DR. NEBU GEORGE THOMAS AND DR. AMPADI A N COMPLETED THE TRAINING ON GOOD CLINICAL PRACTICE (GCP) AND REGULATORY REQUIREMENTS FOR RESEARCH

Dr. Nebu George Thomas and Dr. Ampadi A. N. have successfully completed the training programme on “Good Clinical Practice (GCP) and Regulatory Requirements for Research”, organised by the Indian Society for Clinical Research (ISCR) and the Academic Consortium for Clinical Research in India (ACCRI) in collaboration with Caritas Hospital and Institute of Health Sciences, Kottayam, held on 18 July 2026.

NEW PATENT FILED FROM PUSHPAGIRI RESEARCH CENTRE

Dr Nebu George Thomas, Professor and Scientist from PRC has filed a new collaborative patent with Biomaterial Lab of Vellore Institute of Technology entitled "A Bioactive Electrospun Nanofibrous Wound Dressing and Method of Fabricating the Same”.

Office of the Controller General of Patents, Designs & Trade Marks
Department for Promotion of Industry and Internal Trade
Ministry of Commerce & Industry,
Government of India

Application Details	
APPLICATION NUMBER	202641054493
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	29/04/2026
APPLICANT NAME	VELLORE INSTITUTE OF TECHNOLOGY
TITLE OF INVENTION	“A bioactive electrospun nanofibrous wound dressing and method of fabricating the same”
FIELD OF INVENTION	BIO-MEDICAL ENGINEERING
E-MAIL (As Per Record)	ipr.elpisanalytix@gmail.com
ADDITIONAL-EMAIL (As Per Record)	elpisanalytix17@gmail.com
E-MAIL (UPDATED Online)	
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	--
PUBLICATION DATE (U/S 11A)	15/05/2026

FINANCIAL ASSISTANCE FOR CONDUCTING WORKSHOP FOR DR. ANIKET NAHA

Dr. Aniket Naha, Scientist, PRC, has received financial assistance from the Indian Council of Medical Research (ICMR) to conduct an ICMR–DHR National Workshop titled "Biomedical Innovations in One Health Research for Combating MDR/XDR Pathogens Through In-Silico, In-Vitro and In-Vivo Methodologies." The workshop is scheduled to be held from 8–12 September 2026. ICMR has sanctioned financial assistance of ₹9.88 lakh for the successful conduct of the workshop. Dr. Aniket Naha will serve as the Principal Investigator, while Dr. Vikram Gowda, Dr. Betsy A. Jose, and Dr. Soumya R. S. will serve as the Co-Principal Investigators.

No. DHR-ICMR Workshop Funding/HRD-2024
Government of India
Ministry of Health & Family Welfare
(Department of Health Research)

2nd Floor, IRCS Building,
1, Red Cross Road, New Delhi-110001

No. DHR- Workshop Funding/HRD- 2026/June (07) Date: 02-07-2026

To,

Dr. Aniket Naha (Senior Scientific Research Office) &
Dr. Vikram Gowda N R (PRC and Professor)
Department of Physiology
Medical Biotechnology and Computational Drug Designing
Laboratory Scientist, Pushpagiri Institute of Medical Sciences
Medical Biotechnology and Computational Drug Designing
Laboratory Pushpagiri Institute of Medical Sciences and
Research Centre (PIMSRC), Tiruvalla, Kerala –689101
Mobile No. 8473912790
Email ID- draniketnaha@pimsrc.edu.in

Subject: Workshop on “National Workshop on Biomedical Innovations in One Health Research for Combating MDR/XDR Pathogens Through *in-silico, in-vitro* and *in-vivo* Methodologies “to be held from 08-12 September , 2026 at Pushpagiri Institute Of Medical Sciences and Research Centre, Kerala - reg.

Dear Sir/Madam,

With reference to your application on the above mentioned subject, we are pleased to inform you that your proposal has been recommended for financial support of Rs.9,88,300/- (Rupees Nine Lakhs Eighty Eight Thousand Three Hundred only) to meet the expenditure for organizing the workshop at Pushpagiri Institute Of Medical Sciences and Research Centre, Kerala, within 4 months period from the date of issue of this sanction order. You are requested to submit the enclosed proforma of formal bill and Mandate form (hard copies) duly filled in with your details along with cancelled cheque for remitting the financial support of Rs.9,88,300/- The financial support is contingent upon adherence to the guidelines outlined in the provisions laid down in GFR-2017 and T.A. rules.

