



Sree Padmavathi Venkateswara Foundation

IMPACT & ACTIVITY REPORT
2019-2025



From Society, through Science, for Society

Society Enabling Science. Science Serving society.

The Sree Padmavathi Venkateswara Foundation (SreePVF) is a philanthropic organisation dedicated to advancing science for societal impact. All our activities are founded on the firm belief that science thrives when it is inspired by the needs of society, and society progresses when it invests in science. By empowering researchers and promoting innovation in biomedical and agricultural sciences, alongside education, healthcare, and environmental sustainability, we aspire to create lasting impact on society and contribute to building a more resilient nation.

Founders' Foreword

When we returned to India from the United States in 1978 after completing our medical training at Harvard Medical College and Tufts University, we carried with us a simple aspiration — to serve people. Through the establishment of Pinnamaneni Poly Clinic, a tertiary health care centre in Vijayawada, we were able to realise this dream through the practice of medicine. However, our commitment to philanthropy extended beyond clinical care; we also sought opportunities to support community well-being through outreach healthcare services, educational initiatives, and other acts of public welfare. During this time, we were privileged to witness India's remarkable transformation, while also recognising that the benefits of progress had not reached all sections of society equally.

These experiences shaped our conviction that meaningful and lasting change requires sustained efforts; guided by this belief and inspired by a deep sense of gratitude for all that life had bestowed upon us, we established the Sree Padmavathi Venkateswara Foundation (SreePVF) in 2014 as a not-for-profit organisation, to contribute towards nation-building through focused interventions in healthcare, education, innovation, and agriculture.

At the heart of our work lies a philosophy that places "Return of Impact" above "Return on Investment." Our

belief that the ultimate path to serve society is by promoting knowledge and innovation, led to the establishment of a research funding programme under the Sri Ramakrishna Paramahansa Research Grants. Since 2019, under this grant scheme we have been supporting bench-bedside/field, biomedical and agricultural solutions that are accessible, affordable, sustainable, and capable of creating meaningful improvements in people's lives. This was among the first instances of private philanthropic support for translational scientific research in India, reflecting our conviction that the advancement of science is a shared responsibility, one that must be supported not only by the government, but also by private donors and philanthropic foundations.

Sri Ramakrishna Paramahansa Research Grants is a peer-reviewed grants system that helps us identify and empower exceptional researchers with the potential to deliver breakthrough outcomes in areas of critical national importance. Biomedical research holds the promise of developing new treatments and improving health outcomes, while agricultural research contributes to food security, sustainable development, and poverty reduction. By providing generous funding,



“We were privileged to witness India's remarkable transformation, while also recognising that the benefits of progress had not reached all sections of society equal.”

and mentorship, we strive to enable researchers to generate high-quality knowledge and translate their scientific achievements into practical solutions for the benefit of humanity.

Across our two grant programmes have received more than 1,800 applications from around 850 institutions across the country. From premier institutes such as the IITs and IISc to universities and research institutions in remote regions, including North-Eastern India, the diversity and scale of participation have been truly heartening. We are grateful that the programmes have been so widely embraced by India's scientific community. So far, SreePVF has sanctioned around ₹24 crores across 22 translational research projects in biomedicine and agriculture across the nation. The scientific quality of these projects is exceptional, yet we have also learned that translating promising research into real-world impact is often the most difficult part of the journey. The well-known "valleys of death" between discovery and implementation continue to hinder many innovations, particularly in the biomedical sector. Recognising these challenges, we are continuously refining our grant programmes and support mechanisms to accelerate translation and strengthen the innovation ecosystem. As part of this effort, this year we are organising the 'Translation Accelerator' as a platform to bring together experts who could provide structured guidance, foster collaborations, and help ensure that the outcomes of our grantees reach end beneficiaries during and beyond the grant period. Our ambition is to see every single one of our projects succeed and create an impact on the ground.

Beyond research and innovation, we remain deeply committed to the development of rural communities. We believe that sustainable progress cannot be achieved without empowering small and marginal farmers who form the backbone of our agricultural economy. By improving access to advanced knowledge, technologies, and innovative farming practices, we believe rural communities can significantly enhance their livelihoods and create pathways for long-term sustenance. In pursuit of this vision, we established the Krishna Sudha Academy of Agroecology, a Centre of Natural Farming recognised by the National Mission on Natural Farming (NMNF).

As we reflect on this journey, we remain humbled by how much more there is to be done. The Foundation's work is rooted in a lifelong commitment to service and a steadfast faith in the transformative power of knowledge, compassion, and collective action. We are deeply grateful to the Almighty for guiding us at every step and for granting us the opportunity to contribute, in our own small way, to the progress of our nation.

It is our sincere hope that the initiatives supported by SreePVF will continue to touch and transform the lives of millions, creating a future that is healthier, more equitable, more innovative, and more sustainable for generations to come.

Dr. Chadalawada Sudha

Dr. Chadalawada Nageswara Rao

Founders, Sree Padmavathi Venkateswara Foundation

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Pillar One

Biomedical Research Grants

The Sree Ramakrishna Paramahansa Research Grant in Biomedical Sciences was introduced in 2019 and has since completed seven editions of the grant call. Since 2020, the program has shifted its focus towards supporting “bench to bedside” translational research, which aims to bridge the gap between fundamental scientific discoveries and their application in clinical settings for the benefit of patients. This new approach reflects our commitment to funding innovative research projects with the potential to improve healthcare outcomes and advance medical knowledge.

Grant at a glance



Duration

Three years



Grant Amount

Up to 3 crores



Ambit

Tangible, accessible, and affordable solutions to contemporary problems within three-year period



Message from the Chair

Prof. L S Shashidhara – Biomedical Grants Committee



SreePVF was established with the firm belief that philanthropy can help transform our research ecosystem and deliver meaningful societal impact. The Foundation's Biomedical and Agriculture Grants [Sree Ramakrishna Paramahansa Translational Research Grant scheme]

exemplify this vision by supporting innovative ideas with the potential to reach the communities that need them most. A distinguishing feature of the grant programme is its emphasis on flexibility and mentorship. Beyond financial support, it seeks to assist grantees as they move from proof-of-concept to real-world implementation, through regulatory, and product development pathways, with the aim to accelerate the translation of promising research into tangible benefits to society.

The number of grants awarded each year remains intentionally selective. Yet, the response from the Indian research community has been overwhelming and deeply encouraging. Across the country, researchers from a wide spectrum of institutions have responded enthusiastically to our grant calls with proposals submitted not only by talented

early career researchers, but also by established mid-career and senior investigators. What has been particularly heartening is the quality of submissions, characterised by scientific rigour, creativity, and a clear focus on addressing real-world needs.

We are immensely grateful for the trust and confidence that has been placed in this initiative. Equally gratifying has been the extraordinary support received from expert peer reviewers in India and abroad. Their commitment and expertise have helped us evaluate a large and diverse pool of applications to identify projects with the greatest translational impact. Additionally, the review process has also helped provide constructive feedback to all applicants. We believe that even proposals that could not be supported directly would have benefited from these assessments.

As we look ahead, our aspiration is that SreePVF grants will continue to seed and nurture impactful ideas, foster translational innovation, and contribute to solutions that improve lives. We also hope that this model of focused, mission-driven philanthropy serves as an example for other mid-sized philanthropic organisations, inspiring broader participation in supporting science that serves the society.

Grants Review Committee

A Committee of eminent scientists was constituted to support the Foundation in reviewing grant applications. The call initially invites short applications, which are assessed for eligibility and alignment with the grant's remit before being screened by the Committee for competitiveness and potential impact. Shortlisted

applicants are then invited to submit full proposals, which undergo external peer review by subject experts. Based on the reviewers' scores and feedback, the Committee identifies a final pool of applicants for a formal interview with the Committee and the Founders, following which funding decisions are made.



Prof. D. Balasubramaniam
LV Prasad Eye Institute,
Hyderabad
*Committee Member
Since 2019*



Prof. Dipankar Chatterji
Indian Institute of Science,
Bengaluru
*Committee Member
2019–2023*



**Dr. Ganesan
Venkatasubramanian**
National Institute of Mental Health
and Neuro Sciences, Bengaluru
Committee Member Since 2024



Dr. Ghanshyam Swarup
CSIR-Centre for Cellular and
Molecular Biology, Hyderabad
*Committee Member
2019–2023*



Dr. G.N. Rao
LVPEI, Hyderabad
*Committee Member
Since 2019*



Dr. Jyotsna Dhawan
CSIR-CCMB, Hyderabad
*Committee Member
Since 2024*



Dr. K. Thangaraj
CSIR-CCMB, Hyderabad
*Committee Member
Since 2024*



Prof. L.S. Shashidhara
National Centre for Biological
Sciences, Bengaluru
*Grants Chair
Since 2019*



Dr. Radha Rangarajan
CSIR- Central Drug Research
Institute, Lucknow
*Committee Member
Since 2024*

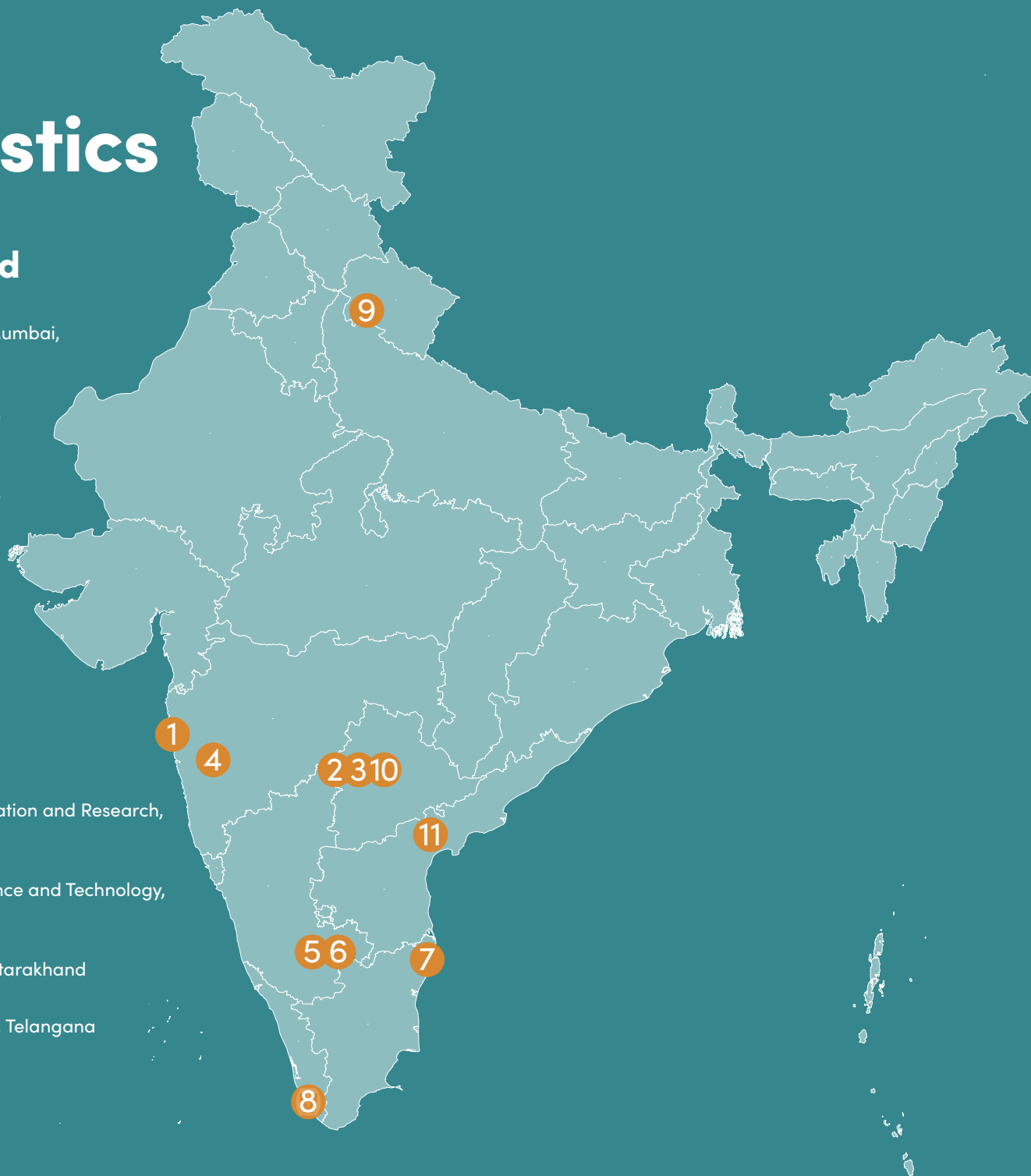


Prof. V. Chandrasekhar
Tata Institute of Fundamental
Research, Hyderabad
*Committee Member
2019–2023*

