



## Rashtriya Vigyan Puraskar 2024

### Honoring Scientific Excellence in India

August 23, 2024

#### Introduction

Science and technology are the pillars of societal progress, driven by the relentless pursuit of knowledge and innovation. In India, the Rashtriya Vigyan Puraskar (RVP) stands as one of the highest recognitions in the field of science, technology, and innovation. Established to acknowledge and inspire the remarkable contributions of scientists, technologists, and innovators, the RVP honors those who have made path-breaking discoveries and advancements that significantly impact society.



1

<sup>1</sup> <https://x.com/karandi65/status/1826629638191227273/photo/2>

## Rashtriya Vigyan Puraskar 2024: A Celebration of Excellence

On **August 22, 2024**, the inaugural **Rashtriya Vigyan Puraskar** ceremony was held at Gantantra Mandap, Rashtrapati Bhavan, with **President Smt. Droupadi Murmu** presenting the awards to **33 distinguished scientists** across the four categories. The Minister of Science & Technology, Dr. Jitendra Singh was also present for the occasion.

### Categories of the Award

The Rashtriya Vigyan Puraskar is awarded in four distinct categories:

- Vigyan Ratna (VR) Award:** This is the highest honor, awarded for lifetime achievements in any field of science and technology.
- Vigyan Shri (VS) Award:** Recognizes distinguished contributions in any field of science and technology.
- Vigyan Yuva-Shanti Swarup Bhatnagar (VY-SSB) Award:** Honors young scientists who have made exceptional contributions in science and technology.
- Vigyan Team (VT) Award:** Given to a team of three or more scientists/researchers/innovators who have made significant contributions in their field through collaborative work.

### Key Awardees

**Award: Vigyan Ratna**

**Field: Biological Sciences**

**Awardees: Prof. Govindarajan Padmanabhan**

**Profile:** NASI Honorary Scientist & Professor, Indian Institute Of Science, Bangalore: Prof. Padmanabhan has been instrumental in creating the Biotechnology Industry Assistance Council, New Delhi that supports 1800 incubatees and generating more than 800 products in the area of Biotechnology. Prof. Padmanabhan elucidated the heme-bio synthetic pathway of

plasmodium causing malaria and pioneered several molecular biology / biotech research efforts in the country



**Award: Vigyan Shri**

**Field: Agricultural Science**

**Awardees: Dr Anandharamakrishnan C**

**Profile:** Director, CSIR - National Institute for Interdisciplinary Science and Technology, Thiruvananthapuram: Dr Anandharamakrishnan C has significantly contributed to the field of food processing and has improved the understanding of innovative food processing technologies, nutrient delivery systems, 3-D food printing, food structure & digestion, and their applications towards achieving sustainable food systems

**Award: Vigyan Shri**

**Field: Atomic Energy**

**Awardees: Dr Avesh Kumar Tyagi**

**Profile:** Distinguished Scientist & Director, Chemistry Group, Bhabha Atomic Research Centre, Mumbai: Dr. Tyagi is a globally acclaimed scientist and technologist. He has made groundbreaking contributions to the advancement of processes and materials crucial to Indian Atomic Energy Program



The image is a graphic for the Rashtriya Vigyan Puraskar 2024. It features a light blue background with a molecular structure pattern. At the top right is the logo of the PIR (Public Information Research Unit). The main title is "Rashtriya Vigyan Puraskar 2024" in a bold, black serif font. Below it is a decorative flourish. The central text is "Vigyan Shri" in a large, bold, brown serif font. Underneath that is a dark brown rectangular box containing the text "Final List of Awardees" in white. Below this box are two columns of names, each preceded by a gold medal icon. The names are: Dr. Anandharamakrishnan C, Dr. Avesh Kumar Tyagi, Prof. Umesh Varshney, Prof. Jayant Bhalchandra Udgaonkar, Prof. Syed Wajih Ahmad Naqvi, Prof. Bhim Singh, Prof. Adimurthi Adi, Prof. Rahul Mukherjee, Prof. Dr Sanjay Behari, Prof. Lakshmanan Muthusamy, Prof. Naba Kumar Mondal, Dr. Annapurni Subramaniam, and Prof. Rohit Srivastava.

