Electrical Insulation News in Asia

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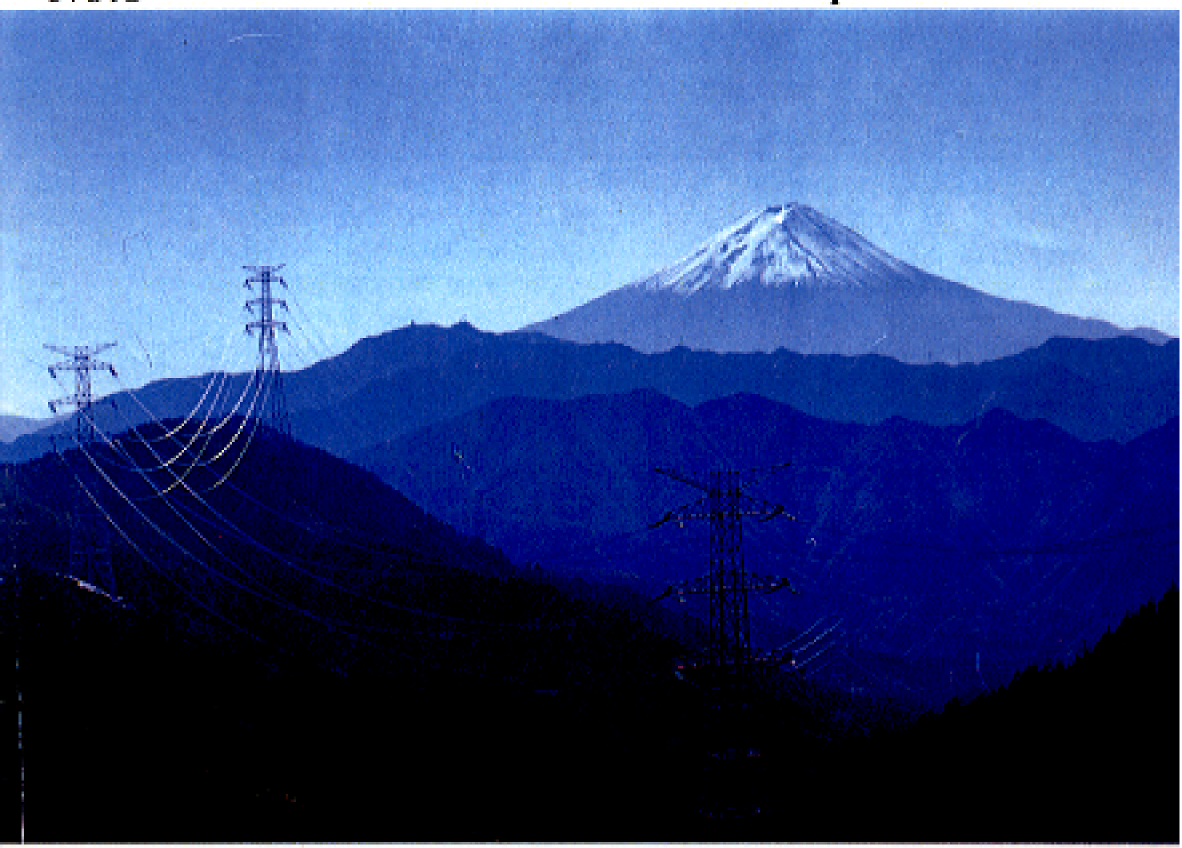

IEEJ

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PREFACE

by Prof. M. Ieda

We had been learning the science and technology of electrical insulation from the advanced American and European countries similarly to the other field of industries as soon as we opened our country a little more than a century ago. We have been accustomed to the attitude of the catching-up and trying to be competitive to the forerunners. This way was particularly effective at the resumption of the built-up of science and technology out of the complete distraction both mentally and materially after the second world war. However, we purposely paid more attention and effort than other advanced countries to the positive introduction of the material science based on the modern physics of material properties to the science and technology of excessively complicated electrical insulation. And thus we innovate the conventional ways to understand the electrical insulation which were strongly depending on the empirical approaches.

Our attitude toward the innovation of the science and technology of electrical insulation has been distinctly evident in the education of the university students of electrical engineering major, on the job training in industries and discussion in the meetings of the Institute of Electrical Engineers of Japan (IEEJ) and others. Also, the invitation of foreign experts in this field have promoted the international exchange and understanding of its science and technology and prevented our isolation in the archipelago. The results of our effort are well represented in the progress in our science and technology of electrical insulation. The December issue, 1986 of IEEE Transactions on Electrical Insulation, the periodicals of the Dielectrics and Electrical Insulation Society of IEEE specialized only Japanese state-of-the-art of science and technology of electrical insulation.

As a conclusion, we would like to point out the importance of information exchange for the effective progress of our science and technology.

Along this line, Professor H. Yamashita of Keio University has established recently the special Committee in IEEJ to improve more effectively our exchange activities with many foreign countries in this field.

— Masayuki Ieda

EDITORIAL

by Prof. H. Yamashita

The electric use is growing with the advance of civilization. The growth requires better quality and higher reliability in the field of electrical insulation. The research and development of insulating material has great progress in all over the world especially in Asian countries. In fact, the contributions from Asian countries at International Conference were increased as well as the number of the Conferences held in Asia. For example, the International Conference on Properties and Applications of Dielectric Materials (ICPADM) were held at China in 1985 and 1988, at Japan in 1991, and at Australia in 1994.

The Technical Committee on Dielectrics and Electrical Insulation (DEI) in IEEJ has now eight Investigation Committees and one Cooperative Research Committee. In January 1991, Professor Masayuki Ieda of Aichi Institute of Technology organized the Cooperative Committee to investigate the Academic and Technical Exchange between Asian Countries and Japan in the Field of Dielectrics and Electrical Insulation (Asian Interlink in Dielectrics; AID Committee). After two years of the research work, AID Committee published the Technical Report which contains the activity information in the field of electrical insulation in Asian countries as well as in Japan (in Japanese). To inform these valuable information not only to Asian countries but also to all over the world, this Committee was started in January 1994.

It is my pleasure to publish the first "Electrical Insulation News in Asia". The contents of the news are the activities of the DEI Technical Committee in IEEJ, information of the International Conferences or Technical Meetings, and the recent activities in Asian countries appeared in the Technical Report of the AID Committee. I believe that with your help we can continue to grow our work. Your kind suggestions and latest information are greatly appreciated.

— Hisanao Yamashita

1) Activities of the technical committee on DEI

In the DEI committee, eight investigation committees and one cooperative research committee are working at present as follows.

List of the Committees

No.	Committee Name	Chairperson	Period
ADEI 1035	Insulating Materials Database	Y. Tsutsumi	Oct. 1991 - Sep. 1994
ADEI 1039	Design and Control of Functional Organic Ultra-Thin Films	F. Kaneko	Apr. 1992 - Mar. 1995
ADEI 1041	New Approach to Analytical Methods of the Properties for Dielectric Materials	Y. Hama	June 1992 - May 1995
ADEI 1043	High Electric Field Phenomena and Space Charge in Dielectric/ Insulating Materials	K. Miyairi	Oct. 1992 - Sep. 1995
ADEI 1045	Computer Application to Dielectric Measurements	T. Okamoto	Jan. 1993 - Dec. 1995
ADEI 1047	High Reliability Insulation Technology for Printed Board	S. Kobayashi	Apr. 1993 - Mar. 1996
ADEI 1049	Electrical and Optical Properties of Molecular Films and Characterization Methods of the Films	M. Iwamoto	Oct. 1993 - Sep. 1996
ADEI 1051	Fundamental Process of Treeing Degradation	K. Kudo	Apr. 1994 - Mar. 1997
ADEI 8003	Electrical Insulation News in Asia	H. Yamashita	Apr. 1994 - Mar. 1996

