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AMS 16
GUILIN CHINA

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Investigation of small sample preparation for 14C-AMS based on AGE-3 Automated Graphitization Equipment

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Abstract: Accelerator Mass Spectrometry (AMS) is considered to be the ultra-sensitivity technique for 14C isotope analysis at present, however, high-quality 14C data are heavily dependent on the sample graphitization. Relying on AGE-3 from Ionplus, the graphitization process not only improves the sample processing efficiency but also reduces the sampling cost compared to the traditional method, and is characterized by high graphite yield, stable beam currents and low background. This study is based on the equipment for the preparation of small samples carbon masses ranging from 0.02 to 1 mg for the modern carbon standard sample OXII, the laboratory secondary standard Humic Acid (HA) and the background sample C1, the limits of the device for small sample preparation were explored, the amount of modern and dead carbon contamination introduced into the process was estimated, and the small sample preparation capability of the automated graphitization equipment was evaluated. The experimental set-up, calibration method and initial results will be detailed in this contribution.
Key word: Accelerator Mass Spectrometry (AMS); 14C Sample preparation; Trace sample; AGE-3

Student Submission

No

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