

PENNING TRAP MASS SPECTROMETRY OF EXOTIC NUCLEI *

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Manipulation of radioactive isotopes with ion traps has opened new opportunities in atomic and nuclear spectrometry. The applications employed so far include high-precision mass measurements as well as studies by laser and decay spectroscopy where high sensitivity and purity is obtained through ion manipulation in Penning and Paul traps. In my talk I will discuss recent precision mass measurements using the JYFLTRAP setup at the IGISOL facility. These experiments are related to probing the nuclear structure effects in binding energies and the fine structure of the nuclear mass surface near the doubly magic ^{78}Ni , ^{100}Sn and ^{132}Sn nuclei as well as to nucleosynthesis via the rapid proton- and neutron capture processes [1,2].

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[1] J. Hakala et al., Phys. Rev. Lett. 101 (2008) 052502

[2] V. Elomaa et al., Phys. Rev. Lett., 102 (2009) 252501