

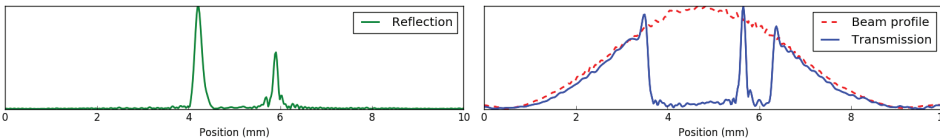


High-Resolution Imaging Using Lasers

BYU #2017-048

DESCRIPTION

The invention uses patterns of light to illuminate an object. By measuring the amount of light scattered from different patterns, an image of the object can be calculated. The resolution of the images is determined by the smallest fringe spacing.



PROBLEM SOLVED

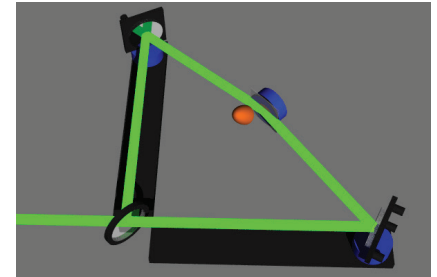
Similar to what is done in an MRI scan, the invention measures spatial frequency components, the data is then used to calculate the image. In conventional imaging, for practical reasons high NA lenses typically have very short working distances. This technology enables imaging an object with high resolution without the need of having a large lens or be close to the object.

KEY ADVANTAGES

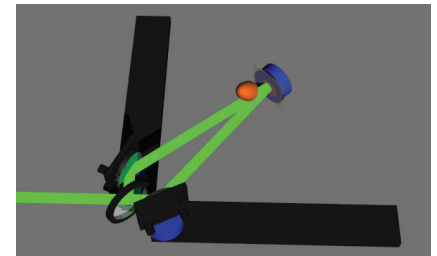
- » High resolution without a complicated lens system
- » Reduces distance constraints
- » Simple and inexpensive

APPLICATIONS

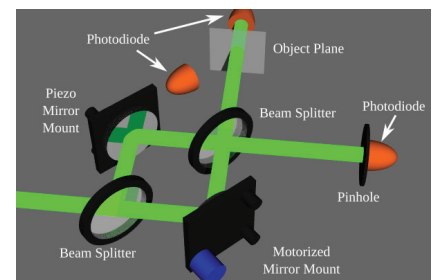
The technology could be used for a large number of applications across many fields such as science, manufacturing, defense, and medicine. For example, this can be an inexpensive way to detect diseases (blood or kidney diseases) without the need of an electron microscope. It could be used to locate biologically hazardous microbes, make high resolution images of tissue, monitor an object being fabricated, etc.



Configuration to make high spatial frequency fringes



Configuration to create low spatial frequency fringes



Basic setup

Offer:
License
Exclusive
World Wide
All Fields of Use

IP STATUS:
Patent Pending



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