

Preface

This issue of Research Report of Laboratory of Nuclear Science reports research activities of the LNS performed in the 2006 academic/fiscal year (April 2006 – March 2007). Major research activities are based on the electron accelerator complex consisting of the 300-MeV LINAC and the 1.2-GeV STB ring. The accelerators have altogether provided a beam time of about 2,380 hours for various experiments through the year.

In the GeV- γ experimental hall, construction of a 4π spectrometer called FOREST, which is an electro-magnetic calorimeter for neutral meson detection, has started. At this occasion, a beam line for counter test experiments was developed to provide low-intensity electron/positron beams with a momentum range from 200 to 800 MeV. In the experimental hall 2, commissioning of the New NKS spectrometer has essentially finished and the $D(\gamma, K^0)$ experiments for neutral Λ particle production has started in June. Various radioactive isotopes were produced by using high intensity beams below 50 MeV at the experimental hall 1. They were served for element analyses as well as for detailed study of decay properties of nuclei: the highlight is the change of positron capture rate in carbon fullerene.

We hope that this Report will serve as a quick overview of the present LNS activities over a variety of nuclear research fields.

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