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- (54) **Title: AUTOMATED DECISION-BASED ENERGY-DISPERSIVE X-RAY METHODOLOGY AND APPARATUS**

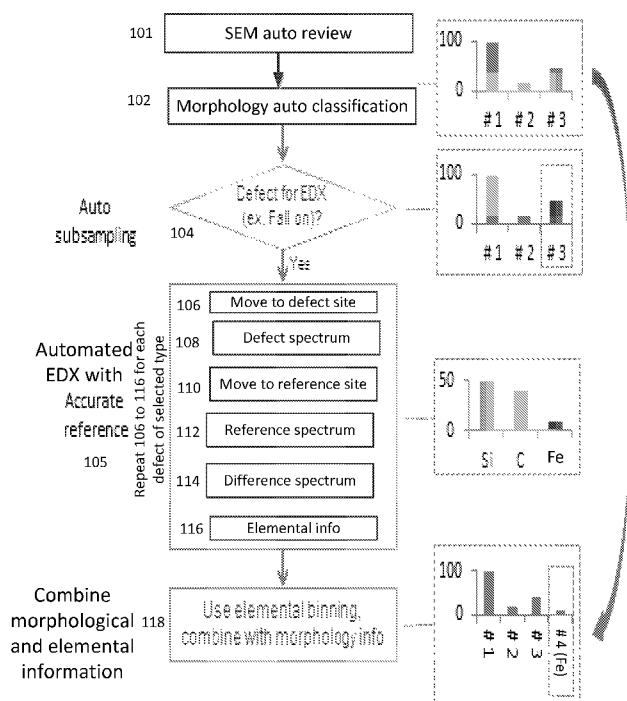


FIG. 1

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- (57) **Abstract:** One embodiment relates to a method for automated review of defects detected in a defective die on the target substrate. The method includes: performing an automated review of the defects using an secondary electron microscope (SEM) so as to obtain electron-beam images of the defects; performing an automated classification of the defects into types based on morphology of the defects as determined from the electron-beam images; selecting defects of a specific type for automated energy-dispersive x-ray (EDX) review; and performing the automated EDX review on the defects of the specific type. In addition, automated techniques are disclosed for obtaining an accurate reference so as to improve the usefulness of the EDX results. Furthermore, an automated method of classifying the defects based on the EDX results is disclosed which provides a final pareto that combines both morphological and elemental information. Other embodiments, aspects and features are also disclosed.



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