

## Message from The Director

As we move forward in this new millennium, it is indeed exciting to see how we have reaped as sown through pooling of innovative research ideas, high quality operation, and dedication to users support. This report gives an account of the scientific results obtained at NSRRC and the progress of facility development in the years 2004 to 2005.

In 2004, scientists from all over the world conducted 611 experimental-runs at NSRRC. The number of papers published with high impact factor increases remarkably, with a growth of forty percentages. With the recent completion of two new beamlines dedicated to structural biology this year, we are able to investigate important protein structures that excite today's bio-medical community. A new X-ray beamline equipped with a world-record breaking three-dimensional imaging system for micro- and nano-structure is operational and will create many new opportunities in the wide range of sciences. We are expecting more excellent scientific results in the coming years at NSRRC.

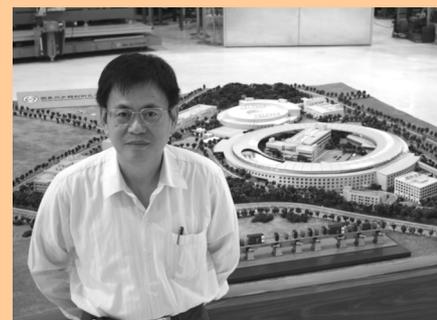
We started with three beamlines in 1994. Today, we successfully operate twenty-seven beamlines, eight insertion devices and fifty-four experimental stations altogether. The superconducting RF cavity was successfully installed in the storage ring and began operational in early 2005. This technology has become a new standard for light sources worldwide, and NSRRC is one of the pioneers in its application. The advanced skills our staff has acquired during the past years in developing superconducting devices, beamlines and experimental stations allow us to export our expertise and to help others construct new synchrotron light facilities as well as train their staff.

Moreover, we are planning on a new Taiwan Photon Source (TPS), a 3~3.3 GeV electron energy, 518.4 m circumference synchrotron ring, with an emittance lower than 2 nm-rad. The TPS feasibility study report has recently been submitted to the government for their account. The project not only aims to construct one of the world's brightest synchrotron X-ray sources, but also to establish a state-of-the-art research facility in Taiwan as well as inspire younger generation's interests in advanced scientific research.

Lastly, my heartfelt thanks go to the NSRRC crew's effort and users' dedication that so much has been accomplished together in the past eight years of my directorship, and that we still embrace a big dream ahead. When I hand over the directorship to Dr. Keng S. Liang, the incumbent deputy director, at the end of this year, it will not be a mere step in my life journey, but also a new big stride to NSRRC in its future development.

I have a great deal of hope and tremendous confidence in the continuing growth of synchrotron light research in Taiwan.

Dr. Chien-Te Chen  
August 2005



Director Chen and the TPS model

### NSRRC in brief

The National Synchrotron Radiation Research Center (NSRRC) located in Hsinchu Science Park, Taiwan, is the first third-generation synchrotron facility built in Asia. NSRRC's mission is to operate a cutting-edge synchrotron light source for pioneering scientific research. Started with three beamlines in 1994, NSRRC now successfully operates twenty-seven beamlines, eight insertion devices and fifty-four experimental stations altogether, including two beamlines at SPring-8 light source in Japan.

