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HOLY CROSS COLLEGE

ACCREDITED BY NAAC WITH 'A+' GRADE (CYCLE:2)

Tripura University Reg. Code: 17

Jubatara, P.O. Lembucherra, Tripura West Pin-799210

Phone: 0381-2915930, +91 9402315672

email- principalhccagt@gmail.com

Web: www.holycrosscollege.in

DEPARTMENT OF HUMAN PHYSIOLOGY

NO. F2/HCC/HP/2024/02

Date: 07.03.2024

To
The Principal
Holy Cross College, Agartala

Rev, Father,

We are glad to inform you that Dept. of Human Physiology is intended to organize a 'One-Day Workshop on Green Synthesis of Nanoparticles' on 18th March 2024 (Monday) for research scholars, undergraduate, and postgraduate students of basic or allied sciences interested in Nanobiotechnology, to develop the basic idea about the methodologies of green synthesis of nanomaterials. The resource person for the workshop will be Dr. Dipan Sarma, Visiting Faculty, Govt. Degree College, Dharmanagar, Tripura, India. This workshop will be beneficial for research scholar, UG and PG students across different institutes. I hope you will grant us the permission to do the same.

Yours faithfully-

HoD, Human Physiology
Holy Cross College, Agartala

HEAD
Department of Human Physiology,
HOLY CROSS COLLEGE, AGARTALA

Approved by

Principal
Holy Cross College, Agartala

PRINCIPAL
HOLY CROSS COLLEGE
AGARTALA

Copy to

1. Vice Principal & Administrator for information.
2. Academic Coordinator for information.
3. IQAC for record.
4. HoD, All the Departments of HCC.

MARCH
18th
2024

HOLY CROSS COLLEGE
Agartala

ONE-DAY WORKSHOP
ON
GREEN SYNTHESIS
OF NANOPARTICLES

Department of
Human Physiology

10:00 am to 3:00 pm



COURSE OVERVIEW

Plant-mediated synthesis of nanoparticles is a green chemistry approach that connects nanotechnology with plants. Nanoparticle synthesis using plants and plant extracts is one of the best options to prepare nanoparticles in an environmentally friendly manner. The workshop's main objective is to introduce participants to the methodologies of green synthesis of nanomaterials and their characterization techniques. This workshop covers hands-on training for the synthesis of nanoparticles.

MODULES

Lecture Series on Green Synthesis and Nanoparticle Formulation; Green synthesis of metal and metal oxide nanoparticles using plant extracts.

TARGET PARTICIPANTS:

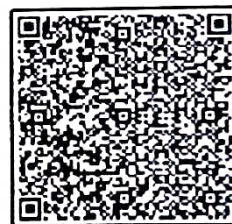
Research Scholars, Post-graduate and Undergraduate students of basic and allied sciences.

FEES:

Registration Fee: Rs. 150
(Includes Registration Kit and Lunch)

BANK DETAILS:

Holy Cross College
Federal Bank,
Agartala Branch
A/c No.- 19650100000992
IFSC- FDRL0001965



ORGANIZING COMMITTEE:

Dr. Susmita Saha (8787601266)
Dr. Sandeep Roy Sarkar
Dr. Ashish Kumar Singha
Mr. Kanak Chakraborty

Department of Human Physiology, Holy Cross College,
Lembucherra, Tripura West-799210, www.holycrosscollege.in

Click Here to
REGISTER



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DEPARTMENT OF HUMAN PHYSIOLOGY

No. F.2/HCC/HP/2024/03

Date: 11.03.2024

To,
Dr. Dipan Sharma
Visiting Faculty
Govt. Degree College
Dharmanagar, Tripura

Dear Sir,

On behalf of the Department of Human Physiology, I would like to take the pleasure of inviting you as a resource person for the 'One-Day Workshop on Green Synthesis of Nanoparticles on 18th March 2024 (Monday) for UG, PG students, and Research Scholar organized by the Department of Human Physiology, Holy Cross College, Agartala, Tripura, India. Your presence and expertise interaction cum training at the workshop would undoubtedly add to the glory of the event.

Your views and opinions about the above-mentioned topic will enlighten the participants. We will appreciate your valuable contribution to this Workshop and making it a grand success.

With best regards.

