Abstract Submitted
for the HAW14 Meeting of
The American Physical Society

Production of Spin Polarized Li Isotope Beam through Heavy Ion reactions JUNICHI OHNO, MOTOTSUGU MIHARA, MITSUNORI FUKUDA, KENSAKU MATSUTA, TADANORI MINAMISONO, RYOSUKE KANBE, MASAOMI TANAKA, SHINTARO YAMAOKA, KOTA WATANABE, SHUICHI IWAKIRI, RIKUTO YANAGIHARA, Dept. Phys., Osaka University, DAIKI NISHIMURA, Dept. Phys., Tokyo University of Science, TAKUJI IZUMIKAWA, Radioisotope Center, Niigata University, TAKASHI OHTSUBO, Dept. Phys., Niigata University, AKIRA OZAWA, DAISUKE NAGAE, Dept.Phys., University of Tsukuba, ATSUSHI KITAGAWA, SHINJI SATO, SHINJI SUZUKI, MASAMI TORIKOSHI, National Institute of Radiological Science, SADAO MOMOTA, Kochi University of Technology, KENYA KUBO, International Christian University, HADUKI SHIRAI, NAOKI YOSHIDA, Tokyo Institute of Technology, HIMAC H290 COLLABORATION — Spin polarized radioactive nuclear beams are useful for materials science as beta-NMR probes which exhibit extremely high sensitivity to the NMR detection. So far, short-lived beta-NMR probe nucleus ^{8}Li ($I = 2^{+}$, $T_{1/2} = 838$ ms) has been used strongly for the materials science. In the present study, we have performed the production test of polarized ^{8}Li and another candidate of ^{9}Li ($I = 3/2^{-}$, $T_{1/2} = 178$ ms) through the heavy ion reactions at HIMAC in NIRS. Polarized ^{8,9}Li nuclei were produced by using ^{10,11}B or ^{12}C primary beams at an energy of 70 AMeV with a Be target. Polarization was observed for ^{8}Li at high momentum side with other than a ^{10}B beam. The result of ^{9}Li suggests the possibility that large polarization is generated with a ^{10}B beam which picks up a neutron in the reaction process.

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Date submitted: 01 Jul 2014 Electronic form version 1.4