



Joseph John Thomson

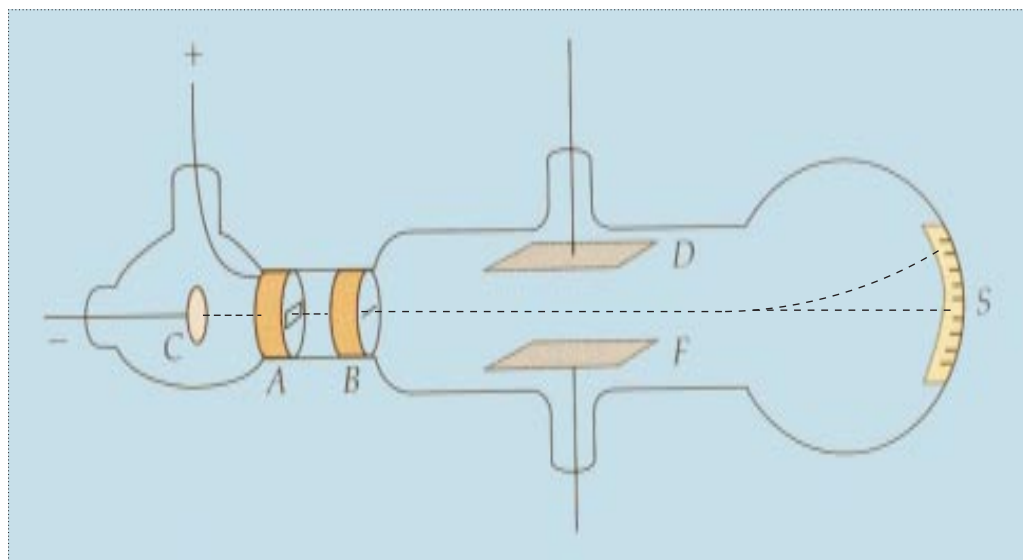
1856 - 1940

Awarded the Nobel Prize for Physics in 1906

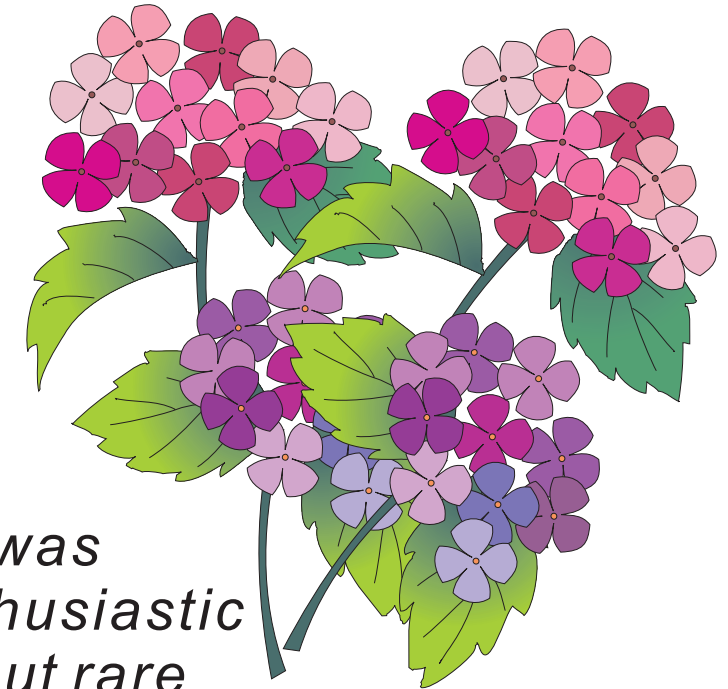
Sir Joseph John Thomson, the British physicist, is credited with having discovered the *electron*.

Thomson was born on 18, December, 1856, in Cheetham Hill, near Manchester. His father, a bookseller and publisher, wanted his son to be an engineer and he sent him to Owens College, now the Victoria University of Manchester, for education until his friend, a leading engineer, had a vacancy. Unfortunately, the father died before a vacancy occurred, and the family could not support his education. With the help of a small scholarship, however, Thomson continued towards an engineering degree. In 1876 he won a scholarship to Trinity College, Cambridge, where he remained for the rest of his life. After taking his BA degree in mathematics he began to do experimental research in physics at the Cavendish Laboratory.

Thomson's most brilliant and famous scientific work was his investigation of cathode rays. His desire was to solve a longstanding controversy regarding the nature of cathode rays, which occur when an electric current is driven through a vessel, from which most of the air or other gas has been pumped out. Thomson noticed that cathode rays are deflected by electric and magnetic fields and assumed that those rays were electrified particles. Later he found that electrified particles with the same properties could be produced in other ways; e.g. from hot metals. Measuring the magnitude of the deflection of cathode rays in magnetic and electric fields, he found that the particles, or 'electrons', were a thousand times less massive than the ions of the smallest atom, hydrogen. Finally, Thomson established that cathode rays or *electrons* were negatively charged particles, fundamental for matter, and much smaller than the smallest atoms known. For this discovery Thomson was awarded the Nobel Prize for Physics in 1906.



He measured the charge to mass ratio for electrons



He was enthusiastic about rare plants

During his most fruitful years as a scientist, he was the administrative head of the Cavendish Laboratory in Cambridge. There he met Rose Elisabeth, a pretty student, who became his wife. They had an only son, George, who followed in the steps of his father and also became a physicist and Nobel Prize winner.

Although Thomson was not athletic, he was an enthusiastic fan of the Cambridge cricket and rugby teams. But his greatest interest, apart from physics, was in plants; while walking round Cambridge, he collected rare plants for his beautiful garden.

Thomson devoted much of his time to teaching; this was highly valued and he inspired enthusiasm in his students. They had a custom of honouring him at their annual dinner with songs about physics and physicists.

Thomson gathered around him many talented physicists and built a research school, whose students went out from Cambridge to become professors in many of the world's universities. He was knighted in 1908.

After his death, Joseph John Thomson was buried in Westminster Abbey, London, close to the great Newton and Rutherford.