



独立行政法人理化学研究所 仁科加速器研究センター
第156回 RIBF核物理セミナー
RIKEN Nishina Center for Accelerator Based Science
The 156th RIBF Nuclear Physics Seminar

New Result in the Production and Decay of an Isotope,
 $^{278}113$, of the 113th Element

Dr. Kosuke Morita
(RIKEN Nishina Center)

An isotope of the 113th was produced in a complete fusion reaction with a ^{70}Zn beam on a ^{209}Bi target. We observed six consecutive α -decays following the implantation of a heavy particle in the detector under an extremely low background condition. The fifth and sixth decays are fully consistent with the sequential decays of ^{262}Db and ^{258}Lr in both decay energies and decay times. This indicates that the present decay chain consisted of $^{278}113$, ^{274}Rg ($Z = 111$), ^{270}Mt ($Z = 109$), ^{266}Bh ($Z = 107$), ^{262}Db ($Z = 105$), and ^{258}Lr ($Z = 103$) with firm connections. This result conclusively leads to the unambiguous production and identification of the isotope $^{278}113$ of the 113th element.

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Contact: Nuclear Physics Seminar Organizing Committee
npsoc@ribf.riken.jp
<http://ribf.riken.jp/~seminar/>