Special Supplement 15 August 2025

Vigyan Setu e-magazine

Rising Stars of Viksit Bharat

Profiles of Scientists, Engineers & Cultural Custodians Transforming Bharat

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Contents

Vigyan Setu e-magazine is a quarterly, bilingual publication by **Vigyan Setu Foundation** that bridges the gap between science and society. Curated with creativity, curiosity, and critical thinking, this e-magazine features insightful articles, creative expressions, and real-world applications of science, technology, and innovation. It aims to nurture scientific temper, celebrate young minds, and spotlight emerging researchers whose work is shaping a sustainable future.
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Editorial

Illuminating Path to *Viksit Bharat*: Honouring the Rising Stars of a New Era

As India strides confidently into the *Amrit Kaal*, the vision of *Viksit Bharat @2047* is steadily transforming from aspiration to action. This transformation is not only driven by policy reforms and economic ambition but is equally shaped by the individuals who, through their passion, purpose, and perseverance, are scripting a new narrative of national development.

This special supplement of Vigyan Setu e-magazine, titled "**Rising Stars of Viksit Bharat**," is a tribute to such extraordinary individuals—emerging leaders who are reshaping India's scientific, educational, cultural, and social landscape. Their contributions span from rural classrooms to high-tech labs, from environmental conservation to science communication, from heritage preservation to public health advocacy. These changemakers exemplify the spirit of a nation on the rise—anchored in values, driven by knowledge, and committed to inclusive progress.

What unites them is not just their pursuit of excellence, but their conscious choice to serve. They have taken the road less travelled—one that connects innovation with inclusion, intellect with integrity, and science with society. In their journeys, we see not only personal achievement, but the impact of knowledge used as a force for good.

From the deserts of Rajasthan to the forests of the Western Ghats, from the academic corridors of Indian universities to international research centres, these Rising Stars illuminate a broader vision of India's growth—one where the nation thrives through grassroots empowerment, scientific curiosity, and civic responsibility. They are teachers mentoring the next generation, researchers developing solutions for local challenges, conservationists preserving our biodiversity, and storytellers bringing science to the people.

As India approaches its 100th year of independence, it becomes clear that *Viksit Bharat* is not a future to wait for—it is a present being shaped by the dedication of individuals like those we honour in this edition. Their work

demonstrates that nation-building is not confined to grand infrastructure or government schemes. It lives in the classrooms they energize, the communities they uplift, the youth they inspire, and the knowledge they share.

This supplement is more than a celebration; it is a call to action. It invites educators to nurture creativity, scientists to innovate for society, institutions to foster inclusion, and citizens to support and recognize those who light the way forward. These Rising Stars are not just points of inspiration—they are beacons guiding our collective journey to a just, enlightened, and empowered India.

At *Vigyan Setu Foundation*, we remain steadfast in our mission to bridge the gap between science and society. By honouring these young leaders, we reinforce our commitment to fostering a culture where knowledge is accessible, innovation is inclusive, and societal progress is a shared goal.

Let the stories within these pages spark curiosity, ignite ambition, and instil hope. Let each reader find in them a reason to contribute—whether through teaching, mentoring, researching, volunteering, or simply by recognizing the quiet heroes among us.

In celebrating these Rising Stars, we celebrate the very essence of *Viksit Bharat*—a nation built not by a select few, but by the combined strength of millions of thoughtful, compassionate, and courageous individuals. The future is not just near; it is already unfolding—and these stars are lighting its path.

Onward, together, to a *Viksit Bharat*.

Jai Vigyan!! Jai Anusandhan!!

Jai Hind!!

Dr Amit Kumar Sharma
Education Assistant,
Nirbhaya Science Museum, New Delhi

Amit Kumar Sharma is a passionate science communicator and government Education Assistant at the Nirbhaya Science Museum in New Delhi. With over six years of experience, he plays a dynamic role in promoting scientific curiosity and museum-based education. He serves as a National Resource Person and Master Trainer for NEP 2020 and Learning Outcomes (NCERT), mentoring educators and creating engaging educational resources, including school museum corners and audio-visual content.

As a Zonal Coordinator for VIPNET Science Clubs (Vigyan Prasar), Amit fosters scientific temper among students and communities. His contributions have earned him accolades including the Best Educator Zonal Award (2011), Nigam Award (2017), and Platinum Category Club recognition at the national level.

Amit is also actively associated with several national and international scientific initiatives. He has represented India at the World Teachers' Congress in Bangkok and multiple editions of the India International Science Festival (IISF), contributing to Guinness World Records events. He has engaged with ISRO and NASA through collaborative educational programs and is a known Astronomy Resource Person.

Beyond formal education, he serves as an *Aahar Kranti Mitra*, Citizen Scientist, and supports environmental and sustainable development goals through UNESCO-linked initiatives.

Amit Kumar Sharma: Igniting Scientific Curiosity in Young Minds and Society

In a world often swept up in the chaos of technological revolutions and the rush toward development, few individuals manage to tether science to society in a way that is not only meaningful but transformative. Amit Kumar Sharma, Mentor and Zonal Coordinator with the Education Department of the Municipal Corporation of Delhi (MCD), is one such individual. A teacher, a researcher, a citizen scientist, and a passionate science communicator—his life story reads like a tapestry woven with purpose, perseverance, and a profound belief in the power of education.

From humble beginnings to becoming a nationally recognized name in environmental science and astronomy outreach, Dr Sharma's journey is a testament to what it means to be a visionary educator in 21st-century India. His efforts go beyond the classroom, stretching into communities, scientific institutions, and even the international arena.

Early Spark and Educational Commitment

Born on July 10, 1979, Amit Kumar Sharma's innate curiosity about the natural world was apparent from a young age. However, it wasn't until he entered the realm of teaching that this curiosity matured into a calling. His professional trajectory gained significant momentum when he joined the Education Department of MCD Delhi. Over time, he evolved from a conventional educator to a Mentor appointed by the State Council of Educational Research and Training (SCERT), Delhi. Since 2018, he has served in this influential capacity, guiding educators, supporting curriculum development, and inspiring a scientific outlook among both teachers and students.

His designation may suggest administration, but his work is rooted deeply in action and field engagement. As a Zonal Coordinator for science clubs affiliated with Vigyan Prasar, under the Ministry of Science and Technology, Sharma has mobilized a generation of young learners to not just study science but experience it.

Science with Purpose: Contributions that Matter

Dr Sharma's areas of expertise—Environmental Science, Astronomy, and Education—are not just academic disciplines for him but active channels through which he connects knowledge with people. He is a national resource person for flagship professional development programs, including modules on the National Education Policy (NEP) 2020 and learning outcomes by NCERT. Through these roles, he has played a crucial part in shaping how science is taught and understood at the grassroots level.

His contributions are both diverse and dynamic. He has led telescope-making workshops and organized sky-watching camps to demystify celestial events for students and local communities. These are not one-off events but part of a larger vision: making science a living, breathing subject that resonates with everyday life. His educational interventions on environmental issues have ranged from poster and drawing competitions to skit performances, rallies, and plantation drives—all designed to trigger awareness and action.

In an era where science communication remains an underserved area, especially in schools, Sharma stands out for his holistic and engaging approach. His work underlines the idea that science is not merely to be memorized but lived and shared.

Citizen Scientist: A Bridge Between Institutions and the Public

Perhaps the most inspiring aspect of Sharma's career is his role as a citizen scientist. Collaborating with reputed scientific organizations such as CSIR-NIScPR, ISRO, and NASA, he has expanded the boundaries of what is possible for a school educator. By participating in research dissemination, collaborative learning, and awareness campaigns, he plays an important dual role: contributing to data-driven science and translating that science into public knowledge.

Citizen science has often been touted as the future of inclusive research, and Dr Sharma has embodied this ideal. His involvement increases public trust in science and makes scientific inquiry more accessible. Moreover, through this participatory model, he reinforces the idea that science belongs to everyone—not just to labs or ivory towers.

Accolades That Speak Volumes

Recognition has followed Mr. Sharma at every step, not because he sought it, but because his work demanded it. Some of his notable honours include:

- Best Educator Zonal Award (2011)
- Nigam Award (2017)
- Sarabhai National Science Award (2021)
- Platinum Category Award by Ministry of Science and Technology, Govt. of India
- *Rashtriya Navachari Shiksha Ratna Samman* (2022)

He has also been felicitated as an *Excellent Environment Friend* and works as an *Aahar Kranti Mitra*—a campaign aligned with nutritional and agricultural education.

Internationally, Sharma represented India at the 8th World Teachers' Congress in Bangkok under the guidance of the All-India Primary Teachers Federation (AIPTF), where he presented his views on integrating India's golden cultural heritage with modern educational policy. His voice has also reached global platforms like UNESCO, where he has represented Delhi in various conferences aligned with the Sustainable Development Goals (SDGs).

Furthermore, his leadership was instrumental in achieving three Guinness World Records during the India International Science Festival (IISF) 2020—an achievement that blends science, scale, and strategy.

The Pen as a Catalyst: Writing for Science Awareness

Dr Sharma's contribution to science communication is not limited to events or lectures. A prolific writer, he has penned numerous scientific poems and articles, especially focusing on astronomy and environmental issues. His works have been published in reputed science magazines such as:

- VIPNET Curiosity
- *Pragati Vigyan*
- Science Reporter
- Teachers Post
- *Shreshtha Matribhumi*
- *Kan-Kan Mein Vigyan*

Through his writing, Sharma offers bite-sized, relatable science to a broad audience, sparking curiosity among young readers and providing teachers with tools to enrich their pedagogy. His literary contribution adds depth to his work as an educator, proving that science and art can—and should—coexist in the realm of learning.

Impact Beyond Metrics: Building a Science-Driven Society

Impact is often measured in numbers—students taught, papers published, awards received. But Dr Sharma's true impact lies in the intangible: the minds he's ignited, the doubts he's dispelled, the curiosity he's awakened.

His initiatives—like workshops on telescope building, environment-centric art competitions, and the Green Good Deeds Campaign—don't just raise awareness. They embed scientific thinking into the culture of the schools and neighbourhoods he touches. As a moderator and national invigilator with VVM (Vidyarthi Vigyan Manthan), he evaluates and encourages scientific talent among youth across India.

He doesn't merely deliver science; he democratizes it.

Vision for the Future: Science for Swarnim Bharat

When asked about the road ahead, Amit Kumar Sharma speaks of *Swarnim Bharat*—a golden India built not only on economic might but on an intellectually empowered, environmentally conscious, and scientifically curious population.

His vision is to scale up citizen science projects, enhance interdisciplinary learning in schools, and integrate Indian traditional knowledge systems with cutting-edge modern science. He advocates for the broader inclusion of astronomy and environmental sciences in foundational education and wants to see every child not just understand science but use it to improve their world.

As the world hurtles toward a future shaped by AI, climate change, and space exploration, Sharma believes the key lies in preparing children not just as jobseekers but as knowledge-creators and thought-leaders. His futuristic outlook involves creating educational ecosystems where every teacher becomes a torchbearer of inquiry and every student a spark of innovation.

Conclusion: The Man Who Looks at the Stars and Plants Trees

Amit Kumar Sharma's life is a beautiful paradox—he gazes at the stars through telescopes yet keeps his hands busy planting trees. In him, the macro meets the micro, the cosmic connects with the civic, and the academic merges with the emotional. He reminds us that science is not a subject but a way of life—a journey of asking questions, seeking answers, and sharing discoveries.

His work serves as a model for educators, policymakers, and citizens alike, proving that one individual can indeed inspire a culture of science and sustainability. In a *Viksit Bharat*, where scientific thinking must be the foundation of growth, mentors like Amit Kumar Sharma are not just educators—they are nation builders.

Arpit Kumar

Scholar | Innovator

Arpit Kumar is an undergraduate student at the Manipal Institute of Applied Physics, MAHE, and an emerging innovator in water science and environmental technology. As Founder and Director of Navmarg Research and Innovation Pvt. Ltd., Arpit has led the development of advanced arsenic removal technologies, including a patented magnetic filtration device now included in the Ministry of Jal Shakti's list of recommended technologies. His startup is incubated at FITT–IIT Delhi, NSRCEL–IIM Bangalore, and MUTBI–MAHE.

Arpit's pioneering research focuses on molecular magnetism, fluid-contaminant interaction modelling, and smart water sensors, tackling groundwater toxicity affecting millions. He has secured over ₹40 lakh in public and private funding and has been honoured nationally and internationally—including awards from Samsung, Tata SE Challenge, Hult Prize, FKCCI, and AIM–ICDK. His projects have been supported by UNICEF, ICICI Foundation, and PHED Bihar.

An invited speaker at national and international water and innovation forums, Arpit combines scientific rigor with societal relevance. His journey, from *Bihar Bal Bhawan Kilkari* to global platforms, reflects the true spirit of Viksit Bharat—where grassroots science meets global impact. Through his work, he is transforming innovation into access, especially for the underserved.

Lighting a Path to Safe Water: Arpit Kumar's Journey from Local Innovation to Global Impact

In the pursuit of a Viksit Bharat, the stories of young innovators like **Arpit Kumar** exemplify what it truly means to bridge science and society. At just 20 years old, Arpit is already a multi-patented inventor, a founder of a cleantech startup, and a nationally recognized changemaker transforming the way India addresses one of its most pressing public health challenges—**groundwater contamination**, especially **arsenic toxicity**.

Born in **Patna, Bihar**, Arpit's early exposure to environmental issues came not from textbooks, but from the lived reality of the people around him. Access to clean water was not just a policy problem; it was a daily crisis. Fueled by curiosity and compassion, his scientific journey began in the labs of **Bihar Bal Bhawan Kilkari**, where he engaged in grassroots research from as early as his school days.

From Science Clubs to National Recognition

Arpit's talent was first recognized during science fairs and innovation competitions, including the **Inspire Award MANAK**, **IRIS National Fair**, and the **National Children's Science Congress**, where his ideas around arsenic sensing and removal earned him accolades and mentorship. He received the **Crown of Kilkari (Sarvashreshth Balak)** in 2017, a recognition that would mark the beginning of his deeper involvement in state-supported R&D projects.

By the time he completed school, he had already filed and won multiple national patents—his first breakthrough being an **"Improved Magnetic Filtration Device for Arsenic Removal from Drinking Water"**, developed under the guidance of the Department of Education, Government of Bihar, in collaboration with UNICEF and PHED Bihar. The device, which removes arsenic species using **molecular magnetism**, has been field-tested across high-risk arsenic zones, with a staggering 99.5% reduction in contamination levels over 300 cubic meters of water.

The Scholar-Innovator

Now pursuing a B.Sc. (Hons) in Physics at the **Manipal Institute of Applied Physics, MAHE**, Arpit is integrating computational chemistry, molecular dynamics (LAMMPS, GROMACS), fluid modelling, and real-time sensing into his research arsenal. His research interests include **fluid–contaminant interaction modelling, sensor-based bio surveillance systems**, and **applied water science**, blending theoretical rigor with pragmatic utility.

He has interned and trained at prestigious institutions like **CSIR–IICT Hyderabad** and **CSIR–CSIO Chandigarh**, gaining exposure to membrane technologies, infrared systems, and instrumentation algorithms—tools he would later apply in his own patented innovations.

From Lab to Market: Navmarg Research and Innovation Pvt. Ltd.

What distinguishes Arpit is his clarity of purpose—to **translate lab-level innovations into field-ready solutions**. In 2023, he co-founded **Navmarg Research and Innovation Pvt. Ltd.**, a DPIIT-recognized cleantech startup addressing heavy metal and microbial contamination through next-gen technologies. Navmarg is incubated at **FITT–IIT Delhi**, **NSRCEL–IIM Bangalore**, and **MUTBI–MAHE**, making it one of the few deep-tech startups born from a school-level R&D lab in Bihar and now thriving across India's top innovation hubs.

The company's technologies include:

- **METAL®**: A patented magnetic arsenic removal device, now recommended under the **Jal Jeevan Mission** by the Ministry of Jal Shakti.
- **IoT-Enabled Modular Device**: A real-time, in-line water monitoring system currently at TRL 4, designed for remote and predictive biosurveillance.
- **Contactless Infrared Badge**: Developed during the COVID-19 pandemic, the device monitors temperature and distance and has reached TRL 7.

