

Brilliant Minds Addressing Formidable Challenges

Title: *India's Science Geniuses*

Author: Archana Sharma and Spoorthy Raman

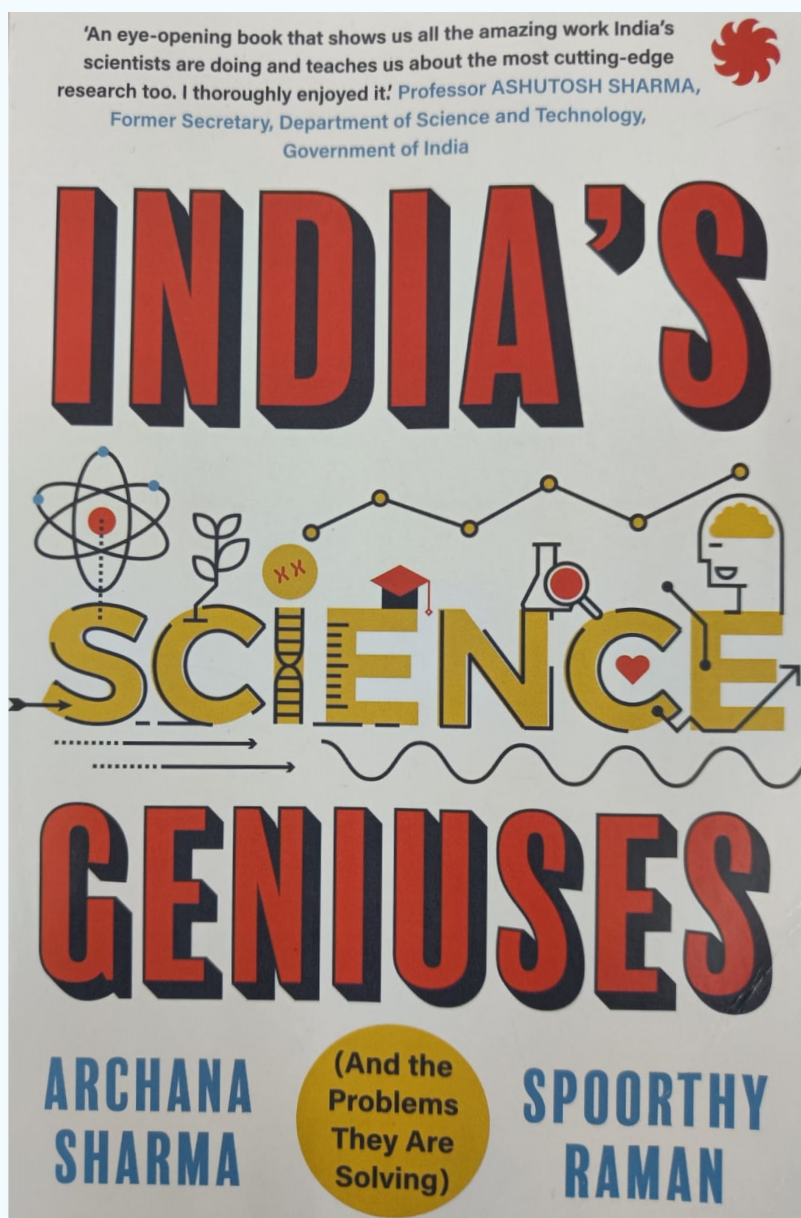
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Reviewed by Sonali Nagar



"An eye-opening book that shows us all the amazing work India's scientists are doing and teaches about the most cutting-edge research too. I thoroughly enjoyed it." — **Professor Ashutosh Sharma, Former Secretary, Department of Science and Technology, Government of India**

IN the last 75 years, India has advanced tremendously in the field of science and technology setting various milestones that also touched the lives of the common public. Science & technology have always been a hallmark of developments in India in ancient and modern times. Undoubtedly scientists from India are among the best in the world, whose inventions

"Kudos to all the trailblazer scientists who are working in the forefront of research in science and technology to unravel the unrevealed mysteries of this Universe. Written in such a simple style that even a layman would have no difficulty in understanding. Highly recommended." —

Dr Sudhanshu Mani, creator of Train 18 (Vande Bharat Express)

demonstrate their brilliance. Some great Indian minds who are regarded for their contributions to the field of science like CV Raman, Ramanujan, Satyendra Nath Bose, and Homi Jehangir Bhabha changed the world through their inventions and set the standards of critical thinking to solve problems.

