



# Preface

The Institute for Chemical Research (ICR) was launched in 1926 as the first research institute at Kyoto University, and celebrates its 90th Anniversary in 2016. The philosophy at the time of its foundation was to “Excel in the Investigation of Basic Principles of Chemistry and Their Applications,” and studies on special medicinal substances, organometallic chemistry, incendiary reagents, and other topics were undertaken at nine research laboratories. Over its lifetime, the ICR has continuously produced outstanding research achievements. Today, the organization is in five research divisions: Synthetic Chemistry, Materials Chemistry, Biochemistry, Environmental Chemistry, and Multidisciplinary Chemistry and three research centers on Beam Science, Elements Science (IRCELS), and Bioinformatics. About 120 faculty members, 210 graduate students and 60 researchers are engaged in research activities in 30 laboratories in total supervised by full-time professors. Further, five laboratories are supervised by visiting professors.

The research within the ICR encompasses the fields of chemistry, physics, biology, and informatics. The chemical studies core covers fields including physical chemistry, inorganic chemistry, organic chemistry, materials chemistry, and biochemistry. The graduate schools encompassing the laboratories accept students in diverse fields of science, engineering, agriculture, pharmaceutical sciences, medicine, informatics, and human/environmental studies. These laboratories are spearheading leading-edge research, and yielding outstanding results in their own and related research areas with publications such as: 1) *Tara Oceans: Exploring the Plankton Forest under the Sea Surface*, 2) *Edge Mixing Dynamics in Graphene p-n Junctions in the Quantum Hall Regime*, 3) *Highly Efficient Perovskite Solar Cells using Sheet-shaped Molecule: Increasing Power Conversion Efficiency by 1.2 Times Compared with Conventional Material*, and 4) *A Mid-sized Agent Capable of Disrupting Intracellular Protein-Protein Interactions is Now Generated in Cells*, all achieved last year. The legacy of our founding philosophy continues to the present day and describes the essence of our research activities. The ICR has entrusted its members, with this vision in mind, to choose and pursue research topics at the forefront of advanced chemistry with bottom-up paradigms. Sustainable and sustained growth of the human race is a

key issue of this century, and we must reform our country from various perspectives. Hence, the ICR encourages its members to be actively involved in research projects and to value the development of unique interdisciplinary research projects, in order to contribute to the future of our society from materials-related fields.

The ICR also collaborates with domestic and international universities and research organizations (with 66 official international collaboration agreements as of January 1, 2016) and functions as a Joint Usage/Research Center proclaiming the Frontier/Interdisciplinary Research Core for Deeping Investigation and Promoting Cooperation in Chemistry-Oriented Fields supported by MEXT (2010-2016); its activity received high commendation on the interim assessment in 2013. In addition, the ICR collaborates with the Research Institute for Sustainable Humanosphere and the Institute of Advanced Energy at Kyoto University to start another MEXT-supported joint research project on bio-inspired smart materials as of April 1, 2015. Furthermore, the ICR—IRCELS in particular—is making a significant contribution to the MEXT Project of Integrated Research on Chemical Synthesis (2010–2016), in collaboration with the Catalysis Research Center at Hokkaido University, the Research Center for Materials Science at Nagoya University, and the Institute for Materials Chemistry and Engineering at Kyushu University. We also fully strive to foster and secure young researchers through these activities. For instance, we provide an in-house annual grant system named “ICR Grant for Encouraging Promoting Integrated Research.” The strong collaboration basis so far constructed in-house and with outside researchers ensures that the Institute will continue to serve as a core of global research propellers in chemistry-oriented fields. With this consideration, we would appreciate your continued encouragement and support.

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A handwritten signature in black ink, which appears to read "N. Tokito".

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Director