

The Division of Plasma Physics (DPP) and the 1st Asia-Pacific Conference on Plasma Physics



The Division of Plasma Physics (DPP), formed in 2014, is the first division formed under the Association of Asia Pacific Physical Societies (AAPPS). 2017 has been a memorable year for the division, as it marked the beginning of both the DPP's official journal, *Reviews of Modern Plasma Physics* (RMPP) and the DPP's new annual conference, which is similar to the (APS)-DPP annual meeting, and the European Physical Society's (EPS)-DPP conference series. In this report, we describe our first annual conference, called the 1st Asia-Pacific Conference on Plasma Physics (AAPPS-DPP 2017), which was held from September 18-23, 2017 in Chengdu, China. Before the conference, we had public lectures at Sichuan University by Prof. Yong Liu on "Future Energy - Nuclear Fusion Energy" and Prof. K. Shibata on the "Threat of the Sun and Superflares".

This conference was organized by the Division of Plasma Physics, hosted by Southwestern Institute of Physics, sponsored by Chengdu city and the Asia Pacific Center for Theoretical Physics (APCTP), and endorsed by CPS-DPP, CNS-NFPP, KSP-DPP, PSSI, JPS-DPP and JSPF. The total number of participants was approximately 500. The distribution of those participants in accordance to country/region was as follows: 250 (China), 80 (Japan), 30 (Korea), 30 (India), 30 (EU), 30 (US), 50 (Other).

The opening ceremony featured speeches by Prof. Yong Liu (LOC chair), Mr. Kai Wu (Chengdu Municipal Government), Prof. Liu Chen (IOC chair), M. Kikuchi (DPP chair), Dr. Delong Luo (MOST, China), Prof. Gui-Lu Long (AAPPS President), and Prof. A. Sen (Chandrasekhar Prize selection committee chair). The conference had 39 plenary speakers, 226 invited speakers, 79 oral talks and 100 posters.

The plenary speakers were Professors X.T. He (Laser), L.C. Lee (2017 S. Chandrasekhar Prize Laureate), C.Z. Cheng (2017 S. Chandrasekhar Prize Laureate), A. Nishida (Space), D. Campbell (ITER) T.H. Watanabe (Gyrokinetic), K. Kusano (Solar eruption), H.T. Kim (Laser), K. Shibata (Solar flare), D. Baker (Van Allen Belt), Y. Ikehara (Plasma medicine), B. Wan (EAST tokamak), Y. Ono (Magnetic reconnection), J.L. Miquel (Laser), Hui Li (Lab. Astro) H. Hayashi (3D dry etching), M. Sunkara (Plasma processing), S. Shinohara (Helicon plasma source), H. Park (KSTAR tokamak), M. Bonitz (Complex plasma), B. Tsurutani (Space), T. Hosokai (Laser wake-field acceleration), T. Souradeep (LIGO India), H.C. Wu (Ball lightning), G. Tynan (Turbulence), M. Osakabe (LHD helical), S. Inagaki (Flow and turbulence), Y.X. Lin (Capacitive coupling), T. Chiueh (Gravitational dynamics), X. Duan (HL-2A/2M tokamaks), Y. Li (Laser Lab. Astro), H. Akatsuka (Plasma A&M), M. Xu (Summary F), A. Sen (Summary B), M. Shiratani (Summary A), Z.M. Sheng (Summary L), Y. Omura (Summary S), P.F. Chen (Summary SA), J. Li (Summary MF).

Nine parallel sessions in different fields (fundamental (F), basic (B), applied (A), laser (L), space (S), solar/astro (SA) and 3 magnetic fusion (MF)) were held in the afternoon for in-depth discussions of recent results. The number of invited speakers in these parallel sessions were 25 for F, 21 for B, 26 for A, 29 for L, 20 for S, 20 for SA, 84 for MF. They also included oral talks where there were 10 for F, 11 for B, 8 for A, 5 for L, 2 for S, 13 for SA, 30 for MF.

Seven summary speakers gave summary presentations at the last day of the conference and will write review articles to AAPPS-DPP's official journal, *Reviews of Modern Plasma Physics* (RMPP).

SUBRAMANIAN CHANDRASEKHAR PRIZE OF PLASMA PHYSICS



Fig. 2: The ceremony of the 2017 S. Chandrasekhar Prize. From left, A. Sen, C.Z. Cheng, L.C. Lee, and M. Kikuchi.