Inventions that revolutionise our world are the result of great minds coming up with unique ideas. Time and again, Indians have shown expertise in several fields — from aero science to neuroscience, nanotechnology to botany — that have gained global attention. The book *"India's Science Geniuses"* is an attempt at presenting the details of the work of Indian scientists in the Nobel Prize-awarded fields of science — Biology, Physics and Chemistry.

To showcase cutting-edge scientific research in India, the authors — Dr Archana Sharma, Senior Physicist at the CERN Laboratory, Geneva and Ms Spoorthy Raman, Science Writer and Journalist — have profiled 31 scientists (including Dr Archana Sharma herself) from varied fields.

Thirty inspiring science and life stories of scientists compiled in this book are presented under three major fields of science — Physics, Chemistry & Biology. The book touches on various interesting and intriguing questions like: *"How can we use small 'drug-like' molecules to attack bacterial proteins?"*; *"How do scientists keep a tab on our body's clock?"*; *"What can our cell cycle tell us about cancer?"*; *"How do we nurture India's neutrino dreams?"*; *"How do we make light dance to our tunes?"*; *"How do galaxies form in the Universe and how do they evolve?"*; *"How do we heal our planet with green chemistry?"*; *"Can a tiny invisible catalyst turn around climate change?"*; *"How do we decode the chemistry of our body's proteins?"*, and many other insightful stories.

The journey of these scientists depicts their hard work, imagination, perseverance, patience, and focus, that led them to set inspiring examples for the young generation. For instance, the first chapter narrates the story of Prof. Srinivasa Chakravarthy, IIT Madras, who is *"building a simple, easy-to-understand computational model of the bewildering human brain to understand it better"*. For several years, Prof. Chakravarthy has been researching to answer the most

"A remarkable insight into some of the stellar work being done by Indian scientists across disciplines, from some of the top experts in the country, The lucid language makes for excellent reading. For the young, a snapshot into Indian S&T and great inspiration, too." — **Hasan Jawaid Khan, Editor, Science Reporter, CSIR- NIScPR**

"We are going through the most glorious phase of almost all branches of science, spurred by generous support from society and an atmosphere of goodwill across people of the world. This is a very valuable book that will teach students (and their parents) about the intellectual pleasure that lies in following your dreams and your curiosity." —

Prof. Dinesh K. Srivastava, Homi Bhabha Chair Professor, National Institute of Advanced Studies

complex question — how our brain works? — for which his approach is unique as he is not conducting experiments on live animals, instead he works on computer programming to prepare digital brain circuits to understand the working of the brain. He dreams of setting up a global hub for computational neuroscience.

Similarly, the story of Dr Nisha Kannan, from IISER-Thiruvananthapuram, who is *"studying how the timekeeper in our body works and what factors influence it"* will surely motivate young readers to keep going despite the hardships. Dr Kannan sought several fellowships to make a comeback after a career break following her PhD, which is often a difficult path for women. But despite odds, she carved a path for herself.

However, scientists are not always deeply engrossed in research. For example, Prof. Arun Kumar Pati, Harish Chandra Research Institute, presents an appreciable combination of work and hobbies. Though his core competency is theoretical physics and laying the foundations for India's quantum computing journey but he has two more passions in his life besides physics – poetry and painting. His poems have been turned into professional music albums. And interestingly as an artist, he creates abstraction on canvas and toys.

Since telling science as a story is one of the most captivating ways to communicate the message effectively, Prof. Dhevalapally B. Ramachary from the University of Allahabad is having a philosophical look at science. And to convey the message of his work, he uses scenes and messages from Mahabharata and Ramayana.

Since the scientists covered in this book are researching in Nobel-winning areas of science, the part that stands out the most in each chapter is the description of a topic on which the Nobel Prize has already been awarded and what more are these scientists trying to achieve in their respective fields. The book not just lays down the science but also throws light on the experiences, journeys, goals and dreams of the scientists that will inspire the young generation to think critically about the right choices and decisions to create a path they want to follow.

With its lucid language, the book does justice to its name and is also a valuable addition to the earlier book *"Nobel Dreams of India: Inspiring Budding Scientists"* by Dr Archana Sharma and Dr Swetha Vijayakrishnan.

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