Navmarg's impact is not theoretical—it is measurable in **millions of litres of clean water**, lives protected from arsenic toxicity, and the empowerment of low-resource communities.

Recognitions, Awards, and Global Platforms

Arpit's work has earned recognition at both national and global levels.

In 2024 alone, he was awarded:

- **Winner, Samsung Solve for Tomorrow** – Selected from over 6,000 teams, securing ₹50 lakh incubation grant.
- **1st Runner-Up, TATA Social Enterprise Challenge 2024**, IIM Calcutta.
- **Winner, SmartIDEAthon 2024** – Won ₹2 lakh and a two-week **immersion program at Northeastern University**, USA.
- **Hult Prize Global Finalist**, SDA Bocconi & IIT Bombay – Represented India among 65 international teams.
- **Winner, FKCCI MANTHAN 2024**, TiE U Pitchfest, and **AIM-ICDK Water Innovation Challenge** – Validating both technological strength and entrepreneurial vision.

He was also a **Campus Founder** under NSRCEL, IIM Bangalore, receiving a ₹5 lakh grant and business mentorship, and was selected by **DTU Skylab, Denmark**, for the **Next Generation Digital Action Program**, where he exhibited Navmarg at the Digital Tech Summit in Copenhagen.

Contributions Beyond Innovation

Arpit's leadership extends to **education, scientific writing, and peer review**. He is a Certified Peer Reviewer from Clarivate's Web of Science and has authored multiple research papers and book chapters on arsenic mitigation, molecular filtration, and water remediation technologies. His work is published in **AIMS Electronics**, **Environmental Science & Pollution Research**, and **Elsevier's compendium on MOFs in wastewater treatment**.

He has also presented his work at the **International WASH Conference**, **IIT Dhanbad's Chemists' Convention**, and workshops organized by **Rotary International**, **EAWAG Switzerland**, and **Geological Survey of India**.

A life member of the **Magnetic Society of India**, and student member of the **American Chemical Society**, **Royal Society of Chemistry**, and **HWTS Network**, Arpit is part of a global ecosystem of innovators and thought leaders in water science.

Legacy and Vision

At the core of Arpit's journey lies a deeply personal mission: **to democratize access to safe water**. Growing up in Bihar, he saw firsthand how arsenic toxicity silently

devastated lives. His work is not merely about technology—it is about **equity, dignity, and human rights**.

Today, his startup serves as both a technological solution and a social movement, making safe water a **scalable reality** for rural India and beyond. His life and work mirror the aspirations of Viksit Bharat—where young minds innovate for inclusion, where scientific curiosity serves public welfare, and where development leaves no one behind.

As Arpit Kumar steps into the future—with patents in hand, field projects in motion, and a vision rooted in service—he becomes not just a Rising Star of Viksit Bharat, but a **beacon of possibility** for the world.

Ashish Jain
Researcher | Educator
Heritage Conservationist

Ashish Jain is a dedicated scholar and practitioner in the field of archaeology, ancient scripts, and heritage conservation. Holding a Master degree in Archaeology with a specialization in Ancient Indian History, Culture, and Archaeology, Ashish has further honed his expertise with post-graduate diplomas in Marine Archaeology, Heritage Management, and Scientific Conservation from esteemed institutions like the National Institute of Oceanography and Deccan College, Pune.

He has served as a guest and visiting faculty at prestigious institutions including Sathaye College (Mumbai), Deccan College (Pune), and KKSU Ramtek, where he led workshops on Brahmi Script and ancient knowledge systems. A certified expert in Brahmi and Nagari scripts, he has also completed specialized courses in Greek language, manuscript studies, LIDAR, and laser technology for heritage preservation.

Ashish has worked with organizations like the National Archives of India, National Mission on Manuscripts, and Manuscript Conservation Centres, documenting and conserving thousands of ancient manuscripts. He has actively participated in national exhibitions, seminars, and workshops at institutions such as VNIT, IITs, and IIIT.

A lifelong learner and advocate of India's cultural heritage, Ashish is affiliated with the Indian Science Congress, Theosophical Society, and other scholarly bodies, continuing his mission to preserve and promote ancient wisdom.

Bridging Scripts and Science: Ashish Jain and the Revival of India's Intellectual Heritage

In an era where digital technologies surge forward, a quieter, profound revolution is also taking place—one that looks back to move ahead. At the intersection of ancient wisdom and modern science stands **Ashish Jain**, a dedicated heritage researcher, manuscript conservator, and educator. With training that spans archaeology, conservation science, and scriptology, he is building pathways between India's past and its aspirations for *Viksit Bharat*—a future that respects tradition while embracing innovation.

His is not the conventional story of a technologist or a policymaker. It is the story of someone who breathes life into palm-leaf manuscripts, deciphers fading Brahmi inscriptions, and teaches the science of scripts and conservation across India's classrooms and labs.

Excavating Knowledge: A Scholar Grounded in India's Roots

Ashish Jain's academic foundation is as rich and layered as the manuscripts he works with. Holding a **Master's degree in Archaeology** (Ancient Indian History, Culture, and Archaeology), he has also pursued **three postgraduate diplomas** in:

- **Marine/Ocean Archaeology** (NIO & Deccan College),
- **Heritage Management and Scientific Conservation** (Deccan College),
- **Prakrit Language Studies** (Kalidasa Sanskrit University).

His interdisciplinary training allows him to move fluidly between the worlds of ancient linguistics, scientific preservation, and cultural heritage management.

His additional certifications in **Greek language (JNU, New Delhi)**, **Lidar technology**, **Laser conservation**, and over **23 ancient Indian scripts**, make him uniquely qualified to bridge traditional knowledge systems with emerging technologies.

From Manuscripts to Museums: A Life of Conservation

Over the past decade, Ashish has worked with some of India's most significant manuscript collections. His work includes:

- **Cataloguing 18,000 manuscripts** at Nagpur University,
- **Conserving 4,200 folios** using traditional and modern techniques,
- Training under the **National Mission on Manuscripts (Ministry of Culture)**,
- Participating in document archiving at the **National Archives of India**,
- Showcasing traditional conservation techniques at **UGC's Akhil Bhartiya Shikshan Sabha Exhibition (2023)** in New Delhi.

Through painstaking documentation and preservation, Ashish ensures that fragile manuscripts—from Vedic hymns to scientific treatises—remain accessible for generations.

The Script Whisperer: Reviving Lost Languages

Ashish's passion for **ancient Indian scripts** is matched by his commitment to teaching them. From **Brahmi** and **Nagari** to lesser-known regional variants, he has not only studied them deeply but also taught them in academic and public forums.

He has conducted:

- **5-day Brahmi workshops** under the **IKS (Indian Knowledge Systems) mission** at KKSU Ramtek,
- Guest lectures at institutions like **Sathaye College (Tilak University, Mumbai)** and **Deccan College, Pune**,
- Community engagement programs at **Zambre School, Jalgaon** and more.

To him, every letter from an ancient script is not just a symbol—it is a gateway into how ancient Indians thought, reasoned, and recorded the world.

Where Heritage Meets Hardware: Melding Tech with Tradition

Unlike many heritage professionals, Ashish is deeply engaged with India's STEM institutions. He has attended and presented in technical workshops at:

- **VNIT Nagpur**, in areas like photonics, data analytics, cognitive engineering, and explosive materials,
- **IIT Gandhinagar**, at the **Centre for Creative Learning**,
- **IIT Mandi**, in composite materials for engineering,
- **IIIT Nagpur**, on entrepreneurship in engineering education.

His participation in these forums reveals a rare blend: a heritage scholar who understands the relevance of his field in contemporary science and nation-building. One of his standout achievements is participating in VNIT's initiative on the **"Roadmap for Ancient Indian Knowledge Systems"**, where he highlighted how traditional materials and preservation practices can inform modern materials science, conservation engineering, and even climate resilience.

Cultural Diplomacy, Memberships & Mission

Ashish Jain is also an active member of several cultural and intellectual forums:

- **Indian Science Congress** (with participation in the **Children's Science Congress 2022**),
- **Theosophical Society of India**,
- **Indira Gandhi National Centre for the Arts (IGNCA)**,
- **Indian Council for Philosophical Research**,
- ***Granthalay Bharti***, and
- ***KundKund Gyanpeeth*** **Manuscript Centre, Indore**.

These networks have allowed him to advocate for **script literacy**, **heritage digitization**, and **community-driven conservation** in both urban and rural settings.

A Visionary for Viksit Bharat

Ashish Jain's contribution to *Viksit Bharat* lies in his belief that a truly developed nation must preserve and reinterpret its knowledge traditions—not just for nostalgia, but for **innovation, inspiration, and identity**.

His vision includes:

- Establishing a **national digital script museum**,
- Developing **curricula that integrate ancient scripts with modern linguistics and AI**,
- Supporting **youth fellowships in heritage science and conservation**,
- Promoting **regional language digitization** for educational equity.

In his words: *"India's strength lies not only in the silicon chip but also in the script on palm leaves. Both have to be protected and decoded."*

Final Reflection: An Archivist of India's Soul

Ashish Jain's journey reminds us that development is not just about GDP or gadgets. But how well a country understands, preserves, and disseminates its intellectual roots. Whether he is **cataloguing manuscripts**, **teaching Brahmi to teenagers**, or discussing **Lidar scanning at VNIT**, Ashish is creating a uniquely Indian model of progress—one where heritage and technology walk hand in hand.

He is not only preserving the past. He is **animating it** for the future.

Dr Bhushan Mahadik
Director of Research, Prellis Biologics
Berkeley, California, USA

Dr Bhushan Mahadik, currently Director of Research at Prellis Biologics, is a pioneering biomedical researcher with over a decade of impactful work in tissue engineering, immunology, and translational medicine. A graduate of the University of California, Berkeley, and a Ph.D. holder in Chemical Engineering from the University of Illinois at Urbana-Champaign, he has consistently bridged the gap between engineering and biology.

His scientific journey includes leadership roles at the University of Maryland's NIH-funded Centre for Engineering Complex Tissues and cutting-edge work at Prellis Biologics, where he is spearheading the development of 3D Lymph Node Organoids for antibody discovery. Dr. Mahadik has published over 20 peer-reviewed articles, holds multiple patents in bio-printed organoids, and co-edited a landmark book on bone tissue engineering.

Recognized globally, he has won numerous awards, including the $50,000 Proof-of-Concept Award and accolades from TERMIS and the Society for Biomaterials. Passionate about mentoring, innovation, and impact-driven research, Dr. Mahadik represents the emerging class of Indian-origin scientists leading a revolution in regenerative medicine and precision health, contributing meaningfully to India's vision of a *Viksit Bharat*.

Dr Bhushan Mahadik: Engineering Life, Empowering Health, and Shaping the Future of Biomedical Science

In an age where science, innovation, and impact intersect to build a brighter future for humanity, **Dr Bhushan Mahadik** stands tall as a visionary researcher and technologist. With roots tracing back to India and a career shaped on global frontiers, he represents the new-age scientific leadership that's poised to drive India's *Viksit Bharat* vision — one where world-class research, equitable healthcare, and transformative technology go together.

From Berkeley to Bio-fabrication: The Journey Begins

Dr Mahadik's academic foundation was laid at the **University of California, Berkeley**, where he completed his undergraduate degree in Chemical Engineering and Materials Science. His early academic brilliance was evident when the MIT Lincoln Laboratory named a minor planet— **(17095) Mahadik**—in his honour, a rare distinction bestowed through the Intel International Science and Engineering Fair.

Eager to explore the cross-section of engineering and biology, he pursued his M.S. and Ph.D. at the **University of Illinois at Urbana-Champaign**, where he specialized in **stem cell biology, tissue engineering**, and **biomaterials**. His doctoral research made significant contributions to understanding how microenvironments regulate hematopoietic stem cell behaviour, paving the way for advanced regenerative therapies.

Innovation with Impact: A Researcher with Purpose

What sets Dr Mahadik apart is not just the depth of his scientific expertise, but the translational vision that informs his work. As a **Postdoctoral Research Associate**, he led the development of ***in vitro*** **platforms mimicking bone marrow and brain tumour biology**, combining microfluidics with computational modelling to simulate and study cell behaviour.

He then became a key figure at the **NIH Centre for Engineering Complex Tissues (CECT)** at the University of Maryland. As **Assistant Director**, he coordinated research, strategy, and operations for this $6 million initiative, bringing together over 10 academic partners. His work spanned **3D bioprinting**, **bioreactor-based platforms**, and **vascularized constructs**, contributing to a total of 14 publications during this period. A highlight was his role in developing the **world's first 3D bioprinting database**, providing open-access resources for the global biomedical community.

Pioneering at Prellis: Bioengineering the Future

Currently, Dr Mahadik leads scientific innovation as the **Director of Research at Prellis Biologics**, a trailblazing biotechnology company based in California. His team is at the forefront of creating **3D Lymph Node Organoids (LNOs)**—complex tissue models that replicate immune system functions. These structures are being used to revolutionize **antibody discovery** and **preclinical drug development**, potentially reducing the reliance on animal models and accelerating therapeutic timelines.

Previously, as Director of Tissue Engineering at Prellis, he established key **analytical methods** for assessing drug immunogenicity, scaffold functionality, and immunological modelling within organoids. His work elegantly integrates **engineering, immunology, and 3D printing**, demonstrating how interdisciplinary science can solve real-world biomedical challenges.

Awards, Patents, and Publications: A Legacy in the Making

Dr Mahadik's contributions have been consistently recognized, including:

- **Proof-of-Concept Award ($50,000)** from the University of Illinois
- **1st Place** in global research competitions (TERMIS World Congress, MRL Biological Conference)
- **Outstanding Abstract Award**, Society for Biomaterials Annual Meeting
- Over **20 high-impact peer-reviewed publications**
- **Multiple U.S. patents** on bio-printed organoid systems and platforms for antibody testing

He is also the **co-editor** of the Springer book *"Bone Tissue Engineering: Bench to Bedside using 3D printing"*, which bridges the gap between fundamental research and clinical application.

Mentorship and Outreach: Inspiring the Next Generation

Beyond research, Dr Mahadik is deeply invested in capacity-building and mentorship. He has mentored numerous undergraduate and graduate students, fostering a culture of scientific curiosity, ethical rigor, and interdisciplinary thinking.

He has served on panels and as a reviewer for prestigious journals, judged academic competitions, and volunteered for educational initiatives like **ASHA**, promoting the education of underprivileged children in India. His professional affiliations include **Tau Beta Pi**, the engineering honour society.

Relevance to *Viksit Bharat*: A Global Scientist with Indian Spirit

In the spirit of a ***Viksit Bharat***—a self-reliant, innovation-driven India—Dr Mahadik embodies the model of a global scientist making local impact. His work addresses some of the world's most pressing healthcare needs: **organ shortages**, **costly drug development**, and **personalized medicine**. Technologies he has helped develop can accelerate vaccine testing, improve transplant outcomes, and power India's biotech ambitions.

By connecting academia with industry, fundamental research with clinical applications, and East with West, Dr Mahadik represents the scientific diaspora's capacity to contribute meaningfully to India's growth story. His success is a testament to what Indian-origin talent can achieve on the world stage—and how it can circle back to uplift Indian science and healthcare.

A Glimpse Ahead: Vision for the Future

Looking forward, Dr Mahadik envisions a world where **regenerative medicine** is not a futuristic concept but an accessible solution. Whether it's **bioengineered tissues**, **organ-on-chip platforms**, or **AI-driven preclinical models**, he believes in building tools that make healthcare more humane, responsive, and personalized. In his own words: *"Science should not be confined to labs and journals; it should reach lives."* That ethos continues to guide his journey—from the bioreactors of Maryland to the organoid labs of California—with India always in his heart and impact as his compass.

Dr Bhushan Mahadik, truly a *Rising Star of Viksit Bharat*, symbolizes the confluence of intellect, innovation, and integrity—qualities that illuminate the path to a scientifically empowered and globally respected India.

