

Paris Session 2022



Calibration devices and evaluation procedure regarding combined and composite voltage test

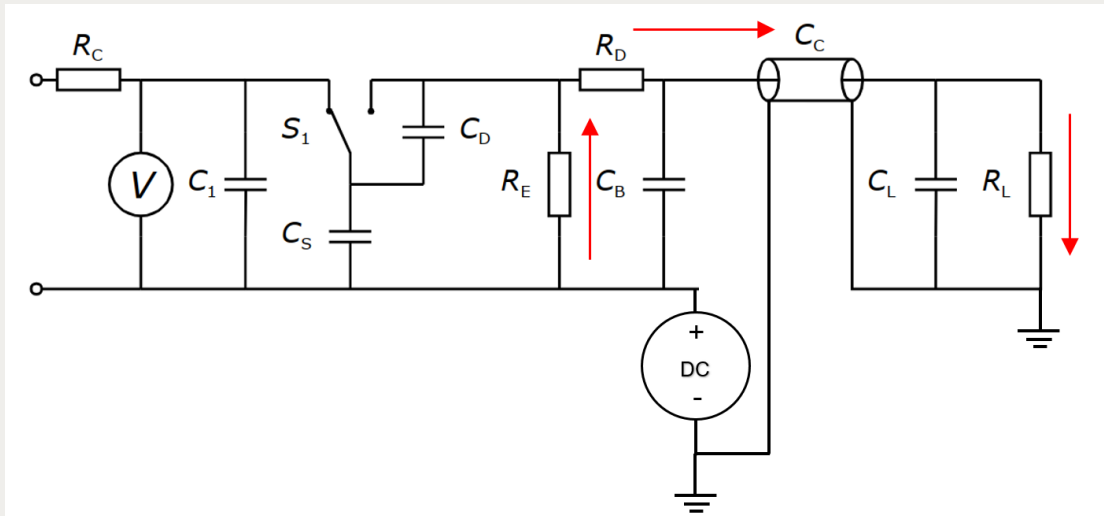
D1 Materials and Emerging Test Techniques