These committee plan technical meetings and hold twelve meetings in average every year under the cooperation with the DEI committee. At each meeting, about eleven papers are presented and discussed. The papers presented for the last one year (Sept. 1993 – Aug. 1994) are as follows.;

List of papers (Sept. 1993 – Aug. 1994)

Theme: Life Expectancy.
Sept. 3, 1993 Kogakuin University

DEI-93-95 Prediction of tree estimation by discharge distribution analysis.
Y.Ehara, H.Kishida, Y.Itou

DEI-93-96 Insulation diagnosis of epoxy-molded high voltage motor.
Y.Kaneda, K.Kimura, N.Iwabuchi, M.Irie, N.Urakawa

DEI-93-97 Evaluation of synthetic resin insulation generator winding wire with the insulation life expectancy method.
Y. Ikeda, Y. Hirada, A. Asano, I. Kamiyama

DEI-93-98 New degradation technology on oilfilled transformer.
E. Takahashi, H. Tsukioka

DEI-93-99 Evaluation of the characteristics of water tree degradation on XLPE cables.
G. Katsuta, Y. Kaneoka, A. Katagai, Y. Maruyama, S. Mutou

DEI-93-100 Primary investigation of high voltage XLPE cable insulation diagnosis using the admittance of the degraded part.
M. Kakuta, S. Nakamura, S. Morooka, M. Mikami

DEI-93-101 Study on the renewal period of high voltage XLPE cables.
T. Shinmoto, M. Kameda

DEI-93-102 Discussion on measurement methods of insulation diagnosis for 22kV XLPE cables.
Y. Kubota, S. Ikeuchi, Y. Ebinuma, Y. Fujiwara

Theme: Conduction, Breakdown and Space Charge.

Oct.7 〜 8, 1993 Shinshu University

DEI-93-103 Fabrication of an electrode system composed of polypropyren insulator for dielectric easurement at high field.
M. Fujii, Y. Mizuno, M. Nagao, M. Kosaki, K. Touyama, T. Tokoro

DEI-93-104 Self-healing breakdown of polyimide films at cryogenic temperature.
Y. Kawamura, Y. Muramoto, Y. Mizuno, M. Nagao, M. Kosaki

DEI-93-105 High field conduction and breakdown in ultra thin polymer films.
S. Ochiai, T. Ogawa, T. Takagi, M. Ieda, T. Mizutani

DEI-93-106 Effect of CCl4 on the propagation of streamers in benzen under microsecond pulse voltage.
H. Yamada, A. Shiga, Y. Ohishi, T. Wakamatsu, T. Fujiwara

DEI-93-107 Compensation effect in electric conduction and dielectric relaxation of dielectric liquids.
N. Tanaka, Y. Ohta, K. Miyairi, T. Mizutani

DEI-93-108 Fractals of simulated trees in three dimensions with consideration of growth probability.
M. Kanemine, S. Shiino, S. Kobayashi, S. Maruyama, K. Kudou

DEI-93-109 Space charges in polyparabanic acid films in the high temperature region.
M. Murata, K. Miyairi

DEI-93-110 Thermally stimulated current in polyether keton.
U. Kim, T. Takeda, Y. Ohki, N. Hirata, K. Uchida

DEI-93-111 Influence of space charge in XLPE with semiconductive defects.
K. Kaminaga, T. Niwa, T. Takahashi, K. Watanabe, H. Miyata

DEI-93-112 Influence of suppression layer for charge injection on the space charge distribution in polyethylene.
Y. Tanaka, E. Li, T. Takada

DEI-93-113 Consideration of space charges in polyethylene by laser induced pressure pulse method
— antioxidant and oxidation, cross-linking — .
H. Kon, Y. Suzuoki, T. Mizutani, K. Suzuki

DEI-93-114 Influence of space charge formed with ac voltage on the impulse breakdown in XLPE cables.
M. Kaneoka, K. Sasaki, A. Katakai

DEI-93-115 High field electrical conduction in acetophenone-doped polyethylene.
S. Yukimine, Y. Mizuno, M. Nagao, M. Kosaki

DEI-93-116 Characteristics of leakage current in a fresh cable of 6kV class.
C. Shinoda, M. Hotta, T. Hashizume, Y. Tanaka, T. Takada

DEI-93-117 Measurement of space charges in tree degraded XLPE cables.
N. Hozumi, T. Okamoto, Y. Ikeda, N. Imajo

DEI-93-118 On the harmfulness of water trees.
S. Muto, Y. Maruyama

Theme: Electrical Insulation.

Nov. 9, 1993 Central Electric Club (Osaka)

DEI-93-119 Thermal degradation and endurance of heat-resistant insulator.
M. Tsukiji, W. Bitoh

DEI-93-120 Characteristics of partial discharge by applying pulse voltage.
K. Mori, Y. Inoue

DEI-93-121 GIS insulation monitoring system using external antenna.
T. Kimura, T. Harunami, K. Konma, K. Saito

DEI-93-122 Study of partial discharge generated from defects in XLPE insulation.
K. Kishi, K. Yatsuka

DEI-93-123 Estimation of thermal history on XLPE power cables.
K. Kobayashi, A. Yoshino, S. Nakayama, T. Niwa

DEI-93-124 Study of carbon black-filled semiconducting materials for power cables-1
(Investigation on their electrical breakdown behaviour.)
Y. Miyashita, H. Kato

Theme: LB Films and Organic Thin Films.

Nov. 25, 1993 Niigata University

DEI-93-125 Transient photocurrent properties in merocyanine dye Langmuir-Blodgett films.
K. Saito, H. Yokoyama

DEI-93-126 Attenuated total reflection (ATR) measurements of LB ultra thin films on Ag thin films.
T. Wakamatsu

DEI-93-127 D.C. voltage generation in MIM structures of LB films.
T. Hino, S. Takeuchi

DEI-93-128 Electron transport mechanism through polyimide Langmuir-Blodgett films possessing functional entities.
M. Iwamoto, T. Kubota

DEI-93-129 Stabilization of organic thin film EL devices.
M. Watanabe, M. Kusabiraki, K. Tanaka, Y. Maekawa, K. Abe, M. Aozasa

DEI-93-130 Preparation and recording property of reversible thermosensitive recording sheet of organic crystalline particles dispersed in a polymer.
T. Ueno, M. Suzuki, Y. Kishimoto

DEI-93-131 Surface pressure and area variations of dye adsorbed monolayers and the dependence of dye concentration.
K. Kudo, S. Kuniyoshi, K. Tanaka

Theme: Cryogenic Liquid.

Dec. 10, 1993 Ryukyu University

DEI-93-132 High field phenomena under cryogenic temperature and its measurement method - introduction -
M. Hara, A. Inui, N. Shimizu, J. Suehiro

DEI-93-133 Cryogenic liquid material.
H. Waki, M. Kosaki

DEI-93-134 Behaviour of cryogenic material under high field.
H. Ohkubo, N. Hayakawa, R. Hanaoka, N. Shimizu

DEI-93-135 Charged particle and electrical conduction under cryogenic state.
Y. Sakai

DEI-93-136 Breakdown of cryogenic material.
K. Arii, Y. Kamata

DEI-93-137 High field phenomena measurement method under cryogenic state.
H. Yamashita, Y. Murooka, Y. Sakai, H. Kishida

DEI-93-138 Behaviour of thermal cavities under cryogenic state and the effects of electrode conditions due to the breakdown characteristics.
H. Saito, Z. Wang, S. Muramatsu, M. Hara

DEI-93-139 Analysis of cavity movement under dc field by liquid nitrogen.
Z. Wang, H. Saito, S. Muramatsu, M. Hara

