

Homi Jehangir Bhabha

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About Homi Jehangir Bhabha(1909-1966)

Early life

Birth: Born in Mumbai on October 30, 1909 to influential Parsi parents – lawyer Jehangir Hormusji Bhabha and Meheren

Education:

- Homi Jehangir Bhabha received primary education at Bombay's Cathedral and John Connon School.
- It was followed by stints at the Elphinstone College and the Royal Institute of Science till 1927.
- Encouraged by his brilliance at studies, his parents and his uncle, Sir Dorabji Tata, a businessman and key figure in the history of the Tata Group, drew up a plan to send him to Cambridge to study mechanical engineering. but once there he developed a strong interest in physics.
- Armed with an honours degree, he started his research in 1930 at the Cavendish Laboratories in Cambridge and in 1935 obtained a doctorate.
- At the behest of physicist Sir Chandrasekhara Venkata Raman, director of the Indian Institute of Science, Bangalore (Bengaluru), he joined the institute as a reader in physics in 1940.

His contributions:

- Homi Jehangir Bhabha is mostly known as the **chief architect of India's nuclear programme**. However, his contribution to India's development goes far beyond the sphere of atomic energy.
- He played a crucial role in the development of electronics in India.

- He **derived a correct expression for the probability of scattering positrons by electrons**, a process now known as Bhabha scattering.
- His classic paper, jointly with W. Heitler, published in 1937 **described how primary cosmic rays from space interact with the upper atmosphere** to produce particles observed at the ground level.
- Bhabha and Heitler explained the cosmic ray shower formation by the cascade production of gamma rays and positive and negative electron pairs.
- **'In 1938 Bhabha was the first to conclude that observations of the properties of such particles would lead to the straightforward experimental verification of Albert Einstein's theory of relativity'**.
- **He had established two great research institutions namely** the
 - Tata Institute of Fundamental Research (TIFR), and
 - The Atomic Energy Establishment at Trombay.
- Funded by businessman J.R.D. Tata, Indian nuclear research began with the inception of the Tata Institute of Fundamental Research (TIFR) in 1945, with Bhabha at the helm.
- Appointed chairman of the Atomic Energy Commission instituted by the government of India in 1948, Bhabha was instrumental in setting up the Atomic Energy Establishment in Trombay.
- All the scientists conducting research in nuclear power and related areas were transferred from TIFR to this institute.
- **After the death of Bhabha in an air crash on Mont Blanc in 1966, the Atomic Energy Establishment was renamed the Bhabha Atomic Research Centre (BARC)** by Prime Minister Indira Gandhi in his memory
- As a true visionary who foresaw the need for high quality facilities in the country to conduct research on nuclear power, Bhabha envisioned a three-stage nuclear

power programme focused on extracting power from thorium instead of uranium reserves, on the basis of its large reserves of the former as compared to those of the latter.

- He was awarded the Adams Prize in 1942 and the Padma Bhushan in 1954 for his contributions.
- Bhabha's contribution to the development of atomic energy made him a significant figure in international scientific circles.
- He served as **president of the United Nations Conference on the Peaceful Uses of Atomic Energy in 1955** and as president of the International Union of Pure and Applied Physics from 1960 to 1963.