Opening Ceremony Speech of XXII International Symposium on Discharges and Electrical Insulation in Vacuum (ISDEIV), Matsue/Japan, 26 September 2006

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Dear Chairman and dear members of the Local Organizing Committee, dear sponsors and supporters of the XXII International Symposium on Discharges and Electrical Insulation in Vacuum, dear attendees, ladies and gentleman,

In my capacity as the present Chairman of the Permanent International Scientific Committee —named PISC—, which acts as the Steering Committee of these International Symposia, I have the honour to open herewith the XXII Symposium and welcome you, hoping that your participation will become a valuable and fruitful experience for all of you.

This Symposium is No. 22 in a series of Symposia founded in 1964 in Cambridge, USA, and from that time on held in different parts of the world according to its real international character. Since it is for the first time held in Japan and most of the participants stem from Japan and surrounding Asian countries like China and may have attended this type of Symposium dealing with the medium “Vacuum” for the first time, it seems to be necessary to give now some information and explanation about the background of this Symposium.

As you know, there exist four basic types of electrical insulation media. These are solid, liquid and gases materials, and in addition one, which is named “vacuum”. While many conferences exist, focussed on insulating solids or insulating dielectric liquids or insulating gases, this Symposium is the only one conference in the world focussed on the special environment called “vacuum”. The ideal “vacuum” is an ideal electrical insulation. However, dealing with a man-made non-ideal real and electrically stressed vacuum requires searching for what is called “electrical discharges”. These electrical discharges in vacuum consisting of particles stemming from hot areas of the metallic electrodes can be considered on one hand as being negative, making the vacuum “dirty” and spoiling the excellent insulation properties. On the other hand, these electrical discharges can be used as “working horses” in tricky arrangements, such as vacuum switches or in devices for film or layer deposition and desired material modification. When we look around we realize that “vacuum” is furtheron applied in electron-, ion- and x-ray sources and particle beams, which apparatus are high sophisticated ones. Phenomena occurring in this scientific equipment are dealt with in these International Symposia as well as phenomena occurring in a space environment.

New results of research work will be presented by oral and poster presentations. Furtheron, these Symposia are enriched for several years by supplementing offers such as a Tutorial presenting information about “writing scientific and technical papers in English” and Panel Discussions, this year dealing with “High Voltage Circuit Breakers” and “Flat Panel Displays” (FPD).

The founders of these symposia were forward-looking people, recognizing early a need for discussion and exchange of scientific work in the field of discharges and electrical insulation in vacuum. The long life of the Symposium is therefore based on a unique cooperation of experts and scientists from different fields, from physicists, engineers and material scientists, working in industry, research institutes and universities. Newcomers with a relevant background are always welcome and invited to cooperate. This guarantees an active and refreshing life of this Symposium and takes into account that the centre of activity presently and in the future may move away from traditionally high-tech countries to fast-developing ones.

Let me now make some brief remarks on the organizing bodies of this Symposium, characterized by the abbreviations LOC and PISC. The Local Organizing Committee (LOC) is in charge of organizing and structuring the relevant Symposium. The LOC can do this with a high degree of freedom. It has been chosen, based on an application to the Permanent International Scientific Committee named PISC and finally on a decision of the PISC. The PISC’s decision, however, is based on the trust and the ability, expertise and scientific background and high motivation of the LOC to make the Symposium a success with regard to the organization and scientific contents.

The PISC, however, is responsible to keep up the long, successful and proud tradition of this chain of symposia. The members are willing to give advice and support to the relevant LOC and to follow the written constitution and by-laws. Furthermore, it has to look to the future and to guarantee the survival of these conferences. Finally, the PISC decides on the Symposia Awards such as the “Dyke Award” and the “Chatterton Young Investigator Award”, based on the recommendation of its Awards Committee.

Fortunately, we are happy to have a formal cooperation with the IEEE, Dielectrics and Insulation Society (DEIS). Through this we are under the umbrella of a

world-wide successfully active Engineering Organization, which gives us the opportunity to publish selected and reviewed extended conference papers in Special Issues of the IEEE Transactions on Dielectrics and Electrical Insulation and on IEEE Transactions on Plasma Science. However, we are in the lucky position not to be dominated and hampered by the bureaucracy of this huge body, but remain independent in our main decisions. This mix guarantees a certain amount of continuity in addition to the cooperation with changing sponsors, who are mainly based on the national level depending on the specific situation in the country, where the relevant symposium takes place. This year the Symposium is hosted by the Vacuum Society of Japan, and enriched by a manufacturers exhibition, where world-wide known companies, mainly from Japan, offer information about their products.