DEI-93-140 Breakdown characteristics of liquid helium due to the quench phenomenon using ac superconductor cable.
M. Hirose, N. Hayakawa, M. Hikita, H. Ohkubo, K. Uchida

DEI-93-141 Area and volume effects of breakdown voltage under liquid nitrogen using the statistical analysis of Weibull distribution.
H. Itsushima, N. Hayakawa, M. Hikita, H. Ohkubo, K. Uchida

DEI-93-142 Study of the refraction phenomena of small rounded conductors using light waves and electromagnetic waves.
K. Tomikawa, T. Nakano, Y. Murooka

DEI-93-143 Measurement of high sensitive field under liquid state using the photo differential method (Part 2).
T. Miki, Y. Takahashi, T. Nakano, Y. Murooka

DEI-93-144 Measurement of three-dimensional field distribution at liquid state (Part I).
S. Taketomo, K. Arii, Udo, H. Ihori, I. Kitani

DEI-93-145 Prediction of insulation life span due to the nerve circuit network using the phase characteristics of the partial discharge.
K. Aoki, N. Nagaoka, N. Mori

DEI-93-146 Evaluation of the partial discharge phenomena due to low voltage and the measurement of partial discharge on low voltage coil.
M. Watanabe, T. Tsunekage, A. Miura

DEI-93-147 Surveillance of electrical machine by inspection of vaporized gas from the insulation.
M. Watabe, S. Shimakawa, S. Hirai, Y. Usui

DEI-93-148 Preface of the history of high voltage engineering (Part VI).
Y. Takahashi

DEI-93-149 Influence of the barrier of different polymer adhesive surfaces due to the electric tree growth.
S. Sera, S. Kobayashi, S. Maruyama, K. Kudo

DEI-93-150 Evaluation of less poisonous, less flammable PVC structure.
T. Mitsui, M. Hanai, H. Umeda, Y. Katou

DEI-93-151 Observation of Cu steam and gaseous temperature of the partial discharge process by the LIF/CARS method.
T. Oida, M. Otsubo, H. Shida

DEI-93-152 Production of ECR plasma using permanent magnet.
A. Yonesu, J. Tanaka, N. Tomisato, A. Henzan, S. Gima, Y. Yamashiro

Theme: Instrumental Analyses of Dielectrics and Electrical Insulating Materials.
Dec. 14 ～ 15, 1993 Japan Atomic Energy Research Institute. (Takasaki Research Laboratory)

DEI-93-153 Analysis of radiation-induced degradation in polymers using μ -FTIR measurements.
H. Matsumoto, K. Hamanaka, Y. Hama, H. Kudoh, T. Sasuga, T. Seguchi

DEI-93-154 Space charges induced by low-dose γ -ray irradiation in low density polyethylene.
M. Kojima, Y. Nakamura, Y. Tanaka, T. Takada, Y. Ohki

DEI-93-155 Evaluation of radiation and thermal degradation in insulating materials using chemiluminescence measurements.
T. Yagi, Y. Morita, T. Seguchi

DEI-93-156 Radiation-oxidation mechanism of polymer model compound.
Y.S. Sobianto, Y. Katsumura, K. Ishigure, J. Kubo, H. Kudoh, T. Seguchi

DEI-93-157 ESR study on the crosslinking reaction in polyethylene: Effects of antioxidant on the crosslinking system.
T. Yamazaki, T. Seguchi

DEI-93-158 Irradiation test of magnetic coil insulation under TRISTAN synchrotron radiation.
R. Kumazawa, H. Mitsui, T. Tanii, T. Nakagun, Y. Ohsawa, K. Takayama, T. Ozaki

DEI-93-159 Evaluation of the burning resistance of electric cable materials using corn calorimetry (II).
C. Satoh, S. Yoshida, F. Aida, Y. Fujiwara

DEI-93-160 Electrical properties of thermoplastic polyimide in high temperature region.
T. Shiono, Y. Satoh, S. Sudo, G. Tanimoto

DEI-93-161 FTIR analysis of the curing behaviour of the epoxy resin.
H. Mitsui, N. Shoda

DEI-93-162 High temperature electrical conductivitiy of PPS: Electrode effect.
H. Watanabe, K. Miyairi

DEI-93-163 Red and yellow luminescence in silica glasses irradiated by high-dose γ -rays: Comparison with luminescence in porous silicon.
Y. Sakurai, K. Nagasawa, Y. Ohki, Y. Hama

DEI-93-164 Withdrawn.

DEI-93-165 Analysis of the γ -ray induced loss in erblum-doped optical fibers.
T. Koyama, N. Dohguchi, Y. Ohki, H. Nishikawa, Y. Kusama, T. Seguchi

DEI-93-166 Effect of irradiation on the performance of temperature sensor using optical fibers(I); Dependence on operating wavelength and irradiation temperature.
Y. Morita, T. Yamamoto, K. Fukuchi, H. Kawakami

DEI-93-167 Effect of irradiation on the performance of temperature sensor using optical fibers(II): Life test under radiation environment.
Y. Morita, T. Yamamoto, K. Fukuchi, H. Kawakami

DEI-93-168 Ion-beam analysis of ion-implanted insulating materials.
H. Naramoto, C.W. White

DEI-93-169 Dielectric strength of the reactive RF sputtered TaOx thin films estimated by the AC dielectric breakdown characteristics.
A. Shiroyama, K. Miyairi

DEI-93-170 Time-resolved measurements of the photoluminescence from defects in high-purity silica using synchrotron radiation.
H. Nishikawa, E. Watanabe, D. Ito, Y. Ohki

DEI-93-171 Analysis of defects in SiO2 films using mono-energetic positron beam.
M. Fujinami

DEI-93-172 Positron annihilation lifetime in D2O, H2O, HDO mixture.
T. Hirade

DEI-93-173 Photoluminescence study on the defects in thermal SiO2 films.
A. Ieki, Y. Ohki, H. Nishikawa, M. Takiyama

Theme: Study meeting on Organic Material Electronics.
Jan. 13, 1994 Toyohashi University of Technology

DEI-94-1 Sub-micron etching process by transmitted electron-beam excited plasma through polymer interface.
C. Shao, R. Inanami, S. Morita

DEI-94-2 Electrical properties of single mono-layers of N-docosylquinolinium TCNQ.
W. Kim, T. Kubota, M. Iwamoto

DEI-94-3 Fluorescence measurement of membrane potential using organic dye.
K. Maruyama, Y. Miyazaki

DEI-94-4 Simultaneous fluorescence measurement with organic dyes of membrane action potential and calcium ion density.
Y. Mori, Y. Miyazaki

DEI-94-5 Preparation of polyurea thin films for nonlinear optical material by vapor deposition polymerization.
T. Segi, Y. Suzuoki, T. Mizutani

DEI-94-6 Study on the EL mechanism of styryl dye-doped Alq3 organic LED .
K. Miyachi, T. Mori, T. Mizutani

DEI-94-7 Effect of electrode materials on the EL characteristics of organic EL.
M. Tomiyama, K. Miyairi, N. Nakamura, S. Wakabayashi

DEI-94-8 Discrimination of optical isomers using quartz-resonator sensors.
J. Ide, M. Ito, T. Nakamoto, T. Moriizumi

Theme: Computer Application for Dielectric Measurement and Database System.
Jan. 28, 1994 IEEJ Conference Room.

