Activities of the Technical Committee on Electrical Discharge

Chairperson :	M. Hara (Kyushu University)
Secretaries :	K. Hidaka (University of Tokyo)
	M. Yumoto (Musashi Institute of Technology)
Assistant Secretaries :	T. Nakano (National Defense Academy)
	M. Hanai (Toshiba Corporation)

The Technical Committee on Electrical Discharge (TC-ED) has been charged with offering the opportunities for the members of IEE of Japan in the research field of electrical discharge to present their achievements, and studying and reporting on current status and future challenges in electrical discharge engineering. It was established formally on 1980, but its root goes back to the start of Technical Committee on Electrical Physics on 1954. In order to meet the objective, a few subcommittees of the TC-ED are organized every year to survey the up-to-date subject and each of them continues for three years normally.

In the past, the following subcommittees were active and published the Technical Research Reports on a relevant subject: Discharge Simulation Methods; Surface Discharges in Diverged Fields; V-t Characteristics in SF6; Conduction and Breakdown in Dielectric Liquids; Plasma Processing; Fundamental Processes in Non-LTE Plasma; Simulation in Non-LTE Plasma; Field Measurements in Electrical Discharges; Breakdown Mechanism and Characteristics of Gas Mixtures; Modeling of Long Sparks; Interaction between Sparks and Laser; Space Charge Effects on Electrical Breakdown in Insulating Liquids; Effects of Interface and Foreign Matters on Electrical Breakdown in Insulating Liquids; High Stress Phenomena in Cryogenic Liquids; Plasma Reactors; Plasma Display; Database for Gas Discharges; Beam and Swarm Data for Gas Discharges and Plasma; Plasma Chemistry; Electrical Breakdown in Vacuum and so on. Total number of the past subcommittees is 33 and the published technical reports reach 27 at the end of 1996.

Now ten subcommittees are working for a survey of the listed subjects. Each subcommittee consists of 20-30 members who are the specialists in the research subject of the committee or are interested in it.

The TC-ED is also supporting the domestic meetings on electrical discharges about ten times a year where about 250 full papers are reported by young scientists and students from universities and institutes and engineers from industries every year.

The international and domestic conferences and annual seminar for young researchers are also promoted by the TC-ED in cooperation with the Technical Committee on Dielectrics and Electrical Insulation, IEE of Japan, The Institute of Electrostatics of Japan and The Japan Research Group on Electrical Discharge which consists of about 400 members whose backgrounds covers a wide area of electrical properties of solids, liquids and gases.

Table 1 Investigation committees in TC-ED

Research Subject	Chairperson / Secretaries / Assistant Secretaries
Interactive Relations between Electrical Discharge and Laser	T. Takuma / T.Shindo, K.Hidaka / K. Miki
The Development of Data Base on Electrical Discharge in Gas	K. Horii / T.Takano, M.Chiba
Electron Collision Cross Section Data Base for Low Temperature Plasma	Y. Sakai / H. Itoh, S.Takagi / Y. Saitoh
Conduction and Breakdown Characteristics in Dielectric Liquids and Their Applications to Electric Power Apparatus	H. Okubo / K. Kojima, N. Hayakawa / S. Yamada
Plasma Properties for the Technique of Promising Prospective Plasma-Processing	M. Sugawara / M. Ouchi, S. Ono / A. Matsuoka
Charged Particle Generation and Emission in Vacuum and Related Technologies Controlling Electrical Discharges	S. Kobayashi / Y. Saito, M. Yumoto / Y. Suetsugu
Discharge Plasma Applications for Environmental Protection	T. Oda / H. Ito, K. Soma