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# DEPARTMENT OF BIOTECHNOLOGY

# NEWSLETTER

June 2025

## About Us

The Biotechnology Department was incepted in the year 2002 and Accredited by NBA.

Having a state-of-art laboratory, the department offers both Bachelors and Ph.D courses which are affiliated with Anna University, Chennai

## Vision

To provide a world-class department to facilitate learning, training and research in Biotechnology by providing infrastructural facilities and competent faculty leading to technological innovations to serve the global society

## Mission

The Mission of the Department is to provide quality education to students and to produce competent Biotechnologists to meet the challenges faced by industry and mankind.

To inculcate high moral and professional standards among our students.

To develop the overall personality of the students.

# STUDENT ACHIEVEMENTS

## Placement

Our final year student **Monika VR** as been placed in **Edu-versity** with a CTC of 8 lakh per annum



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## DEPARTMENT OF BIOTECHNOLOGY

### CONGRADULATIONS

### Placement Offer



BATCH  
**2021-2025**



**V R MONIKA**



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# STUDENT ACHIEVEMENTS

## Internship at Government Institutes

Our third year students have secured industrial internships at various reputed government institutes.




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**DEPARTMENT OF BIOTECHNOLOGY**

**III Year** → *Congratulates* → **BATCH 2022-2026**

For getting internship at  
Tamil Nadu Veterinary And Animal Science  
University, Chennai

|  |   |   |
|--|---|---|
|  |  |  |
| <b>AROMIKA A M</b><br>1 Month  | <b>MOHANAKRISHNAN B</b><br>1 Month  | <b>SASHMITHA R B</b><br>1 Month   |

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**DEPARTMENT OF BIOTECHNOLOGY**

**III Year** → *Congratulates* → **BATCH 2022-2026**

For getting internship at  
Indian Institute of Technology Madras

|   |  |   |
|---|--|---|
|  |  |  |
| <b>AKSHAYA A</b><br>1 Month   | <b>KANAGA DURGA E</b><br>1 Month   | <b>SUBHASHINI S</b><br>2 Months   |

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# STUDENT ACHIEVEMENTS



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## DEPARTMENT OF BIOTECHNOLOGY

List Of Students Got Internship In  
Government Institution

III Year

Batch  
2022-2026



**ASMA G**  
ICMR-NIRT  
Chennai  
1 Month



**KAMUSHREE T**  
CSIR-CLRI  
Chennai  
2 Months



**JANANE K S**  
NLC  
Neyveli  
1 Month



**ANUSHA S**  
Punjab Agricultural University  
Punjab  
2 Months



**RASHMITHA V**  
Anna University  
Chennai  
2 Months



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# STUDENT ACHIEVEMENTS

## Internship at Government Institutes

Our second year students have secured industrial internships at various reputed government institutes.

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**DEPARTMENT OF BIOTECHNOLOGY**  
**CONGRATULATIONS**  
FOR GETTING INTERNSHIP AT  
**NATIONAL INSTITUTE OF OCEAN  
TECHNOLOGY - (NIOT) CHENNAI**  
DURATION: 1 MONTH

**II YEAR**  
BATCH  
2023-27

  
Karpagam R  
312323214026

  
Kavya Jayamoorthy  
312323214028

  
Soundarya Saravanan  
312323214047


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**DEPARTMENT OF BIOTECHNOLOGY**  
**CONGRATULATIONS**  
FOR GETTING INTERNSHIP AT  
**ATOMIC POWER PLANT (BARCF) - KALPAKKAM**


**II YEAR**  
BATCH  
2023-27

  
Kabilan D  
312323214025

DURATION: 1 MONTH

**AAVIN - AVADI**

  
Abirami S  
312323214001

  
Samrakshana S  
312323214041

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## DEPARTMENT OF BIOTECHNOLOGY

**CONGRATULATIONS**  
**II YEAR** FOR GETTING INTERNSHIP AT **BATCH**  
**NATIONAL INSTITUTE FOR RESEARCH IN** 2023-27  
**TUBERCULOSIS (NIRT), CHENNAI** DURATION  
1 MONTH



