

Preface

Youichi Murakami, Head of CMRC

On behalf of the staff of the Condensed Matter Research Center (CMRC) we are pleased to present the annual report 2014 of the CMRC. This report covers the research activities carried out in the fiscal year 2013 (April 2014 - March 2015).

The CMRC pursues cutting-edge research on condensed matter science through the comprehensive use of multi-probes: synchrotron light, neutron, muon, and slow positron probes. The CMRC consists of four groups: the correlated electron matter group, the surface/interface group, the matter under extreme conditions group, and the soft matter group. These groups have been conducting nine bottom-up projects: 1. Hybridized Orbital Ordering, 2. Geometrical Correlation, 3. Molecular Crystals, 4. Oxide Hetero-structures, 5. Surface/interface Magnetism, 6. Extreme Conditions, 7. Soft Matter, 8. Hydrogen, and 9. Surface Structure and Electronic States. In addition, the CMRC is conducting two types of MEXT (Ministry of Education, Culture, Sports, Science and Technology) project: the Element Strategy Initiative to Form a Core Research Center, and the Photon and Quantum Basic Research Coordinated Development Program. In these national projects, the CMRC members are focusing on the Element Strategy Initiative for Electronic and Magnetic Materials, and Tribology with Muons and Neutrons.

The CMRC was established on April 1, 2009, in the Institute of Materials Structure Science (IMSS), KEK. We finished the first six-year term in March 2015. In this period we collaborated closely with many researchers in universities and other institutes and were able to produce many fruitful results as described in the Appendices. We greatly appreciate the collaboration of these researchers and the support from the leadership of the IMSS. In the second term, which starts from April 2015, the CMRC is led by a new head, Prof. R. Kadono. The projects of the CMRC will also be renewed except for the two MEXT projects. I wish the CMRC continued outstanding success in the second term.

Youichi Murakami

