

Abstract Submitted  
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**Identification of new neutron-rich isotopes produced by in-flight fission of  $^{238}\text{U}$  at 345 MeV/u** TETSUYA OHNISHI, TOSHIYUKI KUBO, HIROYUKI TAKEDA, NAOKI FUKUDA, DAISUKE KAMEDA, KENSUKE KUSAKA, ATSUSHI YOSHIDA, KOICHI YOSHIDA, MASAO OHTAKE, NAOHITO INABE, YOSHIYUKI YANAGISAWA, KANENOBU TANAKA, RIKEN Nishina Center, BIGRIPS/ZERODEGREE NEW ISOTOPE COLLABORATION — At RI Beam Factory (RIBF) at RIKEN Nishina Center, an in-flight radioactive isotope beam separator BigRIPS[1] was commissioned in 2007. Then we made a search for new isotopes using in-flight fission of a  $^{238}\text{U}$  beam at 345 MeV/u, and observed two new palladium isotopes  $^{125}\text{Pd}$  and  $^{126}\text{Pd}$ . [2] In November 2008, we revisited this experiment with improved experimental conditions and better tuning of BigRIPS. The intensity of the  $^{238}\text{U}$  beam was  $1.6 \times 10^9$  particle/sec on average, which was about 40 times higher than in 2007. The search was performed for three  $B\rho$  settings that targeted different isotope regions. The achieved resolution of particle identification was good enough to well identify fission fragments even if some of them were not fully stripped. We observed more than 20 new isotopes with  $Z = 26$  to 53, including  $^{128}\text{Pd}$ , which demonstrated the RI-beam production power of BigRIPS at RIBF. The details of the experiment will be reported. [1]T. Kubo, Nucl. Instr. and Meth. **B204**, 97(2003). [2]T. Ohnishi et al, J. Phys. Soci. Jpn. **77**, 083201(2008).

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