



SS INSTITUTE OF PHARMACY

(A unit of VS Educational & Charitable Trust)

Approved by Tamilnadu Government & Pharmacy Council of India, New Delhi.

Affiliated to the Tamilnadu Dr. M.G.R. Medical University,
and The Directorate of Medical Education, Chennai.

REF.NO:SSIP/ REQ/2023/002

Date: 12/06/2023

From

Department of Pharmacognosy,
SS institute of pharmacy,
Sankari, Salem (DIST) - 637301.

To

The principal,
SS institute of pharmacy,
Sankari, Salem (DIST) – 637301.


Subject: Letter for requesting permission to conduct **ADD ON COURSE** -Reg.

Respected sir,


We are requesting you to grant permission to conduct add-on course in the seminar hall on **21/06/2023 to 28/06/2023**. We wish to conduct add on course on the title “**Green Cell Factories**”. This add-on course program would be a great opportunity for students to learn and that would help to shape the students.

Thanking you,

Yours truly,


PRINCIPAL,
SS INSTITUTE OF PHARMACY,
KUPPANUR (PO), SANKARI (TK),
SALEM - 637301




PRINCIPAL,
SS INSTITUTE OF PHARMACY,
KUPPANUR (PO), SANKARI (TK),
SALEM - 637301

NH-544, Kuppanur (Po), Sankari (Tk), Salem(Dt) – 637301, Tamilnadu, India

Phone : 04283 241080 | E-mail : ssip1718@gmail.com | Website : www.ssip.edu.in



SS INSTITUTE OF PHARMACY

(A unit of VS Educational & Charitable Trust)

Approved by Tamilnadu Government & Pharmacy Council of India, New Delhi.

Affiliated to the Tamilnadu Dr. M.G.R. Medical University,
and The Directorate of Medical Education, Chennai.

28

DATE: 12/06/2023

CIRCULAR

This is to inform that will B.PHARM students have the schedule of following value - added course to be conducted by our SS Institute of Pharmacy and it as mentioned below.

COURSE NAME	SCHEDULE	DURATION	VENUE	RESOURCE PERSON
GREEN CELL FACTORIES	21/06/2023 to 28/06/2023	35 HOURS	SEMINAR HALL	GOMATHILM

All the above-mentioned students must enroll and actively participate in the course without fail.

Note: Certificates will be issued for the eligible students after completion of the course and examination.



PRINCIPAL,
SS INSTITUTE OF PHARMACY,
KUPPANUR (PO), SANKARI (TK),
SALEM - 637301

PRINCIPAL,
SS INSTITUTE OF PHARMACY,
KUPPANUR (PO), SANKARI (TK),
SALEM - 637301

NH-544, Kuppanur (Po), Sankari (Tk), Salem(Dt) – 637301, Tamilnadu, India

Phone : 04283 241080 | E-mail : ssip1718@gmail.com | Website : www.ssip.edu.in



**SS INSTITUTE
OF
PHARMACY,
SANKARI**

**DEPARTMENT OF
PHARMACEUTICS**

**COURSE TITLE
GREEN CELL
FACTORIES**

RESOURCE PERSON

**M.GOMATHI M.Pharm
Asst. Professor
SS Institute of Pharmacy**

Topics

- 1.Sustainable Practices**
- 2.Biotechnology and Microbial Production**
- 3.Applications of cell factories**

VENUE: SSIP SEMINAR HALL

DATE : 21/06/2023-28/06/2023

PHONE : 9443026056

E-MAIL : SSIP1718@GMAIL.COM

WEBSITE: WWW.SSIP.EDU.IN

**ADDRESS: SS INSTITUTE OF
PHARMACY,
SANKARI ,SALEM-637 301**



SS INSTITUTE OF PHARMACY

(A unit of VS Educational & Charitable Trust)

Approved by Tamilnadu Government & Pharmacy Council of India, New Delhi.

Affiliated to the Tamilnadu Dr. M.G.R. Medical University,
and The Directorate of Medical Education, Chennai.

SYLLABUS

GREEN CELL FACTORIES

Sl. No.	Topic	Date
1	Sustainable Biomass Production and Optimization <ul style="list-style-type: none">- Optimization of Biomass Feedstocks- Energy-Efficient Cultivation Techniques	21/6/2023
2	Microbial and Photosynthetic Cell Factories <ul style="list-style-type: none">- Engineering Microbes for Biofuel Production- Production of Bioplastics Using Engineered Microorganisms- Utilization of Algae for Carbon Capture and Biofuel Production- Genetic Modification of Plants for Increased Bio-Product Yield	22/6/2023
3	Synthetic Biology and Metabolic Engineering <ul style="list-style-type: none">- Design and Construction of Synthetic Pathways- Genome Editing Technologies for Sustainability- Pathway Optimization for High-Yield Production- Use of CRISPR for Pathway Regulation	23/6/2023- 24/6/2023
4	Circular Economy and Environmental Impact <ul style="list-style-type: none">- Integration of Cell Factories in Waste Valorization- Recycling of Industrial By-Products Through Bioprocesses- Carbon Footprint Reduction Through Green Cell Factories- Environmental Benefits of Bioproducts from Cell Factories	26/6/2023- 27/6/2023
5	Industrial Applications and Policy Regulation <ul style="list-style-type: none">- Scale-Up of Green Cell Factory Processes- Commercialization of Bioproducts from Cell Factories- Regulatory Frameworks for GMOs in Green Cell Factories- Incentives for Sustainable Bioproduction Technologies	28/6/2023

RESOURCE PERSON: M.Gomathi

TOTAL HOURS: 35Hrs



PRINCIPAL,
SS INSTITUTE OF PHARMACY,
KUPPANUR (PO), SANKARI (TK),
SALEM - 637301

PRINCIPAL,
SS INSTITUTE OF PHARMACY,
KUPPANUR (PO), SANKARI (TK),
SALEM - 637301

NH-544, Kuppanur (Po), Sankari (Tk), Salem(Dt) – 637301, Tamilnadu, India

Phone : 04283 241080 | E-mail : ssip1718@gmail.com | Website : www.ssip.edu.in



SS INSTITUTE OF PHARMACY

(A unit of VS Educational & Charitable Trust)

Approved by Tamilnadu Government & Pharmacy Council of India, New Delhi.

