

PREFACE



It is my great pleasure to publish SPring-8/SACLA Research Frontiers 2020. JASRI has stewardship responsibility for SPring-8 and SACLA, whereas RIKEN has ownership. SPring-8 and SACLA are located on the same campus; thus, their synergy produces groundbreaking results.

In FY2020, COVID-19 affected the activities of SPring-8 and SACLA in many ways. Most directly, all users, except those with proposals for work related to COVID-19, were prohibited from visiting the campus from April 11 to June 15. In addition, many precautionary measures were taken on site, including limiting staff attendance for some months. Moreover, the number of users from abroad was severely reduced

owing to travel restrictions. Nevertheless, SPring-8 welcomed about 9,200 users who came to perform 1,321 experiments in FY2020. To date, SPring-8 and SACLA users have published more than 1,000 and about 80 research papers, respectively, in FY2020.

Two SPring-8 and SACLA users were awarded prestigious prizes in 2020 for their achievements in science and technology. Professor Jian-Ren Shen (Okayama University) was awarded the Medal with Purple Ribbon for his structural analyses of the photosystem II protein complex, for which his X-ray crystallography experiments at SPring-8/SACLA contributed significantly. Professor Makoto Fujita (The University of Tokyo) was awarded the Citation Laureate of Clarivate for his advances in supramolecular chemistry through self-assembly strategies that take inspiration from natural processes.

This volume includes two comprehensive review articles. In one article, Professor Yasuhiro Iwasawa (The University of Electro-Communications) describes recent progress in the advanced SR characterization of fuel cells at SPring-8. In the other article, Professor Kouichi Hayashi (Nagoya Institute of Technology) describes recent achievements in experiments using X-ray fluorescence holography and photoelectron holography.

In the main part of this volume, active users of SPring-8 describe the essence of their findings in various fields that include Life Science, Physical Science, Chemical Science, Earth & Planetary Science, and Industrial Applications. In addition, the principal activity reports on SPring-8/SACLA facilities are included in the sections of Accelerators & Beamlines Frontiers and Facility Status.

I am very grateful to the many authors and experts who contributed their papers to this volume. Special thanks are due to Dr. Naoto Yagi, Ms. Marcia Obuti-Daté, and the members of the editorial board for their continuous efforts.

A handwritten signature in black ink that reads "Y. Amemiya".

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