

质谱仪器与教育

智能化惰性气体同位素测量系统

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摘要

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Intelligent Noble Gases Isotopic Measurement System

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Abstract The noble gases isotopic measurement system in IGGCAS (Institute of Geology and Geophysics, Chinese Academy of Sciences) is composed of melting system (laser and furnace), purification system and MM5400 noble gas mass spectrometer. These three independent parts of the system are manually operated and have no communication with each other. The purpose is to control the three main parts of the measurement system by a dedicated computer. A new hardware controlling system suitable for automation was built for the intelligent measurement system. LabVIEW was introduced to the operating software. The whole experimental process will be handled by the dedicated computer. Based on the basic function software, the vacuum status alarm, valve status, data processing program and remote controlling will be added to the intelligent system. By now, the hardware system building was accomplished, and the basic function software was established. The system joint commissioning is ongoing. Preliminary measurements indicate that the intelligent measuring system has same or even a better precision compared to the original system.

Key words [intelligent](#) _ [noble gas mass spectrometer](#) [melting system](#) _ [purification system](#) _ [labVIEW](#)

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