DEI-94-9 Development of a thesaurus for database for insulation technology.
Y. Tsutsumi, Y. Nagao, T. Okamoto, H. Miyao

DEI-94-10 Automatic PD recognition system with neural network.
H. Suzuki

DEI-94-11 Recognition of phase-shifted PD pattern with a neural network.
L. June-Ho, N. Hozumi, T. Okamoto

DEI-94-12 Investigation of insulating material degradation by PD with computer measurement.
H. Ichikawa, K. Itoh, Y. Suzuoki, T. Mizutani, K. Uchida

DEI-94-13 Study of electrical treeing by using computer-aided PD measurement.
Suwaruno, Y. Suzuoki, T. Mizutani, K. Uchida

DEI-94-14 Measurement of space charges on XLPE cable insulation at high field stress.
N. Hozumi, H. Suzuki, T. Okamoto, K. Watanabe, A. Watanabe

DEI-94-15 Development of two-dimensional lockin amplifier for field distribution measurement under liquid conduction.
H. Tanaka, H. Shimada, T. Kawasaki, T. Takada, H. Maeno

Theme: Report on International Conferences.
Feb. 17, 1994 Asakusabashi Training Center

DEI-94-16 Participation report on 1993 conference on electrical insulation and dielectric phenomena.
Y. Ohki, Y. Tanaka

DEI-94-17 Report of CIGRE SC-15 meeting.
T. Tanaka, M. Nagao

DEI-94-18 Participation report on international conference on partial discharge(PD93).
M. Hikita, I. Komori

DEI-94-19 Participation report on 11th international conference on conduction and breakdown in dielectric liquids (ICDL).
H. Yamashita

DEI-94-20 Participation report on IEC TC-15 Frankfurt meeting.
S. Kobayashi

DEI-94-21 Participation report on 2nd Korea-Japan joint symposium on electric insulation and dielectric materials.
N. Hozumi

DEI-94-22 Report on studying at NRC Canada.
H. Suzuki

Theme: High Temperature Insulation and Insulation under Special Environment.
Mar. 4, 1994 Asakusabashi Training Center

DEI-94-23 Joint experiment on thermal endurance evaluation method.
T. Osawa, R. Yamamoto, T. Tsunose, M. Kobayashi, T. Kaneko

DEI-94-24 Application of EGA method on high voltage rotating insulation system.
R. Yamamoto, T. Hashimoto

DEI-94-25 Insulation characteristics at high temperature and humidity.
W. Mito, M. Tsukiji, M. Irie

DEI-94-26 Development of insulation of rotating machine at ultra-high temperature.
K. Haga, M. Maeda, I. Tsujimura

DEI-94-27 Study of electrical conduction of PPS.
H. Watanabe, K. Miyairi

DEI-94-28 High temperature insulation characteristics of ceramic insulated cables.
J. Senoo, S. Amano, Y. Ono

DEI-94-29 Characteristics of high temperature insulated cables.
A. Ishiyama, N. Tsukekawa, K. Takeuchi

DEI-94-30 Evaluation of combustion characteristics of plastic material by the cone-calorie method.
S. Tanifuji, A. Kondo

Theme: Complex Insulation - Interface.
June 23, 1994 Asakusabashi Training Center

DEI-94-31 Effect of silane coupling agent on thermal degradation of glass-polyamide-imide composite films prepared by sol-gel process.
K. Iida, R. Nakanishi, M. Munetaka, S. Nakamura, G. Sawa

DEI-94-32 Effect of adhesive interface between different polymers on electrical treeing growth in EVA.
T. Arai, H. Matsubase, S. Kobayashi, S. Maruyama, K. Kudo

DEI-94-33 Interfacial direction and dielectric characteristics of FRP materials.
K. Ichikawa, T. Motoyama, M. Tan, K. Kadotani

DEI-94-34 Partial discharge resistance of epoxy samples in the direction of molded filament.
Y. Higashimura, Y. Kako

DEI-94-35 Characteristics of partial discharge on defects in XLPE cable joints.
K. Uchida, T. Hirata, I. Tanaka, T. Takahashi, H. Takehara

DEI-94-36 Investigation of interfacial insulation on prefabricated joints for XLPE cable.
A. Kuwaki, K. Itoh, A. Arai

Theme: Electrical Insulation and Gas Discharge.

Jul. 21 ～ 22, 1994 Akita University

DEI-94-37 Estimation of electron-gas atom collision cross section considering the sensitivity of electron drift velocity.
M. Suzuki, T. Taniguchi, N. Yoshimura

DEI-94-38 Boltzmann equation analysis using integral controller type computational method.
T. Miura, T. Taniguchi, Y. Akiyama

DEI-94-39 Effect of acetophenone additive on the pulse breakdown of liquid dielectrics.
H. Yamada, Y. Ohishi, T. Wakamatsu, T. Fujita

DEI-94-40 Comprehensive consideration on the mechanisms of water treeing.
F. Zong-huai, N. Yoshimura, F. Noto

DEI-94-41 Image measurement of water trees in polymeric insulating materials.
M. Yanagiwara, X. Jian-fei, N. Yoshimura, F. Noto

DEI-94-42 Chaotic behaviour of emitting light during the propagation of electrical trees.
S. Shiino, S. Kobayashi, S. Maruyama, K. Kudoh

DEI-94-43 Theoretical formula and estimated precision of Weibull distribution for breakdown strength of XLPE cables.
S. Nakayama

DEI-94-44 Breakdown characteristics of epoxy resin filled with aluminium powders irradiated by X-rays.
M. Ruike, S. Fujita, M. Baba, F. Noto

DEI-94-45 Analysis of charges and gases formed in discharging process of voids.
N. Koizumi, Y. Ehara, H. Kishida, T. Itoh

DEI-94-46 Analysis of phase angle of charge distribution and the distribution of emitting light intensity in discharging process of voids.
K. Urano, Y. Ehara, H. Kishida, T. Itoh

DEI-94-47 Discussion of discharge properties of polymeric materials at higher temperature.
T. Okamoto, H. Honma, N. Hozumi, M. Ikeda

DEI-94-48 Insulation properties and dischage properties of vapor mist (C7F1604 and C8F18) dielectrics.
T. Okada, Y. Sakai, H. Tagashira, Y. Nakagami

DEI-94-49 Properties of surface partial discharge in PMMA filled with dye.
Y. Fukuchi, Y. Yamano

DEI-94-50 Breakdown characteristics and orientation of internal interfaces for FRP material.
K. Ichikawa, T. Motoyama, K. Kadotani

The investigation committees make extensive investigation on each specific subject for the term of the activity (two or three years) and make technical reports which are published by IEEJ.

DEI holds a symposium on electrical insulating materials in September or October every year. At recent symposiums joint sessions in English with Asian countries have been held.

2） Activities for research on Electrical Insulation in Japan

In Japan, many researcher engaged in study on Electrical Insulation. For reference, some university, institute and college researching on electrical insulation are shown in Table-1, and some labolatories of company in Table-2.

Table-1. University, Institute and College researching on electrical insulation(1)