Dr Bishwambhar Sengupta, Ph.D.
Assistant Professor | Medical Physics
Seattle, Washington, United States

Dr Bishwambhar Sengupta is a dedicated medical physicist and educator currently serving as an Assistant Professor in Medical Physics in Seattle, Washington. With over a decade of academic and clinical experience, he recently completed a Radiation Oncology Medical Physics Residency at Northwestern Memorial Hospital, Chicago (2022–2024), and previously served as a Postdoctoral Fellow at the University of Washington Medical Centre (2019–2022).

Dr Sengupta holds a Ph.D. in Physics from Clemson University, where his research focused on radiation protection, shielding, and Monte Carlo simulations of radiosurgery systems. He also earned Master's degrees in Physics from Clemson University and Pondicherry University, with research spanning biosensors and nanomaterials.

His international experience includes a research internship at the Rotating Gamma Institute in Hungary, contributing to research in stereotactic radiosurgery. Throughout his academic journey, he held several teaching and leadership roles, including Graduate Teacher of Record, Vice President of Operations of the College of Science Student Advisory Board, and Physics Department Representative.

Dr Sengupta's multidisciplinary training, hands-on research, and commitment to radiation safety and cancer care highlight his contribution to advancing medical physics and patient-centred oncology. He continues to inspire through teaching, research, and clinical innovation.

Dr Bishwambhar Sengupta: Harnessing Physics to Heal

In the quiet corridors of cancer care, where science meets compassion, Dr Bishwambhar Sengupta stands as a unique beacon of hope—a therapeutic medical physicist whose journey from the classrooms of Kolkata to the clinical wards of Seattle reflects a deep-seated commitment to transforming lives through precision and purpose.
From Curiosity to Calling

Dr Sengupta's story begins in India, where a strong foundation in physics laid the groundwork for what would become a globally impactful career. He graduated with honours in Physics from Ramakrishna Mission Residential College under the University of Calcutta, followed by a Master's degree in Condensed Matter and Materials Physics from Pondicherry University. At this stage, like many young physicists, his path was oriented toward academic research, not healthcare.

It was during his doctoral studies at Clemson University in the United States that Dr. Sengupta was first introduced to the field of medical physics—a discipline that combines deep scientific knowledge with direct patient impact. He recalls this as a pivotal moment, realizing that his expertise in radiation and materials science could directly influence patient outcomes, especially in the battle against cancer.

Pursuing the Physics of Healing

At Clemson, Dr Sengupta immersed himself in interdisciplinary research that ranged from Monte Carlo simulations of radiosurgery systems to investigating the effects of low-dose X-rays on cells. These experiences refined his understanding of radiation interactions and cemented his interest in applying physics to therapeutic contexts.

He served in various academic and leadership roles during his graduate years—Graduate Teacher of Record, Graduate Teaching Assistant, and Vice President of Operations for the College of Science Student Advisory Board. His leadership on the College of Engineering and Science Student Advisory Board helped bridge communication between departments, faculty, and students, underscoring his ability to harmonize science and service.

As a Graduate Research Assistant at the Clemson Nanomaterial Centre, he explored biosensors—a theme that echoed his desire to connect experimental physics with real-world applications. However, it was his internship at the Rotating Gamma Institute in Debrecen, Hungary, that provided hands-on clinical exposure to stereotactic radiosurgery. Here, he worked alongside experienced medical physicists and authored two research articles, further validating his aspirations.

Bridging Research, Residency, and Real-World Oncology

Following his Ph.D., Dr Sengupta began postdoctoral work at the University of Washington Medical Centre in Seattle. His research focused on global oncology, where he contributed to improving cancer care in low- and middle-income countries (LMICs). This exposure added a new dimension to his expertise, combining technological rigor with public health awareness.

Dr Sengupta subsequently pursued a radiation oncology medical physics residency at Northwestern Memorial Hospital in Chicago. This rigorous two-year program allowed him to fine-tune his clinical skills, including patient-specific radiation dose calculations,

machine calibrations, and quality assurance protocols. It also reinforced his central belief: that every patient deserves safe, accurate, and compassionate treatment.

The Global Cancer Challenge

Dr Sengupta is acutely aware of the mounting global cancer burden. In 2022 alone, nearly 20 million new cancer cases were reported globally, with almost 70% occurring in LMICs. India, with its growing population and rising median age, faces an especially steep challenge. Many patients are diagnosed at advanced stages due to limited screening and diagnostic infrastructure.

In such scenarios, radiation therapy (RT) emerges as a powerful and cost-effective tool for both curative and palliative care. Yet, it remains underutilized in many parts of the world. "The disparity isn't just in machines," Dr Sengupta explains, "it's in trained personnel, sustainable infrastructure, and awareness."

His work now contributes to addressing this gap. At the University of Washington, Dr. Sengupta is developing affordable, cobalt-based radiation therapy units capable of delivering advanced treatments like Intensity-Modulated Radiotherapy (IMRT). These units are designed with the realities of LMICs in mind—lower costs, reduced maintenance, and minimal operational complexity.

This innovation is not merely technical—it's transformational. By enabling clinics in resource-limited settings to offer precise treatments, it brings equitable care within reach for countless patients.

Educator and Advocate

In parallel with his research and clinical duties, Dr Sengupta is a passionate educator. As an Assistant Professor in Medical Physics, he teaches and mentors students about the vital role physics plays in cancer treatment. "A lot of people don't know that medical physicists are a part of the treatment team," he notes. "We are the safety net, the ones making sure radiation does its job without harming the patient."

His outreach extends beyond academia. Through public awareness programs and patient education sessions, he helps demystify radiation therapy—often perceived with fear due to pop culture portrayals of radiation as dangerous or destructive. Patients frequently ask if they'll 'feel' the radiation or worry about holding their grandchildren post-treatment. Dr. Sengupta patiently explains that treatments are safe, targeted, and designed with great precision.

"Helping patients understand the science behind their treatment builds trust and reduces anxiety," he says. This humanistic approach, grounded in technical excellence, is what sets Dr. Sengupta apart.

A Vision for India's Healthcare Future

Dr Sengupta is vocal about India's need to invest not just in machines but also in human capital. "We need more radiation oncologists, physicists, dosimetrists, and radiation therapists—trained professionals who can work as a team," he asserts.

He believes that India, with its robust scientific talent and youthful population, is well-positioned to become a global leader in accessible cancer care—provided it takes proactive steps in training, policy-making, and public health engagement. His work

serves as a blueprint for this vision, combining low-cost innovation, global collaboration, and patient-centred care.

Honouring the Patient Behind the Science

While Dr Sengupta's academic and clinical achievements are impressive, what truly defines his work is the empathy he brings to each interaction. Whether he's explaining a complex radiation plan to a concerned patient or encouraging a student to pursue a career in medical physics, his message is clear: science is in service of healing. His profile is a reminder that medical physics is not just about calculations or equipment. It's about hope—offering patients a better chance, a safer path, and sometimes, a second lease on life.

Legacy and Outlook

As a researcher, educator, clinician, and advocate, Dr Bishwambhar Sengupta's journey reflects the finest ideals of science in service to humanity. He has shown that physics, often seen as abstract or theoretical, can be a powerful tool for real-world healing. His work has already influenced global oncology discourse and holds promise to shape the future of radiation therapy access in underserved regions.

Looking ahead, he remains committed to advancing equitable care models, mentoring future generations, and continuing his research in making radiation therapy safer and more accessible. In a world grappling with rising cancer rates, climate concerns, and technological disparities, professionals like Dr Sengupta offer not just expertise—but hope.

As he aptly quotes from Tagore, he envisions an India and a world "where the mind is without fear and the head is held high"—a place where science empowers, heals, and uplifts.

Dr Deepak Akiwate
University Fellow in Aeroacoustics,
University of Salford, UK

Dr Deepak Akiwate is a University Fellow at the Acoustic Research Centre, University of Salford, UK, specializing in aeroacoustics with a focus on rotor noise, propeller-wing interaction, and advanced air mobility systems. He holds a PhD in Mechanical & Aerospace Engineering from IIT Hyderabad, supported by the prestigious Prime Minister's Fellowship. His pioneering research spans noise prediction models, anechoic wind tunnel design, and additive manufacturing for acoustic materials.

Previously, Dr Akiwate served as Research Fellow at the Rolls-Royce University Technology Centre (University of Southampton), where he contributed to noise analysis for next generation aeroengines and developed core noise prediction tools. His work with institutions like NASA, Rolls-Royce, and Boeing underscores his expertise in acoustic measurement and modelling.

A recipient of the Young Professional Award from I-INCE (Madrid, 2019) and multiple Research Excellence Awards, he has over 10 peer-reviewed journal publications and several international conference presentations. Dr Akiwate actively mentors PhD students and contributes to strategic research planning. He is also the Principal Investigator of an InnovateUK knowledge transfer grant in collaboration with GreenJets UK.

His interdisciplinary research bridges academia and industry, making significant strides in quieter and more efficient aviation technologies.

Whispers of the Sky: Dr Deepak Akiwate and the Future of Silent Flight

In the quiet corridors of sound research, where equations shape how we hear machines and how machines listen back, a young Indian scientist is pushing the boundaries of silence. From the windswept test beds of the UK to the computational models of flight in India, **Dr Deepak Akiwate** is scripting a revolutionary future in **aeroacoustics**—the science of sound in motion.

Currently a **University Fellow at the Acoustic Research Centre, University of Salford (UK)**, and formerly associated with **Rolls-Royce's University Technology Centre**, Dr Akiwate is not only decoding how aircraft generate noise but also how to minimize it—transforming tomorrow's aviation into a blend of performance, efficiency, and tranquillity.

His story is one of relentless curiosity, rigorous research, and a rare combination of theory and hands-on innovation—qualities that make him a deserving honouree in *Rising Stars of Viksit Bharat*.

From Kolhapur to the World: A Flight Rooted in Curiosity

Raised in Maharashtra's Kolhapur district, Dr Akiwate's early academic journey was shaped at **Shivaji University**, where he earned a **Gold Medal** in MTech (Mechanical Design). But it was at **IIT Hyderabad**, under the prestigious **Prime Minister's Fellowship Scheme for Doctoral Research**, that he took flight—literally and figuratively.

His doctoral work wasn't just an academic exercise. It was a fusion of **additive manufacturing** and **aeroacoustics**—developing novel sound-absorbing structures for aerospace applications. His work with **Eaton Technologies** and the **Government of India** laid the groundwork for lightweight, efficient, and customizable acoustic panels suited for engine filters, aircraft cabins, and beyond.

His trajectory embodies the dream of *Atmanirbhar Bharat* in science—an Indian mind contributing to global challenges.

Sound Meets Science: Taming the Noise of Flight

At a time when **Advanced Air Mobility (AAM)**—think drones, air taxis, and electric vertical take-off and landing (eVTOL) vehicles—is transitioning from concept to cockpit, Dr Akiwate is pioneering the understanding of **propeller-wing interaction noise** and **rotor tonal and broadband noise**.

From 2020 to 2023, as a **Research Fellow at the Institute of Sound & Vibration Research (ISVR), University of Southampton**, he worked closely with **Rolls-Royce Plc**, where he led multiple projects, including:

- Core noise prediction methods for **UltraFan™ engines** (next-gen turbofans),
- Development of propeller noise simulation tools (VN41M and VN02),
- Acoustic source breakdown using real engine data—from **NASA's Stennis Space Centre** to **Derby test beds**.

Today, at Salford, he is developing **new wind tunnel facilities**, formulating **analytical noise models**, and mentoring future researchers—working on InnovateUK-backed projects that bridge government, academia, and industry.

When Noise Tells a Story: Innovation Through Research

Dr Akiwate's work is not about eliminating noise but understanding its **language**. Every decibel holds information—about turbulence, material behaviour, design flaws, and potential improvements. His contributions help translate that language into **quieter, safer, and more efficient aircraft**.

His **peer-reviewed publications**—in journals like *Applied Acoustics*, *Journal of Sound and Vibration*, *International Journal of Aeroacoustics*, and more—showcase deep analytical skills combined with experimental finesse.

He's also a **principal investigator** on collaborative projects with **GreenJets UK**, a new-age aerospace startup focusing on decarbonizing flight through sustainable propulsion systems. Whether it's **developing noise prediction methods**, **evaluating overlapping propellers**, or **engineering acoustic materials**, his research shapes not just machines—but policies, passenger comfort, and environmental impact.

Awards, Recognitions & Reverberations

Dr Akiwate's excellence has been recognized consistently:

- **University Fellowship** at Salford (2024–2029),
- **Young Professional Award** by I-INCE (Spain, 2019),
- **Research Excellence Award** (IIT Hyderabad, 2017 & 2019),
- Gold Medal (M.Tech, 2014),
- PI on InnovateUK's **Accelerated Knowledge Transfer Grant** (2024),
- 15+ international conference papers, including **AIAA/CEAS**, **INTER-NOISE**, **WESPAC**, and **ICSV**.

These accolades are not merely trophies—they're milestones in a journey of applied science with societal consequences.

Building India's Future—Quietly, Yet Impactfully

Despite working from the UK, Dr Akiwate remains deeply rooted in India's scientific ecosystem. He represents the **emerging face of Indian aerospace research**—a domain traditionally dominated by global giants.

His doctoral innovations in **additive manufacturing of acoustic panels**, and his continued collaborations with **Indian institutes and scholars**, highlight his commitment to **Make in India** and **Design for the World**.

In the coming years, his vision includes:

- Establishing a **Global Aeroacoustics Research Network** with Indian students,
- Developing **cost-effective acoustic testing infrastructure** for Indian universities,
- Supporting **startup innovations** in drone and e-mobility technologies through sound science.

The Future Is Quieter—and Brighter

As urban air mobility becomes real, as electric planes hum over cities, and as space tourism inches closer, **aeroacoustics will define how peacefully we coexist with technology**. In this emerging realm, Dr Deepak Akiwate's work is foundational.

In his hands, sound is not a nuisance but a **narrative**—a way to shape the future of mobility. His is a voice we need in the science of silence.

Dr Divyendu Sen
Lecturer in Biology,
Government of Rajasthan

Dr Divyendu Sen is a dedicated science educator and researcher committed to empowering rural students through innovative teaching. With over a decade of experience as a Biology Lecturer in the Government of Rajasthan, he recently earned his Ph.D. in Botany from the University of Kota, focusing on the flora of the Gagron Fort region and its ecotourism potential. His work documented 212 plant species and explored the phytochemical properties of key medicinal plants.

Dr Sen has mentored over 75 students in NASA's International Asteroid Search Campaign, guiding them in discovering 11 main-belt asteroids. His initiatives, including a QR code-based plant identification system and rural STEM workshops, integrate digital tools with experiential learning. He has also trained students through ISRO-IIRS modules and National Children's Science Congress, aligning with national missions like Digital India and *Atmanirbhar Bharat*.

Honoured with the Reliance Foundation Teachers Award and the State Best Lecturer Award, he serves as a district coordinator and jury member for multiple science programs. Dr Sen envisions establishing a regional science centre in Jhalawar and becoming a rural science communicator. His mission: to ensure no young mind, regardless of location, is left behind in India's scientific journey toward a *Viksit Bharat*.

Cultivating Scientific Temper in Rural India: The Transformative Journey of Dr Divyendu Sen

By bringing science alive in classrooms and communities, Dr. Divyendu Sen is redefining education at the grassroots level one experiment, one plant, and one asteroid at a time.

In the quiet rural landscapes of Jhalawar, Rajasthan, where traditional teaching often still echoes the sound of chalk on blackboards, a quiet revolution has been underway fuelled not by infrastructure or policy mandates, but by the passion and persistence of one educator. Meet **Dr Divyendu Sen**, a lecturer in biology under the School Education Department, Government of Rajasthan, and an award-winning science educator whose mission is nothing short of national transformation through grassroots science engagement.

Over the last decade, Dr Sen has turned constraints into catalysts. With limited access to labs or internet in his early years of teaching, he relied on nature, curiosity, and innovative thinking to bring scientific concepts to life for students who had never seen a telescope or participated in a science fair. Today, his students are identifying main-belt asteroids in NASA-linked campaigns and earning spots in elite science programs like IISER summer camps. How did this metamorphosis come to be?