Deepika M  
312323214009



Anjanha R  
312323214005



Harsha D  
312323214017



Kavindra L  
312323214027



Moushiga S M  
312323214033



Susmithaa S  
312323214051



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## DEPARTMENT OF BIOTECHNOLOGY

**CONGRATULATIONS**  
FOR GETTING INTERNSHIP AT  
**NATIONAL INSTITUTE OF TECHNOLOGY**  
**TIRCHY**

**II YEAR**

**BATCH**  
2023-27



Vansi Jerolee A  
312323214054



Varshini B  
312323214057



Santhosh M D  
312323214044



Pragadees U  
312323214037



Sherwin Dominic jose  
312323214045

**DURATION: 1 MONTH**



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# School Campus Connect Program

The department of Biotechnology as organized **school students visit to our campus from Blessing Matric Higher Secondary School on 26.06.25. A total of 124 students** have attended the program.

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Advancing the Future

**DEPARTMENT OF BIOTECHNOLOGY**

**School Campus Connect**  
Blessing Matric Higher Secondary School, Kalpakkam



**Date: 26.06.25** **Total No. of Students Visited: 124**

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# STAFF ACHIEVEMENTS

## Paper Publication

**Dr. L. F. A. Anand Raj** has published a paper entitled **“Green route synthesis of highly stable zinc oxide nanoparticles using root extract of *Andrographis paniculata* and evaluation of their potential activities”** in the journal of **Plant Nano Biology**

Plant Nano Biology 12 (2025) 100162



Contents lists available at ScienceDirect

Plant Nano Biology

journal homepage: [www.journals.elsevier.com/plant-nano-biology](http://www.journals.elsevier.com/plant-nano-biology)



Green route synthesis of highly stable zinc oxide nanoparticles using root extract of *Andrographis paniculata* and evaluation of their potential activities

L.F.A. Anand Raj<sup>a,\*</sup>, R. Pavithra<sup>b</sup>, S. Karthick Raja Namasivayam<sup>b,c</sup>

<sup>a</sup> Department of Biotechnology, St. Joseph's College of Engineering, OMR, Chennai 600119, India

<sup>b</sup> Centre for Applied Research, Saveetha School of Engineering, Saveetha Institute of Medical and Technical Sciences (SIMATS), Chennai, Tamil Nadu 602105, India

### ARTICLE INFO

**Keywords:**  
*Andrographis paniculata*  
Zinc oxide nanoparticles  
Anticancer activity  
MCF-7  
Cytotoxicity  
Antioxidant  
Anti-inflammatory  
RAW 267.4 cells  
Phytotoxicity

### ABSTRACT

In this study, bioinspired nanoscale zinc oxide particles (ZnONPs), synthesized using the root extract of *Andrographis paniculata*, were evaluated for various biological activities, including antioxidant, anticancer, and anti-inflammatory effects. The root extract of *Andrographis paniculata* was used to reduce the metal precursor, zinc acetate dihydrate, into highly stable zinc oxide nanoparticles, following simple, in situ green chemistry principles. The synthesized zinc oxide nanoparticles exhibited high stability and had a hierarchical nanostructured form, resembling flowers and flakes, with a diameter of 100 nm. X-ray diffraction (XRD) analysis revealed highly crystalline nature indicating hexagonal wurtzite phase of ZnO nanoparticles. The potential anticancer activity of the nanoparticles was confirmed by a significant reduction in the viability of MCF-7 cells, with an IC<sub>50</sub> value of 9.706 µg mL<sup>-1</sup>. The antioxidant potential was assessed through DPPH free radical scavenging activity (74.56%), phosphomolybdenum assay (73.4%), and reducing power efficacy (71.2%), confirming the high antioxidant capability of the zinc oxide nanoparticles. The anti-inflammatory activity was demonstrated by the high albumin denaturation inhibition rate (51.35%) and a notable cytotoxic effect on RAW 267.4 cells (69.61%). The ecotoxicity of synthesized zinc oxide nanoparticles was evaluated by measuring the germination index of mungbean seeds, revealing no significant impact on seed germination. This study confirms that biologically synthesized ZnO nanoparticles exhibit a range of beneficial activities, making them promising candidates for various medical and industrial applications.

