

Irène Joliot-Curie Biography

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Biography

Irène Curie was born in Paris on September 12, 1897, the daughter of one of the most famous women scientists of all time, Marie Curie, and her husband Pierre Curie. Irène attended the Sorbonne and, in 1914, began to work as her mother's assistant at the Radium Institute in Paris. It was at the Institute that she met her future husband, Frédéric Joliot, another of the Curie's assistants. Irène and Frédéric were married in 1926, at which time husband and wife adopted their hyphenated last name. The Joliot-Curies collaborated in their research for 30 years following their marriage.

In the early 1930s, the Joliot-Curies conducted a series of experiments on the bombardment of light elements, using alpha particles. They were admirably positioned for this research since the Radium Institute held the world's largest supply of polonium, a powerful alpha-emitting element. The Joliot-Curies showed that the alpha bombardment of certain elements produced a powerful type of radiation that was able to eject protons from paraffin and other hydrogen-rich materials. They were only months away from identifying this radiation when James Chadwick announced his discovery of the neutron--the radiation particle--in 1932.

Additional work by the Joliot-Curies did turn up another phenomenon, however. In 1934 they found that aluminum that had been bombarded by alpha particles continued to emit radiation even after bombardment had ceased. They concluded that the reaction had resulted in the formation of a radioactive isotope of phosphorus, the first example of artificial radioactivity. For this discovery, the Joliot-Curies were awarded the 1935 Nobel Prize for chemistry.

In the late 1930s, Irène anticipated the discovery of nuclear fission. During the bombardment of uranium with neutrons, she and P. Savitch obtained a product similar to lanthanum. Again, a discovery that could easily have been theirs--nuclear fission--escaped them by a matter of months.

Like her husband, Irène was passionate about social causes. After World War II, she supported a number of Communist causes, an act for which the American Chemical Society denied her membership in its organization in 1954. She briefly served as a cabinet minister in the French government in 1936 and was a commissioner for the French Atomic Energy Project from 1946-1950. She died in Paris on March 17, 1956, a victim of radiation-induced leukemia.