Let's trace the journey of this modern-day science crusader whose work seamlessly aligns with India's dreams of becoming a *Viksit Bharat* by 2047.

From Roots to Research: A Botanist with a Vision

Born and raised in Rajasthan, Dr Divyendu Sen's early fascination with the natural world led him to pursue his undergraduate and postgraduate degrees in Botany from Government PG College, Jhalawar. The inspiration to teach came not from textbooks, but from the recognition that scientific awareness in rural India was alarmingly low—and yet, the potential was immense.

This realization deepened as he began teaching at the school level. Determined to bridge the gap between textbook knowledge and real-world science, he pursued a Ph.D. in Botany from the University of Kota. His doctoral thesis, *"Studies on Flora of Gagron Fort (Jhalawar) and its Environs with Special Reference to Ecotourism,"* focused on documenting 212 plant species near the UNESCO World Heritage Site. His phytochemical and antioxidant studies of *Sisymbrium irio* and *Bryonia laciniosa* not only expanded scientific databases but also highlighted the untapped potential of ecotourism in biodiversity conservation and sustainable livelihoods.

This field-based, place-rooted approach to research laid the foundation for his future philosophy: science should not just be studied—it should be *experienced*.

A Classroom Without Walls: Innovation in Teaching

When asked about his classroom, Dr Sen often smiles and gestures to his school garden. "This is our lab, our observatory, and our portal to discovery," he says. His teaching toolkit includes everything from QR-coded plants to sky-mapping software.

Some of his most impactful innovations include:

- **QR Code-Based Plant Identification System:** Dr. Sen and his students digitally documented over 50 plant species in their school garden. Each plant is now linked

to an online resource accessible via QR codes—a perfect blend of botany, ICT, and self-guided learning. This project, aligned with the *Digital India* mission, has not only fostered digital literacy but also made biodiversity a living curriculum.

- **Asteroid Discovery Campaigns with NASA-IASC:** Since 2021, under his mentorship, more than 75 students have participated in space science initiatives. They have discovered **11 provisional main-belt asteroids**—an unimaginable feat for children who, until recently, had never imagined themselves as space scientists.
- **Experiential Field Sessions in Botany:** By conducting outdoor lessons on floral morphology, blood testing, and ecological surveys, Dr Sen dismantled the walls of the classroom. Students now learn *aestivation* not through dry diagrams but by examining a hibiscus in bloom.
- **Astronomy Outreach Using Astrometrica Software:** He introduced image analysis and astrometry to rural students, empowering them to process space data hands-on. This initiative has helped popularize astronomy in regions otherwise untouched by such exposure.

Science for Society: Guiding National Aspirations

Dr Sen's efforts are deeply aligned with India's larger national missions:

- ***Atmanirbhar Bharat* (Self-Reliant India):** By cultivating critical thinking and problem-solving skills in young learners, especially in underprivileged areas, he equips them to innovate, adapt, and thrive independently.
- **Sustainable Development Goals (SDGs):** His research on ecotourism and biodiversity preservation contributes to SDG 15 (Life on Land), while his science popularization efforts tie into SDG 4 (Quality Education).
- **PM SHRI Schools and Rural STEM Campaigns:** As a regular speaker in PM SHRI Schools, he has delivered **expert talks on scientific temper and innovation**, reaching hundreds of students and teachers across rural Rajasthan.
- **RuSETUP Programs (IIT Delhi & IARI):** His participation in these national training platforms enabled him to bring cutting-edge practices in life sciences, satellite imaging, and education policy to his rural teaching context.

Recognitions That Reflect Impact

Dr Sen's work has garnered national and regional recognition, including:

- **Reliance Foundation Teachers Award** (Top 50 Biology Teachers in India – 2018)
- **State-Level Best Lecturer Award** in Biology, Government of Rajasthan – 2021
- **Certificate of Appreciation** for his science communication article – 2024
- **Jury Member** for INSPIRE Awards (District & State) – 2021–2024
- **District Academic Coordinator** for the National Children's Science Congress – ongoing
- Featured in media outlets such as *The Hindu*, *Times of India*, *Dainik Bhaskar*, and *Rajasthan Patrika* for his asteroid mentorship

These accolades affirm not just his credibility but also the tangible impact he is creating in lives and learning environments.

Bridging Science and Society: Publications & Outreach

Dr Sen is not just a teacher—he is a communicator and collaborator. His academic and public engagement efforts span:

- **Three peer-reviewed international research papers** on ecotourism, biodiversity, and COVID-19's ecological impact

- **Two book chapters** on climate change and sustainable tourism
- **Regular contributions** to science education platforms, including Vigyan Setu Foundation, where his articles reflect grassroots realities and scalable innovations
- **Participation in ISRO-IIRS Online Training Modules**, integrating space technology into everyday teaching

His writing bridges the worlds of field science and classroom reality, making complex topics understandable and actionable for students and fellow educators alike.

Challenges That Became Catalysts

Teaching science in rural Rajasthan is not without its hurdles: lack of laboratories, unreliable internet, and low exposure to scientific careers often hamper student aspirations. Dr Sen tackled these barriers not with complaints, but with creativity.

He learned to use the school garden as a botany lab, local flora as learning material, and free online tools as digital classrooms. He slowly transformed mindsets—parents who once discouraged extracurricular science activities now proudly accompany their children to science fairs.

"Success stories of students discovering asteroids or reaching national science camps helped shift perceptions," he notes. "Once a community sees its children succeed, science stops being an abstract subject and becomes a viable path."

Looking Ahead: Vision for a *Viksit Bharat*

Dr Sen is not resting on his laurels. His future roadmap is as ambitious as it is inspiring:

- **Establishing a Regional Science Centre in Jhalawar:** A hub for botany, space science, environmental education, and innovation—accessible to all students, regardless of school or background
- **Becoming a Science Communicator:** With a special focus on highlighting *rural talent*, he envisions a platform that showcases how students from villages can solve global problems
- **Strengthening Community-Based Research:** He plans to deepen his work on conservation, local ecology, and sustainable livelihoods through student-led research and eco-tourism projects

In his words: *"Science must serve society. If it's not improving lives or inspiring the next generation, it is incomplete."*

Final Reflections: A Message to Young Explorers

Dr Divyendu Sen's journey is proof that transformation doesn't always require large grants, fancy labs, or urban infrastructure. Sometimes, it begins with a magnifying glass, a curious mind, and a mentor who believes.

To the young learners of India, his message is clear: "Science is everywhere—in your kitchen, in your garden, in the night sky. Don't wait for someone to teach it to you. Go explore it. Ask questions. Make mistakes. Discover your own path. In doing so, you won't just learn science—you'll become it."

As India strides toward 2047 and its dream of becoming a global knowledge leader, it is changemakers like D. Divyendu Sen who will ensure that no mind—rural or urban—is left behind.

Mr Manohar Kumar

Science Communicator | Innovator

Manohar Kumar is a dynamic science communicator, innovator, and social entrepreneur from Bihar. Currently pursuing his Ph.D. in Science Communication at IIT-BHU, he is the founder of *IRO Ventures Pvt. Ltd.*, a startup dedicated to promoting grassroots innovation and scientific temper across India.

From being a district topper in Bihar Board to earning national recognition for his science outreach, Manohar has consistently merged academic excellence with social impact. His notable initiatives—such as mobile charging using urine and irrigation through missed calls—have received awards from Kalam Innovation Foundation and the Department of Science and Technology, Government of India.

With over five years of teaching experience and leadership roles including Joint District Coordinator at NCSC Bhojpur, Manohar has conducted engaging science shows across more than 20 districts, earning accolades like the Bihar Change Maker Award and a seed fund from Startup Bihar. His presence in international platforms like the Asia World Model United Nations reflects his global outlook rooted in local relevance.

Manohar's journey is a compelling story of resilience, curiosity, and service—a true Rising Star of Viksit Bharat, inspiring the next generation to see science not only as a subject, but as a solution.

Illuminating Minds with Science: The Journey of Manohar Kumar

In the heartland of Bihar, in the quiet village of Kayamnagar in Bhojpur district, began the remarkable journey of **Manohar Kumar**—a name now synonymous with innovation-driven science communication in India. From humble beginnings to becoming a science show sensation, a youth role model, and a founder of a startup, Manohar's path is a glowing example of how passion and perseverance can craft a new India—*Viksit Bharat*.

A Scholar with a Mission

Manohar's academic journey reflects consistent brilliance. Ranked 10th in the Bihar Board in 2013, his early academic achievements set the stage for a promising future. He pursued a B.A. from Patna University with distinction, followed by a Master's in Geography from Banaras Hindu University, where he secured Junior Research Fellowship (JRF) after qualifying the National Eligibility Test (NET).

His ongoing Ph.D. at IIT-BHU focuses on **Science Communication**, a domain that fits perfectly with his lifelong mission—to bridge the gap between scientific knowledge and public understanding. His research is not confined to academia; it thrives in public spaces, rural communities, and classrooms.

From Curiosity to Creation: Early Innovations

Even as a student, Manohar wasn't just learning science—he was applying it. One of his early projects, "Mobile Charging by Urine," caught national attention for its ingenuity. His project "Irrigation by Missed Call" addressed real agricultural challenges in an accessible and low-cost manner. These innovations earned him accolades from the **Kalam Innovation Foundation**, a symbolic recognition from the very legacy of India's beloved People's President.

His inclination towards solving local problems with scientific thinking laid the foundation of a journey that would soon expand beyond textbooks and laboratories.

The Spark of Science Shows

Science shows became Manohar's signature tool for engagement. Understanding that rote learning had limited impact, he turned to experiential learning and visual demonstrations to bring science to life. These shows, conducted across more than 20 districts in India, are designed to ignite curiosity and critical thinking, particularly among school children in underserved regions.

Manohar's science shows cover topics from basic physics and chemistry to real-life applications of scientific principles. By combining theatrics, live experiments, and relatable storytelling, he turns science into a spectacle—fun, exciting, and deeply educational.

The Department of Science and Technology (DST), Government of India, acknowledged his innovative model of outreach, and his programs have become templates for grassroots science communication across states.

IRO Ventures: A Startup with a Social Soul

In a country bursting with young minds and unmet challenges, Manohar recognized the potential of social entrepreneurship to sustain and scale innovation. He

founded **IRO Ventures Pvt. Ltd.**, which blends education, innovation, and rural outreach into an impactful enterprise. Recognizing its potential, **Startup Bihar** extended seed funding to IRO Ventures, further validating its mission.

Under IRO's banner, Manohar continues to mentor youth, train science communicators, and develop new models of participatory science engagement. His work focuses on nurturing a *scientific temper*—a constitutional duty that he lives every day.

Teaching and Mentoring: Passing the Torch

Over five years of teaching experience have given Manohar deep insights into the educational challenges faced by students, especially in semi-urban and rural areas. His ability to connect, inspire, and explain complex concepts in simple terms has made him a mentor to many.

He served as Joint District Coordinator for **National Children's Science Congress (NCSC)** in Bhojpur, guiding projects and mentoring young researchers. His efforts ensure that scientific inquiry is not limited to urban schools but reaches government schools and lesser-known talents.

Manohar's teaching is not confined to classrooms. His YouTube channel brings accessible science content to thousands, creating a digital ripple effect of awareness and learning.

Global Exposure with Local Commitment

Manohar's work transcends geographical boundaries. He was selected to represent India at the **4th Asia World Model United Nations** held in Bali, Indonesia—a rare feat for a grassroots innovator. The exposure to global discussions on development, sustainability, and policy gave him fresh insights that he continues to localize through his projects.

Despite these international opportunities, Manohar remains deeply rooted in his community. His permanent address remains his native village—a symbolic gesture that he hasn't forgotten his origins, and that development must include the last mile.

Awards and Recognition: Milestones of a Movement

His list of accolades is impressive, not merely for their prestige, but for what they represent. Some of his major recognitions include:

- **Bihar Board Topper (2013)** – A launchpad for his academic credibility.
- **Kalam Innovation Foundation Award** – For two low-cost innovations focused on energy and agriculture.
- **DST Award** – For excellence in science shows and community outreach.
- **NET-JRF Qualified** – Testimony to his academic rigour.
- **Bihar Change Maker Award 2022** – For societal contributions through education and innovation.
- **S.V. National Youth Award 2020** – Recognizing his leadership and inspiration to young India.

Each award is not just a feather in his cap, but a milestone in his mission to promote science for development.

Challenges, Resilience, and the Road Ahead

Manohar's journey has not been without challenges. Working in rural areas, breaking through socio-economic barriers, and sustaining innovation without initial funding posed constant hurdles. Yet, he persevered. With each science show, with every student he inspired, and with each experiment that lit up young eyes with wonder, he moved closer to his vision.

The future holds even more promise. Manohar envisions scaling IRO Ventures across the country, creating a cadre of science communicators who can carry the torch forward. He plans to work on policy advocacy to include more hands-on science learning in school curricula and dreams of establishing a dedicated science innovation hub in Bihar.

A Rising Star for a Rising Nation

Manohar Kumar is not just a researcher or entrepreneur—he is a movement. A movement that believes science is not confined to laboratories, but lives in fields, villages, classrooms, and the curious minds of young Indians.

As India marches toward its centenary of independence and its vision of **Viksit Bharat @2047**, individuals like Manohar are the true change-makers. They embody the spirit of *Atmanirbhar Bharat*—resilient, resourceful, and rooted in India's soil.

Dr Pawan Pingle

Expert in Structural Dynamics

| Vibration Consultant | Educator

Dr Pawan Pingle is a highly accomplished mechanical engineer and vibration expert with a Ph.D. in Mechanical Engineering from the University of Massachusetts Lowell, USA. With over a decade of academic and consultancy experience across India, the USA, and Europe, he has significantly contributed to the fields of structural dynamics, modal analysis, and composite material modelling.

He has consulted for renowned companies such as Pratt & Whitney, Bosch, Siemens, and Rajamane Motors, and developed patented non-contact ultrasound testing techniques for next-gen turbines. Dr. Pingle has held academic positions at Bharati Vidyapeeth University, Deogiri Institute, and the University of Massachusetts as an adjunct professor, teaching subjects like vibrations, dynamics, and design.

A prolific researcher, Dr Pingle has authored multiple books, published over 20 international research papers, and presented at global conferences. His work spans aerospace, automotive, consumer electronics, and sports equipment, including testing Apache helicopters, golf clubs, tennis rackets, and snowboard dynamics.

Proficient in advanced tools like ANSYS, ABAQUS, LDV, and FEMAP, he bridges theoretical research with industrial innovation. His contributions to bio-composite modelling, vibration-based diagnostics, and engineering design make him a leading force in mechanical systems analysis and dynamic testing.

Dr Pawan Pingle: Charting Vibrations on the Path to *Viksit Bharat*

In a nation driven by innovation and guided by resilience, few embody the spirit of a *Viksit Bharat* like **Dr Pawan Pingle** — a pioneering vibration consultant, educator, and researcher whose scientific footprint stretches from the corridors of American laboratories to the industry floors of India. His work exemplifies the synthesis of deep academic insight, advanced experimental modelling, and real-world engineering, making him a fitting torchbearer in the nation's journey toward scientific self-reliance and excellence.

A Scholar in Motion

Dr Pingle's academic path reflects a journey of exploration into the mechanics of vibrations and structural dynamics. He holds a **Ph.D. in Mechanical Engineering** from the **University of Massachusetts, Lowell**, where he specialized in *vibrations and controls*. His early research — spanning **bio-composites**, **modal analysis**, and **non-contact measurement techniques** — laid the groundwork for contributions that would bridge theoretical mechanics and cutting-edge industrial applications.

With over **10 years of consultancy experience**, his contributions have benefitted global industry giants like **Pratt & Whitney**, **Bosch**, and **Siemens**, as well as Indian innovators like **Rajamane Motors** and **Vital Tools**. From designing gear shaving mandrels to testing Apache helicopter wings using laser vibrometry, Dr Pingle's work stands at the convergence of research precision and industry pragmatism.

