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碳纳米材料的非还原热离子发射特性的比较

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摘要 本文主要从测定时间、样品带的电流强度、观测到的目标离子流强度和得到结果的精度等几个方面出发 ,比较了使用几种不同的碳纳米材料 ,如纳米石墨、纳米碳黑和纳米碳管等测定氯同位素的情况 ,并把这些与使用普通石墨测定氯同位素得到的结果做了比较。研究发现这几种碳纳米材料测定的氯同位素比值比使用普通石墨测得的比值高 ,测量的精度比使用普通石墨测得比值的精度低。从这些方面看出 ,它们不适合作为正热电离质谱法测定氯同位素比值的发射剂

关键词 碳纳米材料 氯 同位素测定
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The Comparison of Non-reductive Thermal Ion Emission Characteristics of Different Carbon Nano-Materials by Measuring Chlorine Isotope

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Abstract Several carbon nano-materials,such as nano-graphite, nano-carbon and nano-carbon tube, were used to measure chlorine isotope ratios as an emitter. In this article the measuring time and the observed ion intensity as well as the precision of the gained data by using the three carbon nano-materials to measure the chlorine isotope ratios are compared with that does by using CA graphite, a normal graphite. From these, the study indicates the measured chlorine isotope ratios by using these carbon nano-materials are all higher than that by using CA graphite, but the precisions are all lower than that got by CA graphite. Thus it comes to the conclusion that these carbon nano-materials are not fit for the measurement of the chlorine isotope ratios by positive thermal ionization mass spectrometry.

Key words carbon nano-material chlorine isotope determination

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