Optics for EUV-Lithography, now and then

Hartmut Enkisch(1)

Hartmut.enkisch@zeiss.com

(1) Carl Zeiss SMT GmbH, Rudolf-Eber-Str. 2, 73447 Oberkochen, Germany

EUV-Optics with NA=0.33 are fully industrialized and are a key ingredient to the state-of-the-art semiconductor devices. We will shortly comment on the relevant performance indices.

We will also describe the outstanding performance of the high-NA optics with NA=0.55 currently being introduced into the market. Finally, we will comment on the challenges that would come with either higher NA (hyper-NA) or shorter wavelengths (beyond EUV) with a special focus on metrological challenges like the need for precise optical constants, roughness metrology, and reflectometry.