Grant Statistics

Grant and year of award

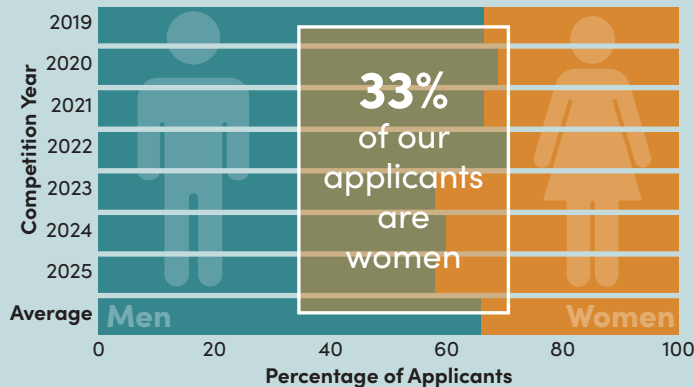
- 1 **Vidita Vaidya, 2019**
Tata institute of Fundamental Research, Mumbai, Maharashtra
- 2 **Vandana Sharma, 2020**
Indian Institute of Technology, Hyderabad, Telangana
- 3 **Falguni Pati, 2021**
Indian Institute of Technology, Hyderabad, Telangana
- 4 **Akanksha Chaturvedi, 2022**
National Centre for Cell Science, Pune, Maharashtra
- 5 **Radhakant Padhi, 2022**
Indian Institute of Science, Bengaluru, Karnataka
- 6 **Ambarish Ghosh, 2023**
Indian Institute of Science, Bengaluru, Karnataka
- 7 **Vidya Ramkumar, 2023**
Sri Ramachandra Institute of Higher Education and Research, Chennai, Tamil Nadu
- 8 **Arun Anirudhan, 2024**
Sri Chitra Tirunal Institute of Medical Science and Technology, Thiruvananthapuram, Keralam
- 9 **Gopinath Packirisamy, 2024**
Indian Institute of Technology, Roorkee, Uttarakhand
- 10 **Jyotsnendu Giri, 2024**
Indian Institute of Technology, Hyderabad, Telangana
- 11 **Sutharsan Govindarajan, 2025**
SRM University, Guntur, Andhra Pradesh



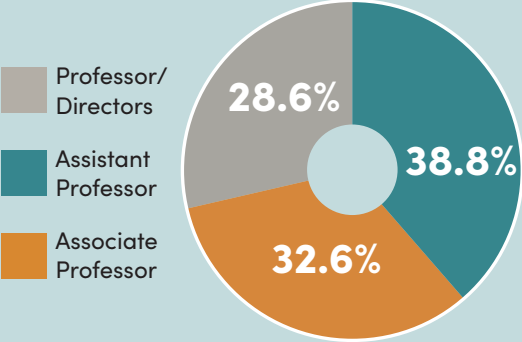
Total spending



Applicants

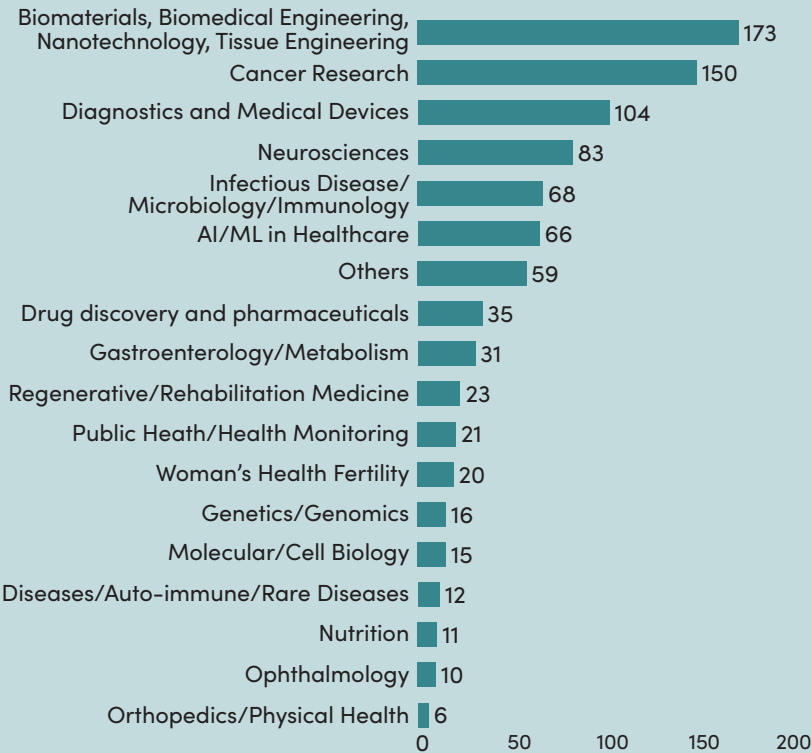


Applicant Career Stage

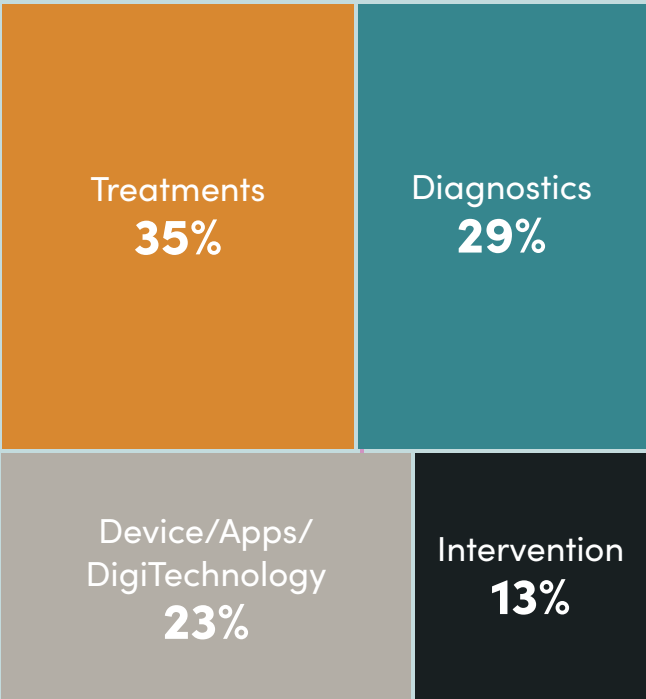


Thematic Spread of Applications Across Subject Areas

990+ Applications from 550+ Institutions



Translational Categories our Applicants Work on



Grantee Directory



2025 Awardee

Sutharsan Govindarajan
SRM University, Andhra Pradesh

Genomic Surveillance-Driven Phage Therapy Against Drug-Resistant Pathogens

Antimicrobial resistance (AMR) is projected to become a leading cause of death in the future. Phage therapy – an approach that utilises bacteriophages to treat antibiotic-resistant infections – has existed for over a century, but with limited clinical application in India. By combining genomic analysis of priority clinical pathogens like *Acinetobacter baumannii* and *Pseudomonas aeruginosa* from Indian hospitals with the development of phage therapy interventions targeting these infections, this project aims to implement a treatment framework that will help tackle these life-threatening infections.

“
Phage therapy has existed for over a century, but with limited clinical application in India.
”



2024 Awardee

Arun Anirudhan
Sree Chitra Tirunal Institute of Medical Sciences & Technology, Kerala

Design and Development of a Low-Cost Simulation Lab for Advanced Healthcare Skills Training

Skills and simulation laboratories ensure that medical students develop and refine critical clinical competencies in a safe and supervised setting before delivering patient care. However, as most of these simulators are imported, resource-limited colleges and training centres find them inaccessible and unaffordable to use and maintain.

This project aims to develop an indigenous, modular simulation platform for clinical skills training using open-source technology, 3D printing, and scalable design. This will support competency-based training in CPR, respiratory care, vascular access, emergency medicine, interventional procedures, and ultrasound diagnostics with real-time feedback and mobile-app integration, making high-quality medical training accessible and affordable to millions of students in the country.

“
As most of these simulators are imported, resource-limited colleges and training centres find them inaccessible and unaffordable to use and maintain.
”





2024 Awardee

Gopinath Packirisamy

Indian Institute of Technology,
Roorkee

Biosensor for Non-invasive, Early-stage Detection of Bladder Cancer

Urine from patients with bladder cancer contains specific biomarkers that may help with early disease detection. This project aims to develop an accurate sensor to detect protein-based and volatile organic compounds (VOCs)-based biomarkers in urine. The protein biomarker will be detected in a home pregnancy test-like assay, while VOC chemicals will be detected using a compact sensing platform. Together, these tools will help doctors save lives by detecting bladder cancer earlier, making treatments more effective.

“

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2024 Awardee

Jyotsnendu Giri

Indian Institute of Technology,
Hyderabad

Autologous Platelet-rich Plasma (PRP)-loaded Personalised Patch for Burn Wound Care

India reports over 7 million burn-related injuries annually, with 1.4 lakh deaths and 2.4 lakh cases of morbidity. Clinical management of large second degree and third degree burns involves skin tissue grafting, and is expensive and inaccessible.

This project aims to clinically validate the in situ forming, directly deposited, dermal regenerative patch containing the patient's own PRP to cover asymmetric, large burn wounds for skin tissue regeneration. Besides being effective and affordable, it is also accessible, as it can be applied on-site without skilled personnel, making it easier to reach burn injury survivors across the country.





2023 Awardee

Ambarish Ghosh

Indian Institute of Science,
Bengaluru

Nanorobotic System for Oral Health

Billions of people face dental hypersensitivity worldwide, affecting their quality of life and eating habits. This project proposes to develop CALBOTs – magnetically controlled nanorobotic bioglass – that can travel deep inside human teeth, forming tiny plugs that seal off the openings that cause sensitivity. Early laboratory results of testing CALBOTs demonstrate safety and efficacy. CALBOT treatment could offer a long-lasting solution for people with dental hypersensitivity, allowing them to enjoy hot and cold beverages without pain.

“
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”



2023 Awardee

Vidya Ramkumar

Sri Ramachandra Institute of Higher
Education and Research, Chennai

Smartphone-based Screening Tools for Early Identification of Hearing Loss in Children

Unaddressed hearing defects affect communication, speech, and cognitive development, contributing to limited opportunities in education and employment. Mobile health (mHealth) tools to screen hearing losses offer convenient alternatives that are both affordable and effective. In this context, the team had developed



SRESHT – a low-cost mHealth screening tool identifying disabling hearing losses in children < 6 years old in rural Tamil Nadu. The current project aims to validate a hearing screening module using ‘Speech/ speech spectrum based stimuli’ in noise in other Indian languages. These will have language-independent stimuli for children < 3 years old and language-dependent modules for children aged 3–6 years, making community-level early identification of childhood hearing loss possible.



2022 Awardee

Akanksha Chaturvedi

BRIC-National Centre for Cell Sciences, Pune

Novel High-affinity Human Monoclonal Antibody Cocktail Against Rabies for Efficacious Post-exposure Prophylaxis

Rabies – a deadly viral disease transmitted via rabid dog bites – claims thousands of lives annually. Altered human-animal interfaces owing to changing agricultural practices, deforestation, and urbanisation, have resulted in the emergence of new viral strains, causing an increased number of non-canine Rabies cases. While human or equine Rabies immunoglobulin (HRIG/ERIG) offers effective post-bite prophylactic treatment, it is expensive, and the availability is limited especially in rural settings. This project aims to generate high affinity, fully human monoclonal antibodies (hmAbs) against Rabies, that can handle future adaptation strategies by the virus or the emergence of new strains, providing an effective, affordable, and scalable treatment option for those who have been exposed to Rabies.

“
This project aims to generate high affinity, fully human monoclonal antibodies (hmAbs) against Rabies.
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2022 Awardee

Radhakant Padhi

Indian Institute of Science, Bengaluru

A Customisable, Intelligent Artificial Pancreas and a Cost-Effective Insulin Pump for Patients with Type-1 Diabetes

Over 80 million people in India are diabetics, 10% of whom are completely insulin-dependent, requiring external insulin for glucose regulation. Currently, only 5% of them use insulin pumps due to high costs and limited availability. This project proposes to develop an affordable and effective insulin pump along with an artificial pancreas (AP) system. The insulin pump is integrated with exercise detection and user-friendly android apps, eliminating the need for manual programming, maintaining glucose levels within normal ranges at all times. Additionally, the AP system will allow doctors and caregivers to monitor patients remotely through cloud functionality.



2021 Awardee

Falguni Pati

Indian Institute of Technology, Hyderabad

Biomimetic Hydrogel for Treating Blinding Corneal Diseases

Corneal blindness, caused by corneal scarring or keratoconus can be irreversible at advanced stages. The only treatment

option is corneal transplantation, however there is a massive shortage of donors. This project aims to develop biomimetic hydrogels from discarded human corneas that do not meet standards for clinical transplantation. This makes treating corneal blindness cost-effective while also eliminating the long wait time needed for corneal transplantation. The project will soon progress to Phase 0/1 clinical trials to establish safety and efficacy of these biomimetic hydrogels for human use.



