

Louis Victor de Broglie

(15 August 1892 – 19 March 1987)

Louis Victor de Broglie, a French physicist, postulated the wave nature of electrons and suggested that all matter has wave properties. This concept is known as the de Broglie hypothesis. Wave particle duality forms a central part of the theory of quantum mechanics. He had intended a career in humanities, and received his first degree in history. In 1924 at the Faculty of Sciences at Paris University he presented his researches on quantum theory, which gained him his doctoral degree.



De Broglie proposed that the wavelength λ associated with a particle of mass m and velocity v , thus having linear momentum p , can be given as

$$\lambda = h/p.$$

This equation is known as *de Broglie relation* and the wavelength λ of the associated matter wave is called *de Broglie wavelength*.

In 1929, de Broglie won the Nobel Prize for Physics, after the wave-like behavior of electrons was first experimentally verified in 1927 by C.J. Davisson and L.H. Germer.

Between 1930 and 1950, Louis Victor de Broglie's work has been chiefly devoted to the study of the various extensions of quantum mechanics: Dirac's electron theory, the new theory of light, the general theory of spin particles, applications of wave mechanics to nuclear physics etc. De Broglie became the first high-level scientist to call for establishment of a multi-national laboratory, a proposal that led to the establishment of the European Organization for Nuclear Research (CERN) at Geneva in Switzerland.

Teachers may suggest students to make a collage of photographs of scientists in physics depicting the advancements in the subject.