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A gas sample preparation method for radiocarbon at the GXNU-AMS laboratory

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A method for preparing gas samples was established in Guangxi Normal University. The method consists of three parts: introducing nitrogen to exhaust the impurity, releasing the gas and circulating CO2 , purifying CO2 and graphitization. A series of atmospheric samples were prepared to verify the feasibility and stability of this method. Moreover, the carbon content corresponding to the atmospheric samples of different volumes has a linear relationship with CO2 pressure collected by the sample preparation system. The measurement results of the accelerator mass spectrometer (GXNU-AMS) in our laboratory show that the beam current of $12C^-$ for each sample is greater than 30uA. The pollution introduced during the gas sample preparation process is less than 3×10^-15. In summary, the gas sample preparation method has the characteristics of high efficiency and low pollution.

Student Submission

Yes

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