Every Symposium and LOC has its special profile. This was for instance the case at the previous Symposium held in Yalta, Ukraine, where the LOC was for the first time chaired by a lady, Mrs. Poluyanov, while the present Symposium is a special one with regard to the high number of members of the LOC. Being a European, I have learned from my colleagues and especially at my time in industry that the strength of the Japanese Society is to form cooperating teams which try to find out an accepted agreement between the team members. Europeans are traditionally more trained to work as individuals and maybe that this has been an advantage in the past. I remember that I as an individual was sent out from my company as a trouble shooter to the Iron and Steel Corporation of South Africa (ISCOR) in the seventies of the last century, and had to fight with arguments against 20 Japanese engineers, which group contained an enormous treasure of different skills. But fortunately, I was not defeated and it was my luck, that the leader of the group of engineers was so overstressed by solving continuously so many different kinds of problems that he fell asleep in the decisive meeting with the customer. But I think, these times are over and presently we live in a globalized world where networking of scientists and engineers from different countries with different cultural background is a must in order to work with success. One can see it from most publications in prestigious and reviewed journals as well as in the preliminary program booklet of this Symposium, where groups consisting of many authors present their common results.

Let me still say some further words to Japan being the country of the rising sun. As far as I know, this country was nearly a "closed" country up to the time when it was opened one and a half century ago. From this time on, skills and modern technology were introduced extremely fast with amazing results. In this context I would like to mention a book written by the German author Frank Thies, who lived in the town of my home university Darmstadt in Germany. He wrote a book about the sea battle of Tshushima which took place in the beginning of the twentieth century in the war between Japan and Russia, and in which seabattle the Russian fleet was defeated. In less than half a century the Japanese Industry was

able to build European styled modern battleships and to handle them so skillfully that the Russian-Baltic fleet directed by experienced sailors —mostly of German origin— could not keep up.

Presently, Japan is one of the strongest economies in the world based on advanced science and technology. I wish our Japanese colleagues all the best for their attempts to keep up that level. But looking to Japan should not only be focussed on this part of the country. The country has a rich cultural tradition and amazing landscapes. World famous are the Japanese Gardens. We have several of them installed early with the help of Japanese garden artists. One of the very famous was supported by the Top Management of the big German chemical company Bayer in Leverkusen. Now I wish all attendees from abroad that they will enjoy the old Japanese tradition and culture. I think that the Japanese colleagues have selected excellent trips for the participants and accompanying persons including the post-conference tour.

Ladies and gentlemen, this is my last Opening Speech as Chairman of the Permanent International Scientific Committee. I have done my duty as Chairman of this body for twelve years, and I think now it is time to retire and give the chairmanship to an active and younger Person. The PISC has followed my proposal and has selected the present Secretary of the PISC Dr. Andre Anders from Berkeley to become my successor. He will take over the duty in the afternoon and chair the second PISC Meeting in the evening.

Looking back it was always a pleasure for me to work with my colleagues from the Permanent International Scientific Committee. I experienced always a friendly, peaceful and scientifically motivated atmosphere among my colleagues with lots of fruitful and cooperative discussions on occasion of the PISC Meetings, but in addition, the overwhelming hospitality of all of the relevant local organizing groups and their remarkable ability to organize the Symposium and the accompanying social events. This experience is based on the Symposia held in Berkeley/USA, Eindhoven/Netherland, Xi'an/China, Tours/France and Yalta/Ukraine. You can imagine that my thoughts are a little bit nostalgic at the time being, but it is important to look towards the future and to realize that the present duty of the "oldies" is mainly to support young people in their scientific career and teaching them that competition is important, but must be done peacefully and fair.

Closing my address, I wish my Japanese colleagues, especially the LOC Members and especially the LOC Chairman Prof. Yanabu, all the best combined with many thanks from the PISC for their enormous preparation work. Furtheron, I wish all attendees, presenters, discussers, listeners and organizers that they will enjoy the following five days of the Symposium.

Good luck to all of you! Thank you very much for your attention.