



Employment News

Since 1976... WEEKLY

VOL. I ISSUE NO. 49 PAGES 60

NEW DELHI 7 - 13 MARCH 2026

₹ 12.00 (Annual ₹ 530)

From Barriers to Breakthroughs Creating Pathways for Women in Science

Dr. Manish Mohan Gore

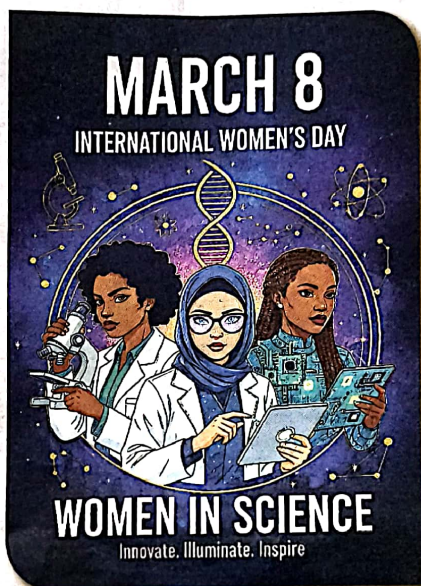
From its earliest discoveries to its boldest innovations, India's scientific legacy has been shaped by the brilliance and determination of exceptional women. Pioneers such as Asima Chatterjee, whose work on anti-malarial drugs saved millions of lives, and Kamala Sohoni, who challenged social and gender barriers to pursue laboratory research, laid strong foundations under difficult circumstances. In more recent decades, figures such as Indian-American astronaut Sunita Williams, public health leader Soumya Swaminathan, and missile scientist Tessy Thomas have continued this legacy, demonstrating women's leadership in fields vital to the nation's progress. Together, their journeys affirm a central truth: women in India are not exceptions in science, but indispensable contributors shaping the country's future through research, innovation, and leadership.

Yet these achievements emerged despite longstanding constraints. Science and technology flourish most when talent from all sections of society can thrive, but for much of India's scientific history, women faced persistent social and institutional barriers that limited their participation and advancement. Restricted access to laboratories, career interruptions due to family responsibilities, entrenched societal expectations, and systemic bias often stood in the way. In such an environment, excellence and dedication alone were rarely enough to ensure opportunity.

Recognising these structural challenges, the Government of India has progressively worked to create a more inclusive ecosystem for women in science, technology, engineering, and mathematics (STEM). What distinguishes this approach is its focus on continuity across the life and career of a woman scientist. Rather than relying solely on isolated scholarships or short-term initiatives, current policies emphasise sustained support—encouraging girls' early engagement with science, enabling higher education, facilitating re-entry after career breaks, and fostering leadership in advanced research and innovation.

Igniting Curiosity Early

The roots of gender disparity in science often take hold early, during the school years, when many girls gradually



disengage due to limited exposure, lack of confidence, or the absence of visible role models. Addressing this critical stage, programmes such as *Vigyan Jyoti*, implemented by the Department of Science and Technology (DST), intervene early to nurture scientific curiosity. Each year, thousands of girls from Classes 9 to 12—particularly from under-represented and rural districts—are given opportunities to explore science through hands-on learning and guided mentorship.

These initiatives extend well beyond conventional classroom instruction. Participants engage with fields such as robotics, artificial intelligence, biotechnology, astronomy, and computer coding—often for the first time—while visits to research laboratories and interactions

with women scientists make scientific careers tangible and attainable. Such exposure helps dismantle the notion that science is "not meant for girls," enabling many participants to pursue engineering, medicine, and the basic sciences with renewed confidence.

Complementing these efforts, the INSPIRE-MANAK programme fosters creativity and problem-solving among school students, including large numbers of girls. By supporting simple, low-cost innovations addressing real-world challenges—such as access to clean water, energy conservation, and improved agricultural tools—the programme reinforces the idea that science is both practical and socially relevant, rooted in everyday experience as well as future possibility.

Supporting Higher Education: From Aspiration to Access

As girls move from school to higher education, financial and institutional support becomes crucial. National schemes such as the AICTE's *Pragati Scholarship* and the UGC's *Indira Gandhi Postgraduate Scholarship for Single Girl Child* help ease the financial pressures that often prevent women from continuing technical studies.

Financial aid alone, however, is not sufficient. Mentoring, guidance, and hands-on experience are equally important. Programmes like *Karyashala* place undergraduate and postgraduate women students in advanced research laboratories for short training periods, helping them gain



confidence and practical insight into scientific work. For many, this exposure marks a key turning point in their academic journey.

In addition, women's universities and colleges receive targeted support through the *CURIE* programme, which strengthens laboratory facilities, computing access, and research infrastructure, ensuring that women students are not limited by lack of resources.

Reclaiming Careers: Science After a Break

A key feature of India's approach to women in science is its recognition of career breaks. Many women scientists step away from research due to marriage, childbirth, caregiving responsibilities, or social expectations, leading to the loss of highly trained talent at critical stages.

The Department of Science and Technology's *WISE-KIRAN* framework directly addresses this challenge. Schemes such as *WISE-PhD*, *WISE-Postdoctoral Fellowships*, and *WISE-SCOPE* enable women to return to research or shift their focus after a break, offering structured funding, research independence, and institutional support.

Similarly, the Department of Biotechnology's *BioCARE* programme supports women re-entering biotechnology research. Projects under *BioCARE* have contributed to areas such as vaccines, diagnostics, agriculture, and modern biology, reinforcing the message that career breaks do not diminish scientific capability.

Dr. Shubha V. Iyengar : In Conversation

The Government of India has honoured Dr. Shubha V. Iyengar, a distinguished woman scientist, with the Padma Shri for her outstanding contribution to aviation safety. Dr. Shubha V. is best known for developing 'Drishti', an indigenous aviation safety technology designed to enhance situational awareness and decision-making during critical flight operations. The system addresses one of the most challenging aspects of aviation—safe navigation and landing under low visibility and adverse weather conditions—thereby significantly improving operational safety for pilots and air traffic services.



Q: How can schools, colleges, and families encourage girls to pursue research careers?

A: My 46 years in science showed me that women can excel when they have passion, confidence, and support. Mentorship from seniors and colleagues played a key role in my own journey. Girls should be encouraged early to follow their interests. Teachers and families must recognise potential, guide them well, and provide consistent support.

Q: Why is mentorship and women's leadership visibility important?

A: Mentorship builds confidence, especially at early

career stages. Support from seniors motivates young scientists and helps them succeed in the long term.

Q: What policy steps are needed to increase women's participation in research leadership?

A: Institutions must strictly ensure equal treatment of women and men, judging only the quality of work, not gender.

Q: How do you see women's role in India's scientific future?

A: Women should be given equal importance based on merit. Their participation across all fields is essential for national progress.

Q: What career options are open to girls studying science today?

A: Beyond medicine and engineering, careers range from teaching, research leadership, administration, law, banking, entrepreneurship, and civil services.

Q: What message do you have for young girls aspiring to be scientists?

A: Believe in yourself, work hard, and do not be discouraged by obstacles. Confidence matters more than perfection—focus on contributing meaningfully and with integrity.

Continued on page 3

Follow us X @Employ_News

Follow us f @EmploymentNews