

Adding numerical date to geological materials

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Research
Field

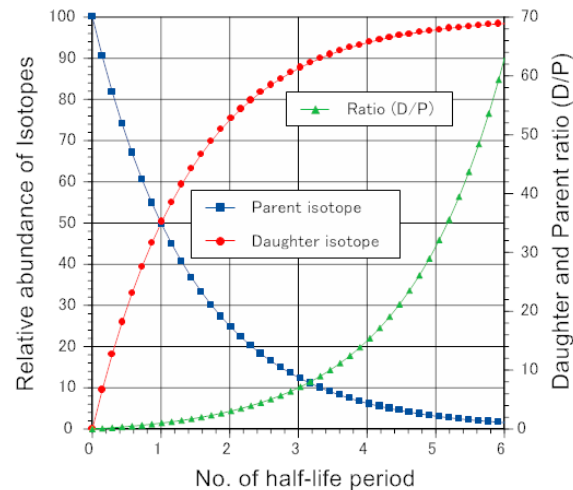
Geochronology

Keywords

Radiometric dating, K-Ar dating method,
isotope geology, mass spectrometry

Introduction

When a radioactive nuclide decays into a radiogenic nuclide, it does so at a specific rate called its half-life. By calculating the ratio of parent to daughter isotopes (green line) and knowing the half-life of the radioactive nuclide, we can determine the age of a rock sample.

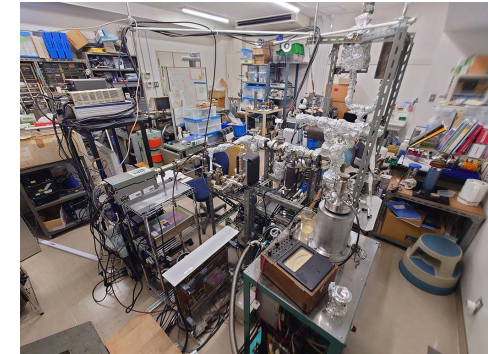


Radiometric dating is a valuable technique to determine the age of volcanic and plutonic rocks. As an expert in this field, I have measured the ages of rocks and minerals from different geological periods and sites. Radiometric dating is a crucial tool in understanding the history of our planet. Therefore, I have strived to obtain more precise and accurate dates to gain deeper insights into Earth's past.

Advisory capability and topics for public lectures

Advice: Geochronology, Noble gas mass spectrometry
Public lectures: Earth sciences, Physical geology

Equipment in our lab.



To determine the age of a sample using the K-Ar dating method, we employ two instruments in our laboratory. The first one is a flame photometer (left), which measures the sample's potassium amount. The second instrument is a noble gas mass spectrometer (right), which is used to measure the ratio of argon isotopes. We also have equipment for mineral separation, such as an isodynamic magnetic separator and sodium polytungstate (SPT) heavy liquid.

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