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Title:

**BREAKDOWN BEHAVIOUR OF GASEOUS INSULATION WITH SYNTHETIC AIR**

## Abstracts

The paper deals with basic investigation of AC breakdown behaviour of gaseous insulation with synthetic air at different level of field homogeneity and gas pressure. The measurement was performed at different gas pressure ranging from 0.1 to 0.25 MPa and gap distances from 1 to 10 cm, using two electrode test- sets. The test parameters were chosen in such a way that different field types could be realized. At slight non-uniform electrical field the measured breakdown values shows a reasonable agreement to those values based on the calculation of the streamer criterion by using a relevant approximation formula for the effective ionisation coefficient. The best fit to the measured results was reached by slightly changing the parameters of the approximation formula depending on the gas pressure value. At strong inhomogeneous electrical field the calculated streamer inception voltage corresponds to the partial discharge (PD) inception voltage only. These calculated inception voltage fits the measured values over the applied gap distance and gas pressure quite sufficiently. Variation of gas pressure revealed a local minimum of the breakdown voltage near 0.15 MPa. Additional PD measurement shows different pd- activity dependent on gas pressure and gap distance.

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More Informations :

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