**Rashtriya Vigyan Puraskar 2024**

**Vigyan Shri**

**Final List of Awardees**

🏆 Dr. Anandharamakrishnan C	🏆 Prof. Rahul Mukherjee
🏆 Dr. Avesh Kumar Tyagi	🏆 Prof. Dr Sanjay Behari
🏆 Prof. Umesh Varshney	🏆 Prof. Lakshmanan Muthusamy
🏆 Prof. Jayant Bhalchandra Udgaonkar	🏆 Prof. Naba Kumar Mondal
🏆 Prof. Syed Wajih Ahmad Naqvi	🏆 Dr. Annapurni Subramaniam
🏆 Prof. Bhim Singh	🏆 Prof. Rohit Srivastava
🏆 Prof. Adimurthi Adi	

**Award: Vigyan Shri**

**Field: Biological Sciences**

**Awardees: Prof. Umesh Varshney**

**Profile:** Honorary Professor, Department of Microbiology & Cell Biology, Indian Institute of Science, Bengaluru: Prof. Varshney is an outstanding biologist and his fundamental work is on essential processes of protein synthesis and DNA repair in tubercular bacteria, E. coli and holds promise towards the development of TB vaccines

**Award: Vigyan Shri**

**Field: Biological Sciences**

**Awardees: Prof. Jayant Bhalchandra Udgaonkar**

**Profile:** Professor, Indian Institute of Science Education and Research, Pune: Prof. Udgaonkar has made outstanding contributions to the understanding of protein structure and function including protein folding and misfolding in the field of structural biology

**Award: Vigyan Shri**

**Field: Earth Sciences**

**Awardees: Prof. Syed Wajih Ahmad Naqvi**

**Profile:** National Science Chair, CSIR-National Botanical Research Institute, Lucknow: Prof. Naqvi is an outstanding Biogeochemical Oceanographer with national and international recognition. His pioneering research work had an enduring disruptive impact in the field of oceanography.

**Award: Vigyan Shri**

**Field: Engineering Sciences**

**Awardees: Prof. Bhim Singh**

**Profile:** SERB National Science Chair & Emeritus Professor, Indian Institute of Technology Delhi: Prof. Singh is prolific researcher and technology mentor with good applied and translational research in the field of power electronics that includes power quality and multipulse convertors, solar PV power generation.

**Award: Vigyan Shri**

**Field: Medicine**

**Awardees: Dr Sanjay Behari**

**Profile:** Director, Sree Chitra Tirunal Institute for Medical Sciences and Technology, Thiruvananthapuram: Prof. Behari is luminary in neurosurgery, epitomised by exemplary service, high quality research and significant advancements in medical technology and infrastructure. He has fostered an environment integrating health sciences with biomedical technology that translates into patents and medical devices as products.



**President presents Vigyan Shri Awards**



2

**Award: Vigyan Shri**

<sup>2</sup> <https://x.com/rashtrapatibhvn/status/1826520937552036001>

**Field: Mathematics and Computer Science**

**Awardees: Prof. Adimurthi Adi**

**Profile:** Distinguished Visiting Professor, Indian Institute of Technology Kanpur: Prof. Adimurthi has made fundamental contributions in the analysis of partial differential equations and settling many important questions in the field. His research contributions can be classified into Semilinear elliptic PDEs, Functional Inequalities, and Hyperbolic conservation laws.

**Award: Vigyan Shri**

**Field: Mathematics and Computer Science**

**Awardee: Prof. Rahul Mukherjee**

**Profile:** National Science Chair, Indian National Science Academy, Indian Institute of Management, Kolkata: Prof. Mukherjee has made outstanding contributions and his contributions to mathematical statistics is well recognized. His academic work in statistics encompasses a wide field, which includes Design of Experiments, Bayesian theory, Asymptotic analysis and survey sampling.

**Award: Vigyan Shri**

**Field: Physics**

**Awardees: Lakshmanan Muthusamy**

**Profile:** Professor of Eminence & DST-SERB National Science Chair, Bharathidasan University, Tiruchirappalli: Prof. Muthusamy is a towering figure in the nonlinear dynamics in the field of physics that includes celestial dynamics in mathematics with inter-disciplinary applications in the field of biology, chemistry, economics and sociology.

