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Improving Sr Radioactive Ion Beams at HRIBF[1] FATIMA RAFIQUE, The City University of New York, HUBERT CARTER, CAROLA JOST, RONALD GOANS, Oak Ridge Associated Universities — The research conducted at the Holifield Radioactive Ion Beam Facility (HRIBF) at Oak Ridge National Laboratory (ORNL) utilizes high quality radioactive ion beams (RIBs) to explore the structure of nuclei. This research reviews chemical techniques to improve the intensity and purity of these radioactive ion beams, in particular strontium (Sr) ion beams. A past experiment on ^{92}Sr showed that the intensity of the Rb contamination was approximately half of the Sr intensity. K*o*ster *et al.* (2008) reported that RbF molecules do not ionize in the ion source, whereas the SrF molecules do. Taking this into account, the data from an old experiment which introduced SF_6 to the target/ion source was reanalyzed. The yield for ^{93}SrF was found to be about 4.55 x 10^6 ions/sec/μA, while for ^{93}RbF it was less than 0.2% of ^{93}SrF. These results are encouraging; therefore, a detailed optimizing experiment using CF_4 gas is expected to be carried out soon and the results will be presented in the poster.

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