

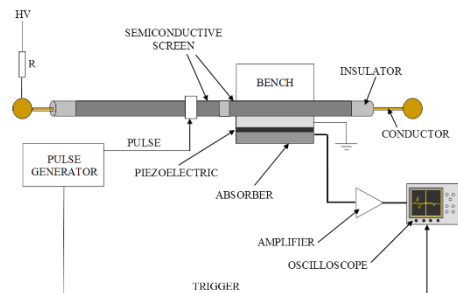
high performance PD accessories

PEA – Space Charge Measuring Equipment

The increasing request for energy quality and, thus, insulation system reliability, associated with significant steps in the manufacturing of new insulating materials, are pushing strongly the research on new techniques for the diagnosis of insulation ageing.

TECHIMP is the only company offering testing devices for space charge measurements on cables and flat specimens.

Typical Layout and Main Features



- Pulse/HVDC generator are available upon request
- Processing software: maximum electric field – time characteristic, charge vs time under polarization and depolarization etc.
- Customer friendly HMI: absolute stored charge density vs poling time, Trap controlled mobility, etc.

Techimp Ultimate Technology

Space charge observation is becoming the most widely used technique to evaluate polymeric materials for dc-insulation applications, particularly high-voltage cables.

The pulsed electroacoustic analysis (PEA) can be used for space charge measurements under dc or ac fields.

The PEA method is a non-destructive technique for profiling space charge accumulation in polymeric materials. The method was first proposed by T.Takada et al. in 1985.

A series of high-voltage pulses of very short time length is applied to an insulation specimen interposed between two electrodes. Each pulse produces an electric force displacing internal charges and generating pulsed acoustic pressure waves in correspondence of each charge layer in excess with respect to neutrality. The resultant pressure pulse is detected by a piezoelectric transducer, so that the charge distribution in the specimen under test can be obtained from the output voltage of the transducer.

The analysis of space-charge profiles is restricted to one dimension.

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