Affiliated to the Tamilnadu Dr. M.G.R. Medical University,
and The Directorate of Medical Education, Chennai.

ADD ON / CERTIFICATE VALUE ADDED COURSES ACADEMIC YEAR 2023-2024



SS INSTITUTE OF PHARMACY

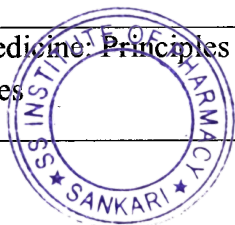
(A unit of VS Educational & Charitable Trust)

Approved by Tamil Nadu Government & Pharmacy Council of India, New Delhi.

Affiliated to the Tamilnadu Dr. M.G.R. Medical University,
and The Directorate of Medical Education, Chennai.

ACADAMIC YEAR 2023-2024

S.NO	NAME OF ADD ON CERTIFICATES PROGRAMS	COURSE CODE	NO OF STUDEN ENROLLED	TYPE OF ADD ON CERTIFICATE PROGRAMS
1.	Advanced therapy topics in immunotherapy	23ATTI01	55	Self-framed course
2.	Green cell factories	23GCF02	58	Self-framed course
3.	Advanced techniques in enzymology .	23ATE03	70	Self-framed course
4.	Biomechanics and orthopaedic implants	23BOI04	63	Self-framed course
5.	Blockchain technology in pharmaceuticals	23BTP05	30	Self-framed course
6.	Cell designer modeling tool for gene-regulatory & biomedical networks	23CDMTGRBN	27	Self-framed course
7.	Computational protein modeling and analytics	23CPMA07	59	Self-framed course
8.	Scientific writing in health research	24SWHR08	56	Self-framed course
9.	Systematic reviews for pharmacy health professionals	24SRPHP09	57	Self-framed course
10.	Advanced bioinformatics: Tools & applications	24ABTA10	113	Self-framed course
11.	Telemedicine Principles & practices	24TPP11	58	Self-framed course



PRINCIPAL,
SS INSTITUTE OF PHARMACY,
KUPPANUR (PO), SANKARI (TK),
SALEM - 637301.

NH-544, Kuppanur (Po), Sankari (Tk), Salem(Dt) – 637301, Tamilnadu, India

Phone : 04283 241080 | E-mail : ssip1718@gmail.com | Website : www.ssip.edu.in



SS INSTITUTE OF PHARMACY

(A unit of VS Educational & Charitable Trust)

Approved by Tamilnadu Government & Pharmacy Council of India, New Delhi.

Affiliated to the Tamilnadu Dr. M.G.R. Medical University,
and The Directorate of Medical Education, Chennai.

ADD ON COURSE – ENROLLMENT LIST

NAME OF ADD ON COURSE : GREEN CELL FACTORIES

COURSE INSTRUCTORS : GOMATHI.M

YEAR OFFERED : 4th SEM B.PHARM

COURSE DURATION : 35 hrs

S.NO	NAME OF THE STUDENT	REGISTER NO	COURSE
1.	ABINAYA.M	560020523501	2 nd B.PHARM
2.	ABISHEK.J	560020523502	2 nd B.PHARM
3.	AMOKA.V	560020523503	2 nd B.PHARM
4.	ANBUSELVAN.V	560020523504	2 nd B.PHARM
5.	ANBUSELVI.S	560020523505	2 nd B.PHARM
6.	ANITHA.L	560020523506	2 nd B.PHARM
7.	ARAVIND.R	560020523507	2 nd B.PHARM
8.	ARCHANA.M	560020523508	2 nd B.PHARM
9.	ARUN VENKATESHWARAN.S	560020523509	2 nd B.PHARM
10.	ARUN.A	560020523510	2 nd B.PHARM
11.	ASWIN.M	560020523511	2 nd B.PHARM
12.	ATCHAYA.K	560020523512	2 nd B.PHARM
13.	BANU.S	560020523513	2 nd B.PHARM
14.	BAVITHRA.B	560020523514	2 nd B.PHARM
15.	BHARATHI RAJA.S	560020523515	2 nd B.PHARM
16.	BARATH KUMAR.R	560020523516	2 nd B.PHARM
17.	DEEPASRI.P	560020523517	2 nd B.PHARM
18.	DINESH.S	560020523518	2 nd B.PHARM
19.	GOPIKRISHNAN.V	560020523519	2 nd B.PHARM
20.	GOWSALYA.V	560020523520	2 nd B.PHARM
21.	GULBAHAR.G	560020523521	2 nd B.PHARM
22.	HEMADHARAN.V	560020523522	2 nd B.PHARM
23.	ISHWARYA.S	560020523523	2 nd B.PHARM
24.	JEYASURYA.V	560020523524	2 nd B.PHARM
25.	KESAVAMUCHESH.M	560020523525	2 nd B.PHARM
26.	MUTHUJ	560020523526	2 nd B.PHARM

NH-544, Kuppanur (Po), Sankari (Tk), Salem(Dt) – 637301, Tamilnadu, India

Phone : 04283 241080 | E-mail : ssip1718@gmail.com | Website : www.ssip.edu.in



SS INSTITUTE OF PHARMACY

(A unit of VS Educational & Charitable Trust)

Approved by Tamilnadu Government & Pharmacy Council of India, New Delhi.