2020 Awardee

Vandana Sharma

Indian Institute of Technology,
Hyderabad

Advanced 3D Vein Viewer: Painless Peripheral IV Access for Pediatric and Geriatric Patients

The project aimed at developing a device that images the peripheral vein map underneath human skin to determine the depth of the vein from the top of the skin with micro-meter precision. Their *in-vivo* optical coherence tomography (OCT)-based mapping of the skin takes into account physiological variations such as skin tone in the population. The project

also proposes to integrate this vein locator with artificial intelligence for precise vein access along with a robotic arm to perform intravenous injections without human intervention. This will help reduce the number of false trials and needle penetrations during IV therapy.



2019 Awardee

Vidita Vaidya

Tata Institute of Fundamental Research,
Mumbai

Modulation of Mitochondrial Metabolism within Limbic Brain Regions following Early Life Stress

The project investigated the impact of early life stress on mitochondrial metabolism within limbic brain regions, and its implications for adult psychopathology and aging-associated dysfunction. Preclinical studies demonstrated that early life stress causes significant aging-related alterations in mitostasis and neuroinflammation, and revealed the underlying mechanisms that transform neural circuits. Additionally, nicotinamide supplementation was shown to rescue key peripheral inflammation- and aging-associated markers in early life stress-induced animals.

“
Nicotinamide supplementation was shown to rescue key peripheral inflammation.
”

Translation Maturity Map

A visual representation of where the funded projects stand in terms of clinical deployability

STAGE

1

STAGE

2

STAGE

3



..... (One aspect of project simultaneously going through stages 1 and 3)

Core Hypothesis Proof & Analytical Validation

The core hypothesis has been proven at the bench. Early prototypes or analytical testing are being validated to show the science works in a controlled setting.

Advanced Preclinical Phase & Manufacturing Design

Moving from basic bench-work to specialised testing. This includes in-vivo (animal) testing for safety/toxicity, or prepping for strict medical manufacturing standards (GMP) needed for humans.

Exploratory Human Testing & Clinical Readiness

Transitioning into early clinical frameworks, with a focus on parallel human proof-of-concept trials, patient cohort collaborations, securing clinical trial funding, or hardware refinement based on stakeholder feedback while awaiting formal approvals.

STAGE
4



Active Technical Refinement & Field Validation

Evaluating and optimising validated platforms in active user environments through field validation and data collection across diverse populations, alongside the iterative refinement, validation, and patenting in case of educational medical simulators.

STAGE
5



Transitioners

The preclinical phases are fully complete. Focus is directed toward establishing strict GMP protocols for test batch manufacturing, scaling up clinical validations, and awaiting formal administrative or regulatory approvals to launch Phase 0/1 clinical trials.

Clinical Trial Design & Human Trials Preparations

Preclinical in-vivo safety and efficacy studies are entirely finalised. Work centres on collaborating directly with clinical partners to lock down the final, definitive human trial designs.



Research Focus

A Home-grown Innovation for Transforming Rabies Treatment

“From the very beginning of my scientific career, I was drawn to B-cell biology,” says Akanksha Chaturvedi, Scientist D at BRIC–National Centre for Cell Science (NCCS), Pune. This laid the foundation for her later interest in broadly neutralising antibodies (bnAbs) and monoclonal antibody (mAb) therapies, which proved relevant as she began reflecting on a critical gap in India’s biomedical innovation ecosystem.

India is among the world’s largest manufacturers of biosimilars, however, the country has yet to develop an end-to-end biologic – discovered, developed and translated entirely through domestic research. The gap is particularly evident in mAbs, where most products used in India are imported or based on innovations originating elsewhere. For Rabies – one of India’s most pressing public health challenges – the consequences are especially severe. India bears the

world’s highest Rabies burden, accounting for nearly one-third of global deaths and approximately 20,000 fatalities annually. Access to human or equine Rabies immunoglobulin (HRIG/ERIG), a critical component of post-exposure prophylaxis, remains expensive and inaccessible in many settings.

Introduction of two mAb-based alternatives to HRIG/ERIG has made access to Rabies vaccines easier, but important gaps still remain. Though these are more effective, safe, and affordable, the current products are not fully human antibody cocktails, and the breadth of their neutralisation against emerging, genetically diverse Rabies strains have not been established. As the virus continues to evolve, there is an urgent need for fully indigenous, next-generation vaccines offering broader and stronger protection while maintaining high efficacy and affordability. It is this specific

“**India bears the world’s highest Rabies burden, accounting for nearly one-third of global deaths and approximately 20,000 fatalities annually.**”

translational bottleneck that Chaturvedi's project, *High-Affinity Human Monoclonal Antibody Cocktail for Effective Rabies Post-Exposure Prophylaxis*, set out to address under the 2022 Sree Ramakrishna Paramahansa Translational Biomedical Science Grant.

Navigating translation

During the COVID-19 pandemic, the team collaborated with clinicians, accessed patient samples, and initiated work on high-affinity fully human mAbs against SARS-CoV-2. This experience proved to them the possibility of moving beyond mechanistic questions to develop translationally relevant therapeutic candidates. At the end of the acute phase of the pandemic, the same platform and expertise were redirected towards a more enduring challenge – Rabies.

To serve as a practical, scalable replacement for HRIG/ERIG, the team focused on developing a cocktail of human mAbs targeting Rabies viral glycoprotein. From the earliest stages of development, the project was aligned with WHO and FDA guidance, so that the end-products meet regulatory requirements, demonstrate non-inferiority to HRIG/ERIG in WHO-relevant assays, and remain affordable for widespread use. Neutralisation studies, breadth testing across diverse Rabies strains, and in vivo challenge models were prioritised to ensure that the resulting data would support future regulatory review. Navigating this translational pathway required mastering not only science but also the realities of product development. Understanding preclinical studies, regulatory requirements, manufacturing constraints, GLP-compliant toxicology assessments, and the broader IND process has been the project's most significant learning experiences.

Support, collaboration, & the road ahead

"Critical to this progress has been support from SreePVF, whose flexible funding enabled the project to evolve from concept to a development-oriented programme. Equally important have been collaborations spanning multiple institutions", says Chaturvedi. Virologist Dr. Debasis Nayak from IISER Bhopal, developed a versatile pseudovirus platform for evaluating antibodies across multiple Rabies strains, while clinical collaborators from AFMC Pune, MUHS and NIMHANS provided access to samples and clinical insights aligned with WHO recommendations.

Today, the project has established an end-to-end platform for human mAb discovery and characterisation in India, with capabilities spanning B-cell isolation and cloning, recombinant antibody production, neutralisation testing and in vivo efficacy evaluation. This has led to the development of three candidate mAb cocktails with broad neutralising potential. Currently, the team is working on optimising these cocktails, conducting in vivo challenge studies, and initiating toxicology, tissue cross-reactivity, and chemistry, manufacturing and controls (CMC) assessments.

A safe, affordable, and scalable mAb cocktail could strengthen post-exposure prophylaxis and support the global goal of Zero Rabies Deaths by 2030. For Chaturvedi, the significance extends beyond Rabies. *"I hope the project will demonstrate that Indian academic laboratories can successfully advance antibody programmes from discovery to application, creating a model that can be adapted for high-burden infectious diseases, including other emerging zoonotic threats",* she comments.

“Critical to this progress has been support from SreePVF, whose flexible funding enabled the project to evolve from concept to a development-oriented programme.”



Research Focus

The Journey of Nanorobots into Medicine

"My interest in nanoscience grew from a basic fascination with motion and matter at scales where ordinary intuition stops working," recalls Ambarish Ghosh, Professor, Centre for Nanoscience and Engineering, Indian Institute of Science (IISc), Bengaluru. That curiosity led him to a fundamental question: could scientists build artificial structures small enough to swim through fluids, and even through the human body, under external control, much like how bacteria do naturally? Seeking answers, Ghosh and his team developed magnetic helical nanoswimmers that can be operated using weak rotating magnetic fields.

In 2023, Ghosh received the Sree Ramakrishna Paramahansa Grant in Translational Biomedical Sciences for the project

Nanorobotic System for Oral Health. He explains, "Medicine constantly runs into places that are difficult to reach and treat locally: within tissue, near a tumour, or inside a tooth." Dental hypersensitivity affects millions worldwide. Sharp tooth pains occur when microscopic tubules in teeth become exposed, creating direct pathways to the nerve. "The ability to deliver therapy precisely to such sites, rather than flooding the whole body, is a problem that has only become more pressing", he adds.

The turning point came when the team shifted its focus. For years, controlled nanoscale motion remained more of a scientific possibility than a practical capability. "The translational shift came when the question changed

“**Ghosh and his team developed magnetic helical nanoswimmers that can be operated using weak rotating magnetic fields.**”

from whether we could make nanostructures move to whether we could make them do something useful, and do it reliably,” says Ghosh. Once they demonstrated that nanosystems could navigate genuine biological environments, the path to real-world applications became clear. This reframing ultimately led to *Theranautilus*, a clinical-stage venture built directly on the team’s research. One of its key innovations is CALBOTS — nanorobotic bioglass guided by magnetic fields deep into microscopic tooth structures. Once inside, they form bioglass ‘plugs’ that permanently seal the tiny openings responsible for dental pain.

Navigating translation

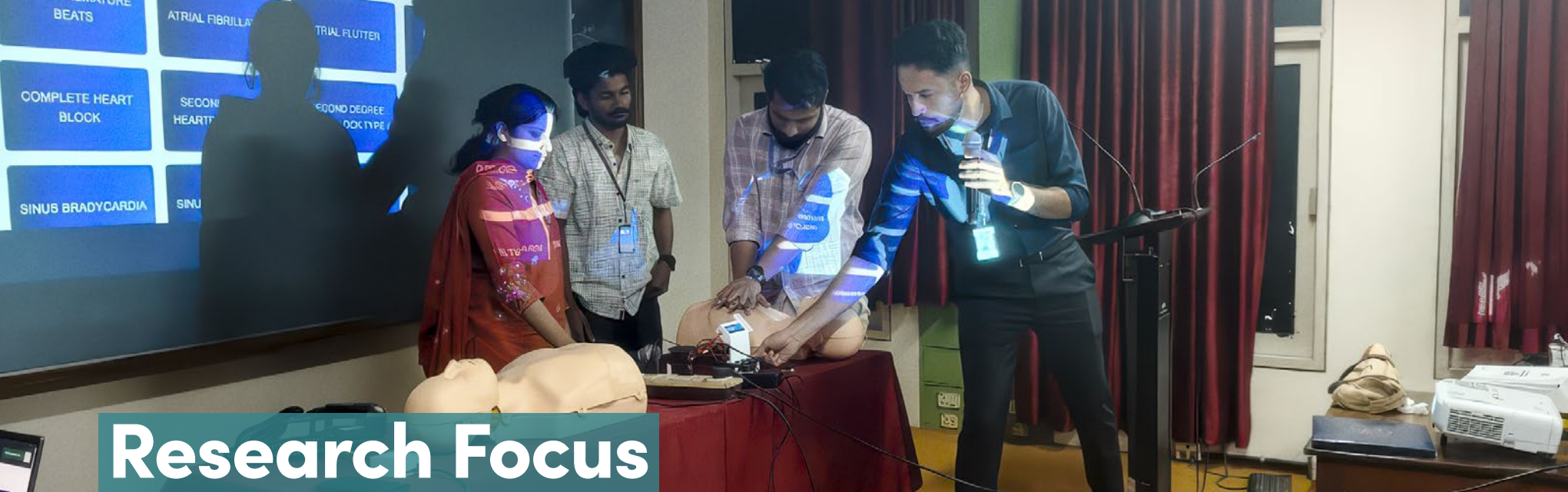
Translating a scientific discovery into a clinical technology, required a different mind-set. *“The biggest challenge was learning to design backwards from the clinical problem rather than forward from the physics,”* Ghosh reflects. Working closely with clinicians and patients forced the team to prioritise factors often considered secondary in academic research: safety, biocompatibility, manufacturability, and reliable performance under real-world conditions. The focus shifted from creating one elegant device to developing several dependable systems that could repeatedly perform in a manner that survives the regulatory and clinical pathways. Along the way, the team learned that the most difficult barriers to translation are rarely the headline scientific challenges. *“Reproducibility at the nanoscale, scaling fabrication beyond a handful of devices, and making something robust enough to leave the lab are where most of the effort goes,”* Ghosh explains.

The experience also underscored the importance of patience. Many promising ideas never reach application, and translational research often progresses over years rather than months. Sustained support is therefore critical. Reflecting on the Foundation’s role, Ghosh notes that the value extends beyond funding. *“The flexibility to pursue a challenging translational direction without being forced to show short-term returns at every step has been invaluable. The Founders and the SreePVF Committee members are themselves renowned medical practitioners and scientists, so their technical depth and advice provided immense value,”* he says. Strong partnerships with clinical collaborators willing to explore an unconventional idea helped validate the technology, while *Theranautilus* has been instrumental in supporting commercialisation efforts.

The team’s work proves that fundamental science can evolve into patient-focused innovation. Through *Theranautilus*, magnetically actuated helical nanorobots will be developed not only for dental hypersensitivity but also for applications such as targeted intratumoral drug delivery. *“Seeing a fundamental capability cross into something that can change how a patient is treated is the kind of result that makes the long road worthwhile,”* Ghosh says.