### 1. Introduction

Nanotechnology is a constantly emerging advanced field of science that is used in numerous multidisciplinary sectors with a wide range of applications in technology as well as in the science field. It integrates key concepts from different areas of science such as physics, chemistry, biology, and engineering, to elucidate novel concepts for both the synthesis and also the control of nanoparticles (Hano and Abbasi, 2022). The nanotechnology plays a critical role among all types of nanomaterials (Donsari et al., 2023). One of the key reasons for their great importance is due to their physico-chemical properties and bioavailability over their bulk phase. Further, the size of nanostructured materials ranging from 1 to 100 nm provides a higher surface area-to-volume ratio, resulting in high surface reactivities (Selim et al., 2020).

Nanoparticles (NPs) possess a numerous properties such as

controlled size and shape, a high surface to volume ratio, and their ability to form composites with different materials. These characteristics, exhibited at the nanometre scale, enable their use in a variety of industries, including pharmaceuticals, medical devices, cosmetics, degradation of colour dyes, remediation of environmental contaminants, photocatalysis, and food processing. Moreover, they are highly effective in the production of sunscreen, paints, coatings, and other materials due to their high UV protection. (Choudhury et al., 2018). Furthermore, they are also suitable for optical, electronic, and medical applications, etc (Suppiash et al., 2023).

Nanoparticles have been synthesized using a variety of physical, chemical, and biological techniques over the years (Shabaani et al., 2020). Except biological method other methods involved in the production of nanoparticles are costly and often lead to environmental concerns due to the use of toxic and potentially life-threatening

\* Corresponding authors.

E-mail addresses: [draandlfa@gmail.com](mailto:draandlfa@gmail.com) (L.F.A.A. Raj), [biologiask@gmail.com](mailto:biologiask@gmail.com), [karthickrajanamasivayam.sse@saveetha.com](mailto:karthickrajanamasivayam.sse@saveetha.com) (S.K.R. Namasivayam).

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# STAFF ACHIEVEMENTS

## Invited Talk

**Dr. L. F. A. Anand Raj** has been invited as a guest speaker at **Velammal Vidhyashram, Mambakkam** on **21.06.2025**

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**Glimpses of Invited Talk at  
Velammal Vidhyashram, Mambakkam**



**Dr. L. F. A. Anand Raj**  
Associate Professor and Head,  
Department of Biotechnology  
St. Joseph's College of Engineering

