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[54] A DEFECT DETECTION AND LOCALIZATION METHOD AND SYSTEM WITH FUSION DATA AUGMENTATION FOR PLASTIC INJECTION MOLDING PRODUCT

具有融合數據增強的注塑成型產品缺陷檢測及定位方法及系統

[57] The present invention discloses a defect detection method for plastic injection molding product, comprising the steps of: collecting product (102a) samples with normal and abnormal classes; collecting image dataset from the collected product samples, and enhanced with data augmentation (102b); annotating the image dataset (102c); applying data augmentation to the annotated dataset by a computational algorithm (102d) to increase the variation of the dataset; training a model (104a) using the generated datasets to prepare a defect detection model; localizing and labelling target region of the products; recording frames with defective products and detection information (106b); and monitoring the production performance in real-time (108a) using the detection information.

本發明公開了一種注塑成型產品的缺陷檢測方法，包括以下步驟：收集正常和異常類別的產品（102a）樣品；利用數據增強從收集的產品樣本中收集圖像數據集（102b）；注釋所述圖像數據集（102c）；通過計算算法（102d）將數據增強應用

於注釋數據集以增加數據集的變化；使用生成的數據集訓練模型（104a）以準備缺陷檢測模型；定位及標記產品的目標區域；記錄具有缺陷產品的幀及檢測信息（106b）；以及使用檢測信息實時監控生產性能（108a）。