Looking ahead, the team remains focused on advancing clinical translation while continuing to strengthen the underlying science, from fabrication reliability and control in complex tissues to the broader physics of active matter and controlled motion. Ultimately, Ghosh hopes the work will contribute to a future of more precise and localised medicine, where treatments are delivered exactly where they are needed, with minimal impact on the rest of the body.

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The team remains focused on advancing clinical translation while continuing to strengthen the underlying science.
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Research Focus

Engineering Access: Building Affordable Medical Simulation Training for India

Every year, around 6.0 lakh students enrol across India's many medical and nursing colleges to train as healthcare professionals. While national medical and nursing council regulations require these institutions to maintain "Skills & Simulation Laboratories", access to effective simulation-based training remains uneven. Many institutions depend on technologically sophisticated, imported medical simulators which are extremely expensive. Often, a single unit serves large batches of students, limiting opportunities for hands-on learning. Maintenance and repairs can be costly, time-consuming, and dependent on external service providers, often disrupting training schedules. Additionally, imported systems offer limited customisation for local teaching needs. This gap caught the attention of Arun Anirudhan, Senior Engineer at the Sree Chitra Tirunal Institute for Medical Sciences and Technology (SCTIMST), Thiruvananthapuram, and Principal Investigator of the project "Design and Development of a

Comprehensive Low-Cost Simulation Lab for Advanced Healthcare Skills Training", supported under the 2024 Sree Ramakrishna Paramahansa Translational Biomedical Grants.

For Anirudhan, the journey began as a desire to apply engineering expertise to a meaningful societal challenge. "SCTIMST's multidisciplinary ecosystem helped the team understand the routine struggles faced by clinicians, students, and educators in the nuances of medical training, and made it clear that healthcare education was an area where engineering could genuinely bridge important gaps", he adds. This insight led them towards developing indigenous, low-cost medical simulators tailored to Indian training environments.

Refining through real-world feedback

The potential for impact became increasingly visible during workshops and validation sessions conducted with students,

“The potential for impact became increasingly visible during workshops and validation sessions conducted with students, nurses, and clinicians.”

nurses, and clinicians. *“Unlike conventional classroom teaching, simulation-based learning allowed trainees to practise procedures repeatedly, make mistakes safely, and build confidence before entering clinical settings”,* observes Anirudhan. As participants interacted with the prototypes, the team gathered continuous feedback and refined the systems accordingly. Hardware and software were adapted to improve durability, portability, realism, ease of use, modularity, and affordability. Rather than developing technology in isolation, the team adopted an iterative approach in which users directly shaped the evolution of the simulators. *“That process ensured the simulators remained practical, accessible, and user-centred”,* Anirudhan adds. As more institutions expressed interest, and feedback grew increasingly positive, they started to identify their work as a scalable solution for healthcare training, particularly in resource-limited settings.

The journey, however, was not without challenges. For the engineering team, understanding clinical workflows required a significant learning curve. Anirudhan adds, *“Medical training environments operate very differently from traditional engineering systems, and creating realistic yet affordable simulators required constant collaboration between technical and clinical teams”.* The team also had to balance realism with affordability, aiming not merely to create lower-cost alternatives but durable, effective tools that could withstand everyday classroom use.

Development was further complicated by unavailability of specialised components on Government e-Marketplace (GeM), repeated prototyping cycles, and the complexities of hardware-software integration. But, Anirudhan notes that these challenges only strengthened the project’s multidisciplinary character and sharpened its focus on practical implementation.

Support and collaboration

Anirudhan credits the project’s progress to a strong ecosystem of support. *“The flexibility provided by the Grant enabled the team to experiment and refine their designs while maintaining a clear focus on societal impact”,* he adds. Additionally, SCTIMST’s collaborative environment, bringing together engineering, medicine, and education, became one of the project’s greatest strengths.

Today, the project is advancing on several fronts. Multiple simulator platforms continue to undergo refinement and validation, while patent applications are progressing for innovations such as the Arrhythmia Simulator, CPR Meter, TTE Simulator, and Heart/Lung Sound Simulator. However, the long-term vision extends beyond these individual devices. Through wider deployment, local manufacturing, rural training centres, and national collaborations, the team hopes to strengthen medical education infrastructure across the country. *“The possibility that institutions which previously couldn’t afford advanced training infrastructure may soon gain access to it, is exciting”,* Anirudhan shares.

Indigenous, affordable training technologies can enable healthcare professionals to practise and refine skills before treating patients, improve confidence, reduce errors, and strengthen preparedness, while helping democratise medical education, particularly in rural and underserved regions. *“For us, the project represents more than a technological innovation, it is a step towards a more accessible, self-reliant, and equitable healthcare training ecosystem for India”,* reflects Anirudhan.

“
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Pillar Two

Agriculture Research Grants

In 2021, SreePVF expanded the Sree Ramakrishna Paramahansa Research Grant to include the agricultural sciences. The grant aims to provide last-mile funding for novel and sustainable solutions that benefit small and marginal farmers in India. This program supports researchers whose work aligns with our mission to improve agriculture practices and promote sustainable solutions in the field. Five editions of this grant call has been completed so far.

Grant at a glance



Duration
Two years



Grant Amount
Up to 50 lakhs

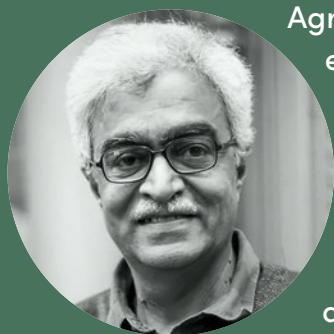


Ambit
Science-backed innovative solutions curated towards the needs of small/marginal farmers with scope for immediate deployment



Message from the Chair

Prof. Ramesh Sonti – Agriculture Grants Committee



Agriculture is the backbone of India's economy as it not only ensures our food security but also provides livelihood to 46% of our population. The majority of our farming community consists of small and marginal farmers. Their livelihoods are threatened by a host of factors, including declining soil health, attacks by crop pests and pathogens, climate change, post-harvest yield losses, and poor health and nutrition of farm animals.

The agricultural research community in India is endeavouring to leverage the latest advances in biotechnology, nanotechnology, information technology, artificial intelligence, and drones to develop cost-effective solutions that address the challenges faced by our farmers. An additional challenge is that, even when a technology is developed, there is a last-mile connectivity issue between the technology developer and the farmers.

Since 2021, the Sree Padmavathi Venkateswara Foundation has been awarding the Sree Ramakrishna Paramahansa Research Grants in Agriculture to support science-based,

innovative solutions with immediate deployment potential for the benefit of farmers, especially small and marginal farming communities. A number of projects spanning a wide range of agricultural topics have been funded by the Foundation. Some of these projects have led to technologies that are already in commercial practice, and several more are expected to do so in the next few years.

The continued relevance of this scheme to the Indian agricultural research community is vouchsafed by the very large number of proposals received every year under this call. On behalf of the present and past members of the SreePVF expert committee on agriculture, I would like to place on record our sincere appreciation for the Foundation's support for this noble cause.

“

The continued relevance of this scheme to the Indian agricultural research community is vouchsafed by the very large number of proposals received every year under this call.

”

Grants Review Committee

A Committee of eminent scientists has been constituted to support the Foundation in reviewing grant applications. Preliminary applications are evaluated for remit, eligibility and competitiveness. Shortlisted candidates are invited to share a

final full application which are reviewed by the Committee. A final pool of applicants are invited for an online interview with the Committee. Funding decisions are made following these interviews.



Dr. Alok Kalra

CSIR – Central Institute of Medicinal
& Aromatic Plants, Lucknow
Committee Member
Since 2021



Dr. Alok Krishna Sinha

BRIC–National Institute of Plant
Genome Research, New Delhi
Committee Member
2019–2024



Prof. L.S Shashidhara

National Centre for Biological
Sciences, Bengaluru
Grants Co-Chair
Since 2021



Dr. M. Sujatha

ICAR–Indian Institute of Oilseeds
Research, Hyderabad
Committee Member
Since 2021



Dr. Navin Sharma

International Agriculture
Consulting Group
Committee Member
2021–2024



Prof. Ramesh Sonti

International Center for Genetic
Engineering and Biology, New Delhi
Grants Chair
Since 2021



Prof. Sheshshayee Sreeman

University of Agricultural
Sciences, Bengaluru
Committee Member
Since 2025



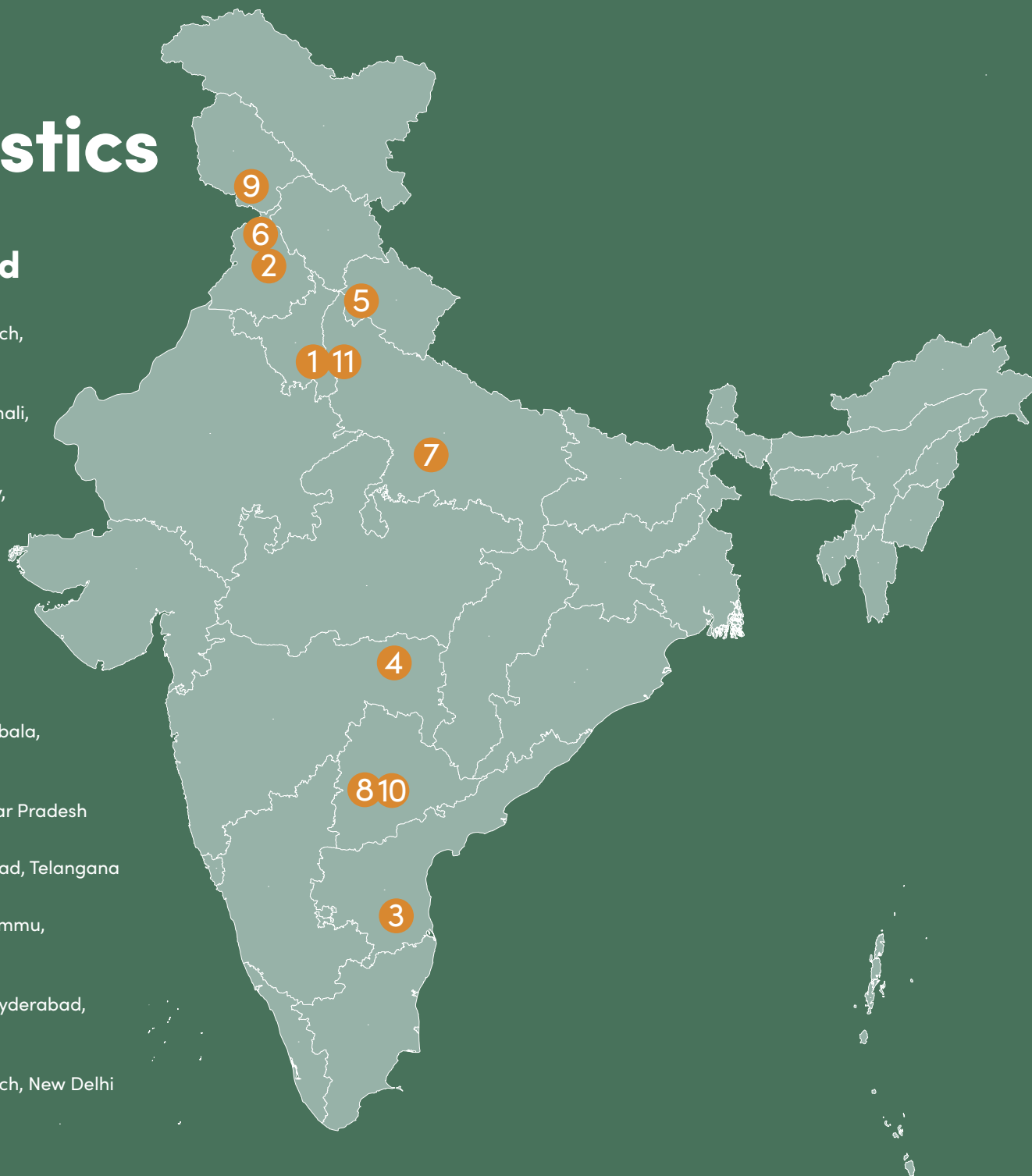
Prof. V Sudha Rani

(Retd. from) Professor Jayashankar
Telangana Agricultural University,
Hyderabad
Committee Member
Since 2025

