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GRK-NanoFab-KOLLOQUIUM

am 04. Januar 2024 um 15:00 Uhr im EAZ Raum 1337/38

Dr. Gaoliang Dai

Physikalisch-Technische Bundesanstalt Braunschweig

Overview of AFM-based techniques for accurate and traceable nanometrology

The presentation will offer an overview on metrological Atomic Force Microscopy (AFM) for various nanometrology tasks. Following an introduction to the fundamental aspects, the talk will delve into two crucial metrology tasks. The first involves calibrating the geometrical properties of nanometrology systems, including magnification, nonlinearity, squareness, flatness, resolution, and noise. The second task focuses on true 3D metrology of complex nanostructures, including critical dimension (CD), line edge/width roughness (LER/LWR), sidewall angle (SWA), among others. Two approaches for realising traceability in nanometrology — a top-down approach and a bottom-up approach will be addressed. Application examples including an extreme ultraviolet (EUV) photomask standard, nanoscale standards calibration, and a novel material measure for optical areal surface topography tools will be demonstrated. As nanotechnologies rapidly evolve, the presentation will finally discuss future prospects, for instance, the application of hybrid metrology, data fusion, and artificial intelligence (AI) for nanometrology.

Wir laden alle Interessierten zu diesem Kolloquium herzlich ein!

Vortragssprache: englisch