Sincerely yours-

11/03/2024

Dr. Susmita Sana
HoD, Human Physiology
Holy Cross College, Agartala

HEAD
Department of Human Physiology,
HOLY CROSS COLLEGE, AGARTALA

One-Day Workshop on Green Synthesis of Nanoparticle
Organized by: Department of Human Physiology
Holy Cross College, Agartala
Registration Fee Payment Details

Sl. No	Date of Payment	Name of the Participant	Amount	Mode of Payment	Transaction Number
1	11.03.2024	Subhajit Debnath	150	Online (UPI)	ID: 407146522682
2	11.03.2024	Saugata Naskar	150	Online (UPI)	ID: 443785639239
3	11.03.2024	Rashmi Ranjan Hati	150	Online (UPI)	ID: 407169271178
4	11.03.2024	Kamal Hassan	150	Online (UPI)	ID: 407164561047
5	11.03.2024	Nabanita Shivam	150	Online (UPI)	ID: 407173330055
6	12.03.2024	Mayoekh Chakraborty	150	Online (UPI)	ID: 407276357617
7	12.03.2024	Neeta Das	150	Online (UPI)	ID: 443846352376
8	12.03.2024	Suari Debbarna	150	Online (UPI)	ID: 407285239307
9	12.03.2024	Abhijit Reang	150	Online (UPI)	ID: 443898475946
10	12.03.2024	Prantik Roy	150	Online (UPI)	ID: 407280847377
11	12.03.2024	Danyel Murasing	150	Online (UPI)	ID: 407243700703
12	13.03.2024	Rainy Murasing	150	Online (UPI)	ID: 443939811743
13	13.03.2024	Vikash Kumar	150	Online (UPI)	ID: 407379612386
14	13.03.2024	Medhabi Chakraborty	150	Online (UPI)	ID: 407349211599
15	14.03.2024	Sumana Mondal	150	Online (UPI)	ID: 407421540177
16	14.03.2024	Hrithik Ghosh	150	Online (UPI)	ID: 407402864173
17	14.03.2024	Sohamdeep Chakraborty	150	Online (UPI)	ID: 444004714492
18	14.03.2024	Nilirajan Saha	150	Online (UPI)	ID: 407403609335
19	15.03.2024	Tarisma Debbarna	150	Online (UPI)	ID: 407500001770
20	15.03.2024	Bindia Debbarna	150	Online (UPI)	ID: 444157833792
21	15.03.2024	Preksha Arora	150	Online (UPI)	ID: 4075355801446
22	15.03.2024	Himanshu Kumar Bharti	150	Online (UPI)	ID: 407582834217
23	15.03.2024	Tusharika Pal	150	Online (UPI)	ID: 407536384065
24	15.03.2024	N.Tagiranglu	150	Online (UPI)	ID: 407551592785

25	15.03.2024	Necraj Kumar	150	Online (UPP)	ID: 4075520474746
26	15.03.2024	Sandip Das	150	Online (UPP)	ID: 444146136469
27	15.03.2024	Nirupam Pattanayak	150	Online (UPP)	ID: 407555382760
28	15.03.2024	Abhishhek Kumar	150	Online (UPP)	ID: 407559696944
29	15.03.2024	Subhajit Dey	150	Online (UPP)	ID: 407559553005
30	15.03.2024	Anmul Nama	150	Online (UPP)	ID: 407535291485
31	15.03.2024	Trishna Ghorai	150	Online (UPP)	ID: 407500493938
32	15.03.2024	Shreerjita Khanra	150	Online (UPP)	ID: 407532734944
33	15.03.2024	Dibakar Chakma	150	Online (UPP)	ID: 407571969509
34	15.03.2024	Shuvann Nama	150	Online (UPP)	ID: 407514970959
35	15.03.2024	Tannu Biswas	150	Online (UPP)	ID: 407558612268
36	16.03.2024	Madhumita Muhuri	150	Online (UPP)	ID: 444205829643

Signature
16/3/24





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DEPARTMENT OF HUMAN PHYSIOLOGY

One-Day Workshop on Green Synthesis of Nanoparticles

Date: 18.03.2024

Time: 10 am onwards (IST)

9:30 am Onwards	Registration (F2-1; 2 nd Floor; Human Physiology Lab)	
10:00-10:05 am	Welcome address	Dr. Sandeep Roy Sarkar
10:05-10:15 am	Introduction to the Programme	Dr. Susmita Saha
10:15-10:20 am	Introduction to the Resource Person	Mr. Kanak Chakraborty
10:20-10:50 pm	Lecture Session	Dr. Dipan Sharma
10:50-11:00 am	Break	
11:00 am -12:30 pm	Hands-on-training session	Dr. Dipan Sharma
12:30-1:15 pm	Lunch Break	
1:15-2:30 pm	Hands-on-training session	Dr. Dipan Sharma
2:30-2:55 pm	Valedictory Session	
2:55-3:00 pm	Vote of Thanks	Dr. Ashish Kumar Singha


