

GENEALOGY DATABASE ENTRY

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Rutherford, Ernest

1871 - 1937

DEGREE: BA (physics)

DATE: 1897

PLACE: Cambridge

TEACHER/RESEARCH ADVISOR: Thomson

Nobel Prize 1908; founder of nuclear physics; discovered alpha and beta particle radiation from radioactive substances; proved that alpha particles are ionized helium atoms; put forward (with Soddy) modern theory of successive radioactive decays from parent to daughters; discovered first-order rates of radioactive decay and coined the term "half-life"; discovered the existence of atomic nuclei and proposed the planetary model of the atom; recognized that the simplest positively charged particles must be ionized hydrogen atoms and coined the word "proton"; discovered artificial transmutation of light elements induced by alpha particle irradiation and thereby discovered first man-made nuclear reaction; discovered first evidence that tunneling is responsible for alpha particle emission from nuclei; first to measure gas-phase ion recombination rates; discovered first instance of a fusion reaction; pioneer in wireless communication; predicted existence of the neutron and the deuteron; proposed idea that lead isotopes could be used to determine the age of the earth; first to measure the wavelengths of gamma-rays.

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