DR. AJAY KRISHNAN U AS GUEST SPEAKER

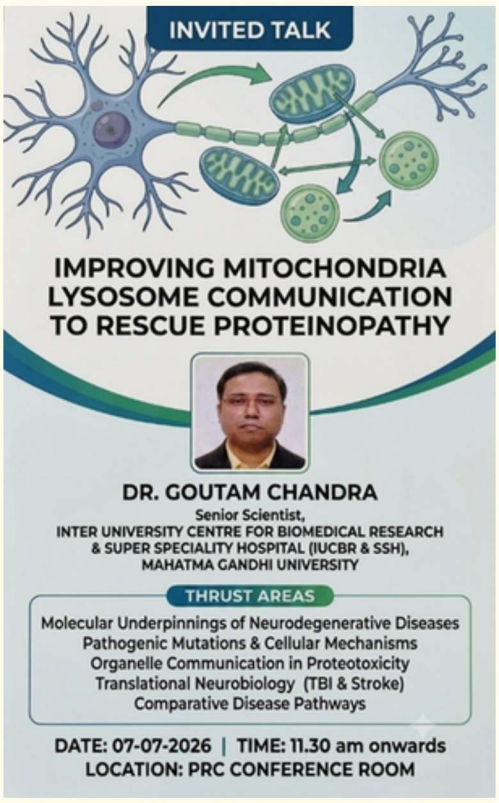
Dr. Ajay Krishnan U, Scientist from Molecular Biology Laboratory, PRC was invited as a Guest Speaker for conducting Bridge Course for newly joined BSc students under Four-Year Undergraduate Programme at the Department of Biochemistry, NSS College, Pandalam on 9th July 2026.

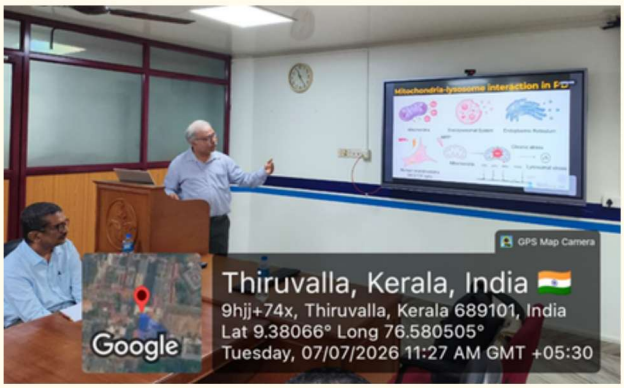
INDUCTION FOR NEW INTERNS, TRAINEES AND JOINEES AT PRC

Dr. Aniket Naha, Student coordinator conducted induction for new interns, trainees and joinees at PRC highlighting the Emergency Preparedness, Safety Protocols and Workplace Conduct on 21st July 2026

INVITED TALK ON PROTEINOPATHY

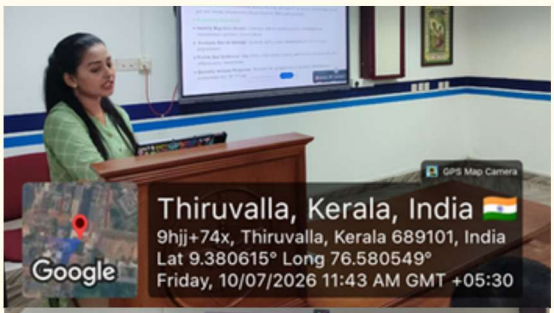
PRC organised an Invited Talk on 7 July 2026 titled "Improving Mitochondria–Lysosome Communication to Rescue Proteinopathy." The session was delivered by Dr. Goutam Chandra, Senior Scientist, Inter University Centre for Biomedical Research & Super Speciality Hospital, Mahatma Gandhi University. The lecture highlighted the critical role of mitochondria–lysosome communication in maintaining cellular homeostasis and discussed emerging therapeutic strategies to mitigate proteinopathy and related neurodegenerative disorders.





GUEST LECTURE ON ANIMAL MODEL IN CANCER RESEARCH

PRC organised a Guest Lecture on 17 July 2026 titled "How We Can Use Animal Models for Cancer Research." The session was delivered by Dr. Janeesh P. A., Director, Centre for Advanced Cancer Research, and Assistant Professor of Biochemistry, University of Kerala. The lecture provided valuable insights into the application of animal models in cancer research and highlighted their significance in advancing biomedical and translational research.



