

PREFACE

In fiscal year 2018, RIKEN entered its 4th midterm, which will last for seven years. For this new midterm period, we have modified the Center's organization. The former RIBF Research Division was split into three divisions, the Nuclear Science and Transmutation Research Division, Research Facility Development Division, and Accelerator Application Research Division. The change makes our infrastructure components, application research, and nuclear transmutation research more visible. We merged the Theoretical Research Division into the Subnuclear Research Division, reflecting the recent promotions of the leading theorists in the Nishina Center.

We made this change, in part, because from this midterm, the RIKEN Nishina Center is categorized as a strategic research center, switched from the former infrastructure center. This means that we need to place more emphasis on our research strategy than on our user support as an accelerator facility. With this organizational change, we can pursue the enhancement of both RIKEN's own strategic research and user support for the community.

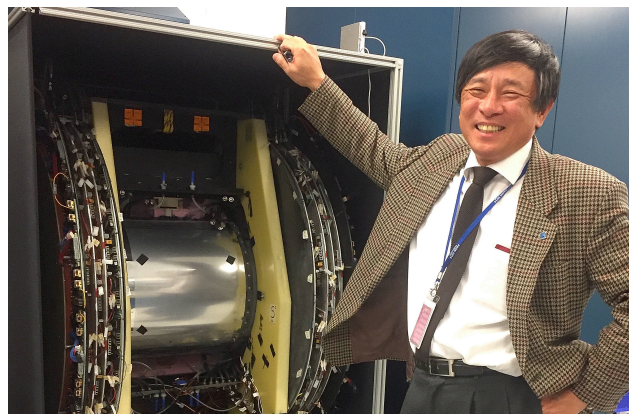
The Heisei era ended in April 2019. Considering the festive mood for the era change, I feel that it was much more natural for the Japanese imperial transition to have taken place through abdication rather than by passing of the Emperor. However, as stated by the Heisei Emperor, we have experienced so many disasters over the 30 Heisei years, and the one of the largest was the accident at the Fukushima Nuclear Power Plant. We still remember that many of us went there to perform radiation measurements of the local people and soil in Fukushima.

Nuclear energy is one of the most important social knowledges born from nuclear science. Unfortunately, with the radioactive waste generated by nuclear reactors becoming a social problem, because of the Fukushima disaster, and the decommissioning of the "Monju" plan, the nuclear energy cycle of our nation has failed. As nuclear physicists, we must now reconsider energy issues and identify the correct path for the use of nuclear energy by scientifically reconstructing its usefulness. Continuing operation of large nuclear power plants is not necessarily the only way to achieve this goal.

The Nishina Center has spearheaded a research effort to transform radioactive waste into short-lived nuclides with the use of the accelerator through the ImpACT Project. The patent "Radioactive Waste Processing Method," which originated from the Project, was awarded the 21st Century Invention Award for FY2018 by the Japan Institute of Invention and Innovation. The award ceremony was attended by Imperial Prince Takamatsunomiya Nobuhito. This is a very small step toward the real goal of the nuclear energy problem, but we have to pursue solutions patiently and continuously.

The year 2019 was proclaimed the International Year of the Periodic Table of Chemical Elements by UNESCO. The opening ceremony was held in Paris in January, and the Year will conclude at the closing ceremony scheduled for Tokyo on December 5. The 150th anniversary of the creation of the periodic table by Mendeleev as well as the recent completion of the 7th row of the table will be celebrated. Tokyo was chosen as the venue of the closing ceremony because of the discovery of nihonium.

The scientific goal of the Nishina Center is to obtain more research results from experiments conducted at the RIBF, promote facility expansion and reinforcement of the RIBF, and discover elements 119 and 120. We have already begun experiments to search for element 119. Trial operation of the superconducting RILAC will begin soon, providing a substantial boost to the search experiment. Only God knows whether the elements will be discovered in the near future or in 10 years.



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