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PREFACE

Prof. T. Takada

International cooperative research and education start from visiting each other.

The 1996 Asian International Conference on Dielectric and Electrical Insulation is going to be held in Xiang, China from October 8 to 11, and the 5th International Conference on Properties and Applications of Dielectric Materials is held from June 20 to 24 in Seoul, Korea. These meeting is the result of how Asian researchers are getting more and more active in working together both on research and education. I believe that the research activity itself is the education for the young researchers. Developing cooperative research among foreign groups is such an effective and attracting way to accomplish the purpose of educating young researchers. Here I introduce my own experience of how the cooperative research has started between my laboratory and others in foreign countries.

In 1981 I had an opportunity to have a cooperative research with a laboratory abroad for the first time. There were three researchers from Asian countries including me, from Japan, who was 40 years old at that time, and a great and powerful professor from China, and a young graduate student from Korea. The Chinese professor was Prof. Zyu Liu who organized the 1st ICPADM. He was one of the great professors who were visiting major universities of the world to inspect and to study, right after the end of the great culture revolution in China. I learned a lot about the educational condition and students of their universities through communications with them. So many things were new to me. Even though they are neighboring countries, I had poor knowledge about them. And then I got interested in visiting their universities in China and Korea.

In 1985 I visited China for the first time to participate in the 1st ICPADM which was held in Xaing. The most impressive thing was the eagerness of the graduate students. Those young students worked hard for the meeting in the background to make it successful. They were so interested in the United States, Europe, and Japan. They asked me many things about my country such as the campus life, economic activities and many other topics. Now 10 years has passed since then, they are playing important roll in various places of the world. I felt that the international academic meetings stimulates young people and give them chance for starting new researches.

In 1989 I traveled in Korea for a week with one of my friends visiting universities, research centers and industrial companies. Each place, we had such a warm welcome. What impressed me most was that how well young researchers, who had acquired an academic degree in foreign universities, took us around their laboratories. They are very enthusiastic about their research work and concerning education. It seems that they are very much concerned about what they want or should do for the future. Many of them are now working for the 5th ICPADM meeting, which is held in Seoul in 1997, as the committee member. I am looking forward to join that to meet my old friends and to be friend with young researchers.

Each time I visit international academic meetings and foreign laboratories, I discussed about the opportunities of having cooperative research work with them including exchanging students and mutual visiting of students. Through my experience, I believe that mutual visiting of laboratories and cooperative research work have so much means to improve the research work of the young generation.

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EDITORIAL

Prof. Y. Ohki

Can Science Bear a New Technological Revolution in Electrical Insulation?

A truly innovative technology cannot be borne without a discovery of a new principle or theory in natural science. First, let me look back briefly on the history of science. It seems to me that there have been four revolutionary periods in which science made remarkable advances.

The first revolution was born in the period of Four Great Civilizations. However, even though Democritos (ca. 460 B. C. - 370 B. C.) proposed 'Atomic Theory', it cannot be regarded as natural science since it was developed without doing experiments and without showing scientific evidence. What followed this period in the history of natural science was the Great Black Era lasting for over 1700 years.

The door of the second revolution was opened by G. Galilei (1564 - 1642), who established 'proof by experiments' and 'analysis and simplification by mathematics' and is sometimes called the Father of Natural Science. I. Newton (1643 - 1727) is another giant in this revolution. Lots of new principles in physics which were clarified in this revolution became the cradle of the Industrial Revolution.

The third revolution was started by C. A. Coulomb (1736 - 1806) and A. Volta (1745 - 1827) and completed by J. C. Maxwell (1831 - 1879). New principles and theories born in this revolution let the first half of the 20th century become the Era of Electricity.

The fourth revolution was dramatically opened in the last moment of the 19th century. In 1900, M. Planck (1858 - 1947) proposed the discontinuity of energy, which was the first concept of the quantum theory. Another significant theory of this revolution is the theory of relativity by A. Einstein (1879 - 1955). We are now enjoying the Era of Electronics (or Photonics) thanks to the success of this revolution.

Then, will the fifth revolution come? At the end of the 19th century, physics was in the badly chaotic situation. This chaos is considered to be the mother of revolution. It is said such a chaos is not seen in today's physics.
While it is true that we are living in the era of electronics, is the electrical insulation technology truly utilizing the achievements of the latest revolution? It seems the answer is not fully affirmative. Therefore, we must make every effort to take as many achievements as possible in the electrical insulation technology. Exchange of information should surely give good assistance. I hope this small booklet can be a big step of our such endeavor to promote information exchange.

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