 **Date: 21.06.25**

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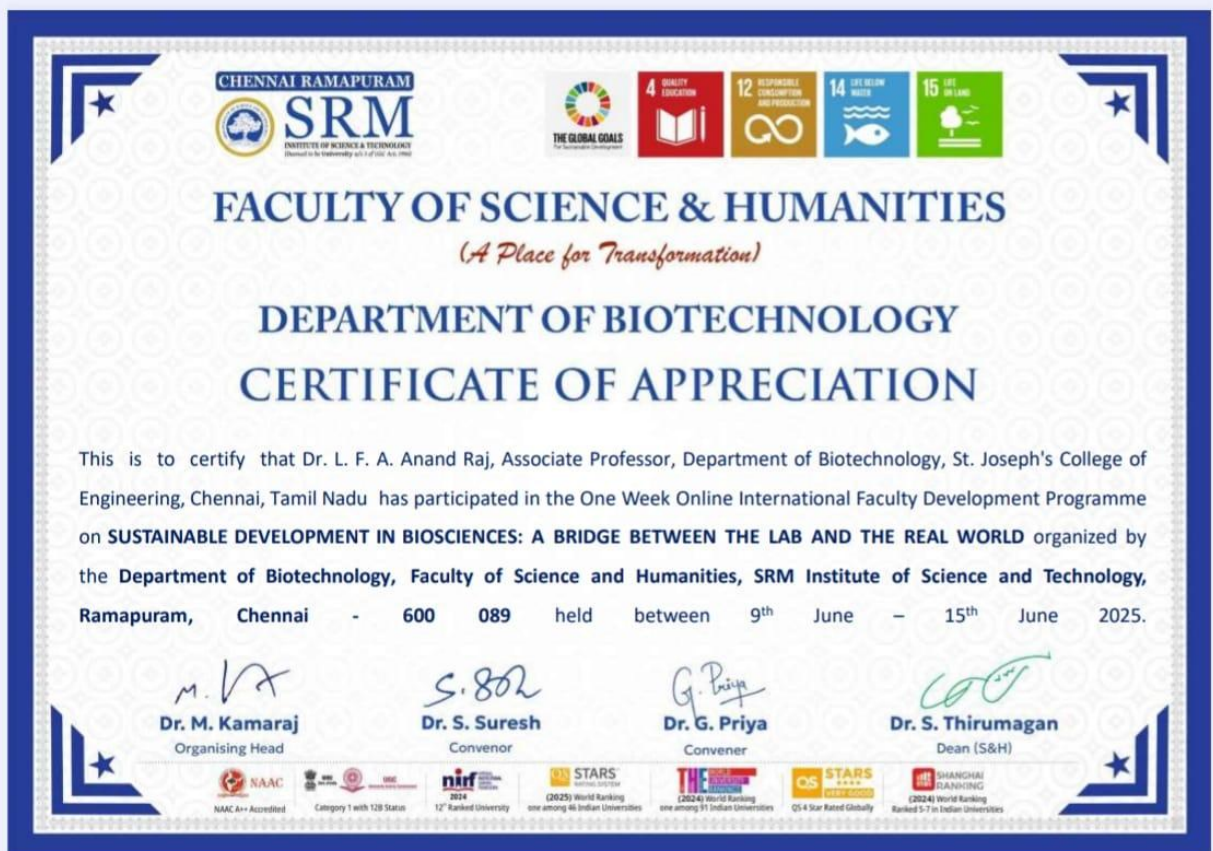
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# STAFF ACHIEVEMENTS

## FDP

**Dr. L. F. A. Anand Raj** has attended one week FDP on **Sustainable Development in Biosciences: A Bridge between the Lab and the Real World** organized by SRM Institute of Sciences and Technology from **09.06.2025 to 15.06.2025**



# STAFF ACHIEVEMENTS

## Associate Editor

**Dr. G. Baskar** has been appointed as associate editor for our journal **Frontiers in Energy Research**

## Reviewer Certificate

**Dr. G. Baskar** has received reviewer certification for his contribution in **BMC Biotechnology** and **Urolithiasis**



**Journal of Environmental Biology**  
p-ISSN: 0254-8704 • e-ISSN: 2394-0379 • CODEN: JEBIDP  
(An International Research Journal of Environmental Sciences and Toxicology)

**CERTIFICATE OF RECOGNITION**

**Dr. G. BASKAR**  
is awarded this certificate  
in recognition his/her service as a **Reviewer** of a research manuscript entitled:  
"Climate change mitigation through industrial Spirulina culture: a multifaceted approach for carbon sequestration and recovery of value added pigment phycocyanin"

\*\*\*  
Thank you for your valued expertise and dedication as reviewer in enhancing the scientific excellence and quality of research manuscripts we publish.

23/06/2025

   
(Divakar Dalela)  
M.S., M.Phil., Ph.D., F.R.S. (India), F.R.S. (Urology)  
Executive Editor

Email: editor@jeb.co.in Phone: +91-522-4017359 

WOS-Impact Factor: 0.7 □ Scopus Impact Factor: 0.70 □ WOS-JCI: 0.12 □ NAAS: 6.60 □ SJR: 0.235 □ H Index: 61

# STAFF ACHIEVEMENTS

## CEEE Program

**Dr. M. Chamundeeswari** have been shortlisted for CEEE program in the domain of Civil and Environmental Engineering at IIT Madras from 23/06/2025 to 04/07/2025



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## Congratulations



for getting shortlisted

Centre for Engineering Education Excellence  
(CEEE), IIT Madras



**Stipend**  
Rs. 50,000



**Dr. M. Chamundeeswari**  
Associate professor

Domain: Civil and Environmental Engineering

**Duration: Two weeks**  
23<sup>rd</sup> June to 4<sup>th</sup> July, 2025



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# STAFF ACHIEVEMENTS

## CEEE Program

**Dr. B. Sangeetha and Ms. A. Anli Dino** have successfully completed CEEE program in the domain of Materials, Chemical And Biomedical Engineering at IIT Bombay from 16/06/2025 to 27/06/2025