Laboratory	Address	Research
Hokkaido Univ. Dept. of Electrical Eng.	8-CHOME, 13JYOU-NISHI KITA-KU, SAPPORO-SHI	*Gas insulation/Discharge in Gas *Plasma process
Muroran Inst. of Tech. Dept. of Electrical Eng.	27-1 MIZUMOTO-CHO MURORAN-SHI	*Liquid insulasion
Kitami Inst. of Tech. Dept. of Electrical Eng.	165 KOHEN-CHO KITAMI-SHI	*Stain of Insulator
Akita Univ. Dept. of Electrical Eng.	1-1 TEGATAGAKUEN-CHO AKITA-SHI	*Electrical Propreties of Ceramic film *Propreties of Semiconducting Ceramic Electorod *Automatic measurment for deterioration of insulator
Iwate Univ. Dept. of Electrical Eng.	4-3-5 UEDA MORIOKA-SHI	*Liquid insulasion
Niigata Univ. Dept. of Electrical Eng.	8050 2NO-CHO IGARASHI NIIGATA-SHI	*Functional material
Ibaragi Univ. Dept. of Electrical Eng.	4-12-1 NAKANARUSAWA-CHO HITACHI-SHI	*Electrical insulation *Deterioration of insulator *Data base for insulation technology *Electromagnetic disturbance by gap discharge
Chiba Univ. Dept. of Electrical and Electronic Eng.	1-33 YAYOI-CHO INAGE-KU CHIBA-SHI	*Electrical properties of functional organic film
Dept. of technology faculty of Education		*Creepage break-down *Dielectric properties
Chiba Inst. of Tech. Dept. of Electrical Eng.	2-17-1 TSUDANUMA NARASHINO-SHI	*Test method for heat resistivity
Tokyo Univ. of Agriculture and technology Dept. of Electrical and Infomational Eng.	2-24-16 NAKA-MACHI KOGANEI-SHI	*Radiation effect for insulation material *Tree resistivity of organic insulation *Electrical propertise of Ceramic
Univ. of Tokyo Dept. of Electrical Eng.	7-3-1 HONGO BUNKYOU-KU TOKYO-TO	*Discharge in gas at low temperature *Measurement of surface discharge *Electrification
Tokyo Inst. of Tech. Dept. of Electrical and Electronic Eng.	2-12-1 OH-OKAYAMA MEGURO-KU TOKYO-TO	*LB membrane *Organic electronics
Waseda Univ. Dept. of Electrical Eng.	3-4-1 OHKUBO SHINJYUKU-KU TOKYO-TO	*Electrical properties of solid insulation *Optical fiber
Keio Univ. Dept. of Electrical Eng.	3-14-1 HIYOSHI KOHOKU-KU YOKOHAMA-SHI	*Liquid insulation *Cryogenic Liquids
Meiji Univ. Dept. of Electrical Eng.	1-1-1 HIGASHIMITA TAMA-KU KAWASAKI-SHI	*Fractal of electrical tree *TSC of polymer
Kanagawa Univ. Dept. of Electrical Eng.	3-27-1 ROKKAKUBASHI KANAGAWA-KU YOKOHAMA-SHI	*Test method for heat resistivity *Dielectric properties
Cyuoh Univ. Dept. of Electrical Eng.	1-13-27 KASUGA BUNKYO-KU TOKYO-TO	*Discharge in gas *Dielectric material
Seikei Univ. Dept. of Electrical Eng.	3-3-1 KICHIJYOJIKITA- MACHI MUSASHINO-SHI	*Ultra low temperature

Table-1. University, Institute and College researching on electrical insulation(2)

Laboratory	Address	Research
Musashi Inst. of Tech. Dept. of Electrical Eng.	1-28-1 TAMAZUTSUMI SETAGAYA-KU TOKYO-TO	*Properties of liquid and solid insulator under high electrical field *Diagonostic method for insulation system *Ozon generation and NOx resolve by discharge *Conduction of oil and its surface discharge *Analysis of high E/N discharge *Surface treatment by high E/N discharge *Analysis of electrochemical reaction
Dept. of Mechanical Eng.		*2D-Measurment of electrical field distribution *Measurment of electron density on film *Measurment of space charge
National Defence Academy	1-10-20 HASHIRIMIZU YOKOSUKA-SHI	*Loquid. Measurement *PVC thin film
Tokyo Denki univ. Dept. of Electrical Eng.	2-2 KANDANISHIKI-CHO CHIYODA-KU TOKYO-TO	*Liquid insulation
Tokai Univ. Dept. of Electrical Eng.	1117 KITAKANAME HIRATSUKA-SHI	*Expert system for diagonosis of insulation *Analysis of electrical field *Partial discharge *Surface discharge of spacer
Shinsyu Univ. Dept. of Electrical and Electronic Eng.	500 WAKASATO NAGANO-SHI	*Thin film made by plasma polymerization *Thin film for photo device *Conductance and electrical break-down of polymer *Dielectrical properties *TSC
Nagano Technical College Dept. of Electrical Eng.	716 TOKUMA NAGANO-SHI	*TSC of polymer *Dielectrical properties under low frequency ac field
Aichi Inst. of Tech. Dept. of Electrical Eng.	1247 YACHIGUSA YAKUSA-CHO TOYOTA-SHI	*Surface phenomena of oil immersed insulation under high electrical field. *Mechanism of flow electrification *Functional organic film *Polymer insulation
Nagoya Univ. Dept. of Electrical and Electronic Eng.	FURO-CHO CHIKUSA-KU NAGOYA-SHI	*Insulation material *Diagonosis of insulation *Functional material *Non-linear optical material *Thin film (device) *Electrical field analysis *Super conductivity for electrical engineering *Treeing of polymer *Insulationmaterial for ultimate condition
Nagoya Inst. of Tech. Dept. of Electrical and Infomational Eng.	GOKISO-CHO SYOWA-KU NAGOYA-SHI	*High voltage application *Insulation material *Electromagnetical effect for environment

Table-1. University, Institute and College researching on electrical insulation(3)

Laboratory	Address	Research
Meijyo Univ. Dept. of Electrical Eng.	1-501 SHIOGAMAGUCHI TENPAKU-KU NAGOYA-SHI	*Conduction and electrical break-down of polymer *Electrical properties of zinc oxide ceramics *Measurement of distribution of electrical field using Kerr effect *Diagonosis of power cable insulation *Electrical properties of insulation materials under radiation
Toyohashi Univ. of Tech. Dept. of Electrical and Electronic Eng.	1-1 HIBARIGAOKA TENPAKU-CHO TOYOHASHI-SHI	*Super conductive cable with EPR insulation *Electrical properties and break-down of polymer *Partial discharge deterioration of polymer
Mie Univ. Dept. of Electrical Eng.	1515 KAMIHAMA-CHO TSU-SHI	*Electrical properties and molecular structure of heat resistant polymer *Conduction mechanizm of conductive particle and polymer composite *Conduction of melting polymer
Gifu Technical College Dept. of Electrical Eng.	SHINSEI-CHO MOTOSU-GUN GIFU-KEN	*Break-down of polymer thin film *Dielectric propreties under high electrical field *Computer aided measurment
Fukui Technical College Dept. of Electrical Eng.	GESHI-CHO SABAE-SHI	*Electrical properties of epoxy resin *Electrical surface phenomena
Suzuka Technical College Dept. of Electrical Eng.	SHIROKO-CHO SUZUKA-SHI	*Plasma polymerizated film *Measurement of discharge
Nara Technical College Dept. of Electrical Eng.	22 YATA-MACHI YAMATOKOURIYAMA-SHI	*Electrical properties of organic insulation *Organic thin film
Toba Technical College Dept. of Electrical Eng.	1-1 IKEGAMI-CHO TOBA-SHI	*Measurement of partial discharge
Osaka Univ. Dept. of Electrical Eng.	2-1 YAMADAOKA SUITA-SHI	*Liquid and solid insulation *Conductive polymer *Diagonosis of electrical instrument *Forecast of thunder *Laser inductive discharge
Osaka Inst. of Tech. Dept. of Electrical Eng.	5-16-1 OHMIYA ASAHI-KU OSAKA-SHI	*TSC
Kansai Univ. Dept. of Electrical Eng.	3-3-35 YAMATE-CHO SUITA-SHI	*Electrical tree of polymers
Himeji Inst. of Tech. Dept. of Electrical Eng.	2167 SYOSYA HIMEJI-SHI	*Break-down of SF6 gas *Plasma polymerizated film
Ehime Univ. Dept. of Electrical Eng.	3 BUNKYO-CHO MATSUYAMA-SHI	*Conduction and electrical break-down of liquid, solid and composite *Electrical field measurement of liquid dielectrics using optical method *Conductive polymer and fractal
Kyusyu Univ. Dept. of Electrical Eng.	6-10-1 HAKOZAKI HIGASHI-KU FUKUOKA-SHI	*Insulation for super conductive magnet *Pulse power engineering *Discharge in SF6 gas
Kyusyu-Tokai Univ. Dept. of Electrical Eng.	9-1-1 TOROK KUMAMOTO-SHI	*High voltage and Discharge engineering *Gas insulaton