Innovation Beyond Borders

His **postdoctoral research** at the **Structural Dynamics and Acoustic Systems Lab** at UML, in collaboration with Pratt & Whitney, led to the development of a **novel ultrasound-based, non-contact modal testing technique** — now a patented innovation. This work, critical for next-generation turbine development, underscores Dr. Pingle's flair for blending simulation, experimentation, and industry needs.

From testing **golf clubs for patent disputes** to **snowboards, tennis racquets, and dryer panels**, Dr. Pingle's applications of *Laser Doppler Vibrometry (LDV)* and *Digital Image Correlation (DIC)* showcase not just versatility, but scientific creativity. His work even extends into **vibration energy harvesting**, a field pivotal to sustainable technology.

From Classrooms to Composite Labs

An educator at heart, Dr Pingle has taught across continents — from **adjunct professorships at University of Massachusetts, Lowell**, to professorial roles at **Bharati Vidyapeeth University College of Engineering, Pune**, and **Deogiri Institute of Engineering and Management Sciences, Aurangabad**. His courses in vibrations, machine design, and dynamics have shaped future engineers who now walk the same bridge he built between academia and industry.

His **research lab affiliations in Belgium** and **the United States** have enriched his work on **nanostructures**, **latex-carbon fibre composites**, and **naturally occurring bio composites**, such as nacre and enamel. In each case, Dr Pingle has brought a fusion of **classical mechanics** and **modern material science** to the fore.

The Math, the Machines, and the Mission

Dr Pingle's core strengths lie in his command over **modal and vibration analysis tools** — including **Polytec 3D Scanning LDV**, **ARAMIS DIC**, and software like **ANSYS**,

ABAQUS, FEMTOOLS, and MATLAB. But beyond this technical mastery is a persistent drive to solve real problems — reducing vibration amplitudes in fan blades, optimizing damping in composite plates, or designing precision tools for automotive industries.

He is the author of two technical books and multiple high-impact papers. His Google Scholar profile reflects an H-Index of 10, underscoring the academic impact of his work. Notably, his collaborative research with global experts like Dr Peter Avitabile and Dr Christopher Niezrecki has yielded benchmark publications in modal testing, digital image correlation, and vibration stress prediction.

Vision for a Viksit Bharat

What makes Dr Pingle a "Rising Star" is not just his individual brilliance, but his unwavering commitment to applying that brilliance for nation-building. By offering consultancy to Indian industries, supporting Make in India innovation, and mentoring young engineers and researchers, he is directly contributing to India's goal of technological self-sufficiency and global leadership.

As India aspires to be a hub of advanced manufacturing, sustainable design, and aerospace excellence, professionals like Dr. Pingle provide the expertise, ingenuity, and vision to make it happen. His continued focus on sustainable materials, energy harvesting, and digital engineering education aligns perfectly with the national thrust toward a *science-led, resilient economy*.

Conclusion

Dr Pawan Pingle's story is one of motion — both literal and metaphorical. It is a story of how vibrations, often considered a mechanical nuance, can be transformed into a powerful field of innovation and societal contribution. From aircrafts to racquets, from American labs to Indian classrooms, his journey is a testament to what is possible when curiosity meets commitment.

In the symphony of rising voices shaping a *Viksit Bharat*, Dr Pingle's is a note that resonates deeply — scientific, sharp, and unswervingly sincere.

Prasanna Ramanan S
Director – Product & Technology Management,
Agrisavant Pvt. Ltd.

Mr Prasanna Ramanan is a seasoned engineering professional with over 13 years of global experience in product design, development, and validation. Holding a Master's in Automotive Technology from VIT (in collaboration with ARAI) and a Bachelor's in Mechanical Engineering from Anna University, he has worked extensively across automotive and AgTech domains.

Prasanna has held various senior roles at Cummins Inc., where he led the development of turbocharger technologies for major clients like Mahindra, Tata Motors, Scania, and Volvo. His innovations include performance-boosting nozzle and shroud technologies and efficient integration strategies that enhanced engine fuel economy and emissions compliance. As Innovation Group Leader at Cummins, he doubled invention disclosures by fostering a strong R&D culture.

Currently, as Director at Agrisavant Pvt. Ltd., he leads product and technology strategy for AI/ML-based precision farming solutions that support sustainable agriculture through weather-informed nutrient and pesticide management.

With deep expertise in simulation modelling (CFD, FEA), product life cycle management, and cross-functional leadership, Prasanna brings a rare blend of technical depth and strategic vision. His work bridges engineering excellence and market impact, contributing meaningfully to sustainable technologies and future-ready solutions.

Powering Progress: Prasanna Ramanan and the Engineering of India's Innovation Frontier

In the corridors of cutting-edge engine design and fluid dynamics, few Indian minds have left a trail as inspiring and versatile as **Mr Prasanna Ramanan S**. A mechanical engineer by training and a new product strategist by excellence, his journey from the labs of Vellore to leadership in global mobility technologies reflects the spirit of *Viksit Bharat*—a nation rising through homegrown innovation, scientific rigor, and cross-border collaboration.

With over **13 years of industry experience**, including a long and impactful stint at **Cummins Inc.**, and his current leadership at **Agrisavant Pvt. Ltd**, Mr. Ramanan exemplifies what it means to turn ideas into impact.

Foundations of a Futurist

Mr Ramanan's academic credentials reveal a deep commitment to the science of engines and mobility. He holds a **Master's degree in Automotive Technology** from **Vellore Institute of Technology** (in collaboration with ARAI) and a **Bachelor's degree in Mechanical Engineering** from **Karpagam College of Engineering**, affiliated with Anna University. Even early in his academic life, he displayed a keen focus on combining theoretical models with practical performance outcomes.

This dual lens—systems-level thinking and hands-on application—has defined his career across domains such as **computational fluid dynamics (CFD)**, **product design**, **platform strategy**, and **business innovation**.

Engineering at the Frontier: The Cummins Era

Mr Ramanan spent more than a decade at **Cummins Inc.**, rising through the ranks in multiple engineering and leadership roles. As a **Technical Project Leader**, **Senior Engineer**, and later as a **Technical Specialist**, he played a pivotal role in the design and deployment of **turbocharging solutions** for some of India's most trusted commercial vehicles—from **Mahindra** and **Tata Motors** to **Volvo** and **Scania**.

Some of his hallmark contributions include:

- **Turbocharger integration** for 4.5L and 6.7L diesel engines,
- Design of **fixed nozzle turbocharger technologies** that enhanced fuel economy,
- Development of **multi-clearance shroud technology** for Variable Geometry Turbochargers (VGT),
- Strategic use of **CAE tools (CFD/FEA)** for aerodynamic and thermal optimizations.

Through these contributions, he not only helped companies meet **stringent emission norms**, but also improved engine **efficiency**, **reliability**, and **cost-effectiveness**—hallmarks of *Make in India* excellence.

Simulation to Sustainability: An Agile Mind in Motion

Mr Ramanan's expertise in **computational simulations** gave him a powerful edge in a highly competitive field. As a **Thermal and Fluid Science Engineer**, he:

- Used CFD to refine nozzle profiles,
- Developed virtual testing environments,
- Integrated advanced meshing techniques and turbulence modeling,
- Validated virtual results against physical data with scientific rigor.

This ability to **simulate, validate, and optimize** engineering systems is critical in modern product development, reducing lead times, prototyping costs, and environmental impact—exactly what India needs as it transitions to clean and connected mobility solutions.

From Engineer to Ecosystem Builder

What sets Mr Ramanan apart is his growth from a problem solver to a **solution architect and business leader**. His current role as **Director of Product and Technology Management at Agrisavant Pvt. Ltd.** represents a bold foray into **AgriTech**, where he is applying engineering precision to **sustainable farming**.

There, he leads the development of an **AI/ML-powered vision model** that helps farmers optimize fertilizer and pesticide use by accounting for **weather variability**—a tool that not only boosts crop yield but also champions **environmental stewardship**.

He has also served as the **New Product Business Development Leader at DFMEA Technosol**, where he identified **market gaps**, led **competitive analysis**, and drove **growth strategies** for technology adoption in new domains.

Innovation as a Culture

At Cummins, Mr Ramanan played a dual role as an **Innovation Group Leader**—an auxiliary but impactful responsibility where he nurtured a culture of **continuous improvement** and **IP generation**. Under his guidance, the rate of **invention disclosures doubled**, setting a new benchmark in the company's R&D ethos.

He worked with multi-disciplinary teams to:

- Identify **technology gaps**,
- Conceptualize **disruptive designs**,
- Champion **design thinking and agility** in a traditionally rigid industry.

Such efforts reflect his understanding that innovation is not just about products—it's about **people, processes, and platforms**.

Vision for a *Viksit Bharat*

Mr Ramanan envisions a **Viksit Bharat** where engineers don't just build machines—they build ecosystems. His career is a testimony to this vision. Whether it's cleaner engines, smarter farms, or more agile product cycles, his approach is rooted in **interdisciplinary integration**, **data-driven decision-making**, and a strong **sense of responsibility to society**.

In his words: *"Tomorrow's Bharat doesn't just need scientists—it needs systems thinkers who can see the full picture and build for resilience, not just performance."*

As he looks ahead, he plans to:

- Expand his work in **precision agriculture and sustainability**,
- Mentor young engineers to adopt **simulation-first design thinking**,
- Strengthen **industry-academia linkages** to fast-track innovation to market,
- Advocate for **agile engineering models** in traditional manufacturing ecosystems.

Concluding Reflection: The Designer of Tomorrow

Mr Prasanna Ramanan is not just designing components—he is **designing futures**. His story is a masterclass in **how to evolve as a professional**: from CFD engineer to project leader, from turbochargers to tech-for-agriculture, from internal combustion engines to intelligent sustainability tools.

He symbolizes the ideal *Rising Star of Viksit Bharat*:

- Technically grounded
- Globally aware
- Socially responsible
- Innovation-driven

Dr Sidharath Sharma

Engineering Lead - Anzen, London

Dr Sidharath Sharma is a distinguished Mechanical Engineer with a Ph.D. in Computational Fluid Dynamics and a strong background in the automotive, aerospace, and energy sectors.

Currently serving as Engineering Lead at Anzen in London, he has previously held research and consulting positions at prestigious organizations like Rolls-Royce UTC, JCB Power Systems, Alstom Transport, and Mahindra & Mahindra. Dr. Sharma is known for leading cross-functional teams, optimizing mechanical systems, and pioneering solutions in hydrogen engines, electric propulsion, and thermal management.

His career reflects a harmonious blend of industry application and academic contribution, including a £2 million EU-funded aviation electrification project and solar-powered innovations for Sub-Saharan Africa. With patents, best paper awards, and international conference leadership roles, he exemplifies technical excellence and societal impact. Passionate about sustainable innovation, Dr. Sharma represents the emerging generation of global Indian talent contributing to a self-reliant and technologically advanced *Bharat*.

Dr Sidharath Sharma: Engineering Tomorrow with Purpose, Precision, and Passion

In a world rapidly propelled by innovation and sustainability, the journey of Dr Sidharath Sharma stands out as a compelling narrative of vision, versatility, and deep-rooted values. From the classrooms of the National Institute of Technology (NIT) Srinagar to cutting-edge laboratories in the UK and France, Dr Sharma's story is a testament to how Indian talent is shaping global engineering frontiers while remaining anchored to the ideals of societal progress.

Rooted in Fundamentals, Driven by Curiosity

Born with a passion for machines and systems, Sidharath pursued Mechanical Engineering at NIT Srinagar, where he graduated in the top 5% of his class. His academic prowess and curiosity soon led him beyond the basics of thermodynamics and design—to the advanced and intricate world of computational simulations.

He began his career at Mahindra & Mahindra, one of India's automotive giants. Working across India and the USA, he quickly rose through the ranks—from Graduate Trainee to Deputy Manager—contributing to major product launches with best-in-class acoustic performance. His work in engine and exhaust acoustic modelling helped launch a car that was celebrated by over 20 national and international bodies. He also played a crucial role in evaluating product feasibility for North American markets, proving his acumen on a global platform early on.

An International Scholar with a Practical Mind

The turning point came when Dr Sharma was awarded the prestigious BorgWarner Research Fellowship, worth over £200,000. He pursued his Ph.D. in Computational Fluid Dynamics (CFD) at the University of Huddersfield, UK, in collaboration with Universitat Politècnica de València, Spain. His research, which spanned academia and industry, focused on virtual product development and mechanical system optimization—vital areas for both automotive and aerospace sectors.

During his doctoral journey, he not only published impactful research but also took on roles as a teaching assistant, course organizer, and final-year project supervisor. This ability to blend knowledge creation with knowledge dissemination set him apart as both a researcher and a mentor.

Engineering for Equity and Sustainability

At the University of Huddersfield, Dr Sharma served as a Research Fellow, where he managed projects that were as much about humanity as they were about science. One standout initiative was the development of a solar-powered water pump for Sub-Saharan Africa, a project that directly addressed water scarcity and energy access for marginalized communities. Leading a small but effective team, he transformed this £80,000 project into a beacon of sustainable engineering.

Leadership in High-Stakes Sectors

Dr Sharma's career continued to scale as he joined the Rolls-Royce University Technology Centre (UTC) at the University of Nottingham. Here, he led a multi-institutional consortium to evaluate electrification technologies for regional aviation, managing a £2 million EU-funded project. His work in electric propulsion not only

addressed climate concerns but also laid the foundation for the next generation of aviation technologies.

In early 2024, he served as CAE Consultant at JCB Power Systems, where he optimized hydrogen engine designs—saving over £400,000 in internal costs—and empowered a team of 20+ engineers through knowledge-sharing initiatives.

Currently, Dr Sharma serves as Engineering Lead at Anzen, a London-based firm where he continues to innovate at the intersection of mechanical systems and digital transformation.

Technical Mastery and Cross-Disciplinary Skills

Dr Sharma is proficient in advanced tools like ANSYS, STAR-CCM+, openFOAM, and MATLAB. His skillset spans CAD design, thermal-fluid simulations, additive manufacturing, machine learning for fluid mechanics, and agile project management. He has also enriched his knowledge through short courses at Imperial College London and the von Karman Institute, staying ahead in a fast-evolving field.

Global Recognition and Service to Science

A recipient of multiple patents and best paper awards (SAE, NAFEMS), Dr Sharma's work has been recognized not only by industry leaders but also by the global scientific community. He has served as a reviewer and editorial board member for high-impact journals such as AIAA, ASME, and IJER. As a session co-chair at major conferences like ASME 2019 and AIAA 2022, he has helped shape the discourse around engineering innovations.

He is also a representative for Early-Stage Researchers with the Royal Society of Engineering and the UK Acoustics Network+, reflecting his commitment to community and collaboration.

A Star Lighting the Path to *Viksit Bharat*

Dr Sidharath Sharma represents the ideal Rising Star of *Viksit Bharat*—technically brilliant, socially conscious, and globally competitive. His work touches sectors critical to India's development goals: clean energy, transportation, water access, and technological innovation. Yet, what makes him truly exemplary is his humility, his willingness to mentor, and his deep belief that engineering must serve people—not just markets.

As India journeys toward its vision of becoming a developed nation by 2047, it will need the dedication, global expertise, and integrity of individuals like Dr Sharma. He is not just engineering machines; he is engineering a better tomorrow—for India, and for the world.

Dr Smruti Smita Mohapatra
Documentation Officer,
SEVA – Jammu & Kashmir

Dr Smruti Smita Mohapatra is a dedicated veterinarian and social researcher working at the intersection of climate change, sustainable livelihoods, and rural development. With a Ph.D. in Veterinary Physiology and qualifications from premier institutions like OUAT, TANUVAS, WBUAFS, and IGNOU, she has contributed significantly to the documentation and empowerment of India's nomadic and indigenous communities—particularly the *Maldhari* of Gujarat and *Bakarwal* of Jammu & Kashmir.

Currently serving as the Documentation Officer at SEVA in Jammu & Kashmir, she leads initiatives on SDG implementation, gender inclusion, pastoralist welfare, and climate-resilient agriculture. Her efforts have earned national recognition, including the Rising Star Award (IVA 2024), Best PhD Thesis Award (2025), and features in publications celebrating women in veterinary sciences.