Affiliated to the Tamilnadu Dr. M.G.R. Medical University,
and The Directorate of Medical Education, Chennai.

27.	NAGAMUGILAN.P	560020523527	2 nd B.PHARM
28.	NAGESHWARI.K	560020523528	2 nd B.PHARM
29.	NARESH KUMAR.M	560020523529	2 nd B.PHARM
30.	NARMATHA.M	560020523530	2 nd B.PHARM
31.	PAPITHA .V	560020523531	2 nd B.PHARM
32.	PRAGATHI .P	560020523532	2 nd B.PHARM
33.	PRASANTH .M	560020523533	2 nd B.PHARM
34.	PRIYADARSHINI .V	560020523534	2 nd B.PHARM
35.	RAJALAKSHMI .N	560020523535	2 nd B.PHARM
36.	RAJARAJAN .M	560020523536	2 nd B.PHARM
37.	SATHISHKUMAR .J	560020523537	2 nd B.PHARM
38.	SHIRLEY ELIZABETH.I	560020523538	2 nd B.PHARM
39.	SIVA S.V	560020523539	2 nd B.PHARM
40.	SIVAPRAKASH .V	560020523540	2 nd B.PHARM
41.	SUDHA D.G	560020523541	2 nd B.PHARM
42.	SUNDARAKANNAN .D	560020523542	2 nd B.PHARM
43.	SURIYA .G	560020523543	2 nd B.PHARM
44.	SWATHY .M	560020523544	2 nd B.PHARM
45.	SYED YASIN S.M	560020523545	2 nd B.PHARM
46.	TAMILARASAN .A	560020523546	2 nd B.PHARM
47.	THAMIZHARASAN .N	560020523547	2 nd B.PHARM
48.	THILAGAVATHI .M	560020523548	2 nd B.PHARM
49.	THIRUMURUGAN .R	560020523549	2 nd B.PHARM
50.	UMAVATHI .P	560020523550	2 nd B.PHARM
51.	VALLARASU.D	560020523551	2 nd B.PHARM
52.	VASANTHRAJ .S	560020523552	2 nd B.PHARM
53.	VINOTH SANJAY.T	560020523553	2 nd B.PHARM
54.	VINOTH .S	560020523554	2 nd B.PHARM
55.	VISHWA .M	560020523555	2 nd B.PHARM
56.	VISHWANATHAN .V	560020523556	2 nd B.PHARM
57.	CHANDURU .R	560021523561	2 nd B.PHARM
58.	NISHA .P	560021523562	2 nd B.PHARM



PRINCIPAL,
SS INSTITUTE OF PHARMACY,
KUPPANUR (PO), SANKARI (TK),
SALEM - 637301

NH-544, Kuppanur (Po), Sankari (Tk), Salem(Dt) – 637301, Tamilnadu, India

Phone : 04283 241080 | E-mail : ssip1718@gmail.com | Website : www.ssip.edu.in



SS INSTITUTE OF PHARMACY

(A unit of VS Educational & Charitable Trust)

Approved by Tamilnadu Government & Pharmacy Council of India, New Delhi.
Affiliated to the Tamilnadu Dr. M.G.R. Medical University,
and The Directorate of Medical Education, Chennai

ADD ON COURSE – ENROLLMENT LIST

NAME OF ADD ON COURSE : GREEN CELL FACTORIES

COURSE INSTRUCTORS : GOMATHILM

YEAR OFFERED : 4th SEM B.PHARM

COURSE DURATION : 35 hrs

S.NO	NAME OF THE STUDENT	REGISTER NO	ATTENDANCE						
			21/6/23	22/6/23	23/6/23	24/6/23	26/6/23	27/6/23	28/6/23
1.	ABINAYA.M	560020523501	M.Ah	M.Ah	M.Ah	M.Ah	M.Ah	M.Ah	M.Ah
2.	ABISHEK.J	560020523502	T.A	T.A	T.A	T.A	T.A	T.A	T.A
3.	AMOKA.V	560020523503	V.Am	V.Am	V.Am	V.Am	V.Am	V.Am	V.Am
4.	ANBUSELVAN.V	560020523504	A.A	A.A	A.A	A.A	A.A	A.A	A.A
5.	ANBUSELVIS	560020523505	A.A	A.A	A.A	A.A	A.A	A.A	A.A
6.	ANITHA.L	560020523506	L.A	L.A	L.A	L.A	L.A	L.A	L.A
7.	ARAVIND.R	560020523507	R.A	R.A	R.A	R.A	R.A	R.A	R.A
8.	ARCHANA.M	560020523508	M.Arch	M.Arch	M.Arch	M.Arch	M.Arch	M.Arch	M.Arch
9.	ARUN VENKATESHWARAN.S	560020523509	S.A	S.A	S.A	S.A	S.A	S.A	S.A
10.	ARUN.A	560020523510	A.A	A.A	A.A	A.A	A.A	A.A	A.A
11.	ASWIN.M	560020523511	M.A	M.A	M.A	M.A	M.A	M.A	M.A
12.	ATCHAYA.K	560020523512	K.A	K.A	K.A	K.A	K.A	K.A	K.A
13.	BANU.S	560020523513	S.B	S.B	S.B	S.B	S.B	S.B	S.B
14.	BAVITHRA.B	560020523514	B.B	B.B	B.B	B.B	B.B	B.B	B.B
15.	BHARATHI RAJA.S	560020523515	S.B	S.B	S.B	S.B	S.B	S.B	S.B
16.	BARATH KUMAR.R	560020523516	R.B	R.B	R.B	R.B	R.B	R.B	R.B
17.	DEEPASRI.P	560020523517	P.D	P.D	P.D	P.D	P.D	P.D	P.D
18.	DINESH.S	560020523518	S.D	S.D	S.D	S.D	S.D	S.D	S.D
19.	GOPIKRISHNAN.V	560020523519	V.G	V.G	V.G	V.G	V.G	V.G	V.G
20.	GOWSALYA.V	560020523520	V.G	V.G	V.G	V.G	V.G	V.G	V.G
21.	GULBAHAR.G	560020523521	G.G	G.G	G.G	G.G	G.G	G.G	G.G
22.	HEMADHARAN.V	560020523522	V.H	V.H	V.H	V.H	V.H	V.H	V.H
23.	ISHWARYA.S	560020523523	S.I	S.I	S.I	S.I	S.I	S.I	S.I
24.	JEYASURYA.V	560020523524	V.J	V.J	V.J	V.J	V.J	V.J	V.J

