBanu.A (Reg.No:18BBT1058)** under my supervision and guidance and that no part of the dissertation has been submitted for the award of any degree ,diploma,fellowship or other similar titles or prizes and that the work has not been published in part of in any scientific or popular journals or magazines.



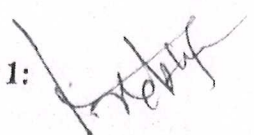
**Signature of the Guide**

**Dr.R. YUVARAJAN M.Sc., M.Phil.,Ph.D.,**  
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PG & Research Dept.ofBiotechnology,  
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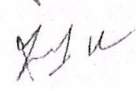


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**HEAD OF THE DEPARTMENT**  
**Dr. T. Selvakumar M.Sc., M.Phil., Ph.D.,**  
Department of Biotechnology,  
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Kalippatti.



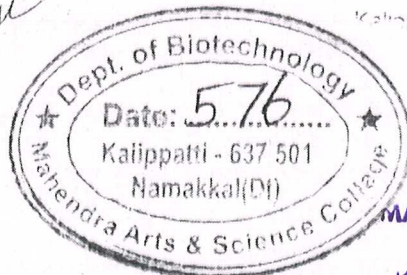
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Kalippatti (PO) - 637 501, Namakkal (DT)

Genetic improvement of *Panicum miliaceum* land  
raises through chemical mutagen

*Dissertation submitted in partial fulfillment of the requirement for  
the award of the Degree of*

**BACHELOR OF SCIENCE IN BIOTECHNOLOGY**

*Submitted by*

S. Anitha Mary - 18BBT1059  
S. Bharathi - 18BBT1060  
S. Bhuvaneshwari - 18BBT1061

*Under the Guidance of*

**Dr. R. KARTHIKA, M.Sc., M.Phil, Ph.D**

**Assistant Professor**



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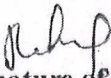
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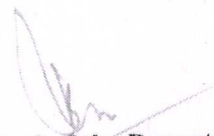
Kalippatti (PO) - 637 501, Namakkal (DT)




## CERTIFICATE

This is to certify that the dissertation entitled Genetic improvement of *Panicum miliaceum* land raises through chemical mutagen submitted to partial fulfillment of the requirement for the award of the degree of **Bachelor of Science in Biotechnology** to the **Mahendra Arts & Science College (Autonomous)**, Kalippatti is a record of bonafide research work carried out by S. Anitha Mary (18BBT1059), S. Bharathi (18BBT1060), S. Bhuvaneshwari (18BBT1061) under my supervision and guidance and that no part of the dissertation has been submitted for the award of any degree, diploma, fellowship or other similar titles or prizes and that the work has not been published in part or full in any scientific or popular journals or magazines.

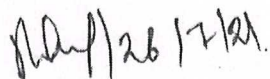
  
Signature of the Guide

  
**Head of the Department**  
**HEAD OF THE DEPARTMENT**  
Department of Biotechnology,  
Mahendra Arts & Science College (Autonomous),  
Kalippatti (Po) - 637 501, Tiruchengode (Tk),  
Namakkal (Dt). Tamil Nadu, India.

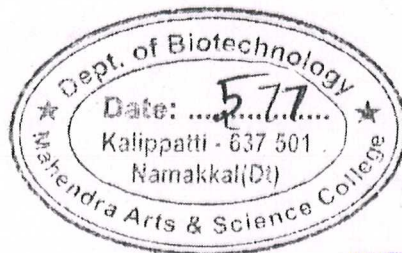
Examiner 1



Examiner 2

 26/7/21

  
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Kalippatti (PO) - 637 501, Namakkal (DT)

# **BIODIESEL PRODUCTION FROM WASTE COOKING OIL**

**Dissertation submitted in partial  
fulfillment of the requirement for the  
award of the Degree of**

**BACHELOR OF SCIENCE IN  
BIOTECHNOLOGY**

**Submitted by  
Biruntha.S(18BBT1062)  
Divyasri.N(18BBT1063)  
Gomathi.P(18BBT1064)**

**Under the Guidance of**

**Mrs.P.Nirmala,M.Sc,M.Phil**

**Assitant Professor in Biotechnology**



**PG & RESEARCH DEPARTMENT OF  
BIOTECHNOLOGY  
(DST-FIST Sponsored)**

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Recognized u/s 2(f) & 12(B) of UGC Act  
1956 | 90<sup>th</sup> All India NTRF Ranking 2020)

**KALIPPATTI 637 501**

**July-2021**

**PRINCIPAL**  
**MAHENDRA ARTS & SCIENCE COLLEGE**  
(Autonomous)  
Kalippatti (PO) - 637 501, Namakkal (DT)

## CERTIFICATE

This is to certify that the dissertation entitled "**BIODIESEL PRODUCTION FROM WASTE COOKING OIL**" Submitted in partial fulfillment of the requirement for the award of the degree of Bachelor of Science in Biotechnology to the Mahendra Arts & Science College (Autonomous), Kalippatti is a record of bonafide research work carried out by **S.Biruntha(Reg.No:18BBT1062),N.Divyasri(Reg.No:18BBT1063),P.Gomathi(18BBT1064)** under my supervision and guidance and that no part of the dissertation has been submitted for the award of any degree, diploma, fellowship or other similar titles or prizes and that the work has not been published in part or full in any scientific or popular journals or magazines.

