The Measurements of Nitrogen and Argon Isotopic Ratios in the Volcanic Fumarole and Hot Spring Gases

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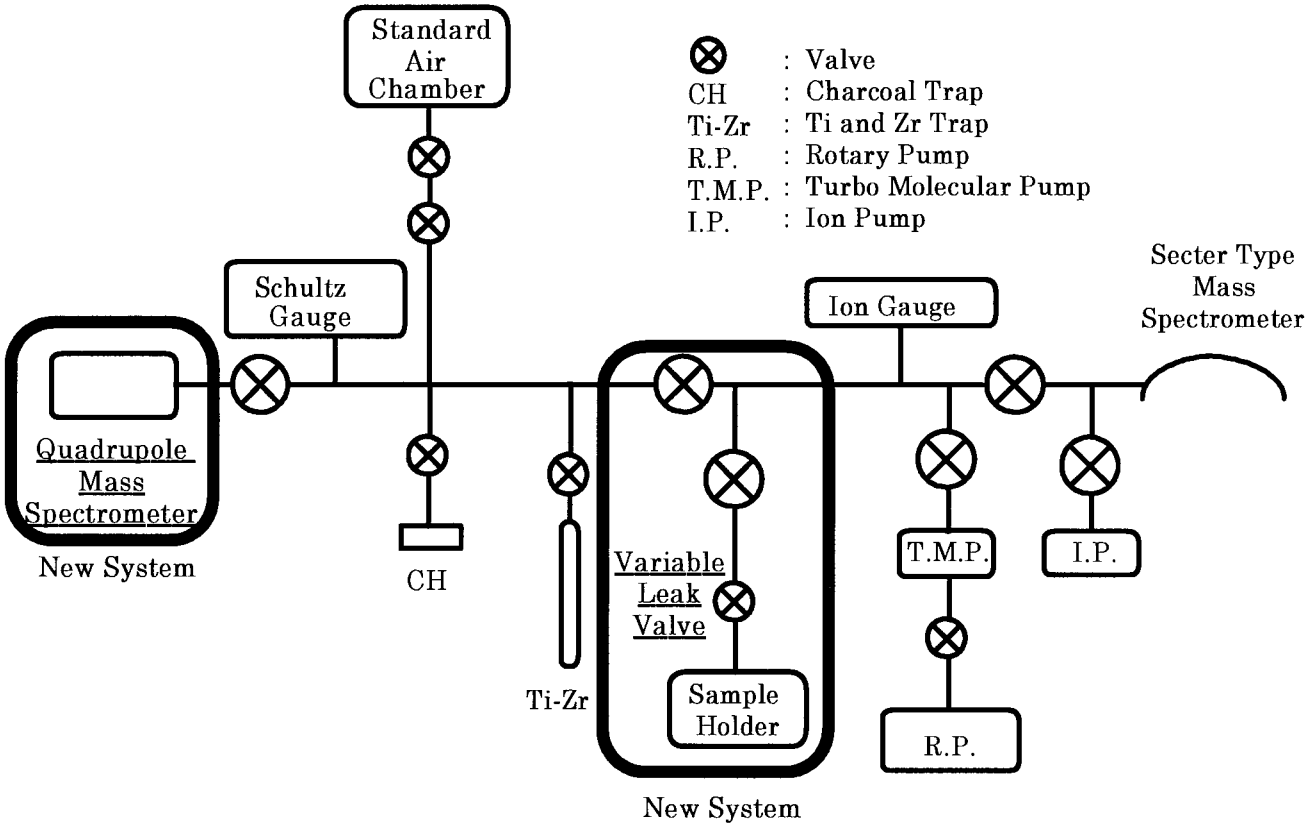
We have been developing a system to precisely analyze the isotopes of various elements in the volcanic fumaroles and hot spring gases. This is based on the expecteation that the temporal and spacial variation of paticular elemental and isotopic compositions in those samples should be utilized for predicting and/or preventing seismic damages. Fot this purpose, we need to develop a system with high productivity and reproducivility. We introduced a new quadrupole mass spectrometer for a quick analysis for high productivity and a (flow-rate-controlable) leak valve for a dinamic mass spectrometric analysis for precise analysis. We will report some preliminary results of Ar and N isotopic measuerments with their analytical conditions with a newly developed system.



A schematic diagram of the new system.