Claims

1. A system comprising: a review tool, wherein the review tool includes: a stage configured to hold a wafer; and an image generation system configured to generate an image of the wafer; an electronic data storage unit in which one or more reference files are stored, each reference file having one or more alignment sites; and a controller in electronic communication with the review tool, wherein the controller is configured to: receive the image of the wafer from the review tool; identify one or more alignment sites in the image of the wafer; receive a reference file from the electronic data storage unit corresponding to the image of the wafer from the review tool; mark at least one die corner on the wafer; compare one or more alignment sites in the reference file to one or more alignment sites in the image from the review tool; generate a deskew transform corresponding to the image of the wafer based on the one or more alignment sites; apply the deskew transform to the image of the wafer; and validate that the image of the wafer from the review tool and the reference file remain aligned after the deskew transform is applied by evaluating a convergence of the deskew transform with an alignment site offset used to calculate the deskew transform.

2. The system of claim 1, wherein the controller includes a processor and a communication port in electronic communication with the processor and the electronic data storage unit.

3. The system of claim 1, wherein the review tool is a scanning electron microscope.

4. The system of claim 1, wherein the image generation system is configured to use at least one of an electron beam, a broad band plasma, or a laser to generate the image of the wafer.

5. The system of claim 1, wherein the reference file is a design file.

6. The system of claim 1, wherein the reference file is an inspection image of the wafer.

7. The system of claim 1, wherein the image of the wafer does not contain a defect having a size from 3 μm to 50 μm.

8. The system of claim 1, wherein the deskew transform addresses scaling, rotation, non-orthogonality, and translation.

9. The system of claim 1, wherein the deskew transform is only based on devices or features with defects having a size less than 3 μm or greater than 50 μm.

10. A method comprising: loading a wafer on a stage of a review tool; receiving, from the review tool, an image of the wafer having one or more alignment sites; receiving, at a controller, a design file corresponding to the wafer, the design file having one or more alignment sites; marking at least one die corner on the wafer; comparing, using the controller, the one or more alignment sites of the design file to the one or more alignment sites of the image from the review tool; generating, using the controller, a deskew transform

corresponding to the image of the wafer based on the one or more alignment sites; applying the deskew transform to the image of the wafer using the controller; and validating, using the controller, that the image of the wafer from the review tool and the design file remain aligned after the deskew transform is applied by evaluating a convergence of the deskew transform with an alignment site offset used to calculate the deskew transform.

11. The method of claim 10, wherein the image of the wafer from the review tool is a scanning electron microscope image.

12. The method of claim 10, wherein the image of the wafer does not contain a defect having a size from 3 μm to 50 μm.

13. The method of claim 10, wherein the deskew transform addresses scaling, rotation, non-orthogonality, and translation.

14. The method of claim 10, wherein the deskew transform is only based on devices or features with defects having a size less than 3 μm or greater than 50 μm.

15. A method comprising: loading a wafer on a stage of a review tool; receiving, from the review tool, an image of the wafer; receiving, at a controller, an inspection image corresponding to the wafer; marking at least one die corner on the wafer; comparing, using the controller, alignment sites of the inspection image to alignment sites of the image from the review tool; generating, using the controller, a deskew transform corresponding to the image of the wafer based on the one or more alignment sites; applying the deskew transform to the image of the wafer using the controller; and validating, using the controller, that the image of the wafer from the review tool and the inspection image remain aligned after the deskew transform is applied by evaluating a convergence of the deskew transform with an alignment site offset used to calculate the deskew transform.

16. The method of claim 15, further comprising: manually marking at least one deskew site on the image of the wafer from the review tool; and calculating an offset between the inspection image and the image from the review tool based on the marked deskew site.

17. The method of claim 15, wherein the image of the wafer from the review tool is a scanning electron microscope image.

18. The method of claim 15, wherein the image of the wafer does not contain a defect having a size from 3 μm to 50 μm.

19. The method of claim 15, wherein the deskew transform addresses scaling, rotation, non-orthogonality, and translation.

20. The method of claim 15, wherein the deskew transform is only based on devices or features with defects having a size less than 3 μm or greater than 50 μm.