Grant Statistics

Grant and year of award

- 1 **Jagadis Gupta Kapuganti, 2021**
National Institute of Plant Genome Research, New Delhi
- 2 **Koushik Mazumder, 2022**
National Agri-biotechnology Institute, Mohali, Punjab
- 3 **P Lavanya Kumari, 2022**
Acharya N G Ranga Agricultural University, Tirupati, Andhra Pradesh
- 4 **Sachin Mandavgane, 2023**
Visweswaraya National Institute of Technology, Nagpur, Maharashtra
- 5 **Srinivas Kiran Ambatipudi, 2023**
Indian Institute of Technology, Roorkee, Uttarakhand
- 6 **Sunny Dhir, 2023**
Maharishi Markandeshwar University, Ambala, Punjab
- 7 **Himanshi Jangir, 2024**
Indian Institute of Technology, Kanpur, Uttar Pradesh
- 8 **Sailaja Banda, 2024**
Indian Institute of Rice Research, Hyderabad, Telangana
- 9 **Shahid Rasool, 2024**
Indian Institute of Integrative Medicine, Jammu, Jammu & Kashmir
- 10 **Arindam Chakrabarty, 2025**
Indian Institute of Chemical Technology, Hyderabad, Telangana
- 11 **Senthil-Kumar Muthappa, 2025**
National Institute of Plant Genome Research, New Delhi



Total spending



Applications



864
received 2021–2025

Applicant Gender



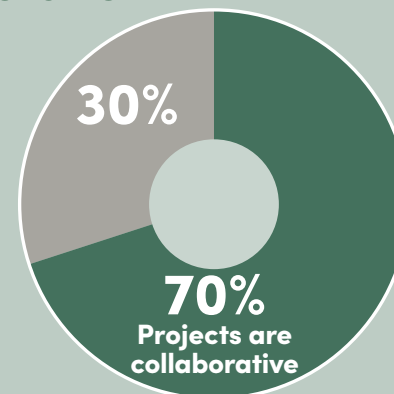
40%
Female
Applicants

Host Institutes



300+
participated in competitions
2021–2025

Collaboration



Focus Areas of Research

- Agriculture Biotechnology
- Abiotic stress resistance
- Organic Farming
- Agro waste Utilisation
- AI/ML, Internet of things (IoT) in Agriculture
- Climate resilient agriculture
- Epiculture, Meliponiculture
- Farm-to Market innovations
- Farm machinery
- Food and Nutrition security
- Horticulture - Crop regulation
- Mushroom production
- Technologies & Solutions for Postharvest Management
- Precision & Seed Technologies in Agriculture
- Productive Entomology
- Soil science
- Urban Farming
- Water management

Grantee Directory



2025 Awardee

Arindam Chakrabarty

CSIR-Indian Institute of Chemical Technology, Hyderabad

Degradable Coated Kraft Paper for Mulching

Plastic mulch – widely used in agriculture to protect crops, conserve water, and suppress weeds – create major environmental challenges because of their non-biodegradability and non-recyclability. Additionally, removing them after use is labour-intensive and contributes to soil microplastic pollution, landfill waste, and on-site burning. This project developed a biodegradable coated kraft paper which performs successfully as mulch for short-duration crops, gradually degrading into the soil after use. The team aims to further improve performance, reduce costs, and enable large-scale adoption of sustainable mulching.

“

This project developed a biodegradable coated kraft paper which performs successfully as mulch for short-duration crops.

”



2025 Awardee

Senthil-Kumar Muthappa

BRIC-National Institute for Plant Genome Research, New Delhi

Harnessing Beneficial Microbes Against Dry Root Rot Disease and Drought

Chickpea farming in Southern India is threatened by drought and dry root rot disease, often causing severe crop losses and financial stress on small farmers. Since resistant plant varieties are rare and the pathogen affects multiple crops, this project aims to develop a sustainable solution by engineering the rhizosphere using beneficial microbes. The team identified mycorrhizal fungi and rhizobacteria that suppress the pathogen while improving water and nutrient uptake and supporting nitrogen fixation in chickpea. By optimising and testing this microbial consortium under diverse field conditions, the project offers a feasible approach to protect chickpea production and support farmers.

“

Chickpea farming in Southern India is threatened by drought and dry root rot disease, often causing severe crop losses and financial stress on small farmers.

”





2024 Awardee

Himanshi Jangir

Indian Institute of Technology,
Kanpur

A Novel Eco-Friendly Nano-Agriculture Strategy for Small-Marginal Farmers of Higher Himalayas

This project aims to create a self-reliant, profitable, and chemical-free farming system for small-scale farmers in remote Himalayan regions, where farming is labour-intensive and mechanisation is limited. Using fertiliser-free nano-pyrite seed, root, and shoot treatment, the project seeks to improve potato and fodder production while supporting farming livelihoods without disrupting the fragile Himalayan ecosystem. Early trials show an ~18% increase in potato yield following nano-pyrite treatment, along with improved germination, fodder growth, and crop density across multiple fodder species.



2024 Awardee

Sailaja Banda

ICAR-Indian Institute of Rice
Research, Hyderabad

RAISE - Rice AI Stress Evaluator

Farmers struggle to identify biotic and abiotic stress in rice crops, leading to delays in diagnosis and treatment, limiting production. This project focuses on building an AI-powered mobile application to assist farmers in diagnosing and managing rice crop stresses in real-time. The app has been deployed and is currently undergoing on-field validation to provide timely advisories to farmers. By combining databases of biotic and abiotic stresses, the app will be continuously updated to maintain prediction accuracy, covering major insect pests, diseases, weeds, and nematodes, as well as nutrient deficiencies, offering management advice for each.

“

This project focuses on building an AI-powered mobile application to assist farmers in diagnosing and managing rice crop stresses in real-time.

”



2024 Awardee

Shahid Rasool

CSIR- Indian Institute of Integrative Medicine, Jammu & Kashmir

Lavender Intercropping in High Density Apple Orchards for Better Farm Profitability and Sustainability

This project developed a sustainable farming model integrating high-density apple orchards with lavender cultivation and apiculture. Using a farmer-participatory approach, the team focuses on how apple-lavender intercropping can improve crop productivity, reduce pest incidence, support pollinators, and enhance overall farm sustainability. This system demonstrated increased profitability by improving input-use efficiency and creating additional income through lavender-based products and specialty “lavender honey,” which has been licensed for export through APEDA. Additionally, they developed protocols to help honeybees survive winters, reducing bee mortality and supporting the production of Kashmir’s first mono-floral apple honey.



2023 Awardee

Sachin Mandavgane

Visvesvaraya National Institute of Technology, Nagpur

Valorisation of Post-Harvest Agro-Waste Using Indigenous Fibrinolytic Enzymes

This project developed an on-farm technology to extract an enzyme from an indigenous bioculture to digest post-harvest lignocellulosic agri-residue. Pre-treating agri-waste with the enzyme helps convert it into commercially valuable products, hence generating revenue for small/marginal farmers. This enzyme has now been patented under the name “Surabhi”, and its efficacy has been demonstrated across multiple domains: Rapid composting, animal fodder enrichment leading to 3-7% increase in milk yield, and improved yield and quality of biogas, in addition to reducing stubble burning.

“
Pre-treating agri-waste with the enzyme helps convert it into commercially valuable products, hence generating revenue for small/marginal farmers.
”



2023 Awardee

Srinivas Kiran AmbatipudiIndian Institute of Technology,
Roorkee

Cow Infra-Red Imaging Analytical (CIRAN) System

Bovine mastitis is one of the most economically damaging diseases affecting dairy animals leading to major losses in milk production worldwide. Detecting it early, during its symptom-free stage is challenging. This project developed a diagnostic framework using body temperature variations and heat signatures associated with inflammation and physiological changes during early-stage mastitis. It established a multi-site data collection system across India and generated a large dataset using somatic cell count (SCC) testing, clinical temperature measurements, and infrared thermography (IRT) from dairy animals. However, high variability in SCC, IRT's sensitivity to environmental conditions, and breed-specific differences indicate the need for further refinement to perform consistently across breeds and production systems.

“

Bovine mastitis is one of the most economically damaging diseases affecting dairy animals leading to major losses in milk production worldwide.

”



2023 Awardee

Sunny DhirMaharishi Markandeshwar
University, Ambala, Haryana

'ASSURED' Biosensor for the Detection and Management of Major Apple Viruses

Viral infections in apple crops cause major agricultural losses, affecting farmers' livelihoods, disrupting supply chains, and increasing costs for consumers. This project developed an **A**ffordable, **S**ensitive, **S**pecific, **U**ser-friendly, **R**obust, **R**eusable, **E**quipment-free, **D**eliverable, biosensor-based diagnostic platform for rapid, in-field detection of apple viruses, with results accessible for farmers on an Android mobile application. While facilitating early disease detection and



timely management in orchards, the diagnostic platform can also support tissue culture industries and nurseries. The developed ELISA-, LFIA-, and biosensor-based field diagnostics were validated using orchard samples from Himachal Pradesh and Jammu & Kashmir.



2022 Awardee

Koushik Mazumdar

BRIC-National Agri-food Biotechnology Institute, Mohali

A Novel Edible Coating Material for Better Postharvest Quality of Perishable Fruits

To address the postharvest loss of fruits and vegetables in India, the team developed a non-toxic and edible coating material made from wheat straw arabinoxylan (AX) and stearic acid derivatised oat bran β -glucan (SABG). This coating formulation demonstrated longer post-harvest shelf life in various fruits under ambient storage conditions. *In vivo* toxicological studies proved that the coating is non-inflammatory and non-toxic. In 2025, the technology was officially transferred to Cirkla Technologies Pvt. Ltd., for commercialisation.



2022 Awardee

P Lavanya Kumari

Acharya NG Ranga Agricultural University, Andhra Pradesh

Artificial Intelligence-based Modelling of Major Pests in Rice Crop to Promote Forewarning Advisory Services

Pest infestation causes rice crop losses, significantly impacting its production. The team developed an AI-based

approach to model and forecast the occurrence of Yellow Stem Borer, Brown Planthopper, Rice Leaf Folder, and Gall midge in rice crops in Andhra Pradesh. A web portal "RICE PEST EARLY WARNING SYSTEM" for AI/ML-based prediction for rice pests and relevant advisory has been deployed for use by farmers. The models will be annually validated and revised by incorporating new data to improve prediction accuracy. This will help farmers take proactive measures towards pest management, supporting sustainable and improved rice production.



2021 Awardee

Jagadis Gupta Kapuganti

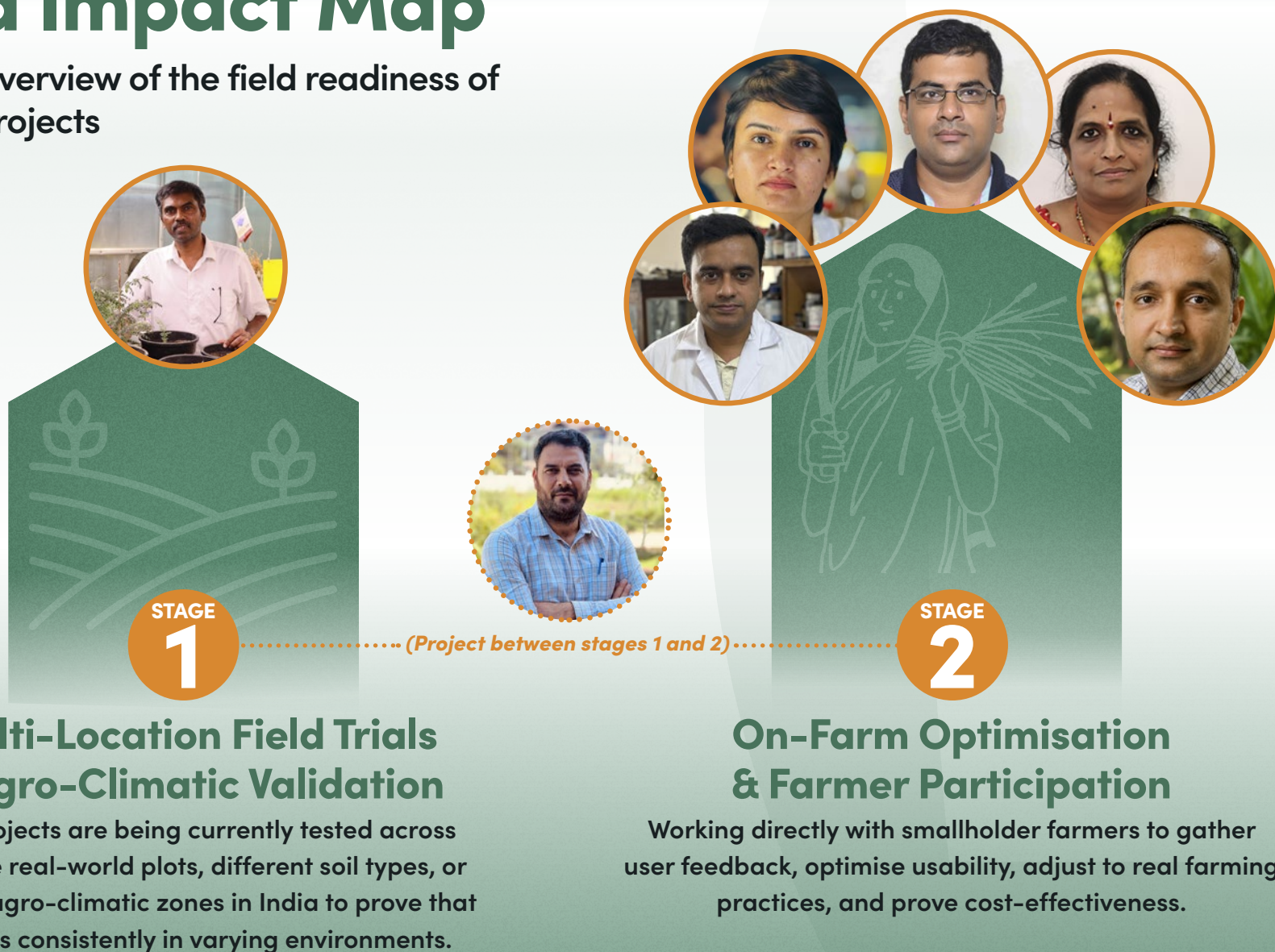
BRIC- National Institute of Plant Genome Research, New Delhi

A Novel and Cost-effective Technology to Prevent Post-Harvest Losses of Fruits

Postharvest spoilage is a significant problem in India, leading to loss of income for farmers and retailers, and increased prices for consumers. Using recycled plastic and wood, the team has developed an innovative and cost-effective technology to tackle this issue, enhancing the shelf life of fruits and vegetables and preventing spoilage. The device helped improve post-harvest quality of various fruits both in stores and under field conditions. The technology has secured eight national and international patents, and in 2025, was licensed to Fruvetech Pvt. Ltd. for commercialisation.

