

3-D Imaging System with Pre-Test Module

Researchers at the University of South Florida have developed a remote 3-D imaging system capable of generating a detailed image for underwater profiling.

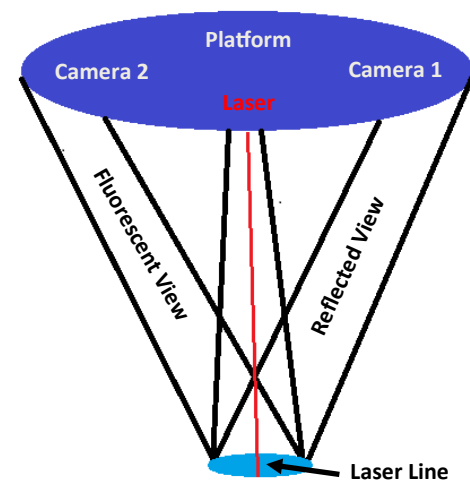
In recent years, interest in underwater profiling has increased significantly. The ability to map ocean environments is an important aspect of many fields including resource exploration, national defense and science. This has led to the development of several different instrumentation methods for underwater imaging. Current systems often require highly sophisticated interfacing of obtained signals and equally sophisticated signal generators to relay the information. This process makes it very expensive and challenging to keep the signals synchronized. Hence, there is a need for a less complex yet accurate system for underwater profiling.

USF researchers have developed such an underwater profiling method. The invention establishes an image via a remote 3-D imaging system that utilizes a novel angular relationship. The system includes a platform and projects a single illumination. The light is then reflected back and an image ascertained. This system is also capable of compensating for turbidity and other conditions usually deleterious to visual imaging in underwater environments. In addition to static surfaces, moving surfaces may also be studied. Differences in surface characteristics are determined by various reflective and fluorescent techniques. Furthermore, an included pre-test module has the ability to re-adjust the instrument to test preliminary conditions. This then increases the optical accuracy of the generated image.

ADVANTAGES:

- Multiple profiling methods incorporated into a single system
- Pre-test model for increased accuracy
- Applicable for static and moving surfaces
- Compensates for turbidity

A Novel Imaging System Able to Detect Features in an Underwater Environment



A Schematic Showing the Principle Operation of the Imaging System

Tech ID # 03B066

Patent #: [7,796,809](#)