Condition assessment of high voltage insulation in power system equipment

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The book introduces the reader to the major components of a high voltage system and the different insulating materials applied in particular equipments.
During a review of these materials, measurable properties suitable for condition assessment are identified. Analyses are included of some of the insulation fault scenarios that may occur in power equipment.
The basic facilities for carrying out tests on the internal and external insulation structures at high and low voltages are described. Tests and measurements according to specifications, on-site requirements and research investigations are considered.
Advances in the application of digital techniques for detection and analyses of partial discharges are discussed and methods in use, or under development, for service condition monitoring are described. These include the utilization of new sensors, the solution of online problems associated with noise rejection and the adaptation of artificial intelligence techniques for incipient fault diagnosis.
The subject matter of the book is suitable for final year courses in electrical power engineering, short courses in insulation condition assessment and postgraduate programmes. Power system engineers associated with high voltage equipment should find the book of value in relation to fault investigations, maintenance requirements, insulation testing and condition monitoring.