The 2017 selection committee (A. Sen, chair) selected Prof. C.Z. Cheng and L.C. Lee as laureates of the S. Chandrasekhar Prize of Plasma Physics (the press release was held on Aug. 21 2017:

(<http://aappsdp.org/AAPPSDPPF/prizetable.html>).

AAPPS-DPP YOUNG RESEARCH AWARD

The AAPPS-DPP Young Research Award was founded in 2016 and its recipients were selected by the 2014-2016 S. Chandrasekhar Prize Laureates (Professors S. Ichimaru, P.K. Kaw, D. Melrose). The awardees are as follows: Prof. K. Takahashi (Tohoku U.), Prof. T. Inoue (Nagoya U.), Prof. W. Lu (Tsinghua U.), and Dr. M.B. Dhanya (Vikram Sarabhai Space Center). The ceremony was held at AP-PC-13 (Dec. 4-8, 2016) in Brisbane.

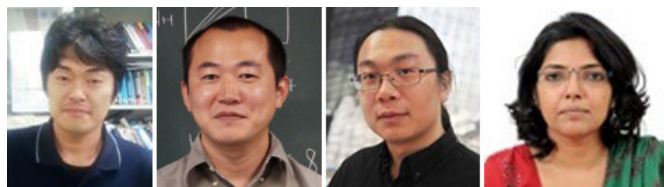


Fig. 1: 2016 AAPPS-DPP Young Research Award Recipients. From left, K. Takahashi, T. Inoue, W. Lu, M.B. Dhanya.



Fig. 3: From left, M. Kikuchi, C.Z. Cheng, M. Shiratani for Y.X. Liu (top), B. Qiao, Lu Wang, Linghua Wang, G.S. Xu, and L.C. Lee.

The 2017 AAPPS-DPP Young Research Award recipients were selected at the occasion of the 1st Asia-Pacific Conference on Plasma Physics. Candidates among partici-

pants were nominated from each sub-discipline program committee. The selection committee chaired by 2017 S. Chandrasekhar prize laureates selected Prof. Lu Wang (Huazhong University of Science and Technology), Prof. Yong-Xin Liu (Dalian University of Technology), Prof. Bin Qiao (Peking University), Dr. Linghua Wang (Peking University), and Prof. Guosheng Xu (ASIPP). The award ceremony was also held at the conference dinner. Winner's citations can be seen in the AAPPS-DPP homepage at <http://aappsdp.org/AAPPSDPPF/awardtable.html>.

REVIEWS OF MODERN PLASMA PHYSICS (RMPP)

AAPPS-DPP started a review journal called the *Reviews of Modern Plasma Physics* (RMPP) in 2017. This is an on-line (ISSN: 2367-3192) and subscription journal with an open access option. It utilizes a continuous article publishing system and single issues and volumes per year. Up to now (the end of Oct. 2017), RMPP has published the following articles since June 16.

1. G.K. Park, et al., (review paper) Shocks in collisionless plasma (44p).
2. P.K. Kaw, (Chandrasekhar lecture) Nonlinear laser-plasma interactions (42p).
3. H. Tanaka et al., (review paper) State of the art in medical applications using non-thermal atmospheric pressure plasma (89p).
4. P.H. Yoon, (review paper) Kinetic Instabilities in the solar wind driven by temperature anisotropies (69p).
5. D. B. Melrose, (Chandrasekhar lecture), Coherent emission mechanisms in astrophysical plasmas (81p).
6. S. Ichimaru, (Chandrasekhar lecture), Phase transitions, interparticle correlations, and elementary processes in dense plasmas (60p).
7. R. Hatakeyama, (review paper) Nanocarbon materials fabricated using plasmas (110p).
8. A. Sen, (obituary) Predhiman Krishan Kaw (4p).

The 1st editorial board meeting of RMPP was held during the AAPPS-DPP 2017 in order to exchange views directly among board members.

AAPPS-DPP 2018: The DPP's next annual conference will be held at Kanazawa from Nov. 12-17, 2018.

Acknowledgements: This 1st Asia-Pacific Conference on Plasma Physics was a great success due to the dedicated efforts by the Southwestern Institute of Physics, and in particular, due to the excellent work by the team led by Prof. Xuru Duan.