

(54) Title of the invention : INTRAORAL HEALTH ASSESSMENT AND TREATMENT DEVICE

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(57) Abstract :

An intraoral health assessment and treatment device is comprising, a body 101 structurally resembling an impression tray, designed to fit within the user's oral cavity, an inspection module 102 integrated with the body 101 captures physiological and anatomical oral health parameters, an image preprocessing module enhances images by reducing noise, adjusting contrast, normalizing brightness, and resizing them for analysis, an image segmentation module detects and isolates suspicious regions, a feature extraction module extracts diagnostic features for classification, an AI-based classification model, trained on annotated datasets, categorizes features into normal, pre-cancerous, or cancerous, a quantum computing accelerator improves classification speed and accuracy, a decision support unit generates diagnostic reports, highlights affected regions, assigns confidence scores, and suggests next steps, a gel dispensing arrangement 103 with a curved guiding rail 103a and motorized compact, rotatable motorized nozzle 103b mounted on the guiding rail 103a applies suppression gel to anomalies.

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