NH-544, Kuppapur (Po), Sankari (Tk), Salem(Dt) – 637301, Tamil Nadu, India

Phone : 04283.241080 | E-mail : ssip1718@gmail.com | Website : www.ssip.edu.in



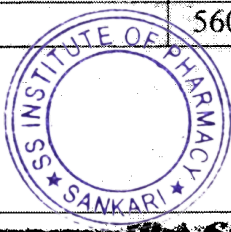
SS INSTITUTE OF PHARMACY

(A unit of VS Educational & Charitable Trust)

Approved by Tamil Nadu Government & Pharmacy Council of India, New Delhi.

Affiliated to the Tamilnadu Dr. M.G.R. Medical University,
and The Directorate of Medical Education, Chennai.

25.	KESAVAMUGILESH.M	560020523525	Kes	Kes	Kes	Kes	Kes	Kes	Kes
26.	MUTHU.J	560020523526	Mu	Mu	Mu	Mu	Mu	Mu	Mu
27.	NAGAMUGILAN.P	560020523527	Nag	Nag	Nag	Nag	Nag	Nag	Nag
28.	NAGESHWARI.K	560020523528	Nag	Nag	Nag	Nag	Nag	Nag	Nag
29.	NARESH KUMAR.M	560020523529	Nare	Nare	Nare	Nare	Nare	Nare	Nare
30.	NARMATHA.M	560020523530	Nar	Nar	Nar	Nar	Nar	Nar	Nar
31.	PAPITHA .V	560020523531	Va	Va	Va	Va	Va	Va	Va
32.	PRAGATHI .P	560020523532	Pr	Pr	Pr	Pr	Pr	Pr	Pr
33.	PRASANTH .M	560020523533	Pr	Pr	Pr	Pr	Pr	Pr	Pr
34.	PRIYADARSHINI .V	560020523534	Va	Va	Va	Va	Va	Va	Va
35.	RAJALAKSHMI .N	560020523535	Raj	Raj	Raj	Raj	Raj	Raj	Raj
36.	RAJARAJAN .M	560020523536	Raj	Raj	Raj	Raj	Raj	Raj	Raj
37.	SATHISHKUMAR .J	560020523537	Sath	Sath	Sath	Sath	Sath	Sath	Sath
38.	SHIRLEY ELIZABETH.I	560020523538	Shir	Shir	Shir	Shir	Shir	Shir	Shir
39.	SIVA S.V	560020523539	Siv	Siv	Siv	Siv	Siv	Siv	Siv
40.	SIVAPRAKASH .V	560020523540	Siv	Siv	Siv	Siv	Siv	Siv	Siv
41.	SUDHA D.G	560020523541	Sud	Sud	Sud	Sud	Sud	Sud	Sud
42.	SUNDARAKANNAN .D	560020523542	Sun	Sun	Sun	Sun	Sun	Sun	Sun
43.	SURIYA .G	560020523543	Sur	Sur	Sur	Sur	Sur	Sur	Sur
44.	SWATHY .M	560020523544	Sw	Sw	Sw	Sw	Sw	Sw	Sw
45.	SYED YASIN S.M	560020523545	Yas	Yas	Yas	Yas	Yas	Yas	Yas
46.	TAMILARASAN .A	560020523546	Tam	Tam	Tam	Tam	Tam	Tam	Tam
47.	THAMIZHARASAN .N	560020523547	Tha	Tha	Tha	Tha	Tha	Tha	Tha
48.	THILAGAVATHI .M	560020523548	Thi	Thi	Thi	Thi	Thi	Thi	Thi
49.	THIRUMURUGAN .R	560020523549	Thi	Thi	Thi	Thi	Thi	Thi	Thi
50.	UMAVATHI .P	560020523550	Uma	Uma	Uma	Uma	Uma	Uma	Uma
51.	VALLARASU.D	560020523551	Vall	Vall	Vall	Vall	Vall	Vall	Vall
52.	VASANTHRAJ .S	560020523552	Vas	Vas	Vas	Vas	Vas	Vas	Vas
53.	VINOTH SANJAY.T	560020523553	Vin	Vin	Vin	Vin	Vin	Vin	Vin
54.	VINOTH .S	560020523554	Vin	Vin	Vin	Vin	Vin	Vin	Vin
55.	VISHWA .M	560020523555	Vish	Vish	Vish	Vish	Vish	Vish	Vish
56.	VISHWANATHAN .V	560020523556	Vish	Vish	Vish	Vish	Vish	Vish	Vish
57.	CHANDURU .R	560021523561	Cha	Cha	Cha	Cha	Cha	Cha	Cha
58.	NISHA .P	560021523562	Nis	Nis	Nis	Nis	Nis	Nis	Nis



PRINCIPAL,
SS INSTITUTE OF PHARMACY,
KUPPANUR (PO), SANKARI (TK),
SALEM - 637301

PRINCIPAL,
SS INSTITUTE OF PHARMACY,
KUPPANUR (PO), SANKARI (TK),
SALEM - 637301

NH-544, Kuppanur (Po), Sankari (Tk), Salem (Dt) - 637301, Kuppam Road, Kuppanur (Po), Sankari (Tk), Salem (Dt) - 637301

Phone : 04283 241080 | E-mail : ssip1718@gmail.com | Website : www.ssip.edu.in



SS INSTITUTE OF PHARMACY

(A unit of VS Educational & Charitable Trust)

Approved by Tamilnadu Government & Pharmacy Council of India, New Delhi.
Affiliated to the Tamilnadu Dr. M.G.R. Medical University,
and The Directorate of Medical Education, Chennai.

