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# Optical Coherence Tomography Device For Characterization Of Atherosclerosis

Tech ID: 28679 / UC Case 2017-572-0

### **BRIEF DESCRIPTION**

This technology introduces an innovative Optical Coherence Tomography (OCT) system utilizing a 1.7 µm swept source laser for enhanced identification and visualization of atherosclerotic plaque.

### **FULL DESCRIPTION**

The OCT system features a swept light source centered around 1.7 µm, optimized for the detection of atherosclerotic plaque and large lipid pools within tissues. It leverages the higher contrast and deeper penetration capabilities of the 1.7 µm wavelength, surpassing traditional systems in delivering detailed structural information from deep within the tissue. The system integrates multimodal imaging capabilities, combining 1.3 µm and 1.7 µm OCT imaging for comprehensive tissue characterization. This advanced OCT technology is designed to operate effectively in environments with strong absorption by blood and water, showcasing unexpected success in differentiating plaque from normal tissue and maintaining high imaging quality with components designed for shorter wavelengths.

#### SUGGESTED USES

- » Advanced diagnostic imaging for cardiovascular diseases, specifically in the detection and characterization of atherosclerotic plaque.
- >> Integration into comprehensive cardiovascular care and monitoring systems, offering clinicians a powerful tool for patient assessment and treatment planning.
- » Research and development in biomedical imaging technologies, providing a platform for further innovations in tissue characterization and imaging depth.
- **>>** Manufacturing of medical imaging equipment, offering an advanced OCT system that can be integrated into existing medical imaging solutions.

### **ADVANTAGES**

- >> Enhanced contrast between lipid and normal tissue, enabling more accurate identification of atherosclerotic plaque.
- >> Deeper penetration of optical signals, allowing for visualization of large lipid pools and detailed structural information from within the tissue.
- >> Integration of multimodal imaging systems, providing comprehensive tissue characterization.
- >> Capability to differentiate plaque from normal tissue even in challenging imaging environments.
- >> High imaging quality with components designed for shorter wavelengths, demonstrating versatility and innovation in OCT system design.

### CONTACT

Alvin Viray aviray@uci.edu tel: 949-824-3104.



# OTHER INFORMATION

### CATEGORIZED AS

- » Optics and Photonics
  - » All Optics and Photonics
- » Imaging
  - » Medical
- » Medical
  - >> Imaging

### **RELATED CASES**

2017-572-0

### PATENT STATUS

Country	Туре	Number	Dated	Case
United States Of America	Issued Patent	11.241.155	02/08/2022	2017-572

### STATE OF DEVELOPMENT

The researchers have devised an intravascular OCT system built with a new laser source and capable of producing images of human coronary artery.

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5270 California Avenue / Irvine, CA 92697-7700 / Tel: 949.824.2683



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