

Abstract Submitted
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Development of Resonance ionization Spectroscopy for highly efficient transport of single ions KARL TWELKER, Stanford University — Resonance Ionization Spectroscopy (RIS) has been shown to be a highly efficient method of selective ionization. We are investigating RIS as part of a high-efficiency single ion transport method to retrieve Barium ions produced in double beta decay of Xenon-136 and inject them in a ion trap where they are identified via optical spectroscopy. This Ba-tagging technique would substantially reduce the background due to radioactive impurities in very large double-beta decay experiments. RIS is used to re-ionize the Ba atoms after they are desorbed from the substrate on which they had been captured.

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