**Award: Vigyan Shri**

**Field: Physics**

**Awardees: Naba Kumar Mondal**

**Profile:** INSA Senior Scientist, Saha Institute of Nuclear Physics, Kolkata: Prof. Mondal is a leading experimental Particle Physicist with international acclaim in the field of neutrino physics. He led the conception and design of the detector for the India-based Neutrino Observatory, the INO, useful for young experimentalists working on neutrino physics.

**Award: Vigyan Shri**

**Field: Space Science and Technology**

**Awardees: Dr Annapurni Subramaniam**

**Profile:** Director, Indian Institute of Astrophysics, Bengaluru: Dr. (Ms.) Subramaniam has made pioneering contributions to physics of single and binary stars, blue stragglers, star clusters, star formation, galactic structure, Magellanic clouds etc. She led the in-orbit calibration and produced impactful scientific results with the UV imaging telescope and also in the Astrosat Mission

**Award: Vigyan Shri**

**Field: Technology and Innovation**

**Awardees: Prof. Rohit Srivastava**

**Profile:** Chair Professor, IIT Bombay: Prof. Srivastava has significantly contributed to point of care medical devices, bio-medical microsystems and nanoengineered biosensors resulting in technology development that includes mobile based urine analysis, diabetes management, noninvasive hemoglobin measurement and lipid analysis systems

**Award: Vigyan Yuva**

**Field: Agricultural Sciences**

**Awardees: Dr Krishna Murthy S L**

**Profile:** Senior Scientist, Indian Institute of Rice Research, Hyderabad: Dr Krishna Murthy has developed six salt tolerant varieties of rice and four genetic stocks for salinity and alkalinity tolerance. The extension related work helped cover a significant area with these varieties





## President presents Vigyan Yuva Awards



3

**Award: Vigyan Yuva**

**Field: Agricultural Science**

**Awardees: Dr Swarup Kumar Parida**

**Profile:** Scientist, National Institute of Plant Genome Research (NIPGR), New Delhi: Dr Parida was instrumental in developing various concepts on integrated next-generation molecular breeding and deployed it for efficient genetic dissection of complex stress tolerance, yield and plant architectural traits in order to accelerate crop improvement of rice and chickpea

---

<sup>3</sup> <https://x.com/rashtrapatibhvn/status/1826524694725411004>

**Award: Vigyan Yuva**

**Field: Earth Sciences**

**Awardees: Prof. Radhakrishnan Mahalakshmi**

**Profile:** Professor, Indian Institute of Science Education and Research (IISER), Bhopal: Prof. (Ms.) Mahalakshmi brings fundamental insights to mitochondrial membrane protein biophysics, in health and diseases in the country. The work has implications for peptide-based therapeutics for disease alleviation.

**Award: Vigyan Yuva**

**Field: Biological Sciences**

**Awardees: Prof. Aravind Penmatsa**

**Profile:** Assistant Professor, Indian Institute of Science, Bengaluru: Prof. Penmatsa has provided novel structural insights to neurotransmitter uptake in the field of pharmacology. His work has revealed mechanisms of efflux pump function in antibiotic transport, to unravel mechanisms of multi drug resistance that is helpful for biomedical research

**Award: Vigyan Shri**

**Field: Chemistry**

**Awardees: Prof. Vivek Polshettiwar**

**Profile:** Professor, Tata Institute of Fundamental Research, Mumbai: Prof. Polshettiwar belongs to the group of researchers with unique signature to discover, design and develop drugs from first principles. His work in nanocatalysis realms of "Black Gold" and "Defects" represents a quintessential example of fundamental science and innovation

**Award: Vigyan Yuva**

**Field: Chemistry**

**Awardees: Prof. Vishal Rai Professor**

**Profile:** Indian Institute of Science Education and Research, Bhopal: Prof. Rai has made seminal contributions to precision engineering of proteins and supports Indian biopharma sector for precise protein engineering to empower antibody-conjugates for directed tumor surgery and cancer chemotherapeutic

**Award: Vigyan Yuva**

**Field: Earth Sciences**

**Awardees: Dr Roxy Mathew Koll**

**Profile:** Scientist F, Indian Institute of Tropical Meteorology, Pune: Dr. Koll has made outstanding and path breaking contribution to Indian ocean warming and its implication to Indian summer monsoon as well as marine productivity, and marine heat extreme events.

