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Media Contacts:

The New York Academy of Sciences
Kamala Murthy
Kmurthy@nyas.org

Tata Sons
Harsha Ramachandra
harsha.r@tata.com

First Winners of the Tata Transformation Prize Announced Today, Celebrating Pathbreaking Innovation in India

Three rising stars in science are recognized for their cutting-edge solutions to food security, sustainability, and healthcare.

Mumbai, India – 7 November 2023: [Tata Sons](#) and [The New York Academy of Sciences](#) today announced the first [Winners](#) of the [Tata Transformation Prize](#). The prize recognizes and supports visionary scientists in India who are developing innovative solutions to critical societal challenges.

Three scientists were selected from 169 entries by an international jury of renowned experts for their innovations in food security, sustainability, and healthcare. Each winner will receive INR 2 crores (approximately US\$240,000) and will be honoured at a ceremony in Mumbai in December 2023. The jury included distinguished scientists, clinicians, technologists, and engineers spanning six continents from a variety of organizations, including IBM Research, Indian Institute of Science Bangalore, Indian Institute of Technology Madras, International Centre for Genetic Engineering and Biotechnology, Public Health Foundation of India, and UN-Habitat.

The 2023 Tata Transformation Prize Winners are:

- **Food Security Winner: Shilpi Sharma, PhD, [Indian Institute of Technology Delhi](#)**
Professor Shilpi Sharma was selected by the jury for her work in the engineering of the soil microbiome using synthetic microbial communities, called microBIOme-based soil TRANSFORMATION (BIOTRANSFORM). Plant diseases threaten crop productivity and, consequently, the global economy. Unlike conventional farming that uses agrochemicals and synthetic fertilizers, soil amended organically has the natural ability to suppress a wide range of plant pathogens. Starting from naturally suppressive soil, Shilpi will catalog the active microbial players and their mechanism of suppression of a range of phytopathogens. Her work will be the first to map the natural suppressive potential of soil across six states of India and to harness

this potential by microbiome engineering to facilitate sustainable agriculture in the country and beyond.

- **Sustainability Winner: Purnananda Guptasarma, PhD, [Indian Institute of Science Education and Research Mohali](#)**

Professor Purnananda Guptasarma was selected by the jury for his breakthrough methods to degrade polyethylene terephthalate (PET), a common plastic pollutant, using enzymes. PET is currently produced and used at unsustainable levels, creating worldwide plastic pollution and micro-plastic contamination in the air, water, and soil, as well as in animal and human bodies. Only 9% percent of PET is actually recycled worldwide. Guptasarma's enzyme-driven strategy uses engineered thermostable enzymes and reactions to demonstrate that solid PET can be broken up into its smallest molecular building blocks with high yield and ultra-high purity to enable PET's degradation and recycling into virgin plastic. Building on this proof of concept at the laboratory-scale, Guptasarma will further identify and improve enzymatic reagents and reactions for PET degradation and attempt to produce the best enzymes in quantities allowing pilot-scale PET-waste degradation and recycling.

- **Healthcare Winner: Anurag Singh Rathore, PhD, [Indian Institute of Technology Delhi](#)**

Professor Anurag Singh Rathore is a healthcare pioneer aiming to reduce the manufacturing cost of biotherapeutics for treating cancer and autoimmune diseases, thus enabling equal access to these top-tier, expensive treatments currently out of reach for 90% of the Indian population. Rathore has established a state-of-the-art drug manufacturing facility with continuous processing that incorporates novel methods for real-time process monitoring and control. Rathore's innovation is projected to reduce manufacturing costs by 50-75%, making best-in-class biotherapeutics for complex diseases significantly more affordable for Indian populations in need and further advancing India's position at the forefront of global medical innovation.

[N. Chandrasekaran](#), Chairman of the Board of Tata Sons, said, "We are extremely delighted to announce the first cohort of Tata Transformation Prize winners and their groundbreaking innovations aimed at solving India's national problems in the areas of food security, sustainability, and healthcare. On behalf of Tata Sons, we are pleased to provide these scientists a global stage to take their technologies from India to the rest of the world."

[Nicholas Dirks](#), President and CEO of The New York Academy of Sciences, said, "Congratulations to the first Winners of the 2023 Tata Transformation Prize. From developing new soil enhancements to improve crop yield, creating methods to make critical medicines available to all, and developing techniques to tackle plastic pollution, these scientists are making important contributions to Indian society and the world. We also thank the jury for sharing their time and expertise in reviewing the submissions in the first year of the Tata Transformation Prize."

ABOUT THE TATA TRANSFORMATION PRIZE

The Tata Transformation Prize was established in 2022 by Tata Sons and The New York Academy of Sciences to support breakthrough, innovative technologies that address India's most significant challenges. By recognizing and supporting the implementation at scale of high-risk, high-reward research, the Prize will drive impactful innovation in scientific disciplines of importance to India's societal needs and economic competitiveness. The Prize will leverage the exceptional potential of scientists in India to address critical national challenges in three categories—Food Security, Sustainability, and Healthcare—and generate improved life quality outcomes across India and beyond. The Tata Transformation Prize recognizes one Winner in each category, with INR 2 crores (approximately US\$240,000) for each Winner. Click here for more information about the [Tata Transformation Prize](#).

ABOUT THE TATA GROUP

Founded by Jamsetji Tata in 1868, the Tata Group is a global enterprise, headquartered in India, comprising 30 companies across ten verticals. The group operates in more than 100 countries across six continents, with a mission 'To improve the quality of life of the communities we serve globally, through long-term stakeholder value creation based on Leadership with Trust'.

Tata Sons is the principal investment holding company and promoter of Tata companies. Sixty-six percent of the equity share capital of Tata Sons is held by philanthropic trusts, which support education, health, livelihood generation and art and culture.

In 2022-23, the revenue of Tata companies, taken together, was \$150 billion (INR 12 trillion). These companies collectively employ over 1 million people. Each Tata company or enterprise operates independently under the guidance and supervision of its own board of directors. There are 29 publicly listed Tata enterprises with a combined market capitalisation of \$300 billion (INR 24 trillion) as on July 31, 2023. Companies include Tata Consultancy Services, Tata Motors, Tata Steel, Tata Chemicals, Tata Consumer Products, Titan, Tata Capital, Tata Power, Tata Communications, Indian Hotels, Tata Digital, Air India and Tata Electronics. Website: <https://www.tata.com>

ABOUT THE NEW YORK ACADEMY OF SCIENCES

The New York Academy of Sciences is an independent, not-for-profit organization that, since 1817 has been committed to advancing science for the benefit of society. With more than 20,000 Members in 100 countries, the Academy advances scientific and technical knowledge, addresses global challenges with science-based solutions, and sponsors a wide variety of educational initiatives at all levels for STEM and STEM-related fields. The Academy hosts programs and publishes content in the life and physical sciences, the social sciences, nutrition, artificial intelligence, computer science, and sustainability. The Academy also provides professional and educational resources for researchers across all phases of their careers.

The Tata Transformation Prize is the latest in a series of prominent [awards and scholarship programs](#) The New York Academy of Sciences and its partners present each year to accomplished early-career and established scientists worldwide. These initiatives, along with education and professional development programs for students and young scientists, reflect the Academy's broader commitment to strengthening and diversifying the pipeline for skilled and talented scientists globally. Please visit us online at nyas.org.