

PREFACE

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PREFACE

In this twenty-second issue of the CYRIC Annual Report, we summarize the activities for research and development and results of training for radioisotope safe-treatment at Cyclotron and Radioisotope Center (CYRIC) during the calendar year 2001.

Research programs in various fields such as nuclear physics, nuclear chemistry, solid state physics and element analyses by PIXE and activation were carried out, and radioisotopes were produced for use in biology and medicine. Several facility improvements have been carried out as well. A total of 2000 hours of the cyclotron beam-time was delivered for the scheduled operation for research works. It is plausible to point out that some scientific yields by the new K=110 MeV AVF cyclotron have been produced as reported in this issue.

Synthesis of radiopharmaceuticals for clinical research with PET (Positron Emission Tomography) and other applications have been continuously carried out. Positron emitting radio-nuclides were provided with 308 hours exposure by 12-MeV proton beams from the HM-12 cyclotron, while those by 6-MeV deuteron beams were done with 217 hrs exposure.

Among the various research programs, studies with PIXE technique have been continuously carried out by using electrostatic accelerator, installed at FNL (Fast Neutron Laboratory) in Graduate School of Technology, Tohoku University, under the scientific tie up between CYRIC and FNL. Indeed, more than nine groups are running under this project using a total of its 300 hours beam-time.

During 2001 school year, 576 of staff members and students of Tohoku University were trained in the beginner's course of safe handling of radiation and radioisotopes, while

215 staff members and students in the "x-ray course". In addition, 82 of staff members and students were trained in the course of safe handling of radiation from a SOR.

Vision of Cyclotron and Radioisotope Center (CYRIC), at the Beginning of the 21st Century, is as follows: CYRIC supports/participates in Education and Research at Tohoku University in the fields of multidisciplinary-use of the AVF-cyclotron and short-lived/high-level Radioisotopes. The other important aim of this Institute is to play a role as the Center of Tohoku University in the Safe-handling/control of Radiation/Radioactivity, together with training of beginners in the whole university scale. At the same time, CYRIC promotes and develops its own research programs, joining directly in the Educational and research programs of Faculties and Graduate Schools. Researches in this Institute cover broad academic fields, such as Material-science, the particle/nuclear physics in particular and Life-science, from basic to clinical medicine, and the Environmental science. As such, CYRIC takes a part in the cutting-edge scientific researches playing an active part in the Global and international standard through the collaborations with the scientists of Tohoku University and other organizations, including those from abroad. Since the AVF-cyclotron and related experimental equipment in CYRIC are one of the most powerful and unique facilities in the world, it is our mission to establish those as the Intelligent Infrastructures of Tohoku University to be a Distinctive University in the Competitive Environments, also taking consideration of the Public Opinions. Under the mission of the Tohoku University, which is going to reform itself as a New Independent and Autonomous Structure, CYRIC will share its roles in development from the Seedling stage to promote Interdisciplinary researches as well as in Nurturing talents of student for the Leaders of the next generation.

We are very grateful to Tohoku University and to the Ministry of Education, Sports, Culture, Science and Technology for their continuous support.

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Director

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