

## Preface

It is our great pleasure that the publication of the contributed papers of the 14th International Congress on Plasma Physics (ICPP2008) held in Fukuoka during September 8-12, 2008, has been completed here as the Journal of Plasma and Fusion Research Series from the Japan Society of Plasma Science and Nuclear Fusion Research.

The International Conference/Congress on Plasma Physics was first held in 1980 at Nagoya as the combined conference of the 4th International Congress on Waves and Instabilities in Plasmas and the 4th Kiev International Conference on Plasma Theory. Since then, the series of ICPP has been held every 2-3 years in order to have the communication and discussion among wide range fields in plasma physics and plasma science.

At the beginning of the series, the host countries were not necessarily from all over the world, and then the sincere discussion on this matter occurred at the International Advisory Committee (IAC) meeting during the ICPP1989 in New Delhi. After the discussion, a kind of consensus has been obtained about the rotation of the host country; that is to say, the host site would be preferable along the rotation of the three areas; from Europe, from Asia and Oceania, and from North/South America.

It has been quite nice that the ICPP's have almost been held along this rotation in these years, and we think this would have enhanced and encouraged the activities of plasma physics research in each area especially for the young scientists in the world.

In the ICPP2008, the number of participants was 737, and the total number of presentations including Key Note, Semi-Centennial, Plenary, Invited Oral, Contributed Oral and Poster was 736. These numbers may suggest further enhancement of participation of young scientists to the following ICPP's, and also we may expect further development of research activities on the present plasma physics and its new frontier field.

I would be grateful to all the members of International Advisory Committee for the strong cooperation to the ICPP2008. I would deeply thank the Organization Committee, the Program Committee, the Financial Committee, and the Publication Committee for their collaboration. Also, the funding from agencies, organizations and companies are highly appreciated. Finally, I would express my sincere appreciation to the members of the Local Organizing Committee, who have carried out the great task by a small number of staff and have realized this ICPP2008 to be a quite successful one.

International Advisory Committee, Chair  
(Local Organizing Committee, Chair)  
Kohnosuke SATO

The fusion energy research and development is approaching to a phase of demonstrating and controlling DT burning plasma keeping step with the progress of the ITER project as world scale collaboration. The role of physics has now become much more important to understand complicated and yet self-organizing behavior of high temperature plasmas, and to predict plasma performance for designing the next step fusion power reactors. The plasma physics provides stiff bases not only for the fusion energy research but for understanding wide range of plasmas in globe and universe and for industrial applications in the high technology front.

It is our great pleasure to report that the 14th International Congress on Plasma Physics (ICPP2008) was successfully held in Fukuoka International Congress Center during September 8-12, 2008, and the scientific papers have now been published as one of the JPFR series from the Japan Society of Plasma Science and Nuclear Fusion Research. On behalf of the Organizing Committee, we wish to sincerely express our thanks to all the participants, international and local committee members, voluntarily supporting staff of Kyushu University and funding agencies and organizations.

Organizing Committee

Shinzaburo MATSUDA, Chair

Osamu MOTOJIMA, Chair

Kohnosuke SATO, Vice-Chair

It is my great pleasure that the 360 excellent papers presented at the 14th International Congress on Plasma Physics (ICPP2008) at Fukuoka, Japan are published in this proceeding. The papers cover the frontiers of the researches on plasma physics and their applications. The fields included in the papers are Fundamental physics of plasma, Magnetically confined plasmas, High energy density plasmas, Space and astrophysical plasmas, Plasma applications, and Sprouting approaches and new trends. The ICPP is a unique international conference because it provides occasion for plasmas scientists to meet together and discuss plasma physics problems cross over various fields. In this stand point of view, this proceeding together with the ICPP2008 invited papers in PFR cover the present status of all fields related to plasma physics. I hope that this proceeding will contribute to the advances of plasma physics.

Finally, I sincerely appreciate the editorial board members, sub-editors, and referees for their efforts on publishing this proceeding. In particular, it should be notified that Professor Kazuaki Hanada and Ms. Keiko Sugiyama devoted their efforts to editing the papers for more than one year.

Publication Committee, Chair  
Kunioki MIMA

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