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Recent Developement of RIKEN 28 GHz SC-ECRIS

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To further increase the beam intensity of highly charged U ion beam for RIKEN radio-isotope (RI) beam factory project and to produce the intense beam of medium mass heavy ions, such as Ti, V and Cr ions, for super-heavy element ($Z = 119$ and 120) search experiments, we tried to improve the performance of the RIKEN 28 GHz SC-ECRIS in last two years.
In the test experiment, we successfully produced ˜ 300 eμA of V^{13+} at low field ($B_{\rm ext} \sim 1.4$ T) and low RF power ($\sim$ 1.3 kW of 28 GHz). It is significantly low magnetic field compared to that for so called "high B mode"operation ($B_{\rm ext} \sim 2B_{\rm ecr}$ ($\sim$ 2T) with 28 GHz). We also produced ˜ 150 eμA of U^{33+} at $B_{\rm ext} \sim 1.55$ T and RF power of $\sim$1.5 kW.
In this contribution, we presented how to produce these beams in detail.

Authors: Dr HIGURASHI, Yoshihide (RIKEN); OHNISHI, Jun-ichi (RIKEN); Dr NAGATOMO, Takashi (RIKEN); NAKAGAWA, Takahide (RIKEN)

Presenter: NAKAGAWA, Takahide (RIKEN)

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