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Sputter negative ion source at BINP Accelerator Mass Spectrometer

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Content

Accelerator mass spectrometry is a powerful analytic method used in archaeology, geology, biology and medicine. Due to its huge resolution, even single atoms are statistically observable for standard 1 or 3 mg target samples. The main problem of the method is to clear the ions beam off the molecular isobars. The use of the negative ions and stripper to change the charge state of ions solves the problem. Thus, one of the important part of the accelerator mass spectrometer is the sputtering negative ion source. Mainly the carbon is of the interest for accelerator mass spectrometry but the mass spectrum is just slightly limited with some elements not producing negative ions. The carbon negative ion sputtering source, developed at Budker Institute of Nuclear Physics, is working succesfully at the Accelerator Mass-Spectrometer of the Center of Kaynozoy Geochronology. The source operating characteristics will be presented. The construction, results of operation and status of the source will be discussed.

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