

Semiconductor mask repair with focused electron-beam induced processing

Joannis Koepsell¹,

¹Carl Zeiss SMT GmbH, Industriestrasse 1, 64380, Rossdorf, Germany

E-mail: joannis.koepsell@zeiss.com

Focused electron beam induced processing (FEBIP) lies at the heart of state-of-the-art photomask repair technology, which is a key enabler for the semiconductor industry. The repair application and our product portfolio at ZEISS SMT will be introduced and discussed. Our high-end tool MeRiT® LE is capable to repair EUV masks down to defect sizes <10 nm [1]. With focused electron beam induced deposition (FEBID) and focused electron beam induced etching (FEBIE), additive respective subtractive FEBIP processes can be accessed with our MeRiT® product family.

References:

[1] T. Heil, M. Waldow, R. Capelli, H. Schneider, L. Ahmels, F. Tu, J. Schöneberg and H. Marbach, *Pushing the limits of EUV mask repair: addressing sub-10 nm defects with the next generation e-beam-based mask repair tool*, Journal of Micro/Nanopatterning, Materials and Metrology, 20, 031013 (2021)