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## INTEGRATED INTRAVASCULAR IMAGING: OCT, ULTRASOUND, AND OPTICAL COHERENCE ELASTOGRAPHY

Tech ID: 23630 / UC Case 2013-647-0

### BRIEF DESCRIPTION

Researchers at the University of California, Irvine have developed an integrated intravascular imaging system that combines OCT/US/PR-ARF-OCE for identifying the different types of plaque-lipid inclusion, fibrous plaque, and calcified plaque and to simultaneously measure the structure and mechanical properties of tissues.

### FULL DESCRIPTION

Currently, many biomedical imaging techniques aimed at imaging and assessing vulnerable plaques are available, including angiography, magnetic resonance imaging (MRI), intravascular ultrasound (IVUS), optical coherence tomography (OCT), intravascular near infrared spectral imaging and others. Many of these are limited by resolution and sensitivity and other imaging techniques (NIRS, Raman and fluorescence imaging) lack the capability of tomographic imaging.

Although each optical probing technique provides access to relevant diagnostic parameters, integration of several modalities is necessary to gather the information required to establish a robust method for early detection of plaque.

### SUGGESTED USES

Suggested uses include imaging and diagnosis of cardiovascular diseases, peripheral vascular disease, and brain aneurysms. The combined multimodal intravascular/endoscopic imaging systems can also be used in diseases such as cancer, where the structure and the properties of the tissue or organ are important.

### ADVANTAGES

The advantages of this system are imaging and diagnosis of vulnerable plaques and monitoring therapeutic efficacy at an earlier stage. The combination of modalities will considerably reduce the cost of imaging to hospitals and radiology suites.

### PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	10,231,706	03/19/2019	2013-647

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### OTHER INFORMATION

#### CATEGORIZED AS

- » **Optics and Photonics**
  - » All Optics and Photonics
- » **Imaging**
  - » Medical
  - » Other
- » **Medical**
  - » Devices
  - » Diagnostics
  - » Disease: Cardiovascular and Circulatory System
  - » Imaging

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2013-647-0

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