Table-2. Labolatories of company researching on electrical insulation

Company	Laboratory	Address
Central Research Institute of Electric Power Industry	Komae Laboratory	2-11-1 IWATOKITA KOMAE-SHI
	Yokosuka Laboratory	2-6-1 NAGASAKA YOKOSUKA-SHI
Tokyo Electric Power Co.	Engineering Development Center, Engineering R&D Administration	1-1-3 UCHISAIWAI-CHO CHIYODA-KU TOKYO-TO
Chubu Electric Power Co.	Electric Power R&D Center	20-1 KITASEKIYAMA OHTAKA-CHO MIDORI-KU NAGOYA-SHI
The Kansai Electric Power Co.	Technical Research Center	3-11-20 NAKOJI AMAGASAKI-SHI
Electric Power Development Co.	Research & Development Department Electric Engineering Department	6-15-1 GINZA CYUO-KU TOKYO-TO
Hitachi	Hitachi Research Laboratory	7-1-1 OHMIKA-CHO HITACHI-SHI
Toshiba	Heavy Apparatus Engineering Laboratory	2-4 SUEHIRO-CHO TSURUMI-KU YOKOHAMA-SHI
Mitsubishi Electric Corporation	Central Research Laboratory Insulation Engineering Department	8-1-1 TSUKAGUCHIHON-MACHI AMAGASAKI-SHI
Fuji Electric Corporate Research and Development	Materials and Analysis Laboratory	2-2-1 NAGASAKA YOKOSUKA-SHI
Nissin Electric Co.	R&D Division	47 UMEZU-TAKASE-CHO UKYO-KU KYOTO-SHI
Sumitomo Electric Industries	Electric Power System Technology Research Laboratory	1-1-3 Shimaya Konohana-ku Osaka-shi
The Furukawa Electric Co.	Chiba Research Laboratory	6 YAWATA-KAIGANDORI ICHIHARA-SHI
Fujikura	Materials Research Laboratory	1-5-1 KIBA KOTO-KU TOKYO-TO
Hitachi Cable	Power System Research Laboratory	5-1-1 HITAKA-CHO HITACHI-SHI
Showa Electric Wire & Cable Co.	Electric Power Research and Development Department	2-1-1 ODASAKAE KAWASAKI-KU KAWASAKI-SHI
Mitsubishi Cable Industries	Technology Central Reseach Laboratory	8 NISHINO-CHO HIGASHI-MUKAIJIMA AMAGASAKI-SHI
Nippon Oil Co.	Central Technical Research Laboratory	8 CHIDORI-CHO NAKA-KU YOKOHAMA-SHI
Toray	Film Products Research Laboratory	1-1-1 SONOYAMA-CHO OTSU-SHI
Mitsubishi Petrochemical Co.	Yokkaichi Research Center	1 TOHO-CHO YOKKAICHI-SHI
NGK Insulators	High Voltage Laboratory	Aza Tagami, Ooaza Futaebori, Komaki, Aichi 485
Yazaki Electric Wire & Cable	Cable Technology R&D Division	2771 Ohoka, Numazu, Sizuoka 410

3) Technical Exchanges between Asian Countries

According to the progress in the electrical insulation, the academic and technical exchanges between Asian countries are increasing. Until now, the Internatonal Conference in the fields of electric power and electrical insulation held in Asia were hosted mainly by Europo and America, but in these days by the Asian countries. Following are the situation of the International Conferences held and will be held in Asian countries.

3-1)Conference Record

① ICPADM

International Conference on Properties and Applications of Dielectric Materials (ICPADM) was set up aiming at activating mutual exchange and discussion of common interests, ideas, and research results on the various aspects of properties and applications of electrical insulating materials, either in the forms of vacuum, gas, liquid and solid. As for the international conferences on electrical insulating materials, there are many conferences held in Europe and North America such as CEIDP (Conference on Electrical Insulation and Dielectric Phenomena, in USA), ISEI (International Symposium on Electrical Insulation, in USA or Canada), ISH (International Symposium on High Voltage Engineering, mainly in Europe), ICSD (International Conference on Conduction and Breakdown in Solid Dielectrics, in Europe), ICDL (International Conference on Conduction and Breakdown in Dielectric Liquids, in Europe), and ICDMMA (International Conference on Dielectric Materials Measurements and Applications, in UK).

However, there had been no truly international conferences regularly held in Asia or Pan Pacific region before ICPADM. It was the late Prof. Liu Ziyu of Xi'an Jiaotong University of China who worried about this situation. During his stay in the USA as a visiting scientist in Massachusetts Institute of Technology, he consulted with Prof. K. C. Kao of Manitoba University, Canada about the possibility of holding an international conference in China. The then IEEE DEIS Meetings Chairman E. O. Forster strongly supported this idea. The First ICPADM was held in 1985 at Xi'an Jiaotong University in China with cosponsorship by IEEE DEIS, Chinese Electrotechnical Society Dielectric Committee, and Xi'an Jiaotong University based on such a background. Since this meeting was the first international conference in electrical insulation area to have been held in China, it attracted strong attention from many countries throughout the world. Thanks to Chinese efforts and international cooperation, this meeting was very successful. In particular, the cooperation by H. Orton, the International Advisory Committee Chairman, was so large that he had stayed for a long period in Xi'an.

The Second ICPADM was again held in China, at Tsinghua University in Beijing in 1988. The International Advisory Committee meeting held during this conference, the venue of the 3rd conference was discussed. Although Australia did

ICPADM '91, Waseda Univ., Tokyo, Japan July 8 − 12, 1991 a strong campaign to invite the conference, Japan was decided to be the venue, by taking account of great commitment to the foregoing two conferences and by virtue of Prof. Ieda's efforts.

The Third ICPADM was held in July 1991 at Waseda University, and was cosponsored by IEEE DEIS, IEE Japan, and Waseda University. Since this was the first big international conference in this field to have been held in Japan, thoroughgoing preparations were made under Honorary Chairman Y. Inuishi, General Chairman M. Ieda, and Executive Committee Chairman T. Tanaka. By taking account of the fact that the conference is based on Pan-Pacific region, a special session in which the status quo of electrical insulation researches and technologies of several, mainly Asian, countries were introduced. These countries included Australia, China, Hungary, India, Japan, Korea,Thailand, and Vietnam.

Tables I and II show the numbers of participants and papers, respectively, of the past three meetings.

While contributions from China and Japan are outstanding,the fact that those from western countries reached in a sizable number seems to be proof that ICPADM is getting recognized among western countries. Furthermore, the fact that the paper contributions from such countries as Korea, India, Australia and the formercommunist countries are increasing is a delightful tendency.

Table 1 Number of Participants

	China	Japan	others	Total
1st ICPADM	370	40	90	500
2nd ICPADM	200	35	60	295
3rd ICPADM	16	237	99	352

Table 2 Number of Paper Contribution

	1st	2nd	3rd
China	69	90	62
Japan	43	28	104
U. S. A.	19	4	14
Canada	11	8	10
(West) Germany	11	5	7
Italy	11	11	5
France	9	12	12
Switzerland	5	4	1
U. K.	5	7	3
Sweden	4	3	4
Australia	3	4	12
Poland	3	7	10
Egypt	3	0	0
East Germany	2	2	-
Norway	1	0	2
India	1	3	13
Hongkong	1	0	0
South Africa	1	0	1
Brazil	0	3	7
Netherlands	0	2	4
Korea	0	2	9
Ireland	0	1	0
U. S. S. R.	0	1	24
Hungary	0	0	4
Iran	0	0	3
Kenia	0	0	1
Austria	0	0	1
Thailand	0	0	1
Vietnum	0	0	1
Indonesia	0	0	1
Total	202	297	316

② Joint Symposium on Electrical Insulation Between Korea and Japan

In recent years, the scientific and technological exchanges have been active among the Asian countries in various area. It was the trend of the time that the 3rd ICPADM was held in Tokyo in 1991, which drew lots of electrical engineers and researchers from China and Korea. Though this conference arouse the need to have stronger relations among the Asian countries, the participants from the other Asian countries claimed to have more discussions and scientific exchanges with Japan. And there have been some successful exchanges among researchers at the local level. Therefore, our committee on Dielectric and Electrical Insulation, IEEJ decided to organize the joint symposium with the other Asian countries for further scientific exchanges.