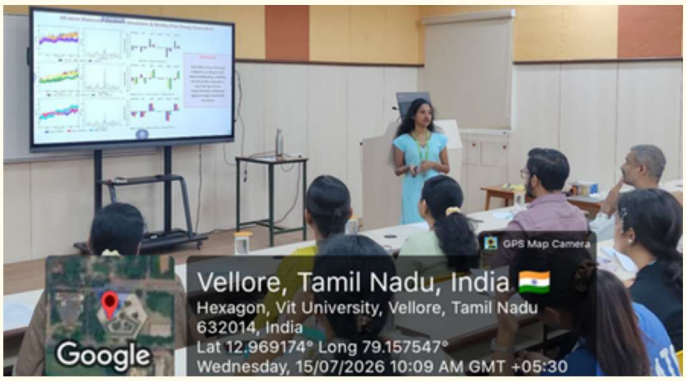
PRC RELAUNCHES PRC CATALYST – THE JOURNAL CLUB AND INNOVATION FORUM

PRC relaunched PRC Catalyst – The Journal Club and Innovation Forum on 10 July 2026. The forum will be held on the second Friday of every month, providing a platform for researchers to present and discuss their latest research findings.

The inaugural session featured a presentation by Dr. Neethu Simon from the Stem Cell and Tissue Engineering Laboratory, who shared her research titled “Linking Periodontitis with Inflammatory Bowel Disease through the Oral–Gut Axis: The Potential Role of Porphyromonas gingivalis.”

PH.D. STUDENT UPDATES

Ms. Elizabeth Annie George, Ph.D. student under Dr. Aniket Naha (Co-Guide) from Vellore Institute of Technology, Vellore has completed her colloquium on the thesis entitled ‘An Integrated Computational Framework for Decoding Novel Therapeutic Targets and Strategies Against Antimicrobial Resistance in Critical Priority Pathogens’ on July 15, 2026



PUBLICATIONS

Neurochemical Research (2026) 51:219
https://doi.org/10.1007/s11064-026-04837-0

RESEARCH

The Unique Mitochondrial Architecture of the Buffalo Brain: A Comparative Transcriptomic Analysis of Transport, Signaling, and Detoxification

E. M. Sadeesh[1] · Madhuri S. Lahamge[1] · A. N. Ampadi[1] · Roshan Mohiddin[2]

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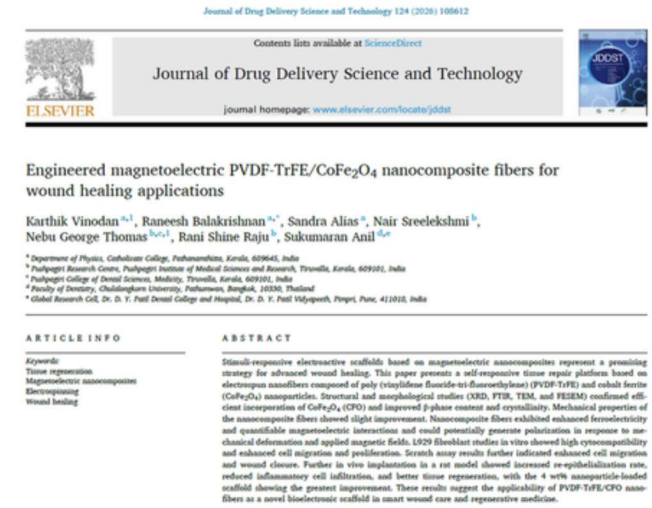
Abstract

The brain is uniquely vulnerable to mitochondrial dysfunction, a primary hallmark of neurodegenerative diseases. While mitochondria are universally recognized as cellular powerhouses, their organ-specific functional architectures remain poorly defined. In this study, we present a high-resolution transcriptomic analysis compared across cerebellar tissue (used as the neural reference) and peripheral tissues (heart, kidney, and ovary) to map the coordination of transport, signaling, and detoxification. Using ovarian tissue as a stable physiological baseline, our findings demonstrate that neural mitochondria are fundamentally architected for metabolic surveillance and repair rather than sheer bioenergetic throughput. To safely meet the extreme metabolic demands of synaptic transmission, the brain exhibits reduced transcriptional emphasis on bulk bioenergetic exchange pathways relative to signaling and repair modules in favor of three highly specialized functional pillars: tightly regulated transport (e.g., *SFXN4*, *SLC25A14*, and *SLC25A22*, *SLC25A25*), highly responsive metabolic signaling (anchored by *EFHD1* and retrograde communication), and targeted detoxification and protein repair (e.g., *MSRA* and *MSRB2*). Furthermore, phylogenetic conservation analysis comparing the bovine lineage to the human transcriptomic reference data across 90 million years of mammalian evolution confirms that these neural-specific adaptations exhibit highly conserved expression hierarchies. This evolutionary rigidity proves that this specific neurochemical architecture is a deeply conserved, essential requirement for protecting the central nervous system. Consequently, defining this baseline establishes a critical molecular framework for identifying precise therapeutic targets to combat oxidative stress, excitotoxicity, and age-related neurodegeneration.