Field Impact Map

A visual overview of the field readiness of funded projects





Ecosystem Integration & Open-Access Deployment

The innovation is fully validated and deployed as a functional tool for the wider agricultural community, often via digital infrastructures like mobile applications.



Commercial Technology Transfer & Licensing

After regulatory vetting, the technology, backed by data and IP rights, is formally licensed to corporate partners for mass manufacturing, distribution, and market scale.



Resilient Harvest

India's agricultural story is often told through record harvests, production statistics, and technological breakthroughs. Yet at its heart stands a different reality. Close to **86% of farmers in India are small and marginal landholders**, owning farms less than two hectares in size, leaving little room for error. Cultivating **almost half (47%)** of India's total agricultural land, they contribute substantially to the country's food security and sustenance. For them, innovation is rarely about convenience. It is about resilience. It is about preserving a harvest long enough to reach the market, detecting a disease before it spreads, reducing dependence on costly inputs, finding new sources of income from the same piece of land, or simply making agriculture viable for the next generation. Within this context operates SreePVF's Agriculture

Science Grant, supporting scientific innovations that travel outside the lab into farms where decisions are made every day.

By translating discoveries into practical solutions for smallholder farmers, the Foundation's grantees are building resilience across the agricultural value chain. Their projects span diverse disciplines, geographies, and farming systems, united by a shared goal: reducing uncertainty and expanding opportunity for farmers.

“For small/marginal farmers, innovation is rarely about convenience. It is about resilience.”



Saving the harvest

Preserving the produce during storage, transport, and marketing is challenging. India loses substantial quantities of fruits and vegetables due to post-harvest spoilage. For smallholder farmers, these losses translate directly into reduced incomes and missed opportunities. Recognising this, our 2021 awardee, **Jagadis Gupta Kapuganti**, from BRIC-National Institute of Plant Genome Research (NIPGR), New Delhi, developed an innovative **shelf-life enhancement technology** that extends the freshness of fruits and vegetables using a cost-effective system built from recycled plastic and wood.

Kapuganti explains, *“by increasing freshness and extending shelf life, the technology allows farmers to sell their produce at better prices, reaching distant markets, increasing their overall income and flexibility. Also, farmers gain more financial stability, confidence, and opportunities for sustainable growth*

in their agricultural business.” During field demonstrations, he recalls the excitement of farmers from Rahata Maharashtra recognising the technology’s potential — reinforcing the significance of designing innovations around real-world needs. What began as a laboratory innovation has now matured into a nationally recognised enterprise through **Fruvetech Pvt. Ltd.**, demonstrating the journey from scientific discovery to commercial adoption.

A similar challenge inspired the work of our 2022 awardee, **Koushik Mazumder** from BRIC-National Agri-Food and Biomanufacturing Institute (NABI), Mohali, who looked to agricultural by-products themselves for a solution. Their **edible coating technology**, developed from wheat straw arabinoxylan and modified oat bran β -glucan, creates a natural protective barrier that extends the shelf life of fruits. Mazumder observes, *“while being simple and cost-effective, this innovation also addresses the demand for natural and sustainable coating*

solutions, and can revolutionise the fruit and vegetable industry in India”. Beyond reducing spoilage, the technology shows how agricultural residues can be converted into value-added products, creating new opportunities within the agricultural economy itself. Now licensed to a commercial partner, **Cirkla Technologies Private Ltd.**, Mumbai, the technology is set to reach farmers across the country.

Reaction to prediction

Tackling crop losses before they are harvested is as important as securing harvests. Most agricultural decisions are reactive. Farmers often identify pests, diseases, or nutrient deficiencies only after visible symptoms emerge, by which time substantial damage may already have occurred. However, advances in data science and artificial intelligence (AI) are enabling a shift from reaction to anticipation.

An example is the work of our 2022 awardee – **Lavanya Kumari**, from Acharya N. G. Ranga Agricultural University (ANGRAU), Tirupati – on **forecasting major rice pest outbreaks** using AI and machine learning. By combining weather data with predictive models, she developed systems capable of forecasting pest infestations in Andhra Pradesh. Farmers receiving timely forewarning advisories can intervene earlier, reduce unnecessary pesticide applications, and minimise yield losses. Kumari describes this as a move towards scientific and smart farming practices. **“It was encouraging to see that the developed hybrid AI/ML models could successfully capture the complex pest dynamics with improved prediction accuracy. The successful deployment of the “Rice Pest Early Warning**

“Tackling crop losses before they are harvested is as important as securing harvests.”

System” web portal is a milestone, especially the module that allows researchers and scientists to independently build prediction models for any crop and location”, she adds.

The same philosophy underpins the work of our 2024 awardee from ICAR-Indian Institute of Rice Research (IIRR), Hyderabad – **Sailaja Banda** who leads the Rice AI Stress Evaluator (RAISE) project. Designed as a mobile application, RAISE enables farmers to identify diseases, insect pests, weeds, nematodes, and nutrient deficiencies simply by photographing affected plants. The application combines AI with expert validation systems, to review uncertain cases before recommendations are provided, **contributing to smart diagnosis and timely advisories for better rice productivity.** During the team’s ongoing field validations, RAISE has been demonstrating encouraging levels of diagnostic accuracy, highlighting the growing role that AI can play in supporting everyday agricultural decisions.

Diagnosing invisible threats

Forecasting pest outbreaks and monitoring crop stress can help farmers stay ahead of many challenges. But what about diseases that remain hidden until visible symptoms appear?

In apple orchards, viral infections can spread silently, reducing productivity long before symptoms become obvious. To address this challenge, **Sunny Dhir** and his team, who received the grant

in 2023, developed **highly sensitive biosensor-based diagnostic systems capable of detecting major apple viruses** directly in the field. Their work at the Maharishi Markandeshwar University, Ambala, combines advanced immunodiagnostics, biosensor technologies, and mobile-based platforms to create rapid, farmer-friendly diagnostic tools. The ultimate vision is to place reliable disease detection directly into the hands of growers, enabling early intervention, reducing economic losses. One of the most rewarding moments came when the technology successfully identified viral infections with high accuracy in field samples at Neva plantations in Himachal Pradesh. ***“Realising that a laboratory concept could move closer to becoming a practical tool that will support farmers and extension workers directly in disease monitoring and crop protection, was encouraging”***, Dhir says.

Srinivas Kiran Ambatipudi from IIT Roorkee, our 2023 grantee addressed a similar problem in livestock. India is the [world’s largest milk and dairy producer](#), contributing to over 22% of global production. [70-75% of this national dairy output](#) is contributed by small and marginal farmers who own just 1-3 milch animals. Bovine mastitis, an infectious disease that causes inflammation in cattle udders, causes significant declines in milk production. **Subclinical mastitis** – an early asymptomatic phase of the disease – reduces milk production gradually over the lactation cycle. In the absence of other evident changes, detecting the disease at this early stage is a challenge. By combining veterinary science, infrared thermography, and AI, Ambatipudi’s **Virtual Cow Care System** proposed to identify subclinical mastitis before visible symptoms emerge. *“Working*

*directly in the field and seeing how differently cattle respond under varied farm and environmental conditions made us realise that **managing Subclinical Mastitis is complex and that future solutions will need to carefully consider breed differences and real farm conditions**”*, he shares.

Working with nature

As agricultural systems face mounting environmental pressures, many researchers are increasingly looking toward biological processes as partners rather than obstacles. Our 2023 awardee, **Sachin Mandavgane**’s work on agricultural residue management illustrates this approach vividly. Every year, India generates enormous quantities of post-harvest residue, much of which is burnt in fields because farmers lack accessible alternatives. The consequences include air pollution, carbon emissions, and wasted resources.

Mandavgane’s team at the Visweswaraya National Institute of Technology, Nagpur, developed an enzyme formulation from a unique indigenous bioculture. Named ‘*Surabhi*’, this enzyme digests agricultural residues, transforming them into valuable products. It catalyses biomass degradation, improves composting, and enhances fodder quality, even leading to increased milk production in cattle. *“Surabhi improves the nutritional value and digestibility of dry fodder, resulting in better milk quantity and quality”*, Mandavgane explains.

Mandavgane recalls the case of a farmer from Beed District in Maharashtra whose three buffaloes were fed with Surabhi-treated fodder. *“Their combined milk yield increased from 15 litres*

to 17 litres, along with an improvement in fat and SNF content. Beed is a rain-shadow district where many marginal farmers depend heavily on cattle-rearing for livelihood. **Seeing a farmer earn additional income through improved milk production was deeply satisfying and emotionally rewarding for me**", he adds. Equally meaningful for the team was seeing improvements in the health of hundreds of abandoned cattle fed with Surabhi-treated fodder at a rescue facility, demonstrating how scientific innovations create benefits that extend beyond the original objectives.

The theme of harnessing natural biological processes also lies at the heart of our 2025 awardee **Senthil-Kumar Muthappa's** research at BRIC-NIPGR. In southern India, a combination of **drought** and **dry root rot disease** is causing devastating losses in **chickpea farming**. Rather than relying solely on conventional interventions, his team is exploring how **beneficial microbes** can strengthen plant health, improve nutrient uptake, and suppress pathogens. By **engineering the microbial communities surrounding chickpea roots**, the project seeks to build resilience directly into the crop's growing environment, harnessing the strength of agriculture's powerful microscopic allies.

Similarly, in the higher Himalayas, **Himanshi Jangir**, our 2024 grantee is pursuing another biologically inspired pathway. Her project proposes using **nano-pyrites** to reduce dependence on synthetic fertilisers while improving potato and fodder production in remote mountain communities. Nanopyrites – engineered nano-biostimulants derived from natural pyrite (FeS₂) – are extensively studied as eco-friendly plant hormone

regulators. After the first field trial, nanopyrite treatment has demonstrated an **18.2% increase in potato production**, alongside better germination, length, and density in fodder crops in the study area. She also adds, *"for the first time in several years, farmers in the Kumaon region of higher Himalayas grew potatoes without synthetic fertilisers!"*

Encouraging farmers to grow nanopyrite-primed fodder crops alongside their main crops in waste/fallow lands, will help them have ready access to green fodder for their cattle. This is especially helpful in the higher Himalayas, where women have to travel long distances during the winter months to collect green fodder. As Jangir notes, **this project could help reduce this severe workload on women, creating opportunities for them to devote time to family, education, and other pursuits.**

Designing resilience into agricultural systems

Each of these innovations addresses specific farming challenges, but long-term agricultural resilience ultimately depends on sustainable agroecosystem-level design. Our 2024 awardee, **Shahid Rasool's** work at the CSIR-Indian Institute of Integrative Medicine, Jammu, on **integrating lavender cultivation and apiculture within high-density apple orchards in Kashmir**, perfectly embodies this agroecological approach. By combining multiple production systems within a single landscape, the project creates **diverse revenue streams while enhancing ecological sustainability**. Preliminary findings from the study indicate **reduced pest incidence in intercropped apples**,

“A simple innovation unlocked entirely new value chains, making these farming systems resilient to economic and environmental shocks.”

improved pollination services, greater input-use efficiency, and new commercial opportunities through products such as lavender oil, dried lavender flowers, mono-floral apple honey and lavender honey. This project demonstrates how a simple innovation unlocked entirely new value chains, making these farming systems resilient to economic and environmental shocks.

The same systems perspective informs the work of **Arindam Chakrabarty**, our 2025 awardee, whose **degradable, coated kraft paper** offers an environment-friendly alternative to conventional plastic mulches, integrating **sustainability into farming practices**. Plastic mulching has helped farmers conserve moisture, suppress weeds, and improve crop performance. Yet it also generates persistent waste and contributes to microplastic pollution. Chakrabarty's innovation seeks to retain the agronomic benefits of mulching while eliminating its environmental costs from the farming system. Field trials with the kraft paper mulching sheets have shown moisture retention comparable to plastic alternatives, while



gradually degrading and dissolving into the soil. This work represents the next generation of agricultural innovation — solutions that improve productivity while reducing environmental burdens.

