

Method for detecting defects on the surface of substrates in a photolithographic process using computer vision includes the step of acquiring a grayscale image of the substrate surface. After acquiring the image, it is preliminarily smoothed using a Gaussian filter, and adaptive thresholding is performed based on the local average brightness value using inverse logic to form a binary structure mask, after which morphological processing of the binary mask is performed by sequentially executing closing and opening operations with a fixed-size structural element; a cleaned binary mask is formed; the contours of connected components are detected, for each of which geometric characteristics such as area and perimeter are calculated; classify objects as defective if at least one of the specified geometric parameters exceeds the predefined threshold values, determine the coordinates of the centers of mass of the detected defective objects, and generate a set of features for further statistical analysis of the defect detection results.