ADD ON COURSE	GREEN CELL FACTORIES
DEPARTMENT	PHARMACOGNOSY
ACADEMIC YEAR	2023-2024
DATE	21/06/2023 to 28/06/2023
VENUE	SEMINAR HALL
NAME: KESAVA MURILISH - M	COURSE: IV - SEM

ANSWER ALL THE QUESTIONS:

DATE: 28/06/2023

MULTIPLE CHOICE QUESTIONS

MARKS: 15

1. What is a green cell factory?

- a) A plant-based energy production unit
- ☒ b) A system using microorganisms for sustainable production of chemicals and fuels
- c) A solar-powered manufacturing plant
- d) A type of fuel cell

12

2. Which microorganism is commonly used in green cell factories for biofuel production?

- a) Algae
- b) Bacteria
- c) Yeast
- ☒ d) All of the above

3. Green cell factories are primarily associated with which field?

- a) Nanotechnology
- ☒ b) Synthetic Biology
- c) Mechanical Engineering
- d) Astrophysics

4. What is the main environmental benefit of green cell factories?

- a) Increased water consumption
- ☒ b) Reduced carbon footprint
- c) Generation of nuclear waste
- d) Deforestation



PRINCIPAL,
SS INSTITUTE OF PHARMACY,
KUDANUR (PO), SANKARI (TK),
SALEM - 637301



SS INSTITUTE OF PHARMACY

(A unit of VS Educational & Charitable Trust)

Approved by Tamilnadu Government & Pharmacy Council of India, New Delhi.
Affiliated to the Tamilnadu Dr. M.G.R. Medical University,
and The Directorate of Medical Education, Chennai.

5. Which of the following is a product typically generated by green cell factories?

- a) Fossil fuels
- b) Antibiotics
- c) Plastic waste
- ☒ d) Heavy metals

6. Which process is commonly used in green cell factories for product synthesis?

- ☒ a) Fermentation
- b) Electrolysis
- c) Combustion
- d) Smelting

7. Why are algae considered a good candidate for green cell factories?

- ☒ a) They have high growth rates and can be engineered for various products
- b) They are the only organism that can be used in these factories
- c) They produce toxic byproducts
- d) They require fossil fuels to grow

8. What is the role of genetic engineering in green cell factories?


- a) It is not used at all
- b) To enhance the production efficiency of microorganisms
- ☒ c) To decrease the environmental impact of fossil fuels
- d) To increase the natural biodiversity of ecosystems

9. Which product from green cell factories is widely used in the cosmetics industry?

- a) Bioethanol
- ☒ b) Omega-3 fatty acids
- c) Polystyrene
- d) Petroleum jelly

10. Which of the following industries can benefit from green cell factories?

- a) Automotive
- b) Pharmaceuticals
- c) Agriculture
- ☒ d) All of the above


PRINCIPAL,
SS INSTITUTE OF PHARMACY,
KUPPANUR (PO), SANKARI (TK),
SALEM - 637301.





SS INSTITUTE OF PHARMACY

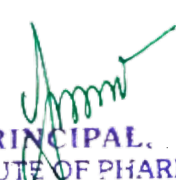
(A unit of VS Educational & Charitable Trust)

Approved by Tamilnadu Government & Pharmacy Council of India, New Delhi.

Affiliated to the Tamilnadu Dr. M.G.R. Medical University,
and The Directorate of Medical Education, Chennai.

11. What is one of the main challenges in scaling up green cell factories?
- a) Availability of raw materials
 - ☒ b) High cost of genetic modifications
 - c) Lack of skilled labor
 - d) High energy consumption
12. Which of the following is NOT true about green cell factories?
- a) They use renewable biological processes
 - ☒ b) They rely heavily on fossil fuels
 - c) They can produce biofuels
 - d) They can be engineered to produce specific chemicals
13. Which of the following is a potential challenge in the use of green cell factories?
- a) High operational temperatures
 - ☒ b) Limited scalability
 - c) Excessive water usage
 - d) Low energy efficiency
14. Green cell factories contribute to the circular economy by:
- ☒ a) Minimizing waste and recycling materials
 - b) Maximizing the use of non-renewable resources
 - c) Encouraging the use of disposable products
 - d) Promoting monoculture farming
15. Which of the following is NOT a product of green cell factories?
- a) Bioethanol
 - b) Bioplastics
 - c) Pharmaceuticals
 - ☒ d) Heavy metals




PRINCIPAL,
SS INSTITUTE OF PHARMACY,
RUPPENUR (PO), SANKARI (TK),
SALEM - 637301.



SS INSTITUTE OF PHARMACY

(A unit of VS Educational & Charitable Trust)

Approved by Tamilnadu Government & Pharmacy Council of India, New Delhi.

Affiliated to the Tamilnadu Dr. M.G.R. Medical University,
and The Directorate of Medical Education, Chennai.

