

Dr Ambarish Ghosh wins 2025 Tata Transformation Prize for cancer-targeting nanorobots

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For pioneering a breakthrough in cancer treatment using magnetic nanorobots



The New York Academy of Sciences and Tata Sons have announced the Winners of the 2025 Tata Transformation Prize. Selected from a competitive pool of 212 nominations spanning 27 Indian states, the winners were chosen by an international jury of eminent scientists, clinicians, technologists, and engineers. Each Winner will receive Rs 2 crore (approximately \$228,000) to advance their research and scale its real-world impact.

Chosen in the healthcare category, Ambarish Ghosh, PhD, (from the Indian Institute of Science) is pioneering a breakthrough in cancer treatment using magnetic nanorobots – tiny, helical devices that can be safely guided through the body using magnetic fields. These nanorobots are designed to navigate complex biological environments, deliver drugs directly to tumours, and distinguish cancerous tissue from healthy cells. His team is also creating real-time imaging tools to track and steer the nanorobots during treatment. This technology promises more precise, less invasive cancer therapies with fewer side effects, with the potential to revolutionize cancer care worldwide and make advanced treatments more accessible and affordable in India and other low- and middle-income countries.

The other winners include Padubidri V. Shivaprasad, PhD, National Centre for Biological Sciences (in the food security category); and Balasubramanian Gopal, PhD, Indian Institute of Science (in the sustainability category).

The Winners will be celebrated at an awards ceremony in Mumbai in December 2025. The jury, consisting of experts from leading academic, industrial, and governmental institutions across India, the U.S., Europe, Asia, and Australia, included representatives from IBM Research, Biocon, the Bill & Melinda Gates Foundation, the University of Messina (Italy), Murdoch University (Australia), the Indian Institute of Management Bangalore, the National Institute of Advanced Studies, and the CSIR - Central Drug Research Institute.