

## EDITOR'S NOTE

Here is the 2016 issue of SPring-8/SACLA Research Frontiers that covers outstanding scientific outcomes of SPring-8 and SACLA in 2015 and 2016. The number of reports on experiments made at SACLA has been increasing since it started operation in 2011. In this issue, there are eight excellent articles (six last year) in Life Science, Physical Science and Chemical Science, proving that SACLA is becoming a common experimental tool for leading-edge sciences.

Reviews in this issue were contributed by Prof. Shimizu of University of Tokyo and Prof. Sekiyama of Osaka University. The former is on the crystal structure analysis of TLR proteins which are the key players in the innate immune system. This basic immune system is a relatively new discovery in biology (a subject of Nobel prize in 2011) and still a hot topic in the field. It is a great honor for us that structure of such topical proteins has been determined using SPring-8. The latter review is on the development and applications of HAXPES (HARD X-ray PhotoEmission Spectroscopy) which is an experimental technique developed mainly at SPring-8. As it requires a brilliant X-ray beam from an undulator, it is one of the techniques that make best use of SPring-8. It is well-known for its bulk-sensitive nature, but Prof. Sekiyama emphasizes there is a lot more to it.

Please note that SPring-8/SACLA Research Frontiers is made of two parts. The first is the scientific results (Scientific Frontiers) and the second is additional information on hard and soft infrastructures that support scientific research. Although some important numbers such as the operation time and the number of users are given in the second part, more complete statistical information on the operation of SPring-8 and SACLA is available on the website ([http://www.spring8.or.jp/en/about\\_us/spring8data/](http://www.spring8.or.jp/en/about_us/spring8data/)).

This year, we are trying to update our distribution list because copies have been sent to the same addresses, with minute updates, over the years. We have realized that some people have already retired and may not need a copy. Thus, we are asking those who receive the copies to send us an email (to [frontiers@spring8.or.jp](mailto:frontiers@spring8.or.jp)) so that we can continue to send another issue next year. Please note that the full text of SPring-8/SACLA Research Frontiers is also available on the SPring-8 website ([http://www.spring8.or.jp/en/news\\_publications/publications/research\\_frontiers/](http://www.spring8.or.jp/en/news_publications/publications/research_frontiers/)). For the list of publications produced by SPring-8 users and staff, please visit the publication database at [http://www.spring8.or.jp/en/science/publication\\_database/](http://www.spring8.or.jp/en/science/publication_database/).

On behalf of all the editors, I would like to thank those who helped us by recommending excellent research results suitable for publication in this issue, and the users and staff of SPring-8 who contributed their reports to this issue.

*Naoto Yagi*

- Editor in Chief -  
Japan Synchrotron Radiation Research Institute (JASRI)

### EDITORIAL BOARD

Naoto YAGI (Editor in Chief)	SPring-8/JASRI
Shunji GOTO	SPring-8/JASRI
Tetsuya ISHIKAWA	SPring-8/RIKEN
Shigeru KIMURA	SPring-8/JASRI
Toyohiko KINOSHITA	SPring-8/JASRI
Takashi KUMASAKA	SPring-8/JASRI
Yasuo OHISHI	SPring-8/JASRI
Norimichi SANO	SPring-8/JASRI
Masayo SUZUKI	SPring-8/JASRI
Yuden TERAOKA	SPring-8/QST
Tomoya URUGA	SPring-8/JASRI
Makina YABASHI	SPring-8/JASRI
Marcia M. OBUTI-DATÉ (Secretariat)	SPring-8/JASRI