A shared vision

Viewed individually, each of these projects seem to address a distinct challenge. But together, these projects illustrate a future in which agriculture becomes increasingly predictive rather than reactive; biological rather than extractive; diversified rather than vulnerable; and sustainable rather than resource-intensive. They show how innovations developed in laboratories can evolve into technologies, enterprises, advisory systems, and farming practices that directly benefit small/marginal farmers, making them resilient to uncertainties. And, in a world where uncertainty is becoming agriculture's defining challenge, resilience is the most important harvest SreePVF hopes to cultivate through its investments in agricultural innovation.

Grantee Milestones & Outreach

A snapshot of the milestones, recognition, and public reach of our grantees' research

अमृतं गमय

Awards & Recognition



Vidita Vaidya

Vice chair and organiser for Gordon Research Conference (GRC) on Neurobiology of Psychedelics held at Rhode Island, USA held in July 2025, and also selected as the Chair for the GRC Conference to be held in 2027.



Gopinath Packirisamy

Rajib Goyal Prize for Young Scientists for the 2023–2024 award cycle in the category of Applied Science presented by Kurukshetra University, Haryana



Vandana Sharma

Woman Technologist of the Year, IEEE-IC Award 2025 for the Development of 3D Vein Viewer, IIIT Bangalore

Young Scientist Award in National Physicists Conclave-2024 (NPC-2024) for developing a medical devices, held at SRM University





Ambarish Ghosh

Received the **2026 IADR Innovation in Oral Care Award** instituted by the The International Association for Dental, Oral, and Craniofacial Research (IADR), USA.



Jagadis Gupta Kapuganti

Received the **Rashtriya Vigyan Puraskar: Vigyan Yuva, Shanti Swarup Bhatnagar Award**, conferred by the Hon'ble President of India



Received the **Tata Transformation Prize 2025** in the Healthcare category for his work on magnetic nanorobots in precise drug delivery, advancing the frontiers of cancer therapy.



Fruvetech Pvt. Ltd., a start-up founded by the awardee has won the **2025 TATA Social Enterprise Challenge**, emerging as a winner from among 15000+ start-ups.



Received the **Chaudhary Charan Singh – Krishi Udyami Award 2025** from Kisan Trust



P Lavanya Kumari

Won the **Best Scientist Award in Agriculture** at ANGRAU, Tirupati, in 2023.



Sailaja Banda

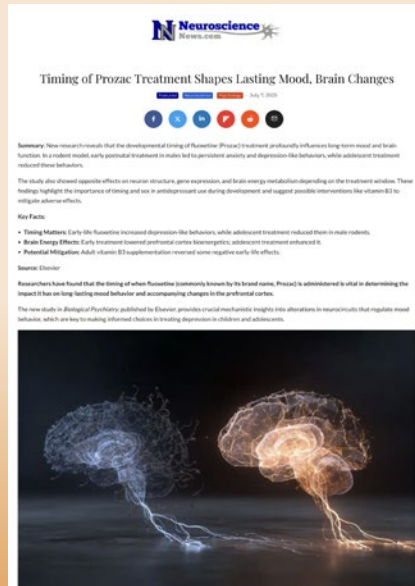
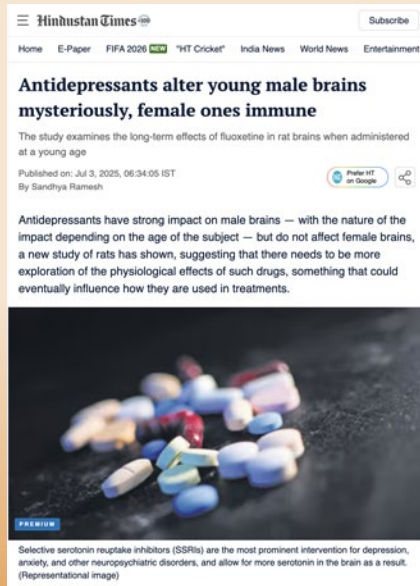
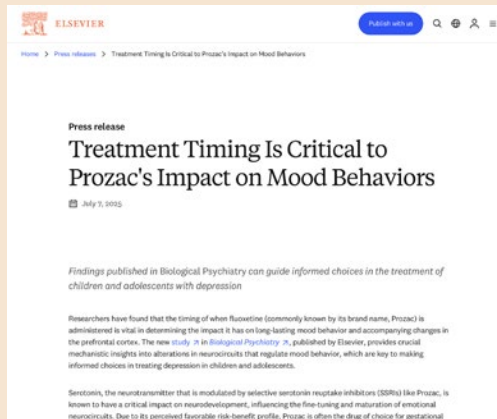
Received the **Outstanding Achievement Award** from the **Science & technology for Integrated Rural Improvement (SIRI) Society**, during the PAHAADI- 2025 conference organised at Dhanbad, Ranchi in 2025.



Media Reach

Vidita Vaidya

Vidita and team published their study examining the long term effects of Prozac treatment when administered at different development timings in patients. This study was featured in various national and international press releases.



Vandana Sharma

The Compact Vein Viewer funded by SreePVF was featured in English and Telugu media, reflecting interest in its development and possible healthcare applications. This coverage provided broader visibility to the device and its potential role in assisting venous access procedures.



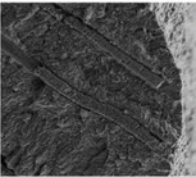
Ambarish Ghosh

Ambarish Ghosh and team’s work on CALBOTS – magnetic nanorobots that help treat dental hypersensitivity has made it to several national and international science news headlines.

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Magnetically guided nanobots for tooth sensitivity relief

by **Rashmi Nish** — 11 months ago in Science News



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Sensitive teeth need tough toothpaste, but technology can also help. Researchers at the Indian Institute of Science (IISc) in collaboration with deep-tech startup TheraNautus have now engineered CalBots – magnetic nanobots that can penetrate deep into dental tubules, which are tiny tunnels in teeth that lead to nerve endings. These CalBots can then form durable seals for worn enamel.

REFRACTOR

Tooth sensitivity could be cured by putting robots in your mouth

By Ben Cassworth
August 16, 2025 09:31 am



A microscope image of compromised dental tubules that have been protectively plugged by the CalBots. Shantanu Podd, Dhiren Deshpande

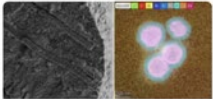
Having hypersensitive teeth can be quite the hassle, making it painful to consume hot, cold, sweet and/or acidic foods and beverages. Tiny new “robots” are here to help, by permanently plugging tunnels in the teeth for less discomfort.

Building upon a previous study, the nanoscale “CalBot” robots are being developed by scientists at the Indian Institute of Science’s Centre for Nano Science and Engineering (CeNSE). Each of the bots is in fact a 400-nanometer-wide magnetic iron oxide nanoparticle, which is doped with a proprietary calcium silicate-based bio-ceramic material.

THE TIMES OF INDIA

IISc, startup develop magnetic nanobots to treat tooth sensitivity

Chethan Kumar / TNN / Aug 12, 2025, 17:05 IST



BENGALURU: For millions of people, the sudden, sharp pain of tooth sensitivity can turn a sip of cold water into a jolt. Now, researchers at the Indian Institute of Science (IISc), in collaboration with Bengaluru-based deep-tech startup TheraNautus, have engineered “CalBots” – magnetic nanobots that can seal the problem at its source.

As per IISc, CalBots are 400-nanometre particles loaded with a calcium silicate-based bio-ceramic formula, designed to travel deep inside dental tubules, the tiny tunnels in the tooth that lead to nerve endings.

Guided by an external magnetic field, the bots can penetrate up to 500 micrometres into the tubules and self-assemble into stable, cement-like plugs that recreate the tooth’s natural barrier. One application, the team says, can offer lasting relief.

Dental hypersensitivity affects nearly one in four people worldwide and occurs when enamel erosion or gum recession exposes the dentine layer beneath, IISc said. The tubules in dentine act as direct pathways to the

Jagadis Gupta Kapuganti

Jagadis Gupta Kapuganti & team’s work on Shelf-life Enhancer has been featured across several video media channels and newspapers, supporting the dissemination of the technology and awareness.

ENG ALL STORIES ABOUT US BRAND CAMPAIGNS ADVERTISE WITH US OUR IMPACT

Scientist's Low Cost Innovation Extends Shelf-Life of Fruits & Veggies up to 10 Days

Jagadis Gupta Kapuganti, a scientist at the National Institute of Plant Genome Research has innovated a 'shelf life enhancer' for fruits and vegetables to prevent rotting and wastage.

By Rashmi Mathurkumar
09 Sep 2025



CURFUE OUR FOOD OUR ENTERTAINMENT OUR ENVIRONMENT GeonConnection OUR HER

An innovative device that enhances the shelf life of fruits and vegetables, and promises to boost farmers' income

A New Energy Efficient And Cheap Device Developed By Indian Scientists Can Address The Problem Of Postharvest Losses In India. This Device Increases The Shelf Life Of Fruits And Vegetables, And Unlike The Cold Storage Units That Are Affected By Power Cuts, This New Device Can Function On Solar Energy.

Shivani Gupta August 13, 2021



YouTube

INDIA'S STARTUP ECOSYSTEM

PERSPECTIVE More than 100 startups have joined the Unicorn club so far



Sachin Mandavgane

Sachin Mandavgane's research on valorisation of agri-residues have been featured in both regional and national newspapers. The field trials of the team's patented enzyme 'Surabhi' have also been of wide interest in science columns in newspapers.

From potato peels to national impact: Dr Mandavgane redefining sustainable engineering

India's First Centre of Excellence in Agri-Waste Utilization has been established in the name of Sachin Mandavgane.

Dr Sachin Mandavgane, a leading expert in the field of sustainable engineering, has been awarded the title of 'National Engineer of the Year' for his pioneering work in the valorisation of agri-waste. His research has led to the development of a patented enzyme, 'Surabhi', which has the potential to revolutionize the agri-waste management industry.

The enzyme 'Surabhi' is a natural product that can be used to break down agri-waste into valuable products. It has been found to be effective in breaking down a wide range of agri-waste, including potato peels, sugarcane waste, and other agricultural by-products. The enzyme is also safe for the environment and can be used in a variety of applications, including food processing, animal feed, and biogas production.

Dr Mandavgane's work has been recognized by the government and the industry alike. He has been awarded several awards and honors, including the 'National Engineer of the Year' award. His research has also been featured in several national and international newspapers and magazines.

Dr Mandavgane is currently working on further developing the 'Surabhi' enzyme and exploring its potential in other areas of agri-waste management. He is also working on developing a commercial-scale production process for the enzyme.

महाराष्ट्र टाइम्स | २० ऑगस्ट २०२५

कीर्णअणयटीच्या 'सुरभी' ने वाढविला दुधाचा दर्जा

मल | २० ऑगस्ट २०२५

कीर्णअणयटीच्या 'सुरभी' ने वाढविला दुधाचा दर्जा

कीर्णअणयटीच्या 'सुरभी' ने वाढविला दुधाचा दर्जा. याबाबतचे वृत्त माहितीसाठी या लेखाचा अभ्यास करा. या लेखात याबाबतचे संपूर्ण वृत्त दिले आहे. या लेखात याबाबतचे संपूर्ण वृत्त दिले आहे. या लेखात याबाबतचे संपूर्ण वृत्त दिले आहे.

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Commercial tag for VNIT tech to enhance milk yield

Sarfraz Ahmed
@timesofindia.com

Nagpur: The first commercial technology that increases milk yield and the nutritional value of fodder developed at the Merino Innovation Center run by Vissvesvaraya National Institute of Technology (VNIT), was officially launched on Thursday. The technology commercialisation agreement was signed between Premal Patel, director of VNIT, and Prakash Lohia, chairman and managing director of Merino Industries.

In 2009, VNIT and Merino Industries entered into a Memorandum of Understanding to foster institute-industry collaboration, leading to the establishment of the Merino Innovation Center at VNIT. So far, the centre has developed nine technologies ready for commercialisation, and these will be introduced in the market gradually," said professor Sachin Mandavgane, the centre coordinator.

One of these nine innovations, a product named 'Surabhi', which enhances the digestibility of dry fodder for dairy animals, was handed over to Marathwada Milk Producer Company Ltd. This company, active in 19 districts of Maharashtra and Vidarbha, works with over 3,000 villages and 35,000 women farmers, informed its CEO Shivkumar Patil. Niranjana Marathe from Merino stated that this high-quality Surabhi product will be manufactured and distributed in the market by Merino Industries.

The 'Surabhi' formula has been granted a patent. "Research showed that using just 2.5 grams of Surabhi with five kilograms of dry fodder significantly increases milk yield and the nutritional value of fodder," said Sanjay Gorant, director of the programme.