**Award: Vigyan Yuva**

**Field: Engineering Sciences**

**Awardees: Dr Abhilash**

**Profil:** CSIR-National Metallurgical Laboratory, Jamshedpur: Dr. Abhilash has contributed significantly to the development of interdisciplinary indigenous processes for extraction of critical/strategic metals from secondary resources like mine and process wastes, etc, as well as contributed exemplarily in leveraging technologies for mining, metallurgical and waste recycling industries.



# Rashtriya Vigyan Puraskar 2024

## Vigyan Yuva

### Final List of Awardees

- |   |   |
|---|---|
|  Dr. Krishna Murthy S L          |  Dr. Bappi Paul              |
|  Dr. Swarup Kumar Parida         |  Prof. Mahesh Ramesh Kakde   |
|  Prof. Radhakrishnan Mahalakshmi |  Prof. Jitendra Kumar Sahu   |
|  Prof. Aravind Penmatsa          |  Dr. Pragya Dhruv Yadav      |
|  Prof. Vivek Polshettiwar        |  Prof. Urbasi Sinha          |
|  Prof. Vishal Rai                |  Dr. Digendranath Swain      |
|  Dr. Roxy Mathew Koll           |  Dr. Prashant Kumar         |
|  Dr. Abhilash                  |  Prof. Prabhu Rajagopal    |
|  Dr. Radha Krishna Ganti       |  ISRO - Team Chandrayaan 3 |
|  Dr. Purabi Saikia             |   |

**Award: Vigyan Yuva**

**Field: Engineering Sciences**

**Awardees: Dr Radha Krishna Ganti**

**Profile:** Professor, Indian Institute of Technology, Madras, Chennai: Dr. Ganti is an excellent researcher, who has indigenously developed 5G Base Station that includes multi-input multi-output (MIMO) SG base stations, 64/32/16 antenna MIMO RRH and software towards indigenization efforts.

**Award: Vigyan Yuva**

**Field: Environmental Sciences**

**Awardees: Dr Purabi Saikia**

**Profile:** Assistant Professor, Central University of Jharkhand, Ranchi: Dr. (Ms.) Saikia is a passionate researcher proficient in ecological niche modelling, quantitative ecological analysis, and RET plant species conservation. Her research publications have potential for field applications and also important as scientific evidence for policy planning

**Award: Vigyan Yuva**

**Field: Environmental Sciences**

**Awardees: Dr Bappi Paul**

**Profile :** Assistant Professor, National Forensic Sciences University, Gandhinagar: Dr. Paul has developed a process and catalyst for direct hydrogenation of carbon dioxide to ethanol as a future fuel and also contributed in removal of volatile organic compounds emitted from industries and transportations leading to global air pollution.

**Award: Vigyan Yuva**

**Field: Mathematics and Computer Science**

**Awardees: Prof. Mahesh Ramesh Kakde**

**Profile:** Professor, Indian Institute of Science, Bengaluru: Prof. Kakde has made decisive progress on the main conjecture of non-commutative Iwasawa theory and the Gross-Stark conjecture which are central problems in number theory using path-breaking ideas.

**Award: Vigyan Yuva**

**Field: Medicine**

**Awardees: Prof. Jitendra Kumar Sahu**

**Profile:** Postgraduate Institute of Medical Education & Research, Chandigarh: Prof. Sahu is an accomplished paediatric neurologist and working on infantile epileptic spasms syndrome and treatment of infantile-onset epilepsies

**Award: Vigyan Yuva**

**Field: Medicine**

**Awardees: Dr Pragya Dhruv Yadav**

**Profile,** Scientist 'F' & Head, ICMR-National Institute of Virology, Pune: Dr. (Ms.) Yadav is an expert in high-risk pathogens and containment issues related to multiple infectious diseases and has contributed in the development and evaluation of multiple vaccines for COVID19 in the country

**Award: Vigyan Yuva**

**Field: Physics**

**Awardees: Prof. Urbasi Sinha**

**Profile:** Raman Research Institute, Bengaluru: Prof. (Ms.) Sinha's main contribution in quantum information, communication and precision tests of quantum mechanics is well recognized in the scientific community. Her loophole-free experiments demonstrating decisive violation of Leggett-Garg inequality and her recent work on Hong-Ou-Mandel interferometry are the important scientific achievements

