

Irene Joliot-Curie

(1897 – 1957)

Pioneering nuclear physicist



Main image: Irene Joliot-Curie [Getty Images].
Background: [i].

As the daughter of Marie and Pierre Curie, Irene was already part of a famous scientific legacy. A brilliant student, her studies were interrupted by the First World War, during which she worked with her mother in mobile field hospitals, operating the X-ray machines that her mother had developed. Both Irene and Marie eventually died from the consequences of radiation exposure.

After the war, Irene returned to Paris to study chemistry at her parents' Radium Institute where she wrote her doctoral thesis about radiation emitted by polonium and met Frederic Joliot, who she married in 1926. The Joliot-Curies made a series of extraordinary discoveries over the course of their lifelong collaboration. They identified the positron and the neutron but failed to realise the significance of their results which was later claimed by others. In 1933, they discovered that by exposing aluminium foil to alpha particles, the aluminium became radioactive, showing that radioactive elements could be artificially produced from stable elements. Further discoveries included the creation of radioactive nitrogen from boron, radioactive isotopes of phosphorus from aluminium, and silicon from magnesium. Their work underpinned later research on radioisotopes and their practical applications, as well as uranium fission and the development of the atomic bomb.

In recognition of their work on new radioactive elements, the Joliot-Curies were jointly awarded the Nobel Prize in Chemistry in 1935.