After the preparatory meeting on Jan.22, 1992 in Seoul, the technical committee decided to hold a Korea-Japan symposium during the 24th Symposium on Electrical Insulating Materials in Tokyo in 1992. Following the agreement, the Korea-Japan symposium in 1993 was organized, along with this year.

Date	Number of papers		Place/City	Joint Meeting
	Korea	Japan		
1992 Sept. 30	3	4	Waseda Univ. Tokyo, Japan	24th Symp. of E. I. M.
1993 May 20-21	5	6	Korea University Seoul, Korea.	
1994 Sept. 26-27	6	7	International House Osaka, Japan	26th Symp. of E. I. M.

③ The Asian Conference on Electrical Discharge (ACED)

The Asian Conference on Electrical Discharge (ACED) was organized to provide an inter-disciplinaryforum for exchange of scientific achievements on ideas, phenomena, theories, applications and investigations in the field of Electrical Discharge and to built a bridge of friendship and peace between Asian Countries by M.Akazaki, Emeritus Professor of Kyushu University, Japan andthe first conference was held in Karatsu, Japan in1988 with great success.

During the first ACED, the international steering committee members were elected and the committee decided that the ACED would be held every year in one of Asian Countries. The host country of the next conference has been elected atthe committee meeting in the previous conference.

Since the first and second conferences were held in Kyushu Island, Japan in 1988 and 1989, we have met every year at the elected conference sites as shown in Table 1. It is argued that the ACED contributes greatly not only for exchange of technical information and joint effort on researchbetween Asian Scientists but also recovery and development of the cultural exchange with long history among Asian Countries.

The main subjects in the conference are:

- Electrical discharge in vacuum, gas, liquid, solid and composite
- Dielectric materials
- Electrical insulation
- High voltage and its applications
- Plasma and laser and their aplications.

The conference has been planed by the executive committee of the each conference and held for two days in August to October. Each paper has been reviewed by the executive committee to determine the final acceptance of the paper.

The present international steering committee members are

Chairman: M. Akazaki (Japan)
Secretary:M. Hara (Japan)
Members: Y.S.Kwak (Korea)
K.H.Lock (Singapore)
F.L.Mao (China)
C.H.Park (Korea)
Y.Qui (China)
T.Takuma (Japan)
R.Y.Zhang (China)

The corresponding address to the ACED is:

Professor Masanori Hara
Dept. of Electrical Eng. Faculty of Eng.
Kyushu University
36 Hakozaki, Fukuoka 812 JAPAN

Table 1. Scope of the ACED

No.	Year	Conference site	Number of Papers
1	1988	Karatsu, Japan	40
2	1989	Nagasaki, Japan	51
3	1990	Beijing, China	40
4	1991	Pusan, Korea	55
6	1992	Singapore	42
7	1993	Oita, Japan	72
8	1994	Xi'an China	

④ The Japan-China Conference on Electric Insulation Diagnosis

The Japan-China Conference on Electric Insulation Diagnosis began in 1990. The conference intends to be a forum of electric insulation diagnosis for promotion and exchange of ideas, experience and technology, and to stimulate advanced scholarly work, research and industrial activities on insulation diagnosis for electric power apparatus.

The first conference was held at Xi'an Jiaotong University in April, 1990 responding to an upsurge of R & D activity in technology on insulation diagnosis of power apparatus both in P.R.China and Japan. It was organized and chaired by Prof. Z.Yan of Xi'an Jiaotong University and the number of attendants at it was 160 from all over the P.R.China and 11 from Japan. The Japanese mission was organized by Prof. K.Matsuura of Osaka University. In the scientific sessions of Xi'an conference, mechanism of deterioration of electrical insulating materials and various up-to-date methods of insulation diagnosis for generator, transformer and other substation equipments, GIS and cables were presented by experts from both countries followed by thorough discussions on each item.

Based on the great success at the first conference, the second conference was held in Shanghai in October, 1992 under the sponsorship of Shanghai Society of Electric Engineering. It was chaired by Deputy Director Gu Yin Zhang of East China Electric Power United Corporation and organized by Director Weng Wen Yuan of East China Electric Power Science and Technology Information Institute and Prof. K.Matsuura of Osaka University. One hundred and four experts including 18 from Japan attended at the conference and 38 papers were presented by authors from both countries in the following 5 sessions; (i) General conception (ii) Dielectric performance and degradation mechanisms (iii) Diagnosis for oil-paper insulation (iv) Diagnosis for GIS, rotating machines and power cables, and (v) Diagnosis for sub-station systems and others. The Proceedings of the conference issued for the first time at the Shanghai conference was especially profitable for experts in this field.

To make the conference more accessible to experts from Asia, the third conference in Osaka in September,
1994 has been timed to fit in with the 26th Symposium on Electrical Insulating Materials and the 3rd Japan-Korea Joint Symposium on Electric Insulation and Dielectric Materials. This attempt will be rewarded with good results by mutually potentiating effect of the three meetings.

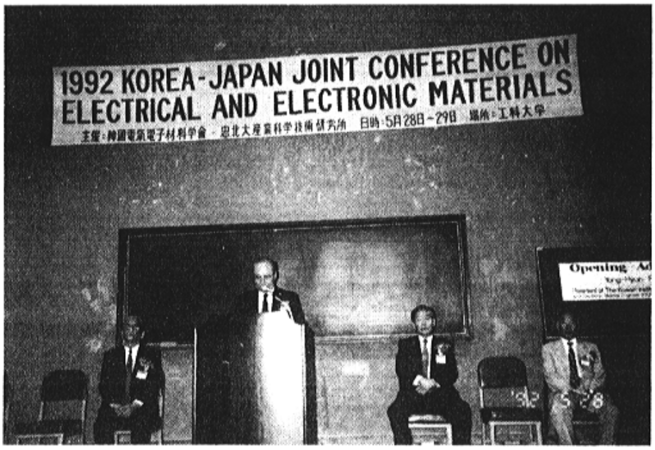
⑤ The 1992 Korea-Japan Joint Conference on Electrical and Electronic Materials

The Investigation Committee of Effects of Interfaces on Solid Insulating Materials began in June 1990 and ended in May 1993. The results of investigation were published in Technical Report of IEEJ, No.488, April 1994. This committee consisted of 31 members, including a foreign member, Dr. Dae-Hee Park from Won Kwang University in Korea. He has devoted his heart and soul to the promotion of academic exchange between Japan and Korea.

The plan of the academic exchange program between the two countries was initiated in the summer of 1991 and outlined in September 1991. Eleven interested members of the committee visited Korea May 27-31, 1992. They participated in the 1992 Korea-Japan Joint Conference on Electrical and Electronic Materials which was designed in connection with this exchange program. Also they visited several universities and industries.

This joint conference was held May 28-29,1992 at Chungbuk National University. It was sponsored by the Korean Institute of Electrical and Electronic Material Engineers (KIEEME) and Chungbuk National University, and organized in concert with six members of this committee. Altogether, there were 38 presentations in 7 sessions. Among them, Japanese made nine presentations. The highlights of the conference included the three invited papers , one of them by Dr.Y.Suzuoki. The Conference Proceedings were distributed to the conference attendances. The program also included a reception and a guided technical tour for the Japanese participants.