PS 1 - Testing, Monitoring and Diagnostics

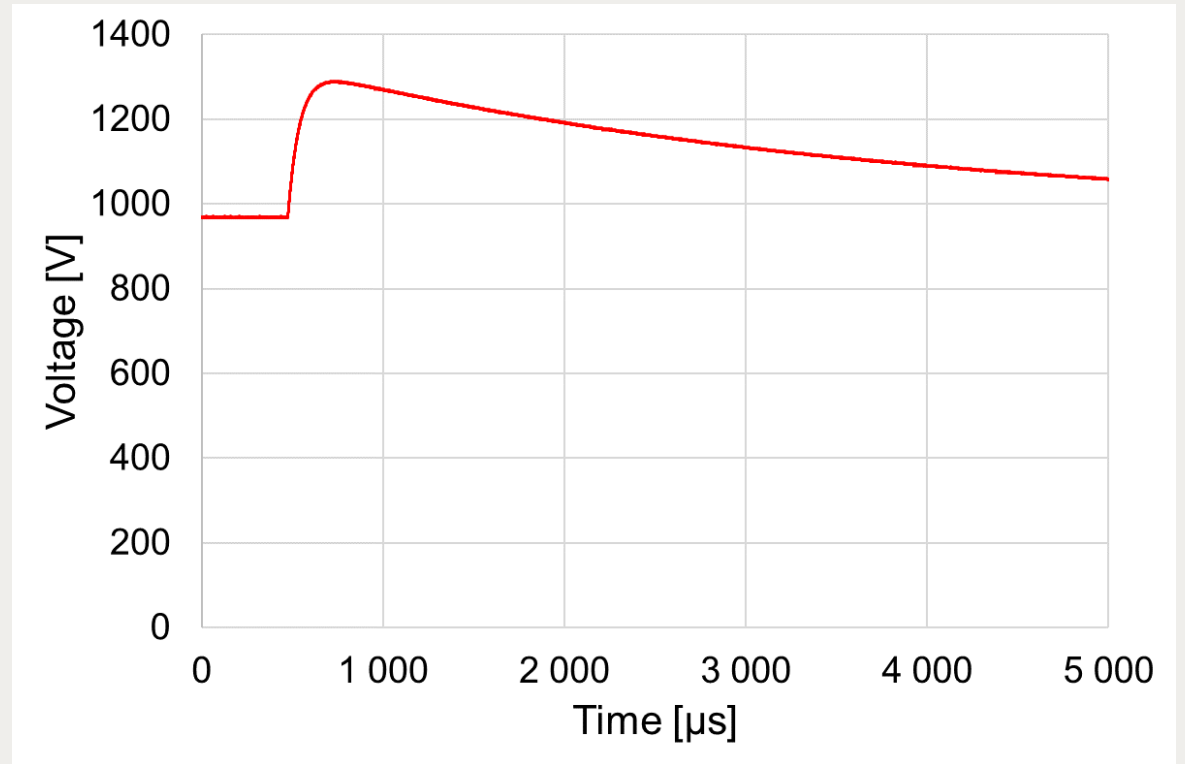
Question 1.02

Traceable measurement systems and calibration references and methods are necessary for the measurement of composite voltages. Are the methods known today already sufficient or should additional measures be described in the standardization? What experience is there already today in the testing of composite and combined voltages?

