

Preface

We would like to offer the readers the scientific activity report of the Institute for Solid State Physics (ISSP) for the Japanese FY 2019.

ISSP was established in 1957 as a joint-use/research institute attached to the University of Tokyo. In every era, we aim to lead the frontier of “condensed matter physics and materials science” and contribute to science and technology from the view of basic research. We have promoted activities focused on research, education, and joint-use/joint-research.

The first part of the reports Research Highlights /Joint Research Highlights exhibits experimental and theoretical achievements in condensed matter physics and materials science. In 2019, the number of granted joint-research proposals is 1,421 and the total number of participants is 6,951.

The second part includes the reports on progress of facilities in 2019 as follows. (1) In International MegaGauss Science Laboratory, the pulse magnets can generate up to 87 Tesla (T) by non-destructive manner, and from 100 T up to 1200 T, the world strongest as an in-door record, by destructive methods to promote materials science under high magnetic field. (2) In the Supercomputer Center (SCC), the replacement of the System B is scheduled in Autumn 2020, which will be much more powerful than the current System. In Center of Computational Materials Science, the website "MateriApps" for information on application software in computational science has been constructed to support community members. The activity on deploying the MateriApps is awarded as the commendation for Science and Technology by the Minister of Education, Culture, Sports, Science and Technology (MEXT) in 2019. (3) In Neutron Science Laboratory, the technical progress of High Resolution Chopper (HRC) spectrometer has been proceeded under high pressure and low temperature environment in cooperation with KEK. (4) The Laser and Synchrotron Research (LASOR) center has 10 groups in 2019, where ISSP has integrated the two streams, namely the extreme lasers and synchrotron radiations, into the common platform. In Synchrotron Radiation Laboratory, operant spectroscopy is available by using lasers at Harima branch.

In the following parts, nine reports of international and domestic conferences and workshops, subjects of joint research, and list of publications have been presented.

In order to develop the international scientific network as scientific hub, new programs including the short time (up to 3 months) international collaboration, international visiting researchers, and graduate students study abroad, as well as foreign visiting professor and international workshop programs, have been conducted since 2017.

All these facts confirm that ISSP continues to develop successfully and dynamically as the global center of excellence of condensed matter physics and materials science. We appreciate continuous support and cooperation of communities for our activities.



July, 2020
Hatsumi MORI
Director
Institute for Solid State Physics,
The University of Tokyo