Ultraviolet Light-Induced Fluorescence for the Detection of Dental Cavities

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Technology description

Invention Description

UTSA innovators have developed a new medical device for the detection of dental cavities. This device induces natural fluorophores in dental tissue. In practice, a probe is introduced in the oral cavity and makes contact with tooth enamel. Then, the fiber optic probe emits an excitation wavelength of 405 nm and a photodetector detects the emission wavelength from fluorophores related to cavities. Next, the photodetector converts the photon emission energy to a signal that can be measured as an electrical voltage. If a positive signal is detected the device will output an audible signal and red light indicator.

Application area

The main application of this device is to be used in the field of dentistry. This device solves the problem of detecting early-stage cavities.

Advantages

Other devices also uses wavelengths but beyond the visible spectrum and can be potentially dangerous with long exposure times. In addition, other devices are far more expensive, less portable and require multiple steps.

Institution

University of Texas, San Antonio

Inventors

Innovators were

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