



Contribution ID: 177 Contribution code: PSA-57

Type: Poster

Performance Assessment of Graphitization Process at AGE-3 for ^{14}C -AMS Analysis in IHEG

Monday, 21 October 2024 17:15 (20 minutes)

Abstract: To overcome the disadvantages of manual purification system during AMS- ^{14}C measurement, including inefficiency, unstable quality of graphite, and interference from modern carbon. CAGS-IHEG (Institute of Hydrogeology and Environmental Geology, Chinese Academy of Geological Sciences) introduced AGE-3 to improve the performance of small carbon graphite, leading to the rapid production of high-quality carbon samples. By changing the reaction temperature and H_2/CO_2 ratio, the optimum conditions for prompt graphitization reaction have been determined. Corrections for isotopic fractionation and increased modern C background are made by measuring samples in relation to standards of similar mass and a blank sample. In comparison to a manual purification system, AGE-3 results in improvements in parameter visualization and the precise synthesis of graphite. The enhanced technique for graphitization was specifically developed to achieve optimal beam currents of ^{14}C in IHEG 1 MV AMS measurement, aiming to address issues related to inefficiency and impurities in the processing of soil and sediment samples.

Student Submission

No

Primary authors: 王, 佳眉 (中国地质科学院水文地质环境地质研究所); 张, 慧 (中国地质科学院水文地质环境地质研究所)

Presenter: 王, 佳眉 (中国地质科学院水文地质环境地质研究所)

Session Classification: Poster Session A

Track Classification: Sample Preparation Techniques