ADD ON COURSE	GREEN CELL FACTORIES
DEPARTMENT	PHARMACOGNOSY
ACADEMIC YEAR	2023-2024
DATE	21/06/2023 to 28/06/2023

ANSWER KEY:


DATE: 28/06/2023

MULTIPLE CHOICE QUESTIONS

MARKS: 15

- What is a green cell factory?
 - A plant-based energy production unit
 - A system using microorganisms for sustainable production of chemicals and fuels**
 - A solar-powered manufacturing plant
 - A type of fuel cell
- Which microorganism is commonly used in green cell factories for biofuel production?
 - Algae
 - Bacteria**
 - Yeast
 - All of the above
- Green cell factories are primarily associated with which field?
 - Nanotechnology
 - Synthetic Biology**
 - Mechanical Engineering
 - Astrophysics
- What is the main environmental benefit of green cell factories?
 - Increased water consumption
 - Reduced carbon footprint**
 - Generation of nuclear waste
 - Deforestation




PRINCIPAL,
SS INSTITUTE OF PHARMACY,
KUPPANUR (PO), SANKARI (TK),
SALEM - 637301.




SS INSTITUTE OF PHARMACY

(A unit of VS Educational & Charitable Trust)

Approved by Tamilnadu Government & Pharmacy Council of India, New Delhi.
Affiliated to the Tamilnadu Dr. M.G.R. Medical University,
and The Directorate of Medical Education, Chennai.

-
5. Which of the following is a product typically generated by green cell factories?
- a) Fossil fuels
 - b) Antibiotics**
 - c) Plastic waste
 - d) Heavy metals
6. Which process is commonly used in green cell factories for product synthesis?
- a) Fermentation**
 - b) Electrolysis
 - c) Combustion
 - d) Smelting
7. Why are algae considered a good candidate for green cell factories?
- a) They have high growth rates and can be engineered for various products**
 - b) They are the only organism that can be used in these factories
 - c) They produce toxic byproducts
 - d) They require fossil fuels to grow
8. What is the role of genetic engineering in green cell factories?
- a) It is not used at all
 - b) To enhance the production efficiency of microorganisms**
 - c) To decrease the environmental impact of fossil fuels
 - d) To increase the natural biodiversity of ecosystems
9. Which product from green cell factories is widely used in the cosmetics industry?
- a) Bioethanol
 - b) Omega-3 fatty acids**
 - c) Polystyrene
 - d) Petroleum jelly
10. Which of the following industries can benefit from green cell factories?
- a) Automotive
 - b) Pharmaceuticals
 - c) Agriculture
 - d) All of the above**




PRINCIPAL,
SS INSTITUTE OF PHARMACY,
KUPPANUR (PO), SANKARI (TK),
SALEM - 637301.



SS INSTITUTE OF PHARMACY

(A unit of VS Educational & Charitable Trust)

Approved by Tamilnadu Government & Pharmacy Council of India, New Delhi.

Affiliated to the Tamilnadu Dr. M.G.R. Medical University,
and The Directorate of Medical Education, Chennai.

11. What is one of the main challenges in scaling up green cell factories?
 - a) Availability of raw materials
 - b) High cost of genetic modifications**
 - c) Lack of skilled labor
 - d) High energy consumption


12. Which of the following is NOT true about green cell factories?
 - a) They use renewable biological processes
 - b) They rely heavily on fossil fuels**
 - c) They can produce biofuels
 - d) They can be engineered to produce specific chemicals

13. Which of the following is a potential challenge in the use of green cell factories?
 - a) High operational temperatures
 - b) Limited scalability**
 - c) Excessive water usage
 - d) Low energy efficiency

14. Green cell factories contribute to the circular economy by:
 - a) Minimizing waste and recycling materials**
 - b) Maximizing the use of non-renewable resources
 - c) Encouraging the use of disposable products**
 - d) Promoting monoculture farming

15. Which of the following is NOT a product of green cell factories?
 - a) Bioethanol
 - b) Bioplastics
 - c) Pharmaceuticals
 - d) Heavy metals**




PRINCIPAL,
SS INSTITUTE OF PHARMACY,
KUPPANUR (PO), SANKARI (TK),
SALEM - 637301.



SS INSTITUTE OF PHARMACY

(A unit of VS Educational & Charitable Trust)

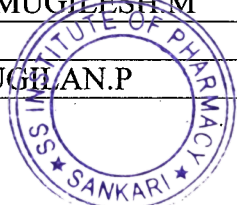
Approved by Tamilnadu Government & Pharmacy Council of India, New Delhi.

Affiliated to the Tamilnadu Dr. M.G.R. Medical University,
and The Directorate of Medical Education, Chennai.

ADD ON COURSE – MARK LIST

NAME OF ADD ON COURSE : GREEN CELL FACTORIES
COURSE INSTRUCTORS : GOMATHI.M
YEAR OFFERED : 4th SEM B.PHARM
COURSE DURATION : 35hrs

S.NO	NAME OF STUDENT	REGISTER NO	MARKS (15)	PERCENTAGE (%)
1.	ABINAYA.M	560020523501	12	80%
2.	ABISHEK.J	560020523502	12	80%
3.	AMOKA.V	560020523503	14	93%
4.	ANBUSELVAN.V	560020523504	13	86%
5.	ANBUSELVI.S	560020523505	13	86%
6.	ANITHA.L	560020523506	15	100%
7.	ARAVIND.R	560020523507	14	93%
8.	ARCHANA.M	560020523508	15	100%
9.	ARUN VENKATESHWARAN.S	560020523509	13	86%
10.	ARUN.A	560020523510	13	86%
11.	ASWIN.M	560020523511	13	86%
12.	ATCHAYA.K	560020523512	13	86%
13.	BANU.S	560020523513	15	100%
14.	BAVITHRA.B	560020523514	15	100%
15.	BHARATHI RAJA.S	560020523515	14	93%
16.	BARATH KUMAR.R	560020523516	15	100%
17.	DEEPASRI.P	560020523517	13	86%
18.	DINESH.S	560020523518	13	86%
19.	GOPIKRISHNAN.V	560020523519	12	80%
20.	GOWSALYA.V	560020523520	13	86%
21.	GULBAHAR.G	560020523521	14	93%
22.	HEMADHARAN.V	560020523522	12	80%
23.	ISHWARYA.S	560020523523	13	86%
24.	JEYASURYA.V	560020523524	14	93%
25.	KESAVAMUGHLESH.M	560020523525	12	80%
26.	MUTHU.J	560020523526	14	93%
27.	NAGAMUGHAN.P	560020523527	15	100%



