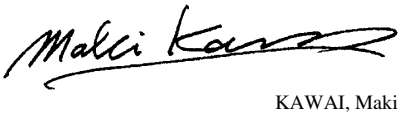
Institute for Molecular Science (IMS) is one of the world's core research facilities for molecular science and is also a center for inter-university joint research in Japan. It sets an extremely wide range of research goals, from understanding the behavior of individual molecules to that of collective molecular systems. These molecular systems have close relation to scientific understanding of biology, engineering and space sciences. Currently, IMS is engaged in six (four plus two) areas of research: Theoretical and computational molecular science, Photo-molecular science, Materials molecular science, and Life and coordination-complex molecular science. Research Center of Integrative Molecular Systems (CIMoS), the fifth research division of IMS, has started from April, 2013 to develop the highly functional molecular systems such as molecular rhythms, sensing and response, and even self-repair. Starting from April 2017, Center for Mesoscopic Sciences (CMS) is launched to develop innovative methodology of studying mesoscopic molecular systems, covering from theoretical methods to leading-edge measurement methods. In addition to these research divisions, IMS has three research facilities; UVSOR Synchrotron Facility, Instrument Center facilitated with various molecular detectors, and Equipment Development Center. IMS also operates the Research Center for Computational Science, jointly with National Institute for Physiological Sciences and National Institute for Basic Biology in the same campus. Okazaki Institute for Integrative Bioscience (OIIB) has accomplished its role to foster new trends in bioscience research since April 2000, and starting from April 2018, Exploratory Research Center on Life and Living Systems (ExCELLS) is launched directly under the National Institute of Natural Science.

Annual Review 2018 is a summary of research activities performed in IMS during September 2017–August 2018. The individual research groups at IMS are making steady progress in basic research on molecular structures, reactions and functions demonstrating "novel molecular capabilities," as reported in this Review. In addition to these individual activities, IMS conducts the six special programs in the institute basis: (i) Emerging innovation in computational science of energy from post-K computer; (ii) Nano science project, called Nanotechnology Platform from July 2012; (iii) MEXT Photon Frontier Network program for Photon Science and Technology in collaboration with Osaka University, Kansai Photon Science Institute, and Kyoto University (ended in March 2018); (iv) Inter-University Network for Common Utilization of Research Equipments cooperated with 72 Japanese National Universities; (v) Project on trans-hierarchical studies of materials and biological systems with molecular observations, as a joint program of NINS; (vi) IMS runs several international collaboration programs and also owns two internship programs for young scientists: Institute for Molecular Science International Internship Program (IMS-IIP) and IMS-IIP in Asia (IMS-IIPA). IMS-IIPA provides the opportunity of internship for young researchers (*e.g.*, master's and doctoral students, postdoctoral researchers and young faculty members of MOU partners) from Asian countries to stay in IMS laboratories related to the basic research.

Four new members have joined the IMS faculty in the period of September 2017–August 2018. Dr. Makoto Fujita of The University of Tokyo, an expert in self-assembling molecular systems based on coordination chemistry, has concurrently started his new position as a Distinguished Professor of IMS in Division of Advanced Molecular Science. Two new associate professors have also joined our faculty in the same period; both Dr. Genki Kobayashi, research associate professor of IMS and Dr. Toshiki Sugimoto from Kyoto University have become members of Department of Materials Molecular Science. Professor Kobayashi is developing effective material for hydride ion conductors for energy devices. Professor Sugimoto is exploring physicochemical properties and quantum dynamics of molecular aggregates at solid surfaces. Dr. Fumihiko Matsui from Nara Institute of Science and Technology has joined our UVSOR Synchrotron Facility as a Senior Researcher. Dr. Matsui studies both surface science and solid state physics with his expertise in developing novel microscope for x-ray and photoelectron spectroscopies, that are placed in synchrotron facilities. On the other hand, three faculty members, one senior professor and two young associate professors have left IMS. Professor Kosugi left for The Institute of Materials Structure Science (IMSS) of High Energy Accelerator Research Organization (KEK), and Professor Yanai left for Nagoya University. Much to our regret, Professor Nobusada passed away in January after some years of medical treatment. May his soul rest in peace. We deeply thank to these three professors for their important contributions to IMS and wish Professor Kosugi and Yanai success in their new environments. Many new young faculty members as assistant professors have joined IMS in this period. Also, Dr. Eiji Shigemasa, associate professor of IMS, became the manager of the technical division after the leave of Mr. Mitsukazu Suzui to the National Astronomical Observatory of Japan.

IMS will continue to contribute to lead the Molecular Science together with many young promising and well-established senior scientists. This institute has been most benefited with your constant support and we do expect your further support and advice for creating this new era of molecular science.

September, 2018



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