15/03/2023

Convener & Head
Department of Human Physiology
Holy Cross College
Agartala, Tripura, India

HEAD
Department of Human Physiology,
HOLY CROSS COLLEGE, AGARTALA


One-Day Workshop on Green Synthesis of Nanoparticle

Organized by: Department of Human Physiology

Holy Cross College, Agartala

Attendance of the Participants on 18.03.2024

Sl No.	Name of the Participants Registered	Name of the Institute	Full Name in Block Letter	Signature with Date
1	Subhajit Debnath	Holy Cross College	SUBHAJIT DEBNATH	18/03/24 Subhajit Debnath
2	Saugata Naskar	Tripura University	SAUGATA NASKAR	SA 18/03/24
3	Rashmi Ranjan Hati	Tripura University	RASHMI RANJAN HATI	R.H. 18.3.24
4	Kamal Hassan	Tripura University	KAMAL HASSAN	KHM. 18.3.24
5	Nabanita Shivam	Tripura University	NABANITA SHIVAM	NShivam 18/03/24
6	Mayookh Chakraborty	Tripura University	MAYOOKH CHAKRABORTY	MChakraborty 18/3/24
7	Neeta Das	GDC Dharmanagar	NEETA DAS	Neeta Das
8	Suari Debbarma	Tripura University	SUARI DEBBARMA	Suari 18/3/24
9	Abhijit Reang	Tripura University	ABHIJIT REANG	Abhijit Reang
10	Prantik Roy	Tripura University	PRANTIK ROY	Prantik Roy
11	Danyel Murasing	Holy Cross College	DANYEL MURASING	Danyel Murasing
12	Rainy Murasing	Tripura University	RAINY MURASING	Rainy Murasing
13	Vikash Kumar	Tripura University	VIKASH KUMAR	Nikash Kumar
14	Medhabi Chakraborty	ICFAI University	MEDHABI CHAKRABORTY	Medhabi Chakraborty
15	Sumana Mondal	Tripura University	SUMANA MONDAL	SM 18/03/24
16	Hrithik Ghosh	GDC, Dharmanagar	HRITHIK GHOSH	Hrithik Ghosh
17	Sohamdeep Chakraborty	NFSU	SOHAMDEEP CHAKRABORTY	SC 18/03/24
18	Nilanjan Saha	NFSU	NILANJAN SAHA	NS 18/03/2024
19	Tarisma Debbarma	NFSU	TARISMA DEBBARMA	Tarisma Debbarma
20	Bindia Debbarma	NFSU	BINDIA DEBBARMA	Bindia Debbarma
21	Preksha Arora	NFSU	PREKSHA ARORA	PA 18/3/24
22	Himanshu Kumar Bharti	Tripura University	HIMANSHU KUMAR BHARTI	HKB 18/03/24
23	Tusharika Pal	Tripura University	TUSHARIKA PAL	Tusharika 18/03/24
24	N.Tagiangliu	Tripura University	N. TAGIANGLIU	NT 18/03/24
25	Neeraj Kumar	Tripura University	NEERAJ KUMAR	NK 18/03/24
26	Sandip Das	Tripura University	SANDIP DAS	Sandip Das
27	Nirupam Pattanayak	Tripura University		
28	Abhishek Kumar	Tripura University	ABHISHEK KUMAR	Abhishek K. 18/03
29	Subhajit Dey	Tripura University	SUBHAJIT DEY	Subhajit Dey 18/03/24
30	Anmul Nama	Tripura University	ANMUL NAMA	AN 18/03/24
31	Trishna Ghorai	NFSU	TRISHNA GHORAI	TG 18.3.24
32	Shreejita Khanra	NFSU	SHREEJITA KHANRA	SK 18.3.24
33	Dibakar Chakma	Tripura University	DIBAKAR CHAKMA	Dibakar Chakma 18.3.24
34	Shuvam Nama	Tripura University	SHUVAM NAMA	Shuvam Nama
35	Tannu Biswas	Tripura University	TANNU BISWAS	Tannu Biswas
36	Madhumita Muhuri	ICFAI University	MADHUMITA MUHURI	Madhumita Muhuri


