



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 a wide range of research goals, from understanding the behavior of individual molecules to that of collective molecular processes on the scale of life forms and in space. Currently, IMS is engaged in five (four plus one) 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 having the function of such as molecular rhythms, sensing and response, and even self-repair. In addition to these research divisions, IMS has six research facilities and centers; UVSOR Facility, Laser Research Center for Molecular Science, Instrument Center facilitated with various molecular detectors, for example, 920MHz and 800MHz NMR, and Equipment Development Center. IMS also operates the Research Center for Computational Science and Okazaki Institute for Integrative Bioscience (OIIB), jointly with National Institute for Physiological Sciences and National Institute for Basic Biology in the same campus.

Annual Review 2016 is a summary of research activities performed in IMS during September 2015–August 2016. 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 five special programs in the institute basis: (i) Computational molecular materials simulation science project, which is the priority study 5 (Development of new fundamental technologies for high-efficiency energy creation, conversion, storage and use) related to the post K-computer, as a development of TCCI (Theoretical and Computational Chemistry Initiative) for the K-computer; (ii) Nano science project, called Nanotechnology Platform from July 2012; (iii) COE of molecular and materials simulations and molecular observations as a joint program of NINS; (iv) MEXT Photon Frontier Network program for Photon Science and Technology in collaboration with Osaka University, Kansai Photon Science Institute, and Kyoto University; (v) IMS runs several international collaboration programs and also own fellowship and internship programs for young scientists in the world. We call the latter IMS-IIP (Institute for Molecular Science International Internship Program). In addition, though two own international programs strategically focusing on Asia, namely, IMS-IIPA (IMS-IIP in Asia) and Asian Core, IMS has invited active young scientists from East and South Asian countries to carry out collaborative researches. IMS-IIPA Program is the post-JENESYS started from 2011, and aims to provide the opportunity of internship for young researchers (*e.g.*, master's and doctoral students and postdoctoral researchers) from Asian countries to stay in IMS laboratories related to the basic research for environmental and energy problems. Asian Core program also has now become IMS's own project, continuing to strengthen the tie among the four key institutes of Chemical Physics in Asia, namely, KAIST (Korea Advanced Institute of Science and Technology) in Korea, IAMS (Institute of Atomic and Molecular Sciences, Academia Sinica) in Taiwan, ICCAS (Institute of Chemistry, Chinese Academy of Sciences) in China and IMS in Japan.

Many new young faculty members joined IMS in the period of September 2015–August 2016. There were some moves in the young independent fellow program (the specially appointed associate professorship), Professor Ishizaki has become our senior member and two new Research Associate Professors Fujita (from Kyoto University) and Okazaki (from Max Planck Institute of Biophysics, Germany) have joined recently. Associate Professor Jiang left for Japan Advanced Institute of Science and Technology (JAIST). We deeply thank Prof. Jiang for his important contributions to IMS and wish his success in his new environment.

Ex-Director-General Professor Iwao Ohmine left IMS in March 2016. By taking this opportunity, I'd like to express my sincere respect to his tremendous contribution in guiding IMS towards a new direction of Molecular Science. Recognizing the importance of “collective” function of Molecules, Professor Ohmine started a new project, CIMoS research center as a succeeding project to Research Center for Molecular Scale Nanoscience, and a route to establish a new center to develop “precision multi-scale measurement and analysis.” Professor Ohmine further strengthened the ability of IMS in promoting talented young scientists and has established the young independent fellow program (the specially appointed associate professorship), from which already has promoted Prof. Ishizaki as a new member of IMS after a few years of time. Following Prof. Ohmine, 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.

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