OPENING ADDRESS

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Good morning, ladies and gentlemen, and dear colleagues;

On behalf of the Organizing Committee, I would like to welcome all of you to the International Symposium on the Foundation of Quantum Mechanics in the Light of New Technology, ISQM-TOKYO'08.

This is the 9th of the series. It was started in 1983, a quarter century ago, when Professor Sadao Nakajima, then the director of ISSP, and Dr. Yasutsugu Takeda, then General Manager of the Central Research Laboratories of Hitachi, resonated in the idea to bridge basic science and technology, namely to discuss subjects on the frontiers of science which have become possible with the help of new technology. Unfortunately both of them can not join the meeting this time.

By now this series has a history. Actually it is impressive to observe that, during last 25 years, there has been tremendous progress in both science and technology.

Behind the decision made 25 years ago by Nakajima and Takeda, there was a beautiful experimental verification of the Aharonov-Bohm effect by Dr. Akira Tonomura, who received strong inspirations and warm encouragements from Professor C.N. Yang to carry out this very difficult experiment. Professor Yang is expected to join this Symposium tomorrow.

By the way, Dr. Tonomura, Dr. Fujikawa, one of the organizers, and myself were together in the same class in the days of undergraduate student in the University of Tokyo.

The experiment by Dr. Tonomura is so beautiful and appealing as you may all know that I now introduce his experimental results in the first class hour of quantum mechanics for the undergraduate students by using power points which Dr. Tonomura kindly edited for me to be used originally for the public lecture.

No doubt, the experiment by Tonomura is symbolic in demonstrating the fact that science and technology are hand in hand - technological developments can lead to exploration of mysteries of nature and, in return, new understanding of scientific facts leads to new technology.

In the last ISQM held three years ago I said the following "in this conference many interesting experimental questions associated with the quantum coherence of not only electron waves but also that of spins has been addressed. This trend will grow since scientific and technological interests are moving more toward to materials in nano-scales, where obviously the quantum coherence really manifests itself." This trend persists, and the importance of transport phenomena in magnetic systems has been recognized last year as Nobel Prize in Physics. Very clear feature of the symposium this time is that there is much more interest in the active roles played by this spin degree of freedom.

It is our hope that this Symposium could contribute to the deeper understanding of the implications of quantum mechanics. We, organizers, thank you for your joining this Symposium. Please enjoy discussions.

Thank you very much for your attention.