1. Sadeesh, E. M., Lahamge, M. S., Ampadi, A. N., & Mohiddin, R. (2026). The Unique Mitochondrial Architecture of the Buffalo Brain: A Comparative Transcriptomic Analysis of Transport, Signaling, and Detoxification. Neurochemical research, 51(4), 219. https://doi.org/10.1007/s11064-026-04837-0



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Engineered magnetoelectric PVDF-TrFE/$CoFe_2O_4$ nanocomposite fibers for wound healing applications

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ARTICLE INFO

Keywords:
Tissue regeneration
Magnetoelectric nanocomposites
Electrospinning
Wound healing

ABSTRACT

Stimuli-responsive electroactive scaffolds based on magnetoelectric nanocomposites represent a promising strategy for advanced wound healing. This paper presents a self-responsive tissue repair platform based on electrospun nanofibers composed of poly (vinylidene fluoride-tri-fluoroethylene) (PVDF-TrFE) and cobalt ferrite ($CoFe_2O_4$) nanoparticles. Structural and morphological studies (XRD, FTIR, TEM, and FESEM) confirmed efficient incorporation of $CoFe_2O_4$ (CFO) and improved β-phase content and crystallinity. Mechanical properties of the nanocomposite fibers showed slight improvement. Nanocomposite fibers exhibited enhanced ferroelectricity and quantifiable magnetoelectric interactions and could potentially generate polarization in response to mechanical deformation and applied magnetic fields. L929 fibroblast studies in vitro showed high cytocompatibility and enhanced cell migration and proliferation. Scratch assay results further indicated enhanced cell migration and wound closure. Further in vivo implantation in a rat model showed increased re-epithelialization rate, reduced inflammatory cell infiltration, and better tissue regeneration, with the 4 wt% nanoparticle-loaded scaffold showing the greatest improvement. These results suggest the applicability of PVDF-TrFE/CFO nanofibers as a novel bioelectronic scaffold in smart wound care and regenerative medicine.

2. Vinodan, K., Balakrishnan, R., Alias, S., Sreelekshmi, N., Thomas, N. G., Raju, R. S., & Anil, S. (2026). Engineered magnetoelectric PVDF-TrFE/$CoFe_2O_4$ nanocomposite fibers for wound healing applications. Journal of Drug Delivery Science and Technology, 124, 108612. https://doi.org/10.1016/j.jddst.2026.108612

IOP Publishing Biomed. Mater. 21 (2026) 045015 https://doi.org/10.1088/1748-605X/ae7fc5

Biomedical Materials

PAPER

Biomimetic electrospun PLA nanocomposite fibers reinforced with CNT and Fe_2O_3 dual fillers for enhanced multifunctional performance

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Keywords: PLA, CNTs, Fe_2O_3, electrospinning, nanocomposite fiber
Supplementary material for this article is available online

Abstract

This study reports the fabrication of polylactic acid (PLA)-based biopolymer nanocomposite fibers reinforced with functionalized multi-walled carbon nanotubes (CNTs) and iron oxide (Fe_2O_3) nanoparticles to enhance both mechanical and electrical properties through dual-filler reinforcement. The electrospun fibers were characterized using mechanical testing, FTIR, field-emission scanning electron microscopy, XRD, differential scanning calorimetry measurements, and polarization-electric field (P-E) hysteresis measurements to understand how the incorporation of CNTs and Fe_2O_3 influenced fiber morphology, crystallinity, and functional behavior. Morphological and structural analyses confirmed the presence of continuous, bead-free fibers with a highly porous nanoscale fibrous network. The decrease in fiber diameter and enhanced dipolar alignment contributed to improved electrical polarization behavior. Due to the inherent biocompatibility of PLA and its relevance in biomedical devices, the biocompatibility and toxicity of the developed PLA/CNT/Fe_2O_3 nanocomposite fibers were evaluated. *In vitro* cell studies, along with short-term *in vivo* implantation and acute toxicity assessments, indicated favorable biocompatibility and absence of acute systemic toxicity. Together, these results demonstrate that PLA/CNT/Fe_2O_3 nanocomposite fiber mats exhibit improved mechanical and electrical polarization characteristics with acceptable short-term biological response.

3. Rajan, A., Balakrishnan, R., Eldho, N., Gopika, S., Thomas, N. G., Sameer, K. M., Koshy, R., Karthika, S., & Raju, R. S. (2026). Biomimetic electrospun PLA nanocomposite fibers reinforced with CNT and Fe_2O_3 dual fillers for enhanced multifunctional performance. Biomedical Materials, 21(4), 045015. https://doi.org/10.1088/1748-605X/ae7fc5