

The recent tendency to use power electronics in power systems brings up new problems with the insulation of equipment and machines in the system. Particularly in inverter-driven induction motors, a repetitive impulse voltage due to the fast switching of power electronics devices can be hazardous to the motor insulation since most of the fast voltage is applied on the first turn insulation of the winding. On the recently recognized insulation problem, some international institutes such as CIGRE, IEC, IEEE begin to investigate state-of-the-art of the technology. The purpose of this committee is to survey and discuss the influence of inverter surge on the electrical insulation systems. The committee started its 2 year term activity in April 1997. The committee will issue a Technical Report of IEE Japan in two years which will be the first text and guidelines in Japan.

The main subject of the meeting are as follows:

- (1) General trend of power devices
- (2) Analysis of the repetitive Surge from inverters
- (3) Insulation ageing on power cables
- (4) Insulation ageing on machine windings

Standardization of Space Charge Measurement in Dielectrics and Insulating Materials

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The purpose of this investigation committee is to review internal space charge measuring methods : pulsed electroacoustic (PEA), laser induced pressure wave propagation (LIPP), and piezo-electric induced pressure wave propagation (PIPWP) methods, Which have been widely used to evaluate insulating materials.

The main subjects of the investigation are as follows:

1. The state of the measurement system in each research group
2. Current problems with each method
3. Calibration method and a standard sample for comparing the methods
4. Methods for analyzing the obtained signals
5. Technical guide, including DOs and DON'Ts for space charge measurement

This committee was established in April, 1997. There are currently 24 members from universities, colleges, cable manufacturers, electric manufacturers, electric power companies and research institutes. The 3 year activity will contribute to knowledge of the internal space charge phenomena (a fundamental subject of insulation), and also to current research activities on space charge in Japan at the meetings of the new task force on space charge in CIGRE (SC 15 TF3).

Structure and Functions of Molecular Ultrathin Films, Organic Thin Films and Interfaces

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The committee was established in July, 1997 with the term of three years. The investigation has focused attention on molecular ultrathin films and organic thin films related to:

1. fabrication technologies and evaluation methods,
2. properties and their Applications,
3. interfacial properties and their control methods, and