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Institute of Science & Technology  
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# Certificate

This certificate is awarded to

**Dr. M. MAGHIMAA**

Faculty from **Muthayammal College of Arts and Science, Rasipuram**, presented a paper entitled **Recent advances of Green Synthesized Nanoparticle-Coated Nanofabrics for Antimicrobial Potential and Wound Healing Applications** and won **Young Scientist Awards** on “International Conference on Applications of Natural Products Nanomaterials and Nano-pharmaceuticals (ICAN3)” organized by School of Life Sciences, B.S. Abdur Rahman Crescent Institute of Science and Technology, Chennai, India In association with Nano and Biomaterials Association (NBA), The Biotech Research Society (BRSI), India and Centre for Surface Technology and Applications (CeSTA), Korea Aerospace University, Republic of Korea held on August 9 & 10, 2023.

**Dr. S. Ranjani**  
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Assistant Professor  
SLS

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SLS

# GCSGD2023-HLS

## ***BEST ORAL PRESENTATION AWARD***

Presented to

***Dr. Maghimaa Mathanmohun***

For the selected presentation entitled

***“ECOFRIENDLY GREEN-SYNTHESIZED METAL NANOPARTICLES-COATED  
NANOFABRICS: A NEW FRONTIER IN ANTIMICROBIAL POTENTIAL AND WOUND  
HEALING APPLICATIONS”***

***in Virtual Global Congress on Sustainable  
Growth & Development 2023 - Health and Life Sciences  
on December 15, 2023***



Prof. Dr. Wong Ling Shing  
Advisor: GCSGD2023-HLS



Asst. Prof. Dr. Sinouvassane Djearamane  
Organizing Chair: GCSGD2023-HLS



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# Ecofriendly Green-Synthesized Metal Nanoparticles-Coated Nanofabrics: A New Frontier in Antimicrobial Potential and Wound Healing Applications

**Dr. MAGHIMAA MATHANMOHUN 1\***,

**Principal Investigator, CRS project, UGC-DAE-CSR, Indore**

**Assistant Professor, Department of Microbiology,**

**Muthayammal College of Arts & Science (A unit of VANETRA group)**

**Rasipuram, Tamil Nadu, India**

<sup>2</sup>**Dr. S. Suresh**, Nanotechnology & Catalysis Research Centre, University of Malaya, Kuala Lumpur 50603, Malaysia.

<sup>3</sup>**Professor Dr. Wong Ling Shing**, Pro Vice Chancellor, Faculty of Health and Life Sciences, INTI International University, Nilai, 71800, Negeri Sembilan, Malaysia.

<sup>4</sup>**Dr. Prakash B**, Department of Biotechnology, School of Life Sciences, Vels Institute of Science, Technology and Advanced Studies, Tamil Nadu, India.



Participant list for the Zoom meeting:

- Sneha H.C. (represented by a purple square with the letter 'S')
- ghimhock.org
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Virtual

**GLOBAL CONGRESS ON SUSTAINABLE  
GROWTH & DEVELOPMENT - 2023**

**HEALTH AND LIFE SCIENCES (GCSGD2023-HLS)**



15<sup>th</sup> December 2023

**BOOK OF ABSTRACTS**

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Conference Webpage: <https://einstein.co.in/gcsgd-2023/>



GCSGD23024

## ECOFRIENDLY GREEN-SYNTHESIZED METAL NANOPARTICLES-COATED NANOFABRICS: A NEW FRONTIER IN ANTIMICROBIAL POTENTIAL AND WOUND HEALING APPLICATIONS

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### Abstract

Cotton fabrics, which are well known for their exceptional properties, can harbor pathogenic microorganisms. Nanoparticles hold immense promise in biomedical fields such as drug delivery and antimicrobial potential. This study aimed to produce metallic silver nanoparticles (AgNPs) and tellurium nanoparticles (TeNPs) using an aqueous extract of *Curcuma longa* roots. The focus was on evaluating the antimicrobial and wound-healing properties of the formulated nanoparticle-coated cotton fabric. The formulated NPs were characterized using High-resolution transmission electron microscopy (HR-TEM) and Fourier transform infrared spectroscopy (FT-IR) analysis. These NPs were then applied to cotton fabrics to assess their efficacy against pathogenic microorganisms, which was confirmed using scanning electron microscopy (SEM) with energy-dispersive X-ray analysis (EDX). The nanofabrics coated with these nanoparticles displayed considerable antimicrobial effects, particularly the CL-TeNPs, showing significant inhibition of pathogenic growth, notably on gram-negative *P. aeruginosa* (29 mm) and gram-positive *S. aureus* (28 mm). Moreover, wound-healing experiments conducted on L929 fibroblast cells demonstrated the potent wound-healing activity of the formulated nanoparticle-loaded cotton fabric. HR-TEM analysis confirmed the presence of spherical NPs, further supporting their successful synthesis. In conclusion, the formulated CL-TeNPs, followed by CL-AgNPs from *C. longa*-coated cotton fabrics, have the potential for a variety of applications in hospitals, benefiting patients and medical personnel in preventing the risk of microbial infections.