Dr Mohapatra has been a key consultant to CSOs and government agencies, working on projects for NABARD and the Centre for Pastoralism. As Rabies and Zoonoses Ambassador with Vigyan Setu Foundation, she has educated youth on one health and zoonotic disease prevention. Her grassroots work has directly impacted marginalized communities, promoting value addition, market access, and policy advocacy.

She also represents J&K in the national Pastoral Census initiative and continues to bridge science, society, and policy with deep empathy and vision.

Championing Livelihoods and Livestock: Dr Smruti Smita Mohapatra's Crossroads of Science, Society, and Sustainability

Veterinarian. Researcher. Rural development leader. From Gujarat's Maldharis to Kashmir's Bakarwals, Dr Smruti Smita Mohapatra is giving voice, value, and visibility to India's most overlooked communities.

In a country as diverse and complex as India, few professionals manage to navigate its plural challenges with the deftness of science, compassion, and grassroots action. **Dr Smruti Smita Mohapatra**, a veterinarian and rural development researcher, exemplifies what it means to blend academic excellence with field empathy.

Currently serving as a **Documentation Officer at SEVA**, Union Territory of Jammu and Kashmir, Dr. Smruti is a rising force at the intersection of climate resilience, dairy development, gender empowerment, and indigenous pastoral rights. Her work spans from Gujarat's salt flats to the highland meadows of Kashmir, binding together communities that have long lived with livestock—but remained on the margins of policy and development narratives.

A passionate advocate for **One Health**, inclusive growth, and sustainable livelihoods, she is not just a scientist working *on* rural India—she is a leader working *with* it.

A Multi-Disciplinary Mind: The Making of a Grassroots Scientist

Born on **28th May 1991**, Dr Smruti Smita Mohapatra's journey reflects both academic depth and a profound commitment to India's marginalised. After completing her **Bachelor of Veterinary Science & Animal Husbandry (B.V.Sc & A.H.)** from OUAT, she pursued **M.V.Sc** from TANUVAS and then completed her **Ph.D. in Veterinary Physiology** from WBUAFS.

But her learning did not stop there.

She also earned a **Postgraduate Certificate in Agriculture Policy** from IGNOU and a **Postgraduate Diploma in Animal Protection Laws** from NALSAR University of Law. Institutions like **IIT Kharagpur** and **IGNOU-NCIDE** have recognized her as a **potential innovator**, further validating her integrative approach to science and policy.

After completing her doctoral research, she joined **IRMA (Institute of Rural Management Anand)**—a crucible for rural thought leadership—where she took her academic insights to the field.

Research with Roots: Livestock Commons and Indigenous Livelihoods

What sets Dr Smruti apart is her ability to give voice to communities often invisible to mainstream research. Her work with two nomadic and indigenous pastoralist communities—**the *Maldharis* of Gujarat** and **the *Bakarwals* of Jammu & Kashmir**—has earned national and international recognition. These communities have long depended on livestock, yet their knowledge systems, adaptive practices, and ecological stewardship are rarely documented.

Her pioneering research has been acknowledged and **mapped on the World Map of Pastoralists and Camelids**—an honour that not only elevates her work but also brings global attention to India's rich but vulnerable pastoral heritage.

From climate adaptation strategies to animal husbandry practices, Dr Smruti's work captures the nuanced realities of livestock-based livelihoods in the context of **climate change**, **gender disparity**, and **rural resilience**.

Honours that Speak Volumes

Dr Smruti's impactful journey has been celebrated through numerous recognitions, including:

- **Rising Star Award 2024** by the Indian Veterinary Association
- Featured in '*Prerna*' and '*Aparajita*', compilations on inspiring women in veterinary sciences (2021 & 2024)
- **Best Oral Presentation Award (2024)** at the J&K Agricultural Science Congress for her work on climate-resilient agriculture
- **Young Veterinary Scientist Award 2024** by RVSKVV Gwalior and Agri Meet Foundation
- **Best Ph.D. Thesis Award (Veterinary Physiology)** on World Veterinary Day 2025 by IVA and BASU

These accolades reflect not just her research output but her role as a **science communicator**, mentor, and changemaker.

From Researcher to Rural Enabler: Projects That Empower

Dr Smruti has served as a principal investigator and consultant on several high-impact, field-driven research and development projects:

1. **IRMA Project (2022–23):** As Principal Researcher, she led the project titled *"Mitigation strategies against adverse effects of climate change on animal husbandry practices by Maldhari community of Kutch."* This participatory research brought together traditional knowledge and scientific approaches to improve dairying resilience.
2. **Centre for Pastoralism Study (2024–25):** Her work evaluated the real-time impact of Jammu & Kashmir's pastoralist policies, identifying gaps between policy intent and ground realities.
3. **SEVA-NABARD Livelihood Project (April 2025):** As Team Leader, she designed and implemented training modules for **wool-based livelihood development** around Wullar Lake in Bandipora, Kashmir. The initiative trained tribal and pastoralist communities in **value addition, marketing, and sustainable wool processing**.

Rabies and Zoonoses: A New Public Health Narrative

Dr Smruti's efforts are not limited to livestock livelihoods—they extend into **One Health advocacy** and **public health education**. As a **Rabies Ambassador 2023**, and later as **Zoonoses Ambassador 2024** for the **Vigyan Setu Foundation**, she brought critical awareness to zoonotic diseases among school students in Jammu.

Her sessions included interactive discussions on rabies prevention, safe handling of animals, and hygiene education—especially crucial in regions with limited veterinary infrastructure and high exposure to animal-human interfaces.

In 2025, she was appointed **Team Lead for the Rabies Ambassador Programme** across India and Nepal, reflecting her cross-border leadership in science-based community education.

Women, Wool, and Worth: Impact on the Ground

Dr Smruti's work stands out for its gender-sensitive approach. Through her IRMA fieldwork, she initiated programs like the *"Rural Haat for Maldharis"*, connecting artisans and dairy women with markets. One such example is **Smt Laxmiben Rabari**, who established *"Pehnava"*—a handicraft collective now empowering women in the Anjar block of Gujarat.

Similarly, in Kashmir's **Bandipora District**, her April 2025 SEVA-NABARD training empowered local women in wool weaving, marketing, and eco-friendly processing. These aren't just livelihood programs—they're platforms for **dignity, income, and identity**.

A Scientist with a Community Compass

As a consultant to several government departments and civil society organizations in Jammu & Kashmir, Dr Smruti serves as a crucial knowledge bridge. Her efforts contribute directly to **India's Sustainable Development Goals (SDGs)**, especially:

- **SDG 1 & 2**: Poverty alleviation through pastoral livelihoods and food security
- **SDG 3**: Good health via One Health and zoonoses awareness
- **SDG 5**: Women's empowerment through livelihood creation
- **SDG 13 & 15**: Climate action and sustainable ecosystem usage
- **SDG 17**: Partnerships for development through inter-institutional collaboration

The Way Forward: Building a *Viksit Bharat* from the Margins

When asked about the future, Dr Smruti smiles thoughtfully. "*Viksit Bharat* will not be built from cities alone—it will be woven from the aspirations of villages, the resilience of nomads, and the untapped wisdom of indigenous women," she says.

Her vision includes:

- **Mapping and mainstreaming pastoralist knowledge systems** into veterinary education and policy
- **Establishing a dedicated One Health Awareness Hub** in J&K to address public health through an integrated human-animal-environment lens
- **Training tribal women as rural para-vets and animal health entrepreneurs**, merging care with commerce
- **Expanding her wool-based livelihood models** across other Himalayan states
- **Using storytelling, documentation, and social media** to amplify invisible rural stories to national platforms

Final Reflections: A Note to the Next Generation

Dr Smruti's journey offers a powerful message: You don't need to choose between lab and land, research and rural. The future belongs to those who bridge divides.

"I want young vets, scientists, and development professionals to remember—real impact happens when you listen before you prescribe, include before you plan, and empower before you lead," she says.

Conclusion: The Future is Female—and Field-Based

Dr Smruti Smita Mohapatra represents a new generation of Indian scientists who are deeply rooted in the field yet firmly connected to global conversations. Her story is not only one of personal excellence but of systemic influence—changing how we see livestock, livelihood, law, and life in the hinterlands of India.

As India dreams of becoming a *Viksit Bharat* by 2047, professionals like her remind us that sustainable development begins in the shade of a tree, in a wool-weaving hamlet, or in the eyes of a child who now knows how to prevent rabies.

In science, as in society, visibility matters—and thanks to leaders like Dr Smruti, the invisible are beginning to shine.

Dr Vikas Mishra
Assistant Professor, A D College, Akbarpur (U.P.)
Science Communicator | Educationist | Puppetry Specialist

Dr Vikas Mishra is an acclaimed educationist and science communicator, currently serving as Assistant Professor in the Department of B.Ed. at Akbarpur Degree College, Akbarpur, Kanpur Dehat. With a Ph.D. in Education and NET/SLET qualifications, Dr. Mishra has over two decades of experience in science communication, teacher training, and educational research.

He is nationally recognized for integrating traditional puppetry into science and technology communication and has organized and led over 20 workshops and national projects supported by NCSTC-DST, Govt. of India. He has actively participated in 200+ national seminars and 13 international conferences, presenting research on education, communication, and cultural pedagogy.

A prolific writer, Dr Mishra has published more than 40 papers in refereed journals and books and contributed to science magazines like *Vigyan Pragati* and *Vigyan Aao Karke Sikhen*. He serves as editor and reviewer for several national journals and holds life memberships in numerous educational and scientific associations.

His outstanding contributions have earned him prestigious honours including the National Science Communication Award (2022), Innovative Teacher Awards, and multiple recognitions from reputed institutions and literary forums. He continues to inspire as a bridge between scientific thought and public engagement through culturally rooted educational tools.

From Puppets to People's Science: Dr Vikas Mishra's Journey as a Torchbearer of Scientific Temper in Bharat

In the heart of Uttar Pradesh, far from the spotlight of metropolitan laboratories and corporate science, a humble torch has been burning bright carried by a man whose mission is to bring science not just to classrooms, but to streets, villages, fairs, and festivals. This is the story of **Dr Vikas Mishra**, Assistant Professor, science communicator, and people's scientist in the truest sense.

A native of Kanpur, Dr Mishra is not your typical academician confined to lecture halls. Over the past 25 years, he has woven a remarkable narrative of *science for society*, using everything from street plays to puppetry, scientific journalism to school outreach. His story resonates with the spirit of *Viksit Bharat*—a nation that rises by empowering its people through knowledge, especially in its remotest corners.

The Spark: A Scholar Grounded in the Soil

Born on **15th July 1980**, Dr Mishra grew up with a deep curiosity and commitment toward education. After completing his M.Sc. in Physics and an M.Ed. in Education, he pursued a Ph.D. focusing on the psychological and educational challenges of science learning in secondary schools—a rare blend of pedagogy, psychology, and scientific inquiry.

Since **2014**, he has served as Assistant Professor in the Department of Education at Akbarpur Degree College, Kanpur Dehat. But his impact extends far beyond formal education.

"Classroom walls are not enough to ignite scientific curiosity," Dr. Mishra often says. "We need to reach out—wherever people are." This belief shaped a unique career that brings science communication directly to people's hearts, minds—and often, their courtyards.

Puppets as Professors: A New Grammar of Engagement

Dr Mishra is a pioneer of *science communication through puppetry* in India. What began as a creative experiment soon evolved into a movement. He has conducted more than **15 workshops** across the state, from Gorakhpur to Ghaziabad, using traditional puppets to explain modern scientific concepts.

Puppetry, in his hands, becomes a bridge—connecting indigenous storytelling to scientific reasoning. Through skits like "*Vigyan Putul Natika*" and science-based *nukkad nataks* (street plays), he has demystified topics such as sanitation, nutrition, health, pollution, and most recently, COVID-19.

During the pandemic, while cities turned inward, Dr. Mishra took science to villages—creating **bilingual e-content** and awareness drives on the prevention and treatment of the virus. His "Corona Awareness Puppetry Series" became a hit, especially in educationally backward districts like Barabanki, Sitapur, and Kanpur Dehat.

His message was clear: *science is not a privilege—it is a right, and it belongs to all.*

A Communicator Who Builds Communicators

One of Dr Mishra's most far-reaching impacts has been through the **National Children's Science Congress (NCSC)**. Over the years, he has mentored and guided more than **2,000 students** across **20+ districts of Uttar Pradesh**, helping them write, refine, and present research project proposals.

"Children are the real scientists," he says. "All they need is a little encouragement and guidance."

Whether it's rural school students preparing models or tribal children exploring environmental conservation, Dr Mishra's mentorship has been a launchpad for countless budding innovators.

He has also worked with **teacher educators**, **DIETs**, and **NGOs** to promote joyful learning techniques—turning science from an examination burden into a celebration of discovery.

Recognition of a Lifelong Mission

Dr Mishra's work has not gone unnoticed. In **2021**, he was awarded the **National Award for Science Popularization** by the **National Council for Science & Technology Communication (NCSTC), DST, Government of India**—one of the highest honours in the field of science outreach.

Over the years, he has earned more than **25 awards**, including:

- **Prof. Sitaram Jaiswal Best Paper Award**
- **Best Presenter Award (2004)**
- **Science Literature Recognition (2022)** by FoS&T, Govt. of India
- **Science Communication Excellence Awards** from various forums

He has also represented India at **13 international conferences**, including those at **IIT Kanpur**, **INSA New Delhi**, **BHU Varanasi**, and **Science City Ahmedabad**—delivering talks on environmental ethics, folk science communication, and innovation in teacher education.

His publications—over **40 research papers** and **16 popular science articles**—are a blend of academic rigor and public relevance. From educational psychology to value education, from comparative pedagogy to environmental activism—his writing spans disciplines but always returns to one goal: societal transformation through science.

A People's Science Platform: From Page to Performance

Apart from his role as an educator, Dr Mishra is an editorial force. He has served as:

- **Executive Editor** of *Shodh Sanchayan* (ISSN refereed journal)
- **Deputy Editor** of *Vigyan Aao Karke Sikhen* (science magazine)
- Former editor of *Shaikshik Halchal* (ISSN journal)

His contributions to ***Vigyan Pragati*** (CSIR's premier science magazine) and ISCOS (Indian Science Communication Society) have helped bring complex ideas into everyday language. He strongly believes in **Hindi** as a medium for science communication and has written extensively on linguistic accessibility in STEM.

Projects, Puppets & Passion: The Triple Axis of Impact

Dr Mishra has led or consulted on **10+ projects**, including:

1. **Science Communication through Puppetry** (2008–09)
2. **Science Awareness Mela** (2018–19)
3. **C.V. Raman Minor Research Projects** (2 phases)
4. **Media and Science Integration Workshops** (ISCOS & NCSTC)

In each of these, the focus has remained unchanged—*connecting science with the people it serves.*

Whether it's handwriting improvement camps in summer vacations, skill development with the Tharu tribes of Bahraich, or folk science demonstrations at the **India International Science Festival (IISF)**—Dr Mishra has been there, often without fanfare, always with purpose.

A Visionary for *Viksit Bharat*

As India marches toward becoming a *Viksit Bharat* by 2047, Dr Vikas Mishra stands out as a grassroots visionary. He is not just spreading scientific literacy but fostering **scientific temperament**—the very foundation of critical thinking and democracy.

"Development isn't only about skyscrapers and satellites," he says. "It's about how a child in a village understands why handwashing matters, or how a family sees climate change not as a distant threat, but a local reality."

His roadmap for the future includes:

- Integrating **folk media with digital platforms** to enhance reach
- Creating a **repository of bilingual science content** for underserved schools
- Training **rural teachers in creative science pedagogy**
- Expanding **district-level science fairs** into community knowledge festivals

He believes that **every school** can be a *science lab*, every teacher a *science communicator*, and every child a *curious explorer*.

Concluding Reflection: A Star Who Lights Many Paths

In a world often dazzled by techno-glamour, Dr Vikas Mishra reminds us of a deeper, quieter kind of brilliance—the kind that shines through consistency, conviction, and community connection.

