12 June 2026, Friday
14:00–15:30 | K1-51 Seminar Room

Material Characterization, Non-invasive Measurements

Dr. Alireza Kazemipour
Federal Institute of Metrology
Bern, Switzerland

Abstract

Measurement of material parameters (complex permittivity and permeability) at higher frequencies is of high interest in new technologies with important applications in telecommunications, autonomous vehicles, biomedical, space technology, security and more.

Material parameter extraction methods are based on measured scattering parameters (reflection and transmission, or one of them). Vector Network Analyzers (VNAs) and/or Photonics-based setups can be used here.

Measurement setups and calibration process are presented to evaluate the scattering parameters on the material (DUT) surface. Estimation of possible systematic-errors and uncertainty propagation will help to consolidate the reliability of the final results.

Bio

Alireza Kazemipour received the B.Sc. degree in electronics and telecommunications from the Sharif University of Technology, Tehran, Iran, in 1992, the M.Sc. degree in physics from Tehran University, Tehran, in 1995, and the Ph.D. degree from Télécom Paris, Paris, France, in 2002.

He was an Associate Professor and a Senior Research Engineer in Iran, France, South Korea, Malaysia, and Germany. He is currently with the Federal Institute of Metrology, Bern, Switzerland. His current research interests include electromagnetics, electromagnetic compatibility, radio frequency metrology, terahertz technology, and antennas.

12 June 2026, Friday
14:00–15:30 | K1-51 Seminar Room