

Enrichment of Xe-136 and Other Isotopes

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Stable isotopes are used in more and more fields, among which neutrinoless double beta decay is one of the important application fields. At present, the Research Institute of physical and chemical Engineering of nuclear industry has mastered the preparation technology of Xenon, Germanium, Molybdenum and Selenium, and is developing the preparation technology of Tellurium. Among them, Xenon-134 and Xenon-136 can be used to detect neutrinoless double beta decay experiment, and have important application value in rare case detection. This paper mainly focuses on Xenon isotope enrichment technology. It studies and establishes high abundance xenon isotope enrichment process with natural xenon as raw material. Through technical breakthroughs such as single-unit development, cascade design and isotope enrichment, key problems such as abundance enhancement, scale production and purity enhancement were solved, and xenon-134 and xenon-136 samples with abundance and purity meeting the requirements were obtained.

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