SS INSTITUTE OF PHARMACY,
KUPPANUR (PO), SANKARI (TK),
SALEM - 637301



SS INSTITUTE OF PHARMACY

(A unit of VS Educational & Charitable Trust)

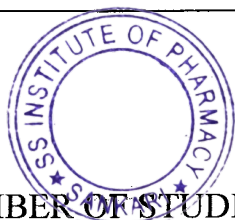
Approved by Tamilnadu Government & Pharmacy Council of India, New Delhi.

Affiliated to the Tamilnadu Dr. M.G.R. Medical University,
and The Directorate of Medical Education, Chennai.

28.	NAGESHWARI.K	560020523528	13	86%
29.	NARESH KUMAR.M	560020523529	13	86%
30.	NARMATHA.M	560020523530	13	86%
31.	PAPITHA .V	560020523531	14	93%
32.	PRAGATHI .P	560020523532	15	100%
33.	PRASANTH .M	560020523533	13	86%
34.	PRIYADARSHINI .V	560020523534	13	86%
35.	RAJALAKSHMI .N	560020523535	13	86%
36.	RAJARAJAN .M	560020523536	13	86%
37.	SATHISHKUMAR .J	560020523537	15	100%
38.	SHIRLEY ELIZABETH.I	560020523538	13	86%
39.	SIVA S.V	560020523539	14	93%
40.	SIVAPRAKASH .V	560020523540	15	100%
41.	SUDHA D.G	560020523541	13	86%
42.	SUNDARAKANNAN .D	560020523542	13	86%
43.	SURIYA .G	560020523543	12	80%
44.	SWATHY .M	560020523544	13	86%
45.	SYED YASIN S.M	560020523545	12	80%
46.	TAMILARASAN .A	560020523546	15	100%
47.	THAMIZHARASAN .N	560020523547	15	100%
48.	THILAGAVATHI .M	560020523548	13	86%
49.	THIRUMURUGAN .R	560020523549	13	86%
50.	UMAVATHI .P	560020523550	14	93%
51.	VALLARASU.D	560020523551	14	93%
52.	VASANTHRAJ .S	560020523552	13	86%
53.	VINOTH SANJAY.T	560020523553	13	86%
54.	VINOTH .S	560020523554	13	86%
55.	VISHWA .M	560020523555	13	86%
56.	VISHWANATHAN .V	560020523556	13	86%
57.	CHANDURU .R	560021523561	15	100%
58.	NISHA .P	560021523562	13	86%

TOTAL NUMBER OF STUDENT : 58

TOTAL NUMBER OF PERCENTAGE : 89.7%



PRINCIPAL,
SS INSTITUTE OF PHARMACY,
KUPPANUR (PO), SANKARI (TK),
SALEM - 637301.

PRINCIPAL,
SS INSTITUTE OF PHARMACY,
KUPPANUR (PO), SANKARI (TK),
SALEM - 637301.

NH-544, Kuppanur (Po), Sankari (Tk), Salem(Dt) - 637301, Tamilnadu, India

Phone : 04283 241080 | E-mail : ssip1718@gmail.com | Website : www.ssip.edu.in



SS INSTITUTE OF PHARMACY

(A unit of VS Educational & Charitable Trust)

Approved by Tamilnadu Government & Pharmacy Council of India, New Delhi.

Affiliated to the Tamilnadu Dr. M.G.R. Medical University,
and The Directorate of Medical Education, Chennai.

ADD ON COURSE : SUMMARY REPORT

Course code and Name : 23GCF02/ Green Cell Factories

Date Of Add On Programme : 21/06/2023 to 28/06/2023

Course Duration : 35 Hours

Year Offered : 4th Sem B.Pharm

Course Instructors : Gomathi.M.,M.Pharm.

Course Outcomes :

- **Plant and Microbial Cell Cultivation:** Learn techniques for cultivating plant cells, microorganisms, and algae in controlled environments. Understand the conditions required for optimal growth and productivity.
- **Metabolic Engineering:** Develop skills in metabolic engineering to optimize the production of valuable compounds in green cell factories. This includes manipulating metabolic pathways to enhance yields of desired products.

Course Type : Add on Course

Assessment Mode:

Total Duration : 35 Hours

Number of Participants : 58

Scheme of Exam : MCQ type, offline Mode

Date of Exam : 28/06/2023

Course Coordinator



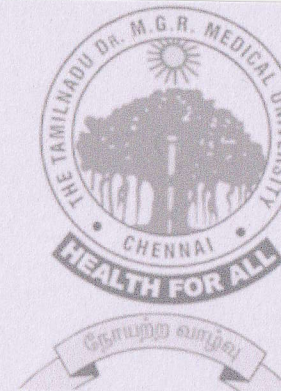
PRINCIPAL,
SS INSTITUTE OF PHARMACY
KUPPANUR (PO), SANKARI (TK),
SALEM - 637301

PRINCIPAL,
SS INSTITUTE OF PHARMACY
KUPPANUR (PO), SANKARI (TK),
SALEM - 637301



SS INSTITUTE OF PHARMACY

CERTIFICATE OF PARTICIPATION



ONE DAY WORKSHOP
Organized by
Department of
PHARMACOGNOSY

GI. SURYA

HAS APPRICATED FOR HIS / HER
PARTICIPATION IN ONE DAY SEMINAR ON
GREEN CELL FACTORIES



COORDINATOR

21/06/2023 TO 28/06/2023



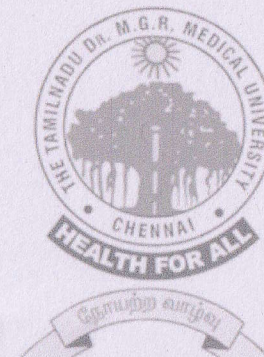
PRINCIPAL,
SS INSTITUTE OF PHARMACY,
KUPPANUR (PO), SANKARI (TK),
SALEM - 637301

