

## System and Method for Ranking Bacterial Activity Leading to Tooth and Gum Disease

**This technology optically measures pH to detect bacterial infections that cause tooth and gum diseases. The system emits an excitation light at the teeth of a patient and uses a detector to measure the light and process the yields with machine learning for early-stage enamel demineralization.**

### What is the Problem?

Tooth and gum disease is caused by bacterial infection. Technologies examining and measuring this oral biofilm in early disease stages do not exist, allowing for progression of the bacterial infection.

### What is the Solution?

This solution is an optical measure of pH. The system emits an excitation light, which is coupled with a detector to receive the light emitted from the teeth of the patient. The measured intensity of the emitted is processed with machine learning, which yields areas that are at risk of cavities. This can serve as an indicator of early-stage enamel demineralization. This technology is used in conjunction with a scanning fiber endoscope to provide a reliable, safe and low-cost means for identifying dental caries or decays.

### What Differentiates it from Solutions Available Today?

Current solutions focus on treating tooth and gum disease, instead of preventing it before it occurs. Preventing tooth and gum disease before they occur would increase the quality of care and the patient outcomes, and provide a differentiating service for a care provider. Care could move towards prevention instead of treatment.

### Patent Information:

[US11883132B2](#)

### Technology ID

BDP 8665

### Category

Selection of Available  
Technologies  
Diagnostic

### Authors

Eric Seibel

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