Signature of the Guide

**M.rs,P.Nirmala,M.Sc,M.Phil**  
Associate professor,  
Department of Biotechnology  
Mahendra Arts and Sciences College (Autonomous)  
Kalippatti

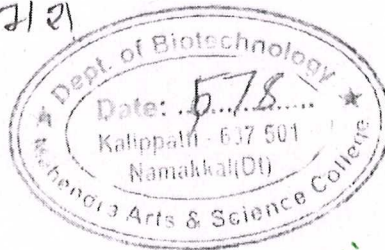
Head of the Department  
**HEAD OF THE DEPARTMENT**

Department of Biotechnology,  
Mahendra Arts & Science College (Autonomous),  
Kalippatti (Po) - 637 501, Tiruchengode (Tk),  
Namakkal (Dt). Tamil Nadu. India.

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Examiner 2

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Kalippatti (PO) - 637 501, Namakkal (DT)



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MAHENDRA ARTS & SCIENCE COLLEGE  
(Autonomous)  
Kalippatti (PO) - 637 501, Namakkal (DT)

**IN VITRO ANTIBACTERIAL ACTIVITY AND PHYTOCHEMICAL  
ANALYSIS OF SIDA ACUTA PLANT EXTRACT**

*Dissertation submitted in partial fulfillment of the requirement for  
the award of the Degree of*

**BACHELOR OF SCIENCE IN BIOTECHNOLOGY**

*Submitted by*

**JANANI G – 18BBT1066**

**JOTHIKA S – 18BBT1067**

**JAYANANDHINI E – 18BBT1068**

*Under the Guidance of*

**Dr.T.Selvan kumar., M.sc,M.Phil,Ph.D.,**

**Head & Professor,**

**Department of Biotechnology**



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**JULY - 2021**



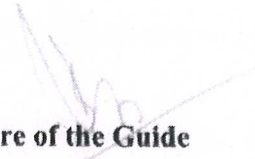
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This is to certify that the dissertation entitled "**In vitro antibacterial activity and phytochemical analysis of Sida acuta plant extract**" Submitted in partial fulfillment of the requirement for the award of the degree of Bachelor of Science in **Biotechnology** to the **Mahendra Arts & Science College (Autonomous)**, Kalippatti is a record of bonafide research work carried out by **JANANI G – 18BBT1066, JOTHIKA S 18BBT1067 JAYANANDHINI E – 18BBT1068** under my supervision and guidance and that no part of the dissertation has been submitted for the award of any degree, diploma, fellowship or other similar titles or prizes and that the work has not been published in part or full in any scientific or popular journals or magazines.

  
Signature of the Guide


**Dr. T. Selvankumar, M.Sc., M.Phil., Ph.D.**

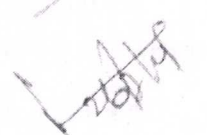
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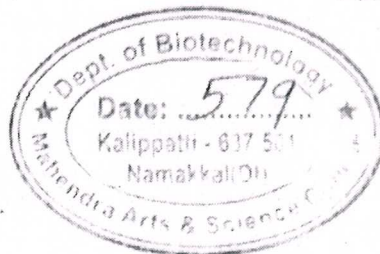
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**Sonochemical synthesis of silver nanoparticles using Manilkara Zapota  
milk extract and their antibacterial activity**

*Dissertation submitted in partial fulfillment of the requirement for  
the award of the Degree of*

**BACHELOR OF SCIENCE IN BIOTECHNOLOGY**

*Submitted by*

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**P.Kokila-18BBT1072**

**S.Lavanya-18BBT1073**

*Under the Guidance of*

**Mrs.R.Rathika,M sc,M.phil,PhD,..**

**Associate professor**



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**September - 2020**

  
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## CERTIFICATE (H)

This is to certify that the dissertation entitled "Sonochemical synthesis of silver nanoparticles using Maulkara zapota milk extract and their antibacterial activity" Submitted in partial fulfillment of the requirement for the award of the degree of Bachelor of Science in Biotechnology to the Mahendra Arts & Science College (Autonomous), Kalippatti is a record of bonafide research work carried out by S.Keerthana(18BHT1070),P.Kokila(18BHT1072),S.Lavanya(18BHT1073) under my supervision and guidance and that no part of the dissertation has been submitted for the award of any degree, diploma, fellowship or other similar titles or prizes and that the work has not been published in part or full in any scientific or popular journals or magazines.

