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(71) Applicant: **KLA-TENCOR CORPORATION** [US/US];
Legal Department, One Technology Drive, Milpitas, California 95035 (US).

(72) Inventors: **GUTMAN, Nadav**; 11 Dror Unit 12, 3091784 Zichron Ya'akov (IL). **AMIT, Eran**; Geva 3/6, Pardes Hanna-Karkur, 37061 Haifa (IL). **EYRING, Stefan**; Auf den Hohen Graeben 9, 35781 Weilburg (DE). **PATHANGI SRIRAMAN, Hari**; 1/480 Ram Garden 2nd Street, B3 Prashanthi Apartments, Gajendra Nagar, Perumbakkam, Chennai 600100 (IN). **LASKE, Frank**; Auf der Au 18,

35789 Weilmünster (DE). **POHLMANN, Ulrich**; Marderweg 53, 07749 Jena (DE). **HEIDRICH, Thomas**; One Technology Drive, Milpitas, California 95035 (US).

(74) Agent: **MCANDREWS, Kevin** et al.; KLA-TENCOR CORPORATION, Legal Department, One Technology Drive, Milpitas, California 95035 (US).

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(54) Title: OVERLAY MEASUREMENTS OF OVERLAPPING TARGET STRUCTURES BASED ON SYMMETRY OF SCANNING ELECTRON BEAM SIGNALS

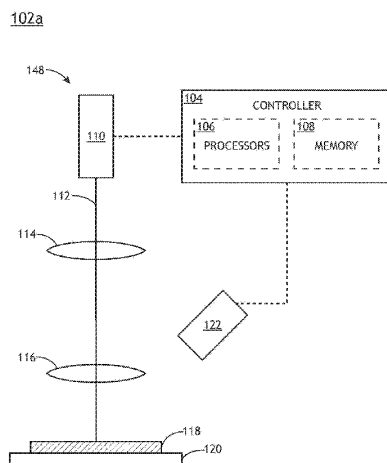


FIG. 1B

(57) Abstract: An overlay metrology system includes a particle-beam metrology tool to scan a particle beam across an overlay target on a sample including a first-layer target element and a second-layer target element. The overlay metrology system may further include a controller to receive a scan signal from the particle-beam metrology tool, determine symmetry measurements for the scan signal with respect to symmetry metrics, and generate an overlay measurement between the first layer and the second layer based on the symmetry measurements in which an asymmetry of the scan signal is indicative of a misalignment of the second-layer target element with respect to the first-layer target element and a value of the overlay measurement is based on the symmetry measurements.

[Continued on next page]

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