

Coherent diffractive imaging for actinic inspection with EUV light produced by a laboratory-scale gas-discharge radiation source

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Coherent diffractive imaging (CDI) in the EUV spectral range offers a possibility to replace imaging optics by image reconstruction algorithms. Additionally it allows gaining phase information about the object. We report on transmission CDI and ptychography experiments with a compact pinch-plasma gas-discharge radiation source. In these experiments, FIB structured membranes are illuminated using oxygen VI ionic emission line (17.3 nm) radiation and the membrane structures are successfully reconstructed. To account for spatial and temporal incoherence of the source radiation, a dynamical kernel and a background subtraction algorithm have been developed and adapted to the source characteristics.