*R. Rathika*

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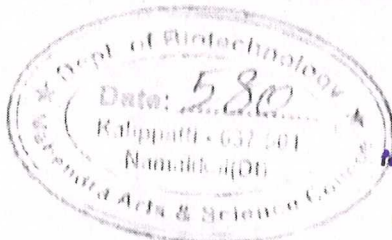
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Kalippatti (PO) - 637 501, Namakkal (DT)

**ECO-FRIENDLY BIOSYNTHESIS AND CHARACTERIZATION OF ZINC OXIDE  
NANOPARTICLES USING *EQUSS ASINUS* AND EVALUATED ANTIBACTERIAL  
ACTIVITY**

*Dissertation submitted in partial fulfillment of the requirement for  
the award of the Degree of*

**BACHELOR OF SCIENCE IN BIOTECHNOLOGY**

*Submitted by*

**N. MENAGA – 18BBT1074**

**A. MONISHA – 18BBT1075**

**R. MONISHA – 18BBT1076**

*Under the Guidance of*

**Dr. A. SENGOTTAIYAN, M.Sc., M.Phil., Ph.D.**

**Associate Professor**

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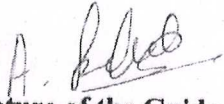
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## CERTIFICATE

This is to certify that the dissertation entitled “Eco-friendly biosynthesis and characterization of zinc oxide nanoparticles using *Equss asinus* and evaluated antibacterial activity” Submitted in partial fulfillment of the requirement for the award of the degree of Bachelor of Science in **Biotechnology** to the **Mahendra Arts & Science College (Autonomous)**, Kalippatti is a record of bonafide research work carried out by **MENAGA.N (18BBT1074), MONISHA.A (18BBT1075), MONISHA.R (18BBT1076)** under my supervision and guidance and that no part of the dissertation has been submitted for the award of any degree, diploma, fellowship or other similar titles or prizes and that the work has not been published in part of full in any scientific or popular journals or magazines.



**Signature of the Guide**

**Dr. A. SENGOTTAIYAN, M.Sc., M.Phil., Ph.D.**

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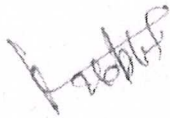


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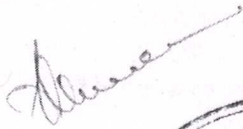
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# PRODUCTION OF BIOFERTILIZERS FROM FRUIT WASTES FOR THE CROP IMPROVEMENTS

*Dissertation submitted in partial fulfillment of the requirement for  
the award of the Degree of*

**BACHELOR OF SCIENCE IN BIOTECHNOLOGY**

*Submitted by*

**Rakshana priya P Reg.Nom : 18BBT1078**

**Sathya A Reg.Nom : 18BBT1079**

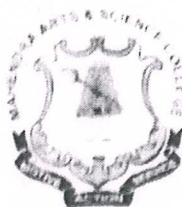
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*Under the Guidance of*

**Name and Qualification**

**Designation**

**Dr.P. Thiyagarajan M.Sc.,M.Phil.,Ph.D**



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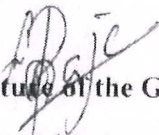
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September - 2020

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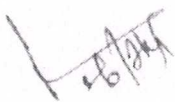
This is to certify that the dissertation entitled "**PRODUCTION OF BIOFERTILIZERS FROM FRUIT WASTES FOR THE CROP IMPROVEMENTS**" Submitted in partial fulfillment of the requirement for the award of the degree of Bachelor of Science in **Biotechnology** to the **Mahendra Arts & Science College (Autonomous)**, Kalippatti is a record of bonafide research work carried out by **Aravinth G Rakshana priya P (Reg Nom:18BBT1078)**, **Sathya A (Reg Nom:18BBT1079)**, **Sowmithra M (18BBT1080)** under my supervision and guidance and that no part of the dissertation has been submitted for the award of any degree, diploma, fellowship or other similar titles or prizes and that the work has not been published in part of full in any scientific or popular journals or magazines.

  
Signature of the Guide

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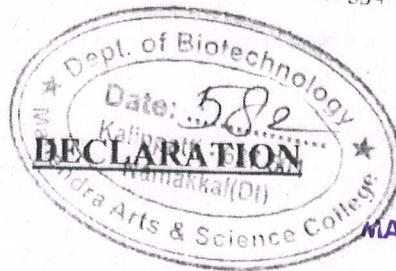
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**Bioinspired synthesis of zirconium oxide nanoparticles  
using *Annona reciculata* leaf extract and its  
antibacterial activity**

*Dissertation submitted in partial fulfillment of the requirement for  
the award of the Degree of*

**BACHELOR OF SCIENCE IN BIOTECHNOLOGY**

*Submitted by*

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**S. Swetha (Reg No: 18BBT1082)**

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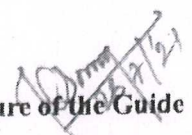
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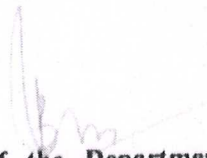
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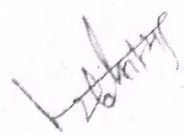
  
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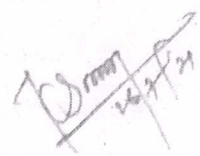
  
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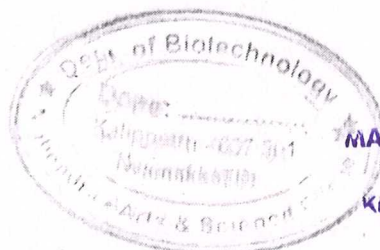


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