I would like to my thanks to those who made this Joint Conference possible and contributed to its success. Hopefully, many other investigation committees of IEEJ will receive foreign members, promote mutual understanding and develop the pertinent research by utilizing a new media.



3-2)Announcement International Conference in Asia

① The 5th ICPADM(ICPADM-97)

The 4th International Conference on Properties and Applications of Dielectric Materials(ICPADM-94) was successfully held from July 3 to July 7, 1994 at Queensland University, Brisbane in Australia. During the Conference the International Advisory Committee (IAC) meeting organized by Mr. H. Orton (Powertech Labs Inc.Canada) was held and chose Seoul, Korea for the venue of the 5th ICPADM (ICPADM-97). The delegates from Kórea expressed their eagerness for a sponsorship of the 5th ICPADM by The Korean Institute of Electrical and Electronic Material Engineers jointly with IEEE DEIS. They have a plan to hold the Conference at Sheraton Walker Hill Convention Center in Seoul. The date of the Conference is still to be decided.

IAC discussed its new members from Korea, India, Indonesia and other countries to encourage the relevant activities in Pan-Pacific countries in order to fulfil the purpose of ICPADM.

[The Secretariat of ICPADM-97]
Professor Joon-Ung Lee
Department of Electrical Engineering Kwangwoon University
447-1 Wolgye-Dong, Nowon-Gu, Seoul 139-701, Korea
TEL:+82-2-910-5144 FAX:+82-2-917-6147

② XI International Conference on Gas Discharges and Their Applications(GD'95)

The XI International Conference on Gas Discharges and their Applications (GD'95) will be held in Tokyo, Japan, on 11–15 September 1995 hosted by IEE Japan. GD'95 will provide the opportunity to present progresses in the field of gas discharges and their applications and to discuss related problems of current and mutual interests. GD'95 in Tokyo will continue along the lines of previous conferences held in London (1982), Oxford (1985), Venezia (1988) and Swansea (1992).

SUBJECT AREAS
Arcs, Corona, Glow and prebreakdown phenomena, Breakdown, Lightning, Long gap discharges, Test techniques and diagnostics, Discharge phenomena in gas insulated systems, Gas insulated cables, Gas insulated switchgear, Plasma applications:high pressure, Plasma applications:low pressure, Light sources, Gas lasers, Environmental effects, pulsed power technology, Discharge process modelling,

CALL FOR PAPERS
Intending authors should submit for consideration one pagesynopsis of 250–350 words by 30 November 1994. One illustration can be included in the synopsis. Authors whose synopsis are selected will be notified in January 1995 and will be requested to provide full typescripts of no more than four pages of text (including illustration) by 20 April 1995.

FEES
The conference fee includes attendance at all sessions, together with a copy of Conference Proceedings.
Provisional Fees:

	Before 31 July 1995	After 31 July 1995
Full registration	¥30,000	¥35,000
Student	¥10,000	¥12,000
Single–day charge	¥15,000	¥20,000

Publication charge:
There will be a standard publication charge of ¥12,000 fo each contribution, payable on submission of the full manuscripts.

DEAD LINES
30 November 1994: Receipt of synopsis
January 1995 : Notification of provisional acceptance
20 April 1995 : Receipt of full text for final review.

CONFERENCE ADDRESS (GD95 Secretary)
Prof. M. Yumoto
Electrical and Electronic Department
MUSASHI INSTITUTE OF TECHNOLOGY
1–28–1, Tamazutsumi, Setagaya–ku, Tokyo 158, Japan
Telephone ; +81–3–3703–3111 ext.366
Telefax ; +81–3–5707–3216

③ 1995 International Symposium on Electrical Insulating Materials

The 1995 International Symposium on Electrical Insulating Materials (ISEIM) will be held on Sep. 17–20, 1995 at Hotel Strada, Tokyo, Japan. Main subjects are divided 'Electrical Conduction and Breakdown in Dielectrics', 'Space Charge, Surface and Interfacial Phenomena' and other seven parts.

[The Secretariat of 1995 ISEIM]
Professor Yoshimichi OHKI
Department of Electrical Engineering Waswda University
3–4–1 Ohkubo, Shinjyuku–ku Tokyo 169, Japan
TEL and FAX : +81–3–3204–1258

For more information, please refer the Call For Paper

4)The others

·APPLICATION FOR MEMBERSHIP IN IEEJ

A member of IEEJ receives a monthly journal and one transaction out of four (A:Fundamentals and Materials in which the activity of DEI is included, B:Power and Energy, C:Electronics, Information and System, D:Industry Applications). The journal gives interesting readings about the latest science and technology in the field of Power Energy, Power Apparatus, Electronics, Information Engineering, Materials and so on. The transaction gives review papers, research papers, letters and other informations.

Total fee for joining IEEJ as a general member is ¥12,400 which consists of initiation fee ¥1,200, annual membership fee ¥10,000 and oversea postage of journal ¥1,200, ¥:Japanese Yen.

When you need more information or an application form, you can request them from membership section of IEEJ.

·PURCHASE OF PROCEEDINGS AND TECHNICAL REPORTS

(1) Proceedings of symposium on electrical insulating materials

Please request it to the investigation section of IEEJ.

(2) Proceedings of technical meetings

You can purchase them by subscription for a year(Jan. to Dec.). When you need photocopies of papers presented at the recent meetings,you can order them from the investigation section of IEEJ. When you need papers presented more than about a year ago,you can order the photocopies from JICST(*).

(*)JICST:The Japan Information Center of Science and Technology,2-5-2 Nagata-cho,Chiyoda-ku,Tokyo 100, JAPAN. Fax:+81-3-3593-3375.

(3) Technical report

You can order technical reports from the publishing section of IEEJ.

Address of IEEJ:
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Shin-Yurakucho Bldg.,12-1,Yuraku-cho 1 chome,
Chiyoda-ku,Tokyo 100, JAPAN
Tel:+81-3-3201-0983, Fax:+81-3-3201-1983

COMMUNICATION

The aim of the Cooperative Research Committee on Electrical Insulation News in Asia (EINA Committee) is the exchange of information among Asian countries in the field of electrical insulation research. Therefore, your comments, suggestions and the latest information are very important.

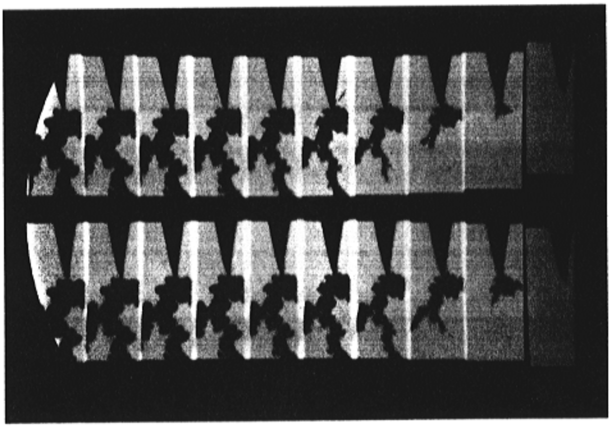
We also would like to send this News to many researchers in this field as many as possible. Please let us know their names, organizations, full addresses, who want to get this News, by sending Fax or mail. Your kind reactions are greatly appreciated.

COVER PHOTOGRAPHS

Front cover: 1000 kV designed transmission line, 2 circuits, 138 km. (Nishi–Gunma trunk line, Tokyo Electric Power Co.)

Rear cover: Streamer propagation in LN_2, 500 ns/F, 60 X. (Keio Univ.)

MEMBERS OF EINA COMMITTEE



Cooperative Research Committee on
Electrical Insulation News in Asia.