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**CONGRATULATIONS**

**Stipend**  
**Rs. 50,000**

**Dr. B. Sangeetha**  
Assistant Professor

**Ms. Anli Dino A**  
Assistant Professor

**Shortlisted for CEEE Program 2025**  
(Domain: Materials, Chemical, and Biomedical Engineering)

**DURATION: 2 Weeks**  
(16/06/2025 to 27/06/2025)

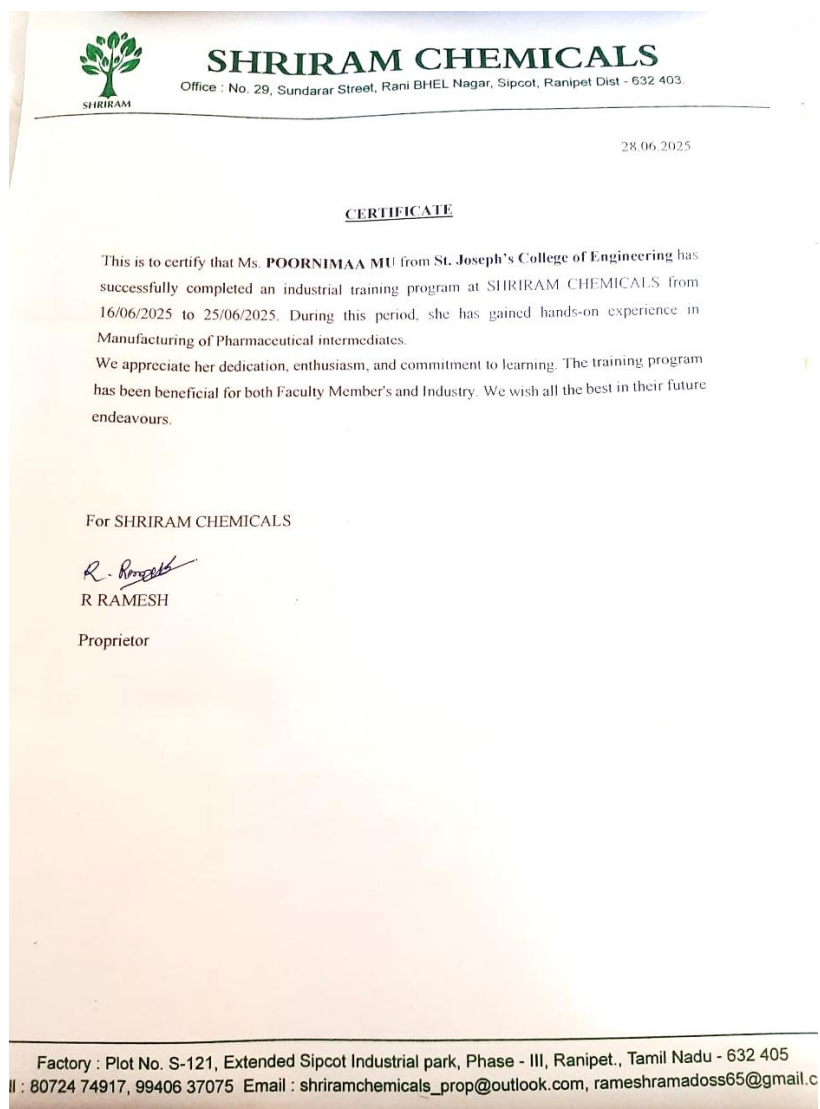
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# STAFF ACHIEVEMENTS

## Industrial Internship

**Ms. Mu. Poornimaa** has successfully completed industrial training program in Shriram Chemicals Pvt Ltd from **16/06/2025 to 27/06/2025**





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Convenor  
**Dr. L F A Anand Raj,**  
M.Sc., M.Tech, Ph.D.,  
Head of the Department  
Department of Biotechnology

Edited by  
**Ms. Mu. Poomimaa,**  
M.Tech,  
Assistant Professor  
Department of Biotechnology