Centre of excellence for agri waste management at VNIT

In recognition of the Merino centre's contribution to research, the Department of Science and Technology (DST), Govt of India, awarded India's first Centre of Excellence (CoE) in the field of Agri-Waste Valorization at VNIT.

The CoE collaborates with institutions like IARI (New Delhi), AIMS Nagpur, IM Nagpur, and veterinary colleges of Nagpur and Akola. The centre was named 'SWAMA', and its official logo was unveiled.

along with the foundation stone laying for the proposed centre, led by Prakash Lohia. The event held at VNIT's boardroom was graced by dignitaries including dean of research, professor Yashwant Katpatia, associate dean of innovation, professor Ravindra Keskar, professor Marathi Kulkarni, professor Kailas Vasavkar, Suresh Nipane (Livestock Development Officer, Bhandara), professor SR Sorpatne, and others.

Shahid Rasool

Shahid Rasool & team's work on introducing a "warm womb" protocol to allow migratory honey bees (*Apis mellifera*) to survive the sub-zero winters of Kashmir, has been featured in The Hindu. Additionally, the team's work on intercropping lavender in apple orchards that resulted the production of lavender honey was also featured earlier in the year.

THE HINDU

HOME | SCI-TECH | ENVIRONMENT

In a first, migratory honey bees get 'warm womb' to stay back in winters in Kashmir

The Council of Scientific and Industrial Research-Indian Institute of Integrative Medicine (CSIR-IIIM), Pulwama, has been working on climate resilient honeybees to allow beekeepers to avoid having to transfer them to the plains to survive the winter

Updated - April 19, 2024 01:01 pm IST - Srinagar

PEERZADA ASHQU

READ LATER



Scientists at the Council of Scientific and Industrial Research-Indian Institute of Integrative Medicine (CSIR-IIIM), Pulwama, have created a new protocol to raise honey bees in sub-zero temperatures in Kashmir for the first time | Photo credit: Imran Nisar

A new set of protocols and scientific intervention in honey bee farming in Jammu and Kashmir will finally allow beekeepers to rear colonies in sub-zero temperatures, instead of physically migrating hives to the plains for around six months with reported 30% mortality. As its spinoff, Kashmir has also recorded its first mono-floral apple honey.

On January 29, when the Kashmir Valley was under a layer of snow, the Council of Scientific and Industrial Research-Indian Institute of Integrative Medicine (CSIR-IIIM), Pulwama, invited around 200 orchardists to the

SPOTLIGHT

Peerzada Ashiq

The science of beekeeping is the science of survival. In the heart of Kashmir, where winters are harsh and long, the science of beekeeping is a matter of life and death. For the past few years, a team of scientists from the Council of Scientific and Industrial Research-Indian Institute of Integrative Medicine (CSIR-IIIM), Pulwama, has been working on a project that could revolutionize the honeybee industry in Kashmir. They have developed a new protocol to raise honey bees in sub-zero temperatures, a first for the region. This protocol, known as the 'warm womb' protocol, allows honey bees to stay in their hives during the winter months, instead of being moved to warmer regions. This is a significant breakthrough for the honeybee industry in Kashmir, as it allows beekeepers to rear colonies in sub-zero temperatures, instead of physically migrating hives to the plains for around six months with reported 30% mortality. As its spinoff, Kashmir has also recorded its first mono-floral apple honey.

Honey on high

In Kashmir's Pulwama, the CSIR-IIIM is producing India's first mono-floral lavender honey, a kilogram of which sells for up to 160,000. Soon, India may join the highest-end international lavender honey market.

The scientists began testing the honey for high-end properties. Developed under the flagship CSIR technology mission, the product is poised to lead the market for functional foods and nutraceuticals. The honey has medicinal properties and is a proven mood enhancer and sleep inducer. Lavender honey has therapeutic and medicinal value. It boosts immunity and acts as a natural remedy for many diseases. The places lavender has been cultivated since the 1970s, after importing it from Bulgaria. In 2014, when lavender plantation picked up in pockets of Jammu and Kashmir, the honey industry began to grow. Cultivated over 750 hectares of land across various areas of Jammu and Kashmir, over 1,000 farmers have already started growing lavender.

Lavender is a non-native species of aromatic plant in Jammu and Kashmir. Dr. Hira Hussain, an agricultural scientist from Kashmir, observed an increase in the yield of lavender honey in the region. She observed that the honey produced in the region was of a higher quality than the honey produced in other regions. She observed that the honey produced in the region was of a higher quality than the honey produced in other regions. She observed that the honey produced in the region was of a higher quality than the honey produced in other regions.

कृषी सोबती

पुणे, बीड | दिनांक २० ऑगस्ट २०२५

कृषी विज्ञान केंद्रात दुग्ध उत्पादन वाढीसाठी सुरभी पाचक सत्वाचे यशस्वी प्रात्यक्षिक



कृषी विज्ञान केंद्रात दुग्ध उत्पादन वाढीसाठी सुरभी पाचक सत्वाचे यशस्वी प्रात्यक्षिक. याबाबतचे वृत्त माहितीसाठी या लेखाचा अभ्यास करा. या लेखात याबाबतचे संपूर्ण वृत्त दिले आहे. या लेखात याबाबतचे संपूर्ण वृत्त दिले आहे. या लेखात याबाबतचे संपूर्ण वृत्त दिले आहे.

Communication Initiatives

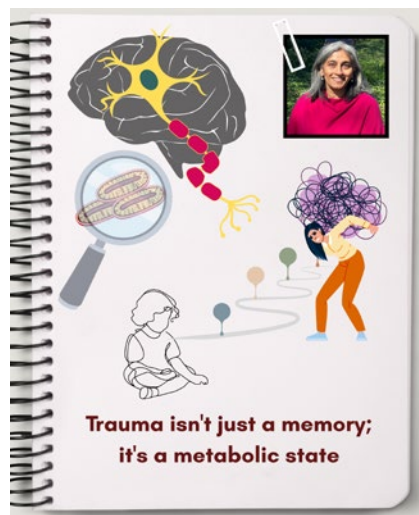
The Digital Dialogue: Summary of social media engagement strategies

The #WhyItMatters Series

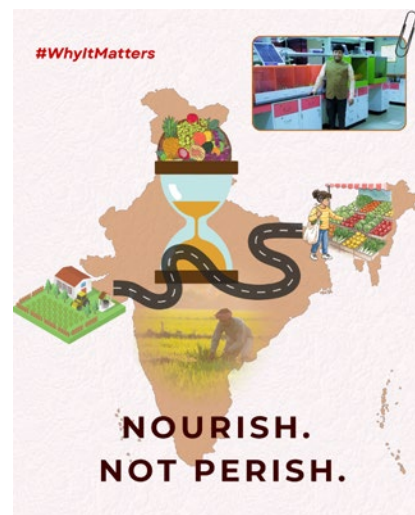


In an effort to bridge the gap between the high-impact translational research of our awardees and public awareness

of **#WhyItMatters**, we launched a dedicated campaign to decode complex, translational research projects into accessible stories of real-world change. By focusing on the tangible outcomes of our grantees' work, the series highlights how ideas move from the lab to the field, directly impacting agriculture, medicine, and public health. This page showcases some of the projects featured in this on-going campaign. For more such content please visit our LinkedIn Page:



This post featured Vidita Vaidya's work identifying a **novel nutritional and metabolic lead** – Nicotinamide [a water-soluble form of Vitamin B3] – with the potential to reverse the neurological signatures of early-life stress



This post featured "**Shelf Life Enhancer**", developed by Jagadis Gupta Kapuganti & team, that regulates the fruit ripening pathways and ensures that harvest remains fresh during transport, storage, and sales, thereby helping to stabilise the entire food supply chain for farmers, retailers, and consumers.



This post highlighted Vandana Sharma & team's work on **3D Vein Viewer**, a compact device that maps out the vein network under the skin, making intravenous access easier for healthcare practitioners and allowing better comfort for patients.

The #ResearchUpClose Series

Demystifying deep science requires breaking it down into its core components. Utilising interactive 4-to-5-page carousels, our **#ResearchUpClose** campaign on LinkedIn, walked our audience step-by-step through the fundamental mechanics of each funded project — explaining exactly what the researchers set out to do, how their methodology works, and the science driving their concepts forward. Below are a few of the projects that were showcased in this campaign [access through QR codes provided]:



Arindam Chakrabarty's group has developed a **biodegradable kraft paper**

mulch with a coating that makes it stronger, and ideal for short-duration crops. The aim is to optimise and commercialise this product to enhance its adaptability among farmers.



Senthil Kumar Muthappa is addressing the twin threat of drought and dry root rot

disease in chickpea crops by turning to nature itself. Using a carefully **designed community of beneficial microbes**, including mycorrhizal fungi and rhizobacteria, they propose to strengthen chickpea roots.

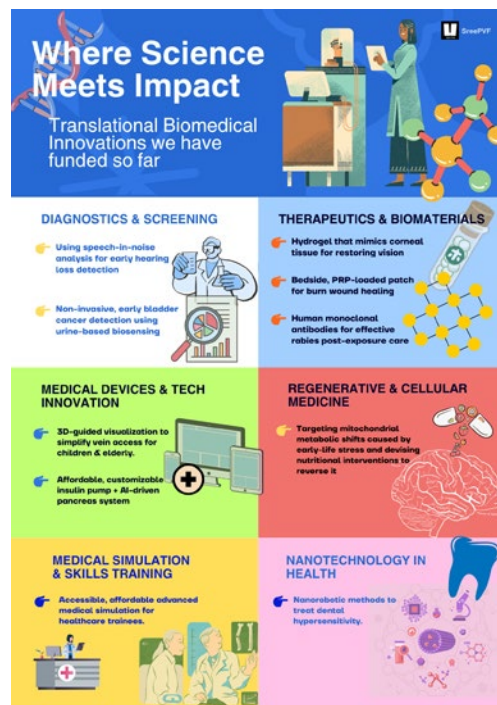


Jyotsnendu Giri is developing an **in situ-forming skin patch** that can be directly applied to burn

wounds. This patch promotes natural skin regeneration, and offers a personalised, affordable alternative to conventional grafts.

Mapping the Landscape: The #GrantsInsights Series

Transparency is important to foster a robust research ecosystem. The **#GrantsInsights** campaign on LinkedIn is for aspiring applicants and ecosystem partners. By opening up our funding archives, this series provides a clear picture of the thematic areas we prioritise. We believe this will help future applicants align their proposals with the Foundation's vision. On this page is an overview of the posts in this on-going series:



Understanding what a grant is truly designed to support can make all the difference. The simplest way to do that is to look at the work that has been funded before. This post distilled the translational biomedical research grants that the Foundation has funded so far — ranging from medical devices and diagnostics to regenerative solutions, digital health, and next-gen therapeutics. The common thread connecting all projects — science that moves beyond the bench to create real-world impact.



The Foundation's Translational Agriculture Science Research Grants is perhaps one of the only non-governmental funding programs in the country that supports last-mile agri-solutions designed to benefit small and marginal farmers. To help future applicants understand the scope of this grant, in this post, we highlighted the key innovation areas that the Foundation has funded since 2021, spanning AI-driven decision tools, crop and livestock health systems, sustainable production models, biodegradable farm inputs, and post-harvest technologies.

Our People

Meet the team that supports the Foundation's grant programmes and organisational activities

अमृतं गमय



Ponnari Gottipati

Head, Grants & Strategy

Ponnari Gottipati is a research management professional with over a decade of experience supporting life sciences research in India. She holds a PhD in Molecular Biology from the University of Sheffield, completed postdoctoral research at the University of Oxford, and previously worked at the DBT/Wellcome Trust India Alliance. She also serves as Associate Director – Research at LV Prasad Eye Institute, Hyderabad. She was recognised as a Young Emerging Leader through the U.S. Department of State's International Visitor Leadership Program (IVLP) and is a WomenLift Health Global Fellow.



Amit Das

Co-ordinator Agriculture Grants Review

Amit Das completed his doctoral degree from the CSIR–Centre for Cellular and Molecular Biology, Hyderabad, on molecular plant-microbe interactions. He later worked at the DuPont Knowledge Centre, Hyderabad, as a research scientist in Plant Biotechnology. Currently, he is the Director at an Agritech Startup based in Kolkata. In addition, he is also an expert in Nabard Consultancy Services (Nabcons), Kolkata.



Gayathri Sreedharan

Grants & Communications Associate

Gayathri Sreedharan completed her doctoral degree at the CSIR–Centre for Cellular and Molecular Biology, Hyderabad, where she studied the disease ecology of Chytridiomycosis in amphibian communities of the Northern Western Ghats. Driven by a keen interest in science communication, she subsequently worked as a science writer with Cactus Communications, and DBT/Wellcome Trust India Alliance, Hyderabad. She joined SreePVF to help establish the Foundation's communications efforts while supporting its grants management and stakeholder engagement activities.



We are grateful to the Almighty for guiding us on this journey and giving us the opportunity to give back to society in all spheres of Human Life...

SOCIAL RESPONSIBILITY

— Sudha & Nageswara Rao

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