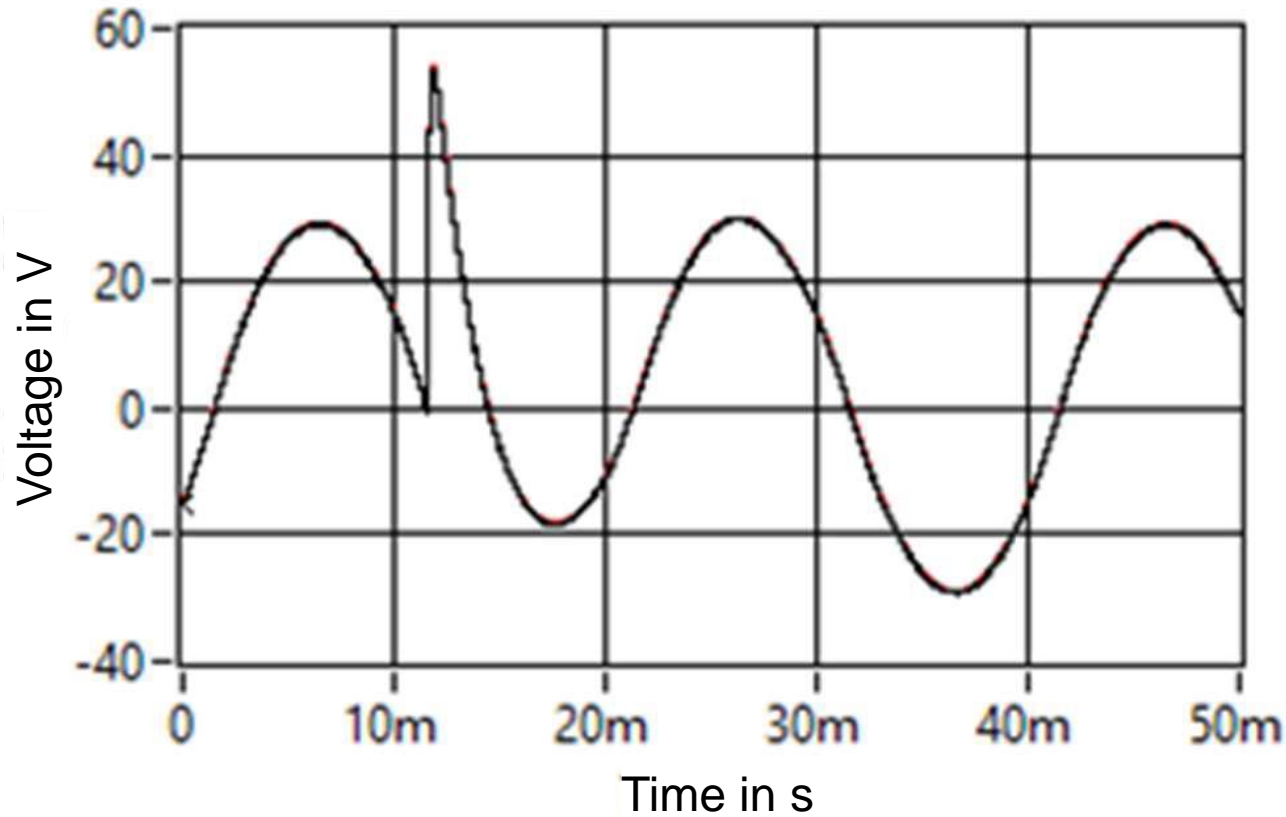
Ernst Gockenbach, Germany



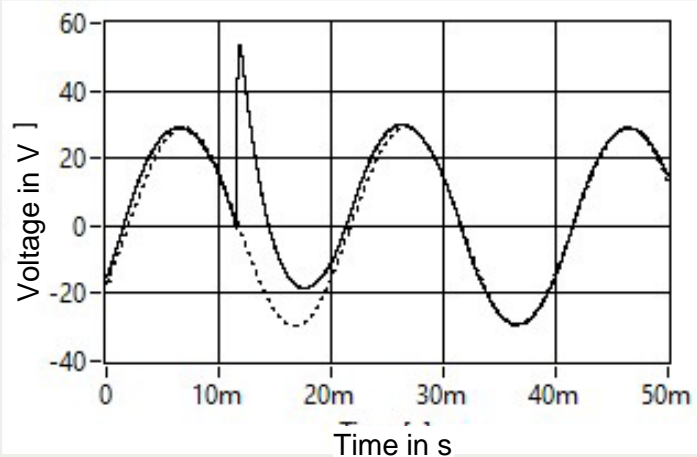
Calibrator for DC and Impulse Voltage



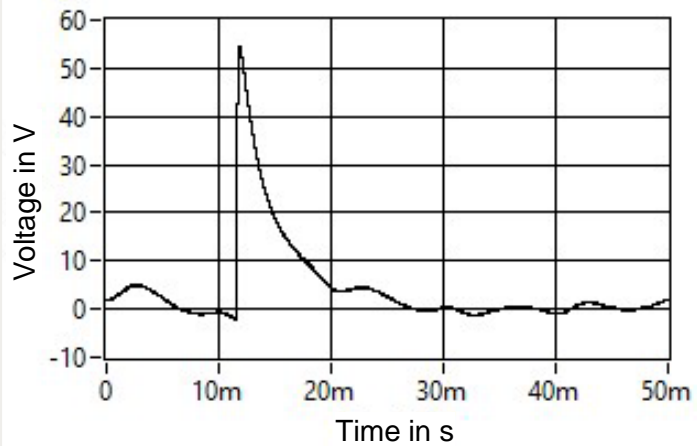
Example of a Composite Test Voltage DC/Impulse



Example for Composite Test Voltage
AC and Switching Impulse Voltage



Calculated AC Voltage ---- (LMA)



Reconstructed Impulse Voltage

Summary

High voltage dividers for combined and composite test voltage

- EMPIR project 19NRM07 HV-com² supports the standardisation of high voltage testing with composite and combined test voltages.
- One part is the development of suitable modular voltage dividers for composite voltage tests and the check of the reachable uncertainties in different laboratories under different voltage combinations. This part is undergoing and test results and reports are expected end of the year 2022.

Test data generator and software for composite test voltage

- The other part is the generation of reference composite waveshapes in the low voltage range in order to check the output of the voltage dividers and the uncertainty of the evaluation of the digital recorded voltages by using suitable software.
- Series IEC 61083 defines hardware for impulse, AC and DC voltage measurement and software to check the evaluation of test voltage parameter.
- Within the research project a test data generator will be developed to check the evaluation of combined and composite test voltage together with software to separate the single components of a composite test voltage.

Proposals IEC 60060-1, -2 and -3 as well as series IEC 61083