**Award: Vigyan Yuva**

**Field: Space Science and Technology**

**Awardees: Dr Digendranath Swain**

**Profile:** EXMD / STR, Vikram Sarabhai Space, ISRO, Thiruvananthapuram: Dr. Swain is an expert in experimental solid mechanics of launch vehicle structures with outstanding contributions in supporting structural qualification tests using DIC and other experimental techniques

**Award: Vigyan Yuva**

**Field: Space Science and Technology**

**Awardees: Dr Prashant Kumar**

**Profile:** Scientist-SF, Space Applications Centre, ISRO, Ahmedabad: Dr. Kumar has made valuable research contributions in the domain of atmospheric science and weather forecast and contributed to development of High-Resolution Rapid Refresh system used by Indian Meteorological Department.

**Award:** Vigyan Yuva

**Field:** Technology and Innovation

**Awardees** Prof. Prabhu Rajagopal

**Profile:** Professor, Indian Institute of Technology Madras, Chennai: Dr. Rajagopal's pioneering research on feature-guided ultrasound, waveguide sensing, robotic asset inspections and ultrasonic metamaterials is widely recognized.



4

<sup>4</sup> <https://x.com/DrJitendraSingh/status/1826596499377312171/photo/1>

**Award: Vigyan Team****Field: Space Science and Technology****Awardees: ISRO - Team Chandrayaan 3**

**Profile:** Indian Space Research Organisation, ISRO Headquarters, Bengaluru: Team Chandrayaan-3 is awarded under Vigyan Team category. The Chandrayaan-3 arguably is the most globally visible and acknowledged scientific achievement for the nation and represents achievements in different areas of technology as a team work of scientists in Indian Space Research Organisation (ISRO).

**Objective of the Rashtriya Vigyan Puraskar**

The primary objective of the Rashtriya Vigyan Puraskar is to recognize and celebrate the outstanding work of individuals and teams in various fields of science, technology, and innovation. This prestigious award is open to scientists, technologists, and innovators working in government and private sectors, as well as independent researchers and Indian-origin professionals abroad. The award seeks to acknowledge those who have made exceptional contributions in their respective fields, particularly those whose work has a significant impact on Indian society and the global scientific community.

**Eligibility Criteria**

The Rashtriya Vigyan Puraskar is open to all scientists, technologists, and innovators working in any field of science, technology, or innovation. This includes professionals in government or private sector organizations, as well as individuals working independently. Additionally, scientists of Indian origin residing abroad who have made significant contributions that benefit Indian communities or society are also eligible.

**Domain Fields**

The awards cover a wide range of scientific fields, including:

- Physics
- Chemistry



- Biological Sciences
- Mathematics & Computer Science
- Earth Science
- Medicine
- Engineering Sciences
- Agricultural Science
- Environmental Science
- Technology & Innovation
- Atomic Energy
- Space Science and Technology

### **Nomination Process**

Nominations for the Rashtriya Vigyan Puraskar open annually from **January 14 to February 28**. The nominations are submitted online through the Rashtriya Puraskar Portal. Both self-nominations and nominations by others are accepted, making the process inclusive and accessible.

### **Conclusion**

The Rashtriya Vigyan Puraskar 2024 has set a high standard for recognizing and celebrating scientific excellence in India. The awards not only honor individual and team achievements but also inspire future generations of scientists and innovators to contribute to the nation's progress. As India continues to advance in science and technology, the Rashtriya Vigyan Puraskar will undoubtedly play a crucial role in fostering a culture of innovation and excellence.

### **References**

<https://awards.gov.in/Home/AwardLibrary>

<https://www.myscheme.gov.in/schemes/rvp>

<https://pib.gov.in/PressReleasePage.aspx?PRID=2047748>

<https://x.com/DrJitendraSingh/status/1826596499377312171/photo/1>

<https://x.com/karandi65/status/1826629638191227273/photo/2>

<https://awards.gov.in/>

**Santosh Kumar/ Sarla Meena / Madiha Iqbal**