

A spatially resolving non-destructive tool for multi-angle EUV spectroscopic reflectometry

M. Tryus

RWTH Aachen University

Extreme ultraviolet (EUV) and soft X-ray reflectometry has not only demonstrated the ability to detect sub-nm thickness variations but also has shown to be very sensitive to the chemical composition changes. Laboratory-based instrumentation, based on off-synchrotron plasma EUV radiation sources is filling the gap of express metrology, providing rapid measurement time in the order of milliseconds to seconds.

Multi-angle spectral reflectivity measurements allow decoupling of the fitting parameters in the analytical model, making the method more reliable when characterizing complex layered systems. For such purposes we developed the Polychromatic Angle-resolving Non-destructive Tool for High-speed Extreme ultraviolet Reflectometry (PANTHER).

In this contribution the upgraded laboratory setup for spatially resolved multi-angle spectroscopic EUV reflectometry, based on a discharge-produced plasma EUV source, will be presented and discussed.