**Keywords:** Plant-mediated nanoparticles, *curcuma longa*, bacterial infection, nano fabrics



4 October 2023

**Our Ref: IIU/HR/JL/NHZ/13746/23**

Asst. Prof. Dr. M. Maghimaa

**PRIVATE & CONFIDENTIAL**

Dear Asst. Prof. Dr. M. Maghimaa,

**LETTER OF RESEARCH FELLOW**

On behalf of INTI International University, we would like to extend this invitation to you as our Research Fellow from **15 October 2023 to 31 Dec 2025**. The aim of our research fellowship program is to enable researchers to pursue excellence in producing quality research outputs in their respective fields and to further enhance our research activities and standards.

As our Research Fellow, you can expect research funding for your projects in collaboration with our colleagues and financial support for research output disseminations and/or publications as well opportunities to supervise our postgraduate research activities. You will also be provided access to facilities of the University throughout your tenure.

Besides, there will be a faculty host working with you as you engage in our university activities such as involvement in research cluster of your interest, participation and organization of research symposium and academic conferences, provision of research consultancy services, development and review of academic or research programs, delivery of guest lectures, and etc.

We believe that you will have a productive and rewarding experience with us and that our university community will gain from the fellowship.

We look forward to welcoming you to INTI International University soon.

Yours sincerely,  
(For and on behalf of **INTI INTERNATIONAL UNIVERSITY**)

**Professor Joseph Lee, PhD**  
Vice - Chancellor

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**ACKNOWLEDGEMENT RECEIPT**

I, \_\_\_\_\_ Passport no. : \_\_\_\_\_  
have read and understood the contents of this letter and hereby acknowledge receipt of this notification.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date





INSTITUTE OF SCIENCE, TECHNOLOGY & ADVANCED STUDIES (VISTAS)  
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INTERNATIONAL SYMPOSIUM ON FOSTERING SKILL DEVELOPMENT  
IN THE BIOTECH INDUSTRY: A PATH TO SUCCESS

THIS CERTIFICATE IS PRESENTED TO

**Dr. Maghima Mathanmohun**  
**Muthayammal College of Arts and Science**

for the **Award of Best Oral presentation** entitled "**Advancement of Green Synthesized Nanoparticles-Coated Nanofabrics for Antimicrobial and Wound Healing Applications**". in the "International Symposium on Fostering Skill Development in the Biotech Industry: A Path to Success" held from 12th to 14th October 2023, Sponsored by Department of Biotechnology (DBT-CTEP), Government of India, organized by the Department of Biotechnology, School of Life Science, Vels Institute of Science, Technology and Advanced Studies, Chennai, In association with INTI International University, Malaysia.

**Dr. B. Prakash**  
Organizing Secretary

**Dr. A. K. Kathiresan**  
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**Dr. Ling Shing Wong**  
Pro VC, INTI IU





Indo-South Korea-Thailand  
3<sup>rd</sup> International Conference on  
Nanoscience and Nanotechnology for Energy,  
Environment and Biomedical Applications  
(iNEEBA-2023)



Date : 1<sup>st</sup> & 2<sup>nd</sup> October 2023

Jointly Organized by



CERTIFICATE OF APPRECIATION

THIS CERTIFICATE IS PROUDLY PRESENTED TO

DR. S. SHAHITHA, Associate Professor,

Dept. of Microbiology, Muthayammal College of Arts & Science

in recognition of **BEST PAPER AWARD** for the paper entitled \_\_\_\_\_

"Molecular Docking Studies of Carotenoids Obtained  
from Halobacterium Species from Solar Salt Pans,  
Tamilnadu"

under the category of **Student / Research Scholar / Faculty / Scientist** in the  
Indo-South Korea-Thailand 3<sup>rd</sup> International Conference on Nanoscience and  
Nanotechnology for Energy, Environment and Biomedical Applications  
iNEEBA-2023 organized by Vinayaka Mission's Kirupananda Variyar Arts and  
Science College, India in association with Core-Facility Center for Photochemistry  
& Nanomaterials, Research Institute of Natural Science (RINS), Gyeongsang  
National University South Korea and Chulalongkorn University, Thailand during  
1<sup>st</sup> – 2<sup>nd</sup> October, 2023.

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Principal, VMKVASC

Prof. Dr. Myong Young Choi  
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