



PREFACE

The first International Particle Accelerator Conference, IPAC'10, took place at the Kyoto International Conference Centre (KICC), Kyoto, Japan from Sunday to Friday, 23 to 28 May, 2010. It was attended by close to 1250 full time delegates from approximately 30 different countries on all continents. Held under the auspices of the Asian Committee for Future Accelerators (ACFA), the European Physical Society Accelerator Group (EPS-AG), the American Physical Society Division of Physics of Beams (APS-DPB) and Institutes in North America organizers of the Particle Accelerator Conference (PAC), it was organized by the Science Council of Japan, the Physical Society of Japan, the Particle Accelerator Society of Japan and the Atomic Energy Society of Japan.

The organizers of IPAC'10 are most grateful for support from (in alphabetical order): Foundation for High Energy Accelerator Science, ICR Kyoto University, JAEA, Japan Society for the Promotion of Science, JASRI, KEK, Kyoto Chamber of Commerce and Industry, Kyoto City, Kyoto Prefecture, Kyoto University, NIRS, Osaka University, RCNP Osaka University, and RIKEN. Furthermore, the attendance of almost 100 young scientists from all over the world was made possible through the sponsorship of societies, institutes and laboratories worldwide (in alphabetical order): APS-DPB, CEA, CELLS-ALBA, CERN, CIEMAT, CNRS/IN2P3, DESY, DIAMOND, EPS-AG, ESRF, Foundation for High Energy Accelerator Science, GSI, ICR Kyoto University, INFN, Italian Physical Society, IUPAP, MAX-lab, MSL, PSI, RCNP Osaka University, STFC, and Synchrotron SOLEIL. The organizers of IPAC'10 are grateful to all sponsors for their valuable support.

The conference was opened by Shin-ichi Kurokawa and Katsunobu Oide, respectively Honorary Chair and Chair of the IPAC'10 Organizing Committee (OC), by Akira Noda, ICR Kyoto, Chair of the Scientific Programme Committee (SPC), and by Toshiyuki Shirai, NIRS, Chair of the Local Organizing Committee (LOC). Albrecht Wagner, formerly of DESY and Chair of ICFA opened the scientific programme with a presentation on *International Collaboration with High Energy Accelerators* followed by *LHC Commissioning and First Operation* presented by Stephen Myers, CERN. Makoto Kobayashi, KEK/JSPS, Norbert Holtkamp, ITER, Jasper Kirkby, CERN and Johannes Bluemer, KIT, KCETA, gave inspiring closing presentations respectively on *CP Violation and B-factory Experiments*, *International Energy-related Developments*, *ITER & IFMIF*, *the Cloud Project: Climate Research with Accelerators*, and *The Pierre Auger Observatory: Cosmic Accelerators and the Most Energetic Particles in the Universe*.

Close to 90 invited and contributed oral presentations of very high quality were made during the week, including a fascinating "Entertainment" presentation entitled *The Spirit of Tea*, demonstrated by Dr. Genshitsu Sen, Ura-Senke, Grand Master of Tea.

The scientific programme was developed by the IPAC'10 SPC. It was a truly international body with members coming 50% from Asia and 50% from Europe and North America. The conference programme spanned four and a half days, with plenary sessions on Monday and Friday mornings, and Thursday afternoon. All other sessions were composed of two oral sessions in parallel, with the poster sessions scheduled alone at the end of each afternoon. There were 54 invited talks, 45 contributed oral presentations, and 1800 posters were scheduled during the lively poster sessions at the end of each afternoon. These proceedings contain the reports of 1560 contributions.

An industrial exhibition took place during the first three days of the conference. Industrial exhibitors occupied 87 booths and presented their high technology products and services to the delegates in an excellent atmosphere conducive to discussions.

Best Student Poster Prizes were awarded to **Houjun Qian**, Brookhaven National Laboratory (BNL) and Tsinghua University in Beijing for the contribution entitled *Experimental Studies of Thermal Emittance of the Mg Cathode at the NSLS SDL* and to **Marcel Ruf**, University of Erlangen-Nurnberg LHFT, Erlangen for the contribution entitled *Beam Position Monitoring Based on Higher Beam Harmonics for Application in Compact Medical and Industrial Linear Electron Accelerators*.

A prize for an individual in the early part of his or her career, having made a recent, significant, original contribution to the accelerator field, was awarded to **Mei Bai**, Brookhaven National Laboratory (BNL) *“for her significant contributions to spin dynamics and polarized proton acceleration in circular accelerators - in particular AGS and RHIC, and to successful polarized proton beam collisions at 500 GeV centre of mass”*.