He is not just a teacher or a communicator—he is a **catalyst**. A man who has turned puppets into platforms, fairs into forums, and students into scientists. As he continues to bring science to life in the most literal of ways, his story inspires a nation striving to be developed not just in infrastructure or economy—but in *awareness*, *equity*, and *enlightenment*.

In celebrating **Dr Vikas Mishra** as one of the *Rising Stars of Viksit Bharat*, we recognize not just his achievements, but the ripple effect he has created—an ever-widening circle of informed, inquisitive, and inspired citizens.

Dr. Vinaya Tari

Postdoctoral Fellow, Universitas Airlangga, Indonesia

Environmental Scientist & Research Author

Dr Vinaya Tari is an accomplished environmental scientist and postdoctoral fellow at Universitas Airlangga, Indonesia. With a Ph.D. in Environmental Science from the University of Mumbai and a strong foundation in environmental economics, nanotoxicology, biodegradation, and wetland management, she has emerged as a dynamic researcher and science communicator.

Dr Tari's global collaborations span across countries including Australia, Indonesia, Qatar, Nigeria, and the UK. She has authored and edited several books with international publishers like IGI Global and CRC Press and published over 35 research papers in reputed, Scopus-indexed journals. As an academic editor with PLOS ONE and board member for various scientific journals, she actively contributes to peer review and publication processes.

She has delivered invited talks, led international conferences, and worked in roles ranging from grant writing to sustainable farming consultancy. Dr Tari is also a recipient of the Young Scientist Award (DERO, India), and accolades recognizing her as an eco-conscious leader and women's empowerment advocate.

Beyond research, she champions causes like the Blue Economy, groundwater justice, and biodiversity conservation. With deep roots in Maharashtra and a global outlook, she continues to bridge science, policy, and sustainability for a greener, equitable future.

Dr Vinaya Tari: A Green Flame of Innovation in Environmental Science

In a world grappling with climate urgency, ecological imbalance, and the imperative of sustainable development, certain voices rise—not with noise, but with consistent work, innovation, and clarity. Among them stands **Dr Vinaya Satyawan Savitri Tari**, a postdoctoral researcher, environmentalist, science communicator, and a relentless champion for a greener, smarter, and more inclusive planet.

Hailing from the Konkan region of Maharashtra and currently contributing to global research in Indonesia, Dr Tari's journey is the embodiment of the aspirations of *Viksit Bharat*—an India that leads with knowledge, cares with compassion, and innovates with sustainability.

A Rooted Journey with a Global Vision

Dr Tari's educational path began with a B.Sc. in Zoology and an M.Sc. in Environmental Science from the University of Mumbai. From early on, her work demonstrated an ecological consciousness—her master's dissertation was completed at the prestigious CSIR–National Institute of Oceanography (NIO), Goa, reflecting a strong foundation in marine and environmental sciences.

She earned her **Ph.D. in Environmental Science** from Mumbai University in 2020, followed by international postdoctoral research at **Universitas Airlangga, Indonesia**, and a key research stint at the **Australian Centre for Sustainable Development Research and Innovation (ACSDRI)**.

Along the way, she has served not only as a researcher but also as an educator, grant writer, mentor, scientific editor, and sustainability consultant. From the classrooms of Chiplun to global panels on green economy and nanotechnology, Dr Tari has let her work speak across borders and disciplines.

Championing Green Science and Blue Economy

With an academic and applied background that spans **environmental economics**, **plant protection**, **biodegradation**, **nanotoxicology**, **wetland management**, and **circular and blue economies**, Dr Tari is among a rare breed of Indian scientists who combine fieldwork with futuristic thinking.

Her research focus has evolved with urgency:

- From **pesticide impact** in mango orchards of Ratnagiri,
- To **groundwater justice** in rural Uttar Pradesh,
- To **bioinsecticide development**,
- To **nano-based waste management** and **eco-friendly energy materials**.

She is the co-editor of cutting-edge books such as *"Novel Energy Storage and Conversion Technologies for Two-Dimensional MXenes and MBenes"* (IGI Global, USA) and upcoming titles under **CRC Press** and **Taylor & Francis**. Her research and editorial contributions have been acknowledged by leading international journals and publishing houses.

At the core of her work lies a commitment to **"green remedies for grey problems."** Whether it's managing marine pollution or decoding eco-legal frameworks, Dr Tari brings to the table not just expertise, but an ecological ethic rooted in justice and accessibility.

A Researcher and a Bridge-Builder

In the complex ecosystem of global research, Dr Vinaya Tari is not just publishing in reputed journals—she's building international collaborations with researchers from **Australia, Indonesia, Taiwan, Turkey, Nigeria, Qatar, Israel, and the Russian Federation.** She has presented at more than **36 conferences and workshops**, acted as a **scientific committee member** in numerous global platforms, and currently serves as an **academic editor at PLOS ONE (USA)** and a **young editorial board member** at *Microbial Biotechnology* (Wiley, UK).

Her interdisciplinary style has also made her a mentor for early-career researchers, an advisor for green start-ups, and a public speaker on issues like the **blue economy**, **eco-journalism**, **environmental law**, and the **role of women in STEM**.

At the *International Conference on Sustainability* held in Mumbai in 2023, where she served as **conference treasurer and presenter**, Dr Tari emphasized how India's ecological solutions must be **"glocal"—locally relevant but globally resonant**.

Powering Science for Society

Beyond academia, Dr Tari actively contributes to public science. She is associated with:

- **GauEcoGram Agrovikas Pvt. Ltd.**, where she consults on sustainable farming,
- **Expertrons**, as a certified career mentor,
- **Majhi Vasundhara Mitra**, a citizen-led climate initiative by the Government of Maharashtra,
- **IKIGAI – The Art of Living**, Hyderabad, where she bridges science and self-development.

Her articles in newsletters like *The Blue Planet*, *Agriculture and Environment*, and *Agricultural Science and Green Energy* reflect her passion for making science understandable and relevant to farmers, students, and civil society.

From **rainwater harvesting** to **food-water security analysis**, she breaks down complexity and makes knowledge usable. It's this rare blend of scientific depth and communicative clarity that makes her a standout voice in India's science diplomacy landscape.

Recognition and Reverence

Dr Tari's dedication has been recognized through multiple honours:

- **Young Scientist Award** by Deccan Environmental Research Organization (DERO)
- **"Friend of the Blue Planet"** title by ACSDRI, Australia
- **ADAMYA – The Unconquerable Empowering Women Award** (2023)
- **Best Poster Presentation** on World Ozone Day (2009)

But perhaps the most telling recognition is the sheer breadth of her influence—as a contributor, reviewer, editor, organizer, and mentor.

She is also a life member or committee member of over **20 academic and professional bodies**, including **IEEE**, **YES-Europe**, and the **Global Professors Welfare Association Forums**.

A Green Star in the Making

Dr Vinaya Tari's story is one of convergence: where environment meets education, where research meets real life, and where a woman scientist from coastal Maharashtra rises to become a global environmental voice.

She is deeply aligned with the spirit of *Viksit Bharat*—where development doesn't come at the cost of the environment, and where every scholar is also a steward.

Her next vision?

To work on integrated sustainability education that begins at the school level and culminates in policy advocacy. To create more opportunities for young scientists from rural India—especially women. And to continue building collaborations that prioritize the planet before profit.

Final Reflection

In Dr Vinaya Tari, we witness a rising star who is as rooted as she is radiant. Her science is not just peer-reviewed—it is people-reviewed, field-tested, and future-ready. As we envision India@2047, let her story be a reminder: that it is not only the high-tech labs or the urban corridors that define progress—it is the patient, persistent work of green visionaries like Dr Tari that will truly sustain our nation.

Vineet Kumar

Innovator | Entrepreneur

Vineet Kumar is a passionate innovator, ecosystem enabler, and cleantech entrepreneur based in Hyderabad with a background in Electrical & Electronics Engineering. With over four years of hands-on experience, he has shaped and supported more than 30 early-stage ventures, mentored over 1000 students, and contributed actively to India's startup ecosystem.

As a **Startup Coach** at the **Venture Development Centre (VDC)** of GITAM University, he guides budding entrepreneurs through ideation, pitch design, and business model development. Vineet has also founded ventures like **PolyFueler**, a plastic-to-fuel innovation recognized nationally, and **MediCool**, a solar-powered vaccine cooling device for rural health infrastructure.

His work has attracted grants from **Startup India**, **IIT Kanpur**, and **Indian Oil Corporation**, among others. A recipient of the ***Swachhata Saarthi* Fellowship**, **CDF Changemaker Fellowship**, and a finalist at the **IISF Innovation Challenge**, Vineet is equally adept in community leadership—having led innovation clubs, mentored robotics projects, and participated in global innovation programs like **Northeastern University's NEXPO**.

Vineet's commitment to solving real-world problems through sustainable technology and his collaborative work ethic exemplify the aspirations of a self-reliant, future-forward India.

Innovation with Impact: Vineet Kumar's Journey of Purpose, Prototypes, and Possibilities

In the evolving landscape of a self-reliant, *Viksit Bharat*, it is individuals like **Vineet Kumar** who translate national aspirations into grassroots action. An engineer, innovator, startup coach, and social technologist, Vineet is making waves not just in laboratories and classrooms but in communities that benefit directly from his innovations.

At the heart of his story lies a rare blend of **technical ingenuity and social empathy**—the ability to spot societal challenges, engineer low-cost solutions, and build scalable ventures that align with India's sustainability goals.

Early Foundations: Engineering for Social Change

Hailing from **Aurangabad, Bihar**, and now based in **Hyderabad**, Vineet's academic foundation in **Electrical and Electronics Engineering** from Sershah Engineering College set the stage for his explorations in applied technology. What began as curiosity in college hackathons and innovation sprints soon turned into award-winning prototypes with global recognition.

While still an undergraduate, Vineet realized that engineering needed to step outside conventional boundaries. His pursuit of purpose-led innovation led him to explore real-world problems: unmanaged plastic waste, cold chain failures in rural health, and lack of access to robotics education in Tier 2 and 3 regions.

PolyFueler: From Waste to Wealth

Among Vineet's most impactful innovations is **PolyFueler**, a homegrown machine that converts **1 kg of plastic into 800 ml of usable fuel**. Developed with a proprietary process and customized catalytic conversion, this solution emerged as a frontrunner in sustainability competitions across India.

Not only does PolyFueler address plastic pollution, but it also offers a decentralized energy generation model—perfect for rural and peri-urban settings. The project earned **over ₹10 lakhs in grants**, was recognized by **Northeastern University (Boston)**, and featured in SmartIDEAthon 2023, where Vineet's leadership stood out among more than 4,000 participants from across India.

MediCool: Saving Vaccines with Sunlight

Vineet's next breakthrough was **MediCool**, a solar-powered vaccine cooler designed for off-grid and remote areas. Understanding that vaccines often spoil due to temperature instability, Vineet developed a **smart cooling box** powered by solar energy and engineered with low-voltage power electronics.

MediCool received funding from innovation forums and NGOs and was showcased as a promising **health-tech solution** for rural healthcare delivery, especially in areas underserved by electricity or cold-chain infrastructure.

In a country where vaccine wastage can undermine public health efforts, MediCool stood as a **simple, yet transformative innovation** rooted in empathy and accessible engineering.

Scaling Through Education: JEVIX Technology LLP

Beyond developing technologies, Vineet has always been passionate about **sharing knowledge**. He co-founded **JEVIX Technology LLP**, a robotics and IoT training startup focused on rural students. The venture trained hundreds of learners in real-world applications like agricultural automation and smart irrigation through the **AgriBot project**.

With support from **BSTC Patna** and local NGOs, JEVIX became a platform for **hands-on learning, prototyping, and skill development**, preparing students for careers in Industry 4.0 while solving local agricultural problems.

Vineet's leadership also extended to **IIT Bombay's E-Yantra Innovation Club**, where he served as an Innovation Lead, conducting ideation sprints, project mentorship, and open-source prototyping sessions.

Enabling Others: Startup Coach at GITAM VDC

In 2024, Vineet joined **GITAM University's Venture Development Centre (VDC)** as a **Startup Coach**. Here, he mentored over **1000 students**, helped shape **30+ startups**, and designed capacity-building programs using the **"Ready, Set, Go" startup model** developed by Northeastern University, Boston.

From grant navigation to pitch decks, business model canvases to prototype refinement, Vineet became a critical pillar in GITAM's innovation ecosystem—guiding students not just as an educator, but as a **co-builder and problem solver**.

He also co-organized **startup bootcamps, VC panels, and mentor connect events**, building a dynamic, real-world bridge between academia and entrepreneurship.

Recognitions and Global Exposure

Vineet's work has been repeatedly recognized by national and international platforms. His **Plastic-to-Fuel**, **MediCool**, and **AgriBot** projects have received grants and accolades from:

- **Startup India & Northeastern University Boston**
- **IIT Kanpur's Ministry of Housing & Urban Affairs Grant**
- **Swachhata Saarthi Fellowship** (Govt. of India)
- **CDF Changemaker Fellowship** (Taco Bell Foundation & Ashoka)
- **IISF 2022 Innovation Challenge Winner**
- **SmartIDEAthon 2023** – Winner
- **Indian Oil's Sustain-a-thon 2024** – Runner-Up

In 2024, he was selected for the **NEXPO International Immersion Program** at **Northeastern University**, where he underwent intensive training in global entrepreneurship, startup scaling, and cross-border innovation.

Fellowships, Training, and Leadership Ethos

A true believer in **continuous learning**, Vineet completed the **National FDP in Entrepreneurship** at EDII Ahmedabad, was trained under **HarvardX's Ronald Heifetz** in public leadership, and earned certifications in **AI, soft skills, and communication** through TCS iON and other platforms.

His work ethic is grounded in **collaboration and community**, exemplified by his stints as:

- **Startup Ambassador, Government of Bihar**
- **Core Member, Entrepreneurship Cell**
- **Placement Cell Coordinator**
- **Innovation Mentor in college and state-level programs**

These roles enriched his ability to mentor, lead, and execute projects that matter beyond the lab or boardroom.

A Vision for *Viksit Bharat*

What makes Vineet Kumar a true **Rising Star of Viksit Bharat** is his alignment with India's long-term vision: sustainability, entrepreneurship, inclusivity, and decentralized innovation.

Whether it's converting waste into energy, delivering healthcare in remote zones, or mentoring first-time founders, Vineet brings **techno-social innovation** to life. His work reflects the **Gandhian principle of *Antyodaya***—serving the last mile first.

He continues to inspire by proving that impactful innovation doesn't need massive infrastructure, but **clarity of purpose, empathy, and grassroots action**.

Conclusion: Lighting the Way Forward

In a country where young minds often wait for opportunity, **Vineet Kumar creates his own—and then shares it with others**. His journey from Bihar to Boston, from student projects to startup pitches, tells a compelling story of what youth-led transformation looks like in 21st-century India.

As he continues to develop new technologies, enable future innovators, and solve real problems, Vineet Kumar stands not just as a technologist or entrepreneur, but as a **symbol of Bharat's developmental resolve**—grounded in service, powered by science, and driven by impact.

Dr Wahied Khawar Balwan
Associate Professor of Zoology,
Govt. Degree College, Doda (J&K)

Dr Wahied Khawar Balwan is a prolific academician, author, and science communicator serving as Associate Professor in Zoology at Government Degree College Doda, Jammu & Kashmir. With over 92 research publications in UGC-CARE, Scopus, and Web of Science-indexed journals, he has made significant contributions to life sciences. He has authored, edited, or co-authored 76 books—a rare feat in the Union Territory.

Recipient of over 66 national and international awards—including the Innovative Science Teacher Award (DST, J&K) and the Congress of Zoology Gold Medal—Dr Balwan is also honoured with honorary D.Litt. and D.Sc. degrees. He has presented in more than 70 national and international conferences and delivered over 35 invited lectures.

A passionate mentor, he has guided numerous postgraduate dissertations and co-supervised a Ph.D. thesis. He actively coordinates academic and administrative initiatives, including NEP 2020 implementation, IQAC, AISHE, and internal examinations. As a science communicator, he regularly contributes popular articles under *Vigyan Setu* and *Everyman's Science* series.