 18/03/2024
HEAD

Department of Human Physiology,
 HOLY CROSS COLLEGE, AGARTALA

BILL / CASH MEMO

THINANG FOOD COURT

Nandannagar, Agartala, West Tripura, Pin-799006

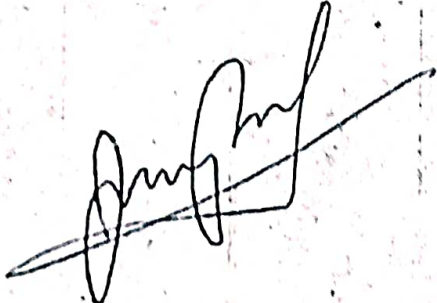
Sl. No. 145

Date 18/03/24

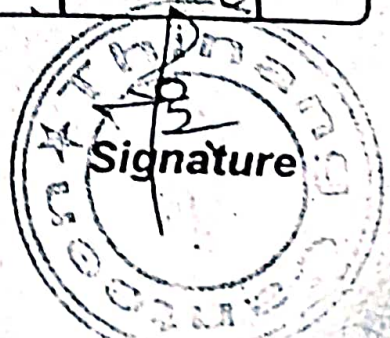
Name Holy Cross College (Dept. of Human Physiology)

Address.....

Sl. No.	PARTICULARS	Qty.	Rate	AMOUNT	
				Rs.	P.
1.	Lunch (meat) Non-Veg.	33	@80	2640	
2.	Lunch (meat) Veg-	03	@80	240	
3.	Water	01	@60	60	
			TOTAL	2940	



Rupees Two thousand nine hundred forty only



CASH MEMO

SREE GURU STORES


A.K. Road, Agartala, Tripura (W).

SL No. 23

Date..16/03/24..

Name :.....Holy Cross College.....Agartala.....

Address :...Department.....of.....Human.....Physiology.....

Sl. No.	Particulars	Qty.	Rate	Total Amt.	
				Rs.	P.
①	Writing Pad	37	@25/-	Rs 925/-	
②	Plastic Folder	37	@20/-	Rs 740/-	
③	Pen	37	@10/-	Rs 370/-	
					
TOTAL				Rs 2035/-	

Rupees Two thousand Thirty Five
only.....only


Signature

GREEN SYNTHESIS OF NANOPARTICLES

➤ **Collection and preparation of plant extract:**

- Fresh plant leaves must be cleaned thrice with double distilled water to eliminate dust and extraneous materials and then air dried.
- Subsequently, 10 grams of finely chopped leaves, combined with 100 ml of distilled water, will boil for 30 minutes at 70 °C.
- The resultant extract will be cooled and filtrated using Whatman filter paper no.1.
- Finally, the light green solution obtained from the extraction process will be used for green synthesis.

➤ **Green synthesis of silver nanoparticles (AgNPs):**

- 10 mL of 1 mM AgNO₃ solution will be mixed dropwise with 90 mL of aqueous solution of plant extract in a 1:9 ratio. The reaction mixture will be exposed to sunlight at room temperature.
- During the synthesis of the AgNPs, the change in the reaction mixture will be visual and need to be tracked using a UV-Vis spectrophotometer.

➤ **Green synthesis of iron nanoparticles (AgNPs):**

- The aqueous extract of leaves and 0.01M FeCl₂ solution will be mixed in a 1:1 ratio with continuous stirring to synthesize iron oxide nanoparticles.
- The synthesis of nanoparticles will be visually observed with a color change from a reddish-brown solution to a black precipitate within a few seconds.
- The solution needs to be centrifuged at 7000 rpm for 15 min, followed by washing the pellet with distilled water thrice.
- The resultant pellet will be air-dried in a hot oven at 60°C overnight to obtain black-colored, purified nanoparticles.