A prize for an individual, having made significant, original contributions to the accelerator field with no age limit, was awarded to **Jie Wei**, Tsinghua University in Beijing *“for his exceptionally creative contributions to the design, construction and commissioning of circular accelerators, in particular RHIC, SNS, LHC, as well as the design of CSNS, and for numerous significant developments in the field of beam dynamics”*.

An achievement prize for outstanding work in the accelerator field with no age limit, was awarded to **Stephen Myers**, CERN *“for his numerous outstanding contributions to the design, construction, commissioning, performance optimization, and upgrade of energy-frontier colliders - in particular ISR, LEP, and LHC - and to the wider development of accelerator science”*.

A further prize, decided by the IPAC'10 OC, was presented to the Joint Accelerator Conferences Website (JACoW) Collaboration, for its service to the accelerator community. **Volker Schaa**, GSI and **Christine Petit-Jean-Genaz**, CERN, respectively Chair and Deputy Chair of the JACoW Collaboration, received the prize on behalf of the whole Collaboration, many of whom worked in the IPAC'10 Proceedings Office Editorial Team.

To conclude, Caterina Biscari, former Chair of the EPS-AG and EPAC'08 OC, received a plaque on behalf of **Claudio Federici**, INFN-LNF, who won the competition to find a logo for the new IPAC series. This logo, shown at the top of this page to announce IPAC'11, will be used for the announcements of all future IPAC events.

The prizes were presented by the Chairman of the Prizes Selection Committee, Won Namkung, POSTECH, and Katsunobu Oide, KEK, Chair of the OC for the latter two prizes.

The medium for the proceedings of this conference is publication on the JACoW site (www.jacow.org). There will be no hard copy volumes. The processing of the electronic files of contributions prior to, during and immediately after the conference was achieved by the JACoW "seasoned experts", who also trained less experienced volunteers from the JACoW Collaboration. The dynamic team was composed of 29 persons from laboratories worldwide, many accomplishing several different tasks ranging from IT (setting up the computers and network), to processing of contributions and transparencies, to author reception and cross-checking of titles and authors. Thanks to the work of this dynamic team and the careful preparations and guidance of Christine Petit-Jean-Genaz, CERN and Akihiro Shirakawa, KEK, a pre-press version with 1545 contributions was published on the last day of the conference. The final version, with the invaluable assistance of Volker Schaa, Chairman of JACoW, was published at the JACoW site just over two weeks after the conference. This is yet another impressive record set by the JACoW Collaboration.

The success of IPAC'10 was due in great part to the truly excellent collaboration between the international teams of the OC and the SPC, and the LOC. Membership of the LOC, under the leadership of Toshiyuki Shirai, NIRS included staff from KEK: Susumu Kamada, Kazuro Furukawa (Website Manager), Yoko Hayashi (Conference Secretary), Eiji Kikutani (Exhibition Manager), Yoshiko Nagashio (Logistics), Emiko Nakamura (Web), Takashi Kosuge (Presentations Manager), Kazuyuki Nigorikawa, Akihiro Shirakawa (co-editor and responsible in particular for providing the JACoW team with excellent working conditions); from RIKEN/Spring-8: Takahiro Inagaki; from RIKEN: Osamu Kamigaito; from JASRI/Spring-8: Akihiko Mizuno; from IAE Kyoto University: Toshiteru Kii, Kai Masuda, Hideaki Ogaki; from ICR Kyoto University: Hikaru Souda (Registration), Hiromu Tongu, Ichiro Kazama (Photographer); from ISIR Osaka University: Ryukou Kato (Poster Sessions), Jinfeng Yang; from RCNP Osaka University: Mitsuhiro Fukuda; from the Particle Accelerator Society of Japan: Sawako Hayashi (Exhibition); from CERN: Christine Petit-Jean-Genaz (Scientific Secretariat, co-editor).

And thus the first conference in the new international IPAC series has set the scene for the future events. May they all be as successful as this one. The second IPAC will take place in San Sebastian, Spain (September 2011), and the third in New Orleans, USA (May 2012). We are convinced that the collaboration between the three regions, steadily enhanced in recent years, will continue to grow to the benefit of IPAC and the accelerator community worldwide.

Shin-ichi Kurokawa and Katsunobu Oide, KEK, Honorary Chair and Chair of the IPAC'10 Organizing Committee