

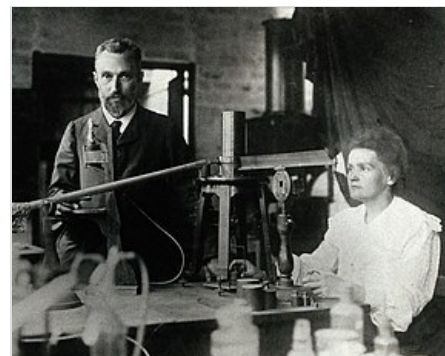
History of discoveries in the field of radioactivity

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In 1896, French scientist Henri Becquerel discovered radioactivity. Becquerel was interested in phosphorescence. He discovered that some materials glow in the dark when exposed to light. Henri hypothesized that the glow produced by X-rays in the monitor could be associated with phosphorescence. He wrapped the photographic plate in black paper and placed various phosphorescent salts on it. All results were negative until he used uranium salt. The result with this mixture caused blackening of the board even though the board was wrapped in black paper. These rays (uranium rays) were therefore named "Becquerel Rays".

It soon became clear that the blackening of the plate had nothing to do with phosphorescence, as it was clear that it was a form of invisible radiation that could pass through the paper and cause a reaction and subsequent blackening if the plate was exposed to light.

At first it appeared that the newly discovered type of radiation was similar to the previously discovered X-rays. Other research involving Henri Becquerel, Ernest Rutherford, Paul Villard, Pierre Curie, Marie Curie and others showed that this form of radioactivity was considerably more complex. Rutherford was the first to realize that all decay follows a mathematical exponential pattern. He and his student Frederick Soddy were the first to also realize that many processes of decomposition resulted in the transmutation of one element into another. Subsequently, the Fajans-Soddy law of radioactive drift was formulated to describe the products of alpha radiation and beta radiation decay.



Soon, scientists also discovered that many other chemical elements besides uranium have radioactive isotopes. The systematic search for total radioactivity in uranium ores was also directed by Pierre and Marie Curie, when they isolated two new elements: polonium and radium. Apart from the radioactivity of radium, the chemical similarity of radium to barium makes the two elements difficult to distinguish.

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