Dr Balwan is a fellow of over 35 academic societies and serves as an editor and reviewer for leading scientific journals, continuing to inspire excellence in teaching, research, and community outreach.

Building Knowledge Bridges from the Himalayas: The Inspiring Journey of Dr Wahied Khawar Balwan

In the remote mountainous district of Doda in Jammu and Kashmir, a zoologist is transforming higher education, research culture, and science communication through sheer commitment and prolific scholarly output.

High in the Chenab Valley, where clouds skim the Deodar forests and the challenges of remoteness often overshadow academic ambition, **Dr Wahied Khawar Balwan** is scripting an extraordinary story—one that transcends geography and discipline. A distinguished **Associate Professor of Zoology** at **Government Degree College, Doda (J&K)**, Dr Balwan is not just an educator but a force multiplier in India's scientific ecosystem.

With over **92 peer-reviewed research publications**, **76 books**, **65 awards**, and a strong commitment to both formal and informal science education, Dr Wahied is widely recognized as one of the most prolific academic contributors from the Union Territory of Jammu & Kashmir. But it's not just the numbers that impress—it's his unflinching belief in the power of accessible, value-based, and visionary education.

His work is shaping not only young minds in his classrooms but also researchers, civil service aspirants, clinicians, and the public across India and beyond.

Roots of Resolve: A Scholar's Journey from Doda

Born on **July 31, 1980**, D. Wahied Khawar Balwan's academic journey began amid the socio-political and infrastructural limitations of rural Jammu & Kashmir. Despite facing challenges typical of conflict-affected and hilly regions—lack of resources, mobility barriers, and minimal exposure to global research—he rose steadily through the ranks of academia.

His primary field of study, **Zoology with a specialization in Genetics**, became his platform not just for research but for wide-ranging contributions to education, curriculum development, and medical diagnostics.

He pursued his academic work with rigor and passion, eventually earning recognition not just in India, but internationally. He was conferred with an **Honorary D.Litt. by the University of South America** and a **D.Sc. (*honoris causa*)** by Ballbridge University, Republic of Dominica—global acknowledgments of his dedication to science.

Research, Writing, and Reach: An Unparalleled Academic Footprint

Few educators in India have matched Dr Wahied's pace and productivity. His **92 research papers** published in **UGC Care-listed, Scopus, and Web of Science-indexed journals** have significantly advanced the field of genetics and zoology. His scholarly writing delves into subjects ranging from developmental biology and population genetics to environmental biology and health science.

His **76 published books**—including textbooks, reference books, edited volumes, and co-authored works—represent a vast corpus of accessible scientific knowledge. These are now valuable assets to **undergraduate and postgraduate students, NET aspirants, and civil service candidates**, especially in regions where standard academic resources are often scarce.

Dr Wahied is also a prolific **science communicator**. He has written over **65 popular science articles** in magazines and newspapers, especially under initiatives like **"Science Connect," "Vigyan Setu,"** and **"Everyman's Science"**—demystifying science for general readers and encouraging youth participation.

Leading from the Front: Teaching, Mentoring, and Curriculum Development

At the Government Degree College, Doda, Dr Wahied wears many hats. Besides teaching zoology, he actively contributes to the institution's academic ecosystem as:

- **Coordinator of Internal Quality Assurance Cell (IQAC)**
- **Convener of Admission and Examination Committees**
- **Coordinator for Skill Courses and AISHE (All India Survey on Higher Education)**
- **Contributor to NEP 2020 implementation at college level**

He has mentored **numerous M.Sc. dissertations** for students affiliated with Barkatullah University, Bhopal; Lucknow University; and the University of Jammu (Institute of Human Genetics). In 2021, he **co-supervised a Ph.D. scholar** awarded the doctoral degree in Zoology from Dr. B.R. Ambedkar University, Agra, and he also conducted **Ph.D.** ***viva voce*** for scholars from Marathwada University in 2021 and 2023.

His teaching effectiveness is echoed in **consistent student feedback**, peer admiration, and departmental excellence.

Thought Leadership in Conferences and Academia

Dr Wahied is a regular presence at **national and international conferences**. He has:

- **Presented research in over 70 seminars/conferences**
- **Participated in 110+ academic events (seminars, courses, workshops)**
- **Delivered 35+ invited/plenary/resource person lectures**
- **Chaired or co-chaired 20 technical sessions**
- **Organized 10 major conferences and workshops**

Such sustained engagement with the academic community has allowed him to influence curriculum discourse, research trends, and inter-disciplinary collaboration—especially between life sciences, health sciences, and environmental studies.

He is also a **fellow member of 35 academic and research bodies**, signifying his broad-based intellectual footprint.

Awards and Recognitions: An Honours Gallery

Dr Wahied has been conferred with **66 national and international awards**, a testament to his scholarship, pedagogy, and innovation. Some notable accolades include:

- **Innovative Science Teacher Award** by the Department of Science & Technology, Govt. of Jammu & Kashmir
- **Congress of Zoology Gold Medal** by Zoological Society of India
- **Dr. Sarvepalli Radhakrishnan Award** by the Asian Biological Research Foundation
- **Honorary D.Litt. and D.Sc.** degrees for contributions to biological sciences and education

These awards reflect not just individual excellence but the symbolic rise of Jammu & Kashmir in India's scientific map, largely catalysed by leaders like Dr Wahied.

Research Impact on Society: Science That Serves

Dr Wahied's work is far from ivory tower academia—it actively improves lives. His doctoral research offered **first-of-its-kind diagnostic insights** in J&K, aiding **clinicians and medical scientists** in understanding regional health and genetics.

Moreover, his **books serve as lifelines** for students preparing for civil services, competitive exams, or higher education—particularly in underserved and conflict-affected areas. His writing simplifies complex biological processes, bringing clarity and confidence to learners often left behind in the educational race.

His contribution to **scientific temperament, career guidance, and curriculum democratization** has enabled thousands of learners across linguistic, geographic, and economic barriers to dream bigger and study better.

Vision for Viksit Bharat: Empowering India Through Education

For Dr Wahied, the vision of **Viksit Bharat 2047** is deeply personal. He believes that: "A truly developed India will be one where no student is deprived of quality education because of their location, language, or limitations."

His roadmap for contributing to India's development includes:

- **Developing bilingual and affordable academic resources** in life sciences for rural and remote learners
- **Establishing a Research and Training Centre** for young scientists in J&K focusing on genetics, ecology, and public health
- **Mainstreaming NEP 2020 reforms** through faculty training and curriculum enhancement
- **Promoting inter-disciplinary science through local-to-global linkages**, especially in mountain ecology and human genetics
- **Elevating J&K as a national hub for science writing, conferences, and publishing**

Final Reflections: A Scientist of the People, for the People

Dr Wahied Khawar Balwan is the embodiment of the scholar-citizen—someone whose research uplifts diagnostics, whose books democratize learning, and whose lectures ignite young minds. His profile challenges the stereotype that scientific excellence is limited to metros or elite institutions.

As India gears up for the Amrit Kaal leading to 2047, **Dr Wahied stands as a beacon of possibility**—that a professor in the remote Doda district can not only publish widely and teach deeply but also help **reshape India's scientific and educational future**.

His advice to young scientists and educators is simple, yet profound: "Let your roots inspire your reach. Great science isn't just about high-tech labs—it's about high purpose."

Conclusion: Lighting the Lamp of Learning in the Mountains

From genetics labs to conference podiums, from newspaper columns to student mentoring, **Dr Wahied Khawar Balwan** continues to prove that knowledge—when shared with sincerity and purpose—can transform individuals, institutions, and indeed, nations. He is not just a rising star in the landscape of Indian science; he is **a guiding light** in how education must evolve—collaborative, contextual, and committed to upliftment.

Dr Ashaq Hussain
Associate Professor of Chemistry,
Govt. Gandhi Memorial Science College, Jammu

Dr Ashaq Hussain, Associate Professor of Chemistry at Govt. Gandhi Memorial Science College, Jammu, is an eminent academic and science communicator with over 24 years of teaching experience. Holding a Ph.D. in Chemistry, his expertise lies in Inorganic and Environmental Chemistry, with significant contributions to research on microwave-assisted synthesis and antimicrobial activities of metal complexes.

He has authored 13 books, published 18 research papers, and written over 600 articles in newspapers and magazines, making science accessible to the wider public. Beyond academia, he has been actively involved in teacher training and student workshops since 2012, in collaboration with the Royal Society of Chemistry, UK, and the NCSTC, DST, Government of India.

As a Resource Person in numerous educational programs, Dr. Hussain has inspired thousands of students and teachers, particularly in underrepresented regions of Jammu and Kashmir. His contributions have earned him multiple recognitions, including the Best Educationist Award by District Administration Kishtwar, honours from the Rotary Club of Jammu, and an Outstanding Contribution Award in Science Popularization from ARTBSE, Nagpur.

Through his vision of *"My Bharat, My Responsibility"*, Dr. Hussain continues to champion sustainability, youth empowerment, and citizen-driven nation-building, making him a true catalyst for positive change in both academia and society.

Dr Ashaq Hussain: Nurturing Scientific Temper and Sustainable Futures

India's march towards a *Viksit Bharat* (Developed India) is powered not only by economic growth and technological advancement but also by the quiet, tireless contributions of individuals who dedicate their lives to nurturing knowledge, promoting education, and inspiring future generations.

Among such torchbearers stands **Dr Ashaq Hussain**, Associate Professor of Chemistry at Govt. Gandhi Memorial Science College, Jammu. His journey, rooted in the serene landscapes of Jammu and Kashmir, reflects an extraordinary blend of scholarship, service, and societal engagement. Through his teaching, research, authorship, and public outreach, Dr Hussain has become a significant figure in advancing science education and sustainability awareness, particularly in regions where opportunities are often limited.

Early Life and Academic Journey

Born on **3rd February 1977**, Dr Hussain grew up in the picturesque yet educationally underserved region of Doda in Jammu and Kashmir. His curiosity for science, coupled with a deep respect for knowledge as a transformative force, guided him towards the discipline of chemistry. His academic pursuits culminated in a **Ph.D. in Chemistry**, with specialization in **Inorganic and Environmental Chemistry**. His research interests, particularly in **microwave-assisted synthesis** and the **antimicrobial activities of metal complexes**, reflect both scientific rigor and social relevance.

Over the years, he cultivated an academic career that extends well beyond traditional classroom teaching, blending pedagogy with mentorship, community engagement, and leadership. His teaching portfolio spans more than **24 years**, including **18 years at the undergraduate level** and **six years at the secondary level**, ensuring that his impact touches multiple generations of learners.

Contributions to Teaching and Research

Dr Hussain's teaching philosophy is rooted in simplicity, clarity, and real-world application. He consistently strives to bridge the gap between complex chemical concepts and everyday life, making science relatable to students across disciplines. His classes emphasize not just factual knowledge but also critical thinking and curiosity — qualities essential for building a scientific temper.

On the research front, his published work includes **18 research papers** in national and international journals, covering themes such as novel methods of synthesis and the biological activities of chemical compounds. His research integrates modern techniques with practical applications, underlining his commitment to both advancing scientific frontiers and addressing societal needs.

His authorship of **13 books** on chemistry and science education further reflects his dedication to knowledge dissemination. These books serve as valuable resources for students, educators, and researchers, offering both academic insights and pedagogical clarity. Beyond academic publications, his extraordinary output of **over 600 articles in newspapers and magazines** demonstrates his zeal for science popularization. Through these writings, he reaches audiences far beyond academic circles, helping ordinary citizens appreciate the role of science in daily life.

Championing Science Popularization and Outreach

One of Dr Hussain's most significant contributions lies in the domain of science outreach. Recognizing that science cannot remain confined to laboratories and lecture halls, he has worked tirelessly to bring it into classrooms, communities, and public spaces.

Since **2012**, he has been associated with various **teacher training and student workshops**, often organized in collaboration with prestigious bodies like the **Royal Society of Chemistry, UK** and the **National Council for Science & Technology Communication (NCSTC), Department of Science & Technology, Government of India**. These workshops — conducted across multiple regions of Jammu and Kashmir — have empowered teachers with new methods of experiential learning and inspired thousands of students to view science as an exciting and empowering discipline.

As a **Resource Person** in numerous national and regional educational initiatives, he has played a vital role in hands-on chemistry workshops, conferences, and training sessions. His ability to communicate complex topics in accessible language makes him an effective mentor, motivating young minds to pursue careers in science.

Leadership and Administrative Roles

Dr Hussain's contributions extend to academic administration as well. He has served as **Associate Dean of Student Welfare at Cluster University of Jammu**, where he worked to ensure that educational growth was complemented by student engagement, welfare, and extracurricular development. His leadership philosophy emphasizes inclusivity, participation, and holistic growth — principles that mirror the broader vision of a *Viksit Bharat*.

His experience in academic leadership, coupled with his grassroots outreach, places him at the intersection of policy, pedagogy, and practice — enabling him to contribute meaningfully to educational reform and innovation.

Recognitions and Awards

Dr Hussain's work has not gone unnoticed. His contributions have been honoured by several institutions and organizations.

- **Best Educationist Award** by the District Administration of Kishtwar, recognizing his tireless efforts in advancing education.
- Recognition from the **Rotary Club of Jammu**, reflecting his societal impact and service orientation.
- **Outstanding Contribution Award in Science Popularization and Education** by ARTBSE, Nagpur, a testament to his ability to make science engaging and accessible to wider communities.

These accolades, while affirming his personal achievements, also highlight the value of sustained grassroots engagement in shaping a scientific society.

Vision for a Sustainable Bharat

Dr Hussain's intellectual and professional pursuits are deeply intertwined with his vision of a sustainable future for India. His essay, *"My Bharat, My Responsibility: My Vision for a Sustainable Bharat"* (2025), outlines a holistic framework for nation-building

anchored in environmental stewardship, citizen participation, and educational empowerment.

In his vision, sustainability is not a peripheral concern but a **moral and civic responsibility**. Drawing upon India's civilizational ethos and ecological wisdom, he emphasizes the urgent need to balance modernization with environmental preservation. He advocates for integrating **traditional ecological knowledge** with modern science, promoting renewable energy, sustainable agriculture, and inclusive education.

Central to his philosophy is the belief that every citizen has a role to play in nation-building: *"My Bharat, My Responsibility" is not a slogan; it is a call to action.*

He champions grassroots citizen engagement, youth empowerment, women's education, and holistic development as pillars of sustainable growth. His strategy of **Avoid, Minimize, Generate (AMG)** for resource management exemplifies his pragmatic approach to sustainability — encouraging citizens to avoid unnecessary consumption, minimize usage through efficiency, and generate clean energy alternatives.

Impact on Society and Community

Dr Hussain's impact extends beyond academic and scientific contributions. By organizing workshops in remote and underserved areas of Jammu and Kashmir, he has inspired countless students who may otherwise have had limited exposure to science. His writings in newspapers and magazines foster scientific awareness among the general public, encouraging informed discussions on pressing issues such as climate change, environmental degradation, and public health.

His efforts have helped bridge the gap between **science and society**, ensuring that knowledge does not remain confined to elite circles but becomes a tool of empowerment for ordinary citizens. He stands as an example of how educators can serve as catalysts for social transformation by combining intellectual pursuit with civic responsibility.

Inspiring the Next Generation

As India journeys towards *Amrit Kaal* and envisions becoming a developed nation by 2047, educators like Dr. Hussain play a pivotal role. His emphasis on **curiosity-driven education**, **youth participation**, and **sustainability consciousness** resonates strongly with the aspirations of a new India.

By mentoring young students and teachers, authoring books, contributing to policy-level discussions, and engaging in grassroots activism, he demonstrates the multifaceted role of a 21st-century academic. His life's work exemplifies how dedication, vision, and perseverance can ripple outward to inspire thousands and, ultimately, shape the trajectory of a nation.

In his words, *"Every Indian — from policymakers to farmers, students to entrepreneurs — has a crucial role."* By living this principle, he exemplifies the spirit of responsibility, service, and innovation that will guide India towards a brighter, more sustainable future.