The National Institute of Radiological Sciences (NIRS) was established in 1957 as Japan's leading medical research institution dedicated to comprehensive research on radiation and human health. During more than a half century NIRS has carried out various scientific activities related to radiological science, ranging from basic and applied science to clinical medicine. In 2001, NIRS reformed its structure as an independent administrative institution, and has carried out its activities according to the 5-year mid-term plan approved by the Government. The fiscal year 2015 (April 2015 – March 2016) concludes the third mid-term plan (2011 – 2015), and this annual report summarizes the most recent accomplishments at NIRS.

NIRS aims to conduct scientific research and development by integrative efforts of a multidisciplinary approach. Based on the knowledge and technologies related to radiation and radiological science, NIRS continues to contribute to society through two approaches, i.e. promoting medical use of radiation to overcome health problems and protecting people from radiation injury. The third mid-term plan was started shortly after the severe nuclear accident at the Fukushima Daiichi Nuclear Power Plant that was triggered by the earthquake and tsunami on March 11, 2011. NIRS put its maximum efforts into activities for emergency medical procedures and radiation protection. In spite of coping with the effects of the accident, integrative efforts during the past five years have led to many successful scientific achievements.

The most intelligible outcome of these joint efforts can be seen for radiological protection in medical uses of radiation. NIRS has led collaborations among medical societies and experts involved in radiological science, and established the Japan Network for Research and Information on Medical Exposure (J-RIME), which provided the first diagnostic reference levels (DRLs) in Japan based on the latest nationwide surveys conducted by liaison organizations in 2015.

The development of cancer radiotherapy using carbon ion beams continues to be a major NIRS activity. Significant improvements have been accomplished during the past two decades in treatment planning, irradiation techniques and treatment in combination with chemotherapy, resulting in excellent treatment outcomes and better prognosis of patients. As a result, from the beginning of the fiscal year 2016, cancer radiotherapy using carbon ion beams will be covered partially by the Japanese National Health Insurance System. Molecular imaging research also requires the joint efforts of multi-disciplinary experts, including molecular imaging probes and instruments as the key elements for detection of abnormal function in the brain and tumor. These innovative research activities are strongly supported by basic research carried out at NIRS.

From April 2016, NIRS will function as a new organization to be known as the National Institutes for Quantum and Radiological Science and Technology (QST). With new opportunities and challenges, the researchers of the QST will continue their efforts to establish a solid base of comprehensive scientific research.

I would like to express my sincere appreciation to all the affiliated organizations, institutions, collaborators and friends for their valuable contributions and support given to the institute.

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President