Characterization Techniques: After that step, nanoparticles need to be characterized using the following instrumental techniques to confirm their nano form:

- (a) UV-Vis Spectrophotometer
- (b) Field Emission Scanning Electron Microscopy (FESEM)
- (c) Transmission Electron Microscopy (TEM)
- (d) X-ray diffraction (XRD)
- (e) Fourier-transform infrared (FTIR)
- (f) Dynamic light scattering (DLS)
- (g) Zeta potential (ZP)
- (h) Energy-dispersive X-ray (EDX)



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DEPARTMENT OF HUMAN PHYSIOLOGY

Report on "ONE DAY WORKSHOP ON GREEN SYNTHESIS OF NANOPARTICLES"


Date of Event: 18th March 2024

Place: Holy Cross College, Jubatara, Tripura(W)

No. of participants: 35

Department of Human Physiology, Holy Cross College, Agartala organized a "One day workshop on green synthesis of nanoparticles" for UG, PG, and PhD students of Biological and its Allied sciences. The workshop's objective was to train all the participants about the plant-mediated synthesis of nanoparticles in a green chemistry approach that connects nanotechnology with plants. Nanoparticle synthesis using plants and plant extracts is one of the best options to prepare nanoparticles in an environmentally friendly manner. The resource person of this workshop was Dr. Dipan Sharma, Visiting Faculty of Government Degree College Dharmanagar, Tripura. In total, 36 participants have registered themselves with a minimal registration fee of Rs.150/- (INR); out of them, a total of 35 participants participated, and they were coming from various Institutions of Tripura viz, Tripura University, ICFAI University, National Forensic Science University, Govt. Degree College, Dharmanagar, and Holy Cross College, Agartala.

The on-arrival registration and distribution of the registration kit to all the participants started at 9.30 am in room number F2-1. The workshop was formally initiated with a short inaugural session at 10.00 am in the Board Room of the College in the presence of Respected Principal Father, Dr. Benny K. John. CSC, Dr. Dipan Sharma, Resource Person, Convener of the workshop Dr. Susmita Saha, HoD and Asst. Professor of the Department of Human Physiology, along with other faculty members of the Department of Human Physiology, Zoology, and Botany, and all the participants. The inaugural session started with a welcome address from Respected Principal Father, Dr. Benny K. John. CSC, and felicitation of Resource Person on behalf of the HCC, Agartala, followed by a short presentation about the workshop's theme presented by Dr.


Dr. Dipan Sharma
Department of Human Physiology,
HOLY CROSS COLLEGE, AGARTALA

Susmita Saha. Afterward, a lecture session was taken by Resource Person Dr. Dipan Sharma regarding the topic of the workshop.

After a short break, at 11.00 am, the hands-on training session was started in Room number F2-1. Then lunch coupons were distributed to all the participants at 12.30 pm and a lunch break was given. The second hands-on training session started at 1.30 pm after the lunch break.

The valedictory session started at the end of all the hands-on training sessions in the Board Room of the College in the presence of Dr. Moumita Dey, Academic Coordinator, and all the respected faculty members of the Bio-Science Departments. The Academic Coordinator distributed the Certificates of participation to all the participants. Then, three participants, Mayookh Chakraborty, Dibakar Chakma, and Nilanjan Saha, shared their experiences, views, and feedback regarding the workshop. The workshop concluded with a vote of thanks from Dr. Ashish Kumar Singha, Assistant Professor of the Department of Human Physiology, Holy Cross College.

The report is prepared by: Dr. Ashish Kumar Singha

Ashish



AS 01/04/2024

HEAD
Department of Human Physiology,
HOLY CROSS COLLEGE, AGARTALA



GPS Map Camera
Debendrachandranagar, Tripura, India
W89C+5MR, Mohanpur Rd, Lembucherra, Debendrachandranagar, Tripura 799210, India
Lat 23.917766°
Long 91.321669°
18/03/24 10:43 AM GMT +05:30



GPS Map Camera
Debendrachandranagar, Tripura, India
W89C+5MR, Mohanpur Rd, Lembucherra, Debendrachandranagar, Tripura 799210, India
Lat 23.917876°
Long 91.321591°
18/03/24 01:53 PM GMT +05:30



GPS Map Camera
Debendrachandranagar, Tripura, India
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Lat 23.917545°
Long 91.321499°
18/03/24 02:33 PM GMT +05:30



GPS Map Camera
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Long 91.32173°
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[Signature]
01/04/2024

HEAD
Department of Human Physiology,
HOLY CROSS COLLEGE, AGARTALA



Ashish.

[Signature]
01/04/2024

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Certificate of Participation

This is to certify that

Nirupam Pattanayak

Tripura University

has participated in the

ONE-DAY WORKSHOP ON GREEN SYNTHESIS OF NANOPARTICLES

Organized by

Department of Human Physiology, Holy Cross College, Agartala

on 18th March, 2024

Dr. Susmita Saha
HoD, Human Physiology, HCC

Dr. Fr. Benny K. John, CSC
Principal, HCC