

**ADDRESS BY THE PRESIDENT OF INDIA,
SHRI RAM NATH KOVIND
AT THE CLOSING CEREMONY OF CENTENARY CELEBRATIONS
OF THE BOSE INSTITUTE**

Kolkata, November 29, 2017

1. It is my pleasure to be here at the Valedictory Session of the centenary celebrations of the Bose Institute, Kolkata. The Bose Institute occupies a unique and exalted position in the landscape of Indian science. This was one of the earliest scientific institutes to be established in the country. It was founded by a true pioneer of Indian science, Acharya Jagadish Chandra Bose.
2. J.C. Bose was an innovator and scientist of world-class distinction. He laid the foundation for revolutionary technologies like modern wireless communication. He demonstrated wireless transmission of microwaves as far back as 1895. This was much ahead of the Italian engineer Marconi's transmission of radio waves. In the process, J.C. Bose designed and fabricated the first semiconductor device in the world, the Galena detector for microwaves.
3. He was also probably the first scientist to study animal-like responses of plants, using instruments crafted by himself. This gave rise to interdisciplinary research in the area now known as **Biophysics**. His work continues to influence our world even today. Indeed, I understand Acharya J.C. Bose was the first person in India to write a science fiction story. He was just so multi-talented.
4. In his lifetime Acharya J.C. Bose was not given enough credit. His scientific career was one of struggle. He had little institutional and financial support. The colonial government put roadblocks in his path. Over the years, he felt the need to establish an institute devoted to scientific research and to helping young Indian scientists. This is how the idea of the Bose Institute was born.

5. A galaxy of great people helped J.C. Bose. He was encouraged by Swami Vivekananda and Sister Nivedita. Later Sister Nivedita helped get substantial financial support from Sarah Chapman Bull, another disciple of Swami Vivekananda. Support was also provided by Rabindranath Tagore, Gopal Krishna Gokhale and last but not the least, Mahatma Gandhi. This institute was blessed by some of our greatest. More than just a scientific institute it was an investment in the future of modern India.
6. That sense of nation building has inspired the Bose Institute through its hundred years. It has served the cause of science and served the cause of India. It has contributed much to research in the biological and physical sciences. At the same time, this Institute has had a very active social outreach programme in rural Bengal through its rural biotechnology initiative. It has also been pursuing educational uplift programmes for school children in various states of the Northeast.
7. Truly, it is making an honest effort to spread the culture of science and innovation down to the grassroots of our society. I commend this and wish the Bose Institute well as it marches into its second century.
8. I am particularly happy to hear about the series of international conferences that have been organised as part of the centenary celebrations. The building of an expanded Museum on the History of Indian Science – which covers our scientific endeavours from ancient times to the 21st century – is also a welcome venture. I am confident it will inspire young people, particularly school children, to explore the wonder and fascination of science.

Ladies and Gentlemen

9. The founding of the Bose Institute came in a certain context. In the first half of the 20th century, Kolkata was the scientific capital and the technology hub of the country. Research in physics and chemistry, in pharmaceuticals and in tropical diseases, was carried

out here and cited across international borders. The city was the leading centre of science and engineering education.

10. And young engineering students from other parts of the country could not complete their education without a visit to Kolkata and a stint at its well-known engineering and manufacturing companies. In the 1940s, the building of the Howrah Bridge – now called the Rabindra Setu – by a local company was a feat of civil engineering that excited the entire country.
11. Science was not limited to the lab. Pioneering Bengali scientists, keen to do something for the country, were among our earliest scientific entrepreneurs. The chemist Acharya P.C. Ray – who was in fact a friend and colleague of Acharya J.C. Bose – established Bengal Chemicals and Pharmaceuticals Ltd as the first Indian-owned pharmaceutical company. The father and son Rajendra Nath Mookerjee and Biren Mookerjee were engineers who went into industry. They established the Indian Iron and Steel Company in Burnpur.
12. I may add here that the founder of the well-regarded Bose Corporation in the United States was Amar Bose, a technologist and academic of Bengali descent. He went on to build a company that sets the bar for sound systems.
13. Clearly when Bengali scientists and technologists turn entrepreneurs, they can be very, very successful. We need to bring back the magic of that synthesis.

Ladies and Gentlemen

14. Bengal was one of India's earliest industrial and manufacturing economies. With that legacy, and with its educational institutions, it should have led the IT revolution in our country. But for whatever reason, it was a slow starter in IT and IT-enabled services. That boom moved to other states, such as those in the south of our country.

15. Now Bengal has another chance. We are in the midst of an explosion of digital technologies. Cutting-edge disciplines like precision manufacture and bioinformatics are changing the way we work. And robotics is changing the way we live.
16. All this throws up great opportunities for Bengal, for Bengal's science, and for Bengal's talented pool of young scientists. Our greatest tribute to Acharya J.C. Bose would be to embrace this new era of innovation and discovery – just as he embraced and led the process of innovation and discovery a century ago.
17. On that optimistic note, once again, I congratulate the Bose Institute on its 100th birthday. I wish it and I wish all of you the very best for the future.

Thank you
Jai Hind!