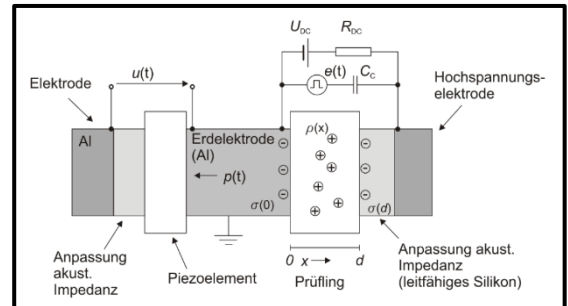


Research Internship

Modification of an existing PEA measuring system for silicone samples

For the high-voltage direct current (HVDC) transmission extruded cable systems with highly engineered insulation arrangements are more and more implemented. The cable joints used for connecting two cable sections are particularly sensitive components. Since the relevance of HVDC transmission systems can no longer be denied regarding the energy transition, the advancement of high-voltage equipment is an essential field of research for the energy supply of the future.

Within this project, an existing PEA measuring system (pulsed electroacoustic method) is to be extended to measure test specimens made of silicone rubber. This requires the adjustment of the acoustic impedance. In addition, a structural modification or an adaptation of the test procedure may be necessary. The production of test specimens and the measurement of these is also part of the work. With the programming language Python an evaluation methodology is to be implemented. In order to consider the influence of attenuation and dispersion, the recalculation of the actual signal will be necessary



Picture: Diss. Thomas Wendel: „Ladungstransport in Epoxidharzformstoff unter Gleichspannungsbelastung, 2019“

Tasks

- Familiarization with measuring system and workflow
- Extension of the existing measuring system for silicone rubbers
- Implementation of a measurement program, including recalculation algorithms to determine attenuation and dispersion
- Validation of the modified measurement system

Requirements

Basic knowledge of Python or the motivation to acquire such knowledge is helpful. An independent way of working is desirable.



- Familiarization
- Theory
- Programming
- Lab work
- Documentation

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