PRINCIPAL



SS INSTITUTE OF PHARMACY

CERTIFICATE OF PARTICIPATION



ONE DAY WORKSHOP
Organized by
Department of
PHARMACOGNOSY

S. DINESH

HAS APPRICATED FOR HIS / HER
PARTICIPATION IN ONE DAY SEMINAR ON
GREEN CELL FACTORIES



COORDINATOR

21/06/2023 TO 28/06/2023



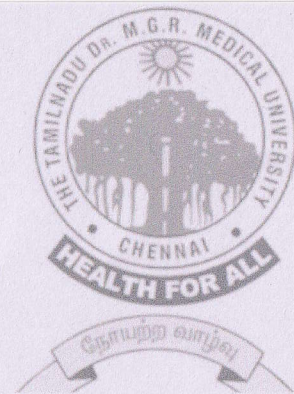
PRINCIPAL,
SS INSTITUTE OF PHARMACY,
KUPPANUR (PO), SANKARI (TK),
SALEM - 637301

PRINCIPAL



SS INSTITUTE OF PHARMACY

CERTIFICATE OF PARTICIPATION

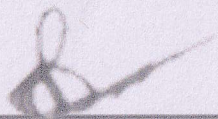


ONE DAY WORKSHOP
Organized by
Department of
PHARMACOGNOSY

V. SIVA PRAKASH

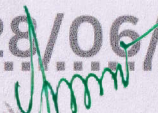
HAS APPRICATED FOR HIS / HER
PARTICIPATION IN ONE DAY SEMINAR ON
GREEN CELL FACTORIES

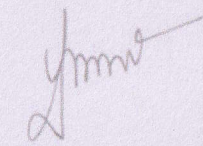



COORDINATOR

21/06/2023 TO 28/06/2023




PRINCIPAL,
SS INSTITUTE OF PHARMACY,
KUPPANUR (PO), SANKARI (TK),
SALEM - 637301


PRINCIPAL



SS INSTITUTE OF PHARMACY

(A unit of VS Educational & Charitable Trust)

Approved by Tamilnadu Government & Pharmacy Council of India, New Delhi

Affiliated to the Tamilnadu Dr. M.G.R. Medical University,

and The Directorate of Medical Education, Chennai.

STUDENT FEEDBACK FORM

STUDENT NAME: Chandru.R.

DATE: 28/06/2023

YEAR/COURSE: B. Pharm - IV Sem.

NAME OF THE ADD ON COURSE: Green Cell factories.

COURSE CODE: 23GCF02.

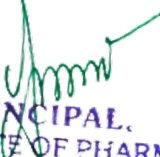
DURATION: 35 Hrs.

EVALUATE HONESTLY:

Questions	Excellent	Good	Fair	Poor
How was the objectives of the training	✓			
How satisfied are you with our seminar			✓	
How would you rate the clarity and effectiveness of the presenter's delivery	✓			
Was the seminar duration appropriate		✓		
How engaging and interactive was the seminar	✓			
Usefulness of the information provided		✓		
Overall quality of session	✓			




SIGNATURE


PRINCIPAL,
SS INSTITUTE OF PHARMACY,
KUPPANUR (PO), SANKARI (TK),
SALEM - 637301



SS INSTITUTE OF PHARMACY

(A unit of VS Educational & Charitable Trust)

Approved by Tamilnadu Government & Pharmacy Council of India, New Delhi.
Affiliated to the Tamilnadu Dr. M.G.R. Medical University,
and The Directorate of Medical Education, Chennai.

PHOTOGRAPH

DATE : 23/6/23

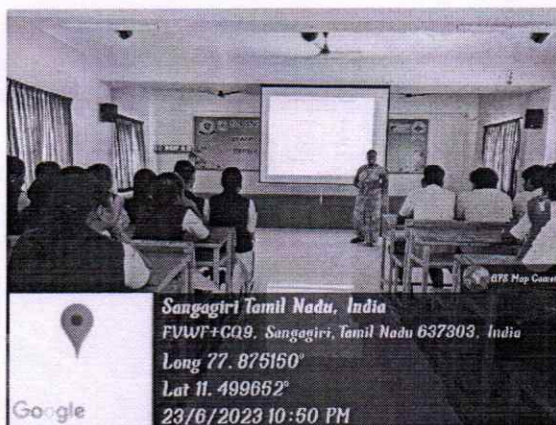
GREEN CELL FACTORIES

NAME OF ADD ON COURSE : GREEN CELL FACTORIES

COURSE INSTRUCTORS : GOMATHI.M

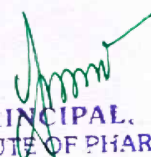
YEAR OFFERED : 4th SEM B.PHARM

COURSE DURATION : 35 hrs



Add-on course regarding the Topic Application of Green Cell Factories 23/6/23 the speech delivered By **Gomathi.M.,M.Pharm.** which was an interactive session and students could able to understand the Application of Green Cell Factories in the fields of pharmaceutical sciences




PRINCIPAL,
SS INSTITUTE OF PHARMACY,
KUPPANUR (PO), SANKARI (TK),
SALEM - 637301