

Jagadish Chandra Bose

On 23 November 1937, Sir Jagadish Chandra Bose, pioneering scientist passed away in Giridih, modern-day Jharkhand. To many in the scientific community, he is known as a pioneer in radio science.

Read more about the life and contribution of Jagadish Chandra Bose for the IAS exam.

Biography of Jagadish Chandra Bose

- J C Bose was born on 30 November 1858 in Munshiganj, Bengal Presidency, British India. The place is now in Bangladesh.
- His father was a member of the Brahmo Samaj and a deputy magistrate and assistant commissioner.
- Bose was sent to a vernacular school initially because his father believed that knowledge of one's mother tongue was necessary before starting the study of English.
- At this school, he listened spellbound to stories of nature told by his classmates. These stories instilled in Bose a yearning to know more about the workings of nature.
- In 1869, he enrolled at the Hare School and later St. Xavier's School in Calcutta. In 1875, he joined the St. Xavier's College at Calcutta. He completed his BA from the University of Calcutta in 1879.
- Bose had wanted to study medicine at the University of London but quit due to ill-health. He then studied Natural Sciences at Christ's College, Cambridge University and passed out with a BA in Natural Sciences. He also secured a B.Sc. in 1884 and a D.Sc. in 1896 both from the University of London.
- Bose invented the Mercury Coherer which is a radio wave receiver. This device was used by Guglielmo Marconi to build a radio. Bose was thus a key figure in the invention of the modern radio and also in sonic technology.
- Bose contributed significantly to the development of remote wireless signalling. He was also one of the pioneers of wireless communications.
- He was denied access to labs due to his race at the University of Calcutta which he had joined as a Professor of Physics. He would then conduct experiments in his dwelling, a 24 sq.ft. room in Calcutta.
- In 1894, Bose demonstrated in Calcutta that communications signals can be transmitted without wires by sending electromagnetic waves 75 feet passing through walls and remotely ringing a bell and igniting some gunpowder.

Legacy of Jagadish Chandra Bose

- He was also a pioneer in the arena of microwave devices.
- Bose holds the first patent in the world for a solid-state diode detector used to detect electromagnetic waves. He was averse to all forms of patenting through and patented the diode only due to pressure from his colleagues.

- He could have earned a fortune had he patented his many inventions. He, however, chose to make all his research public so that other researchers could carry out further research.
- Sir Neville Mott, British physicist and winner of the Nobel Prize in 1977 has remarked, "J.C. Bose was at least 60 years ahead of his time. In fact, he had anticipated the existence of P-type and N-type semiconductors."
- Acharya Bose was also renowned for his work on the physiology of plants. He believed that plants could feel and were aware of their surroundings. He was the first person to prove that plants feel pain and understand affection. He demonstrated the electrical nature of plant stimuli (like wounds, chemical agents, etc.). He researched the seasonal effect on plants and also the effect of chemical inhibitors and temperature on plants. Thus, he contributed significantly to agriculture also.
- He was also a science fiction writer in Bengali.
- Largely unaccredited for his work on radio communications until recently, there has been an understanding of his work and his contributions to the development of modern wireless communications in recent times. He is now regarded as **one of the fathers of radio science**.
- He is also the discoverer of millimetre length electromagnetic waves.