USF Available Technologies

Technology Transfer Office

Full Color Natural Light Holographic Camera

Researchers at the University of South Florida have developed a full color natural light holographic camera which has the capability of capturing holographic 3D images under all common illuminations including outdoor daylight, room light, halogen, LED and more.

This is a new and innovative feature that a smartphone or camera could also offer. Essentially, it would allow a person to take a holographic 3D picture now and zoom in/out or focus on any of the picture's aspects later.

A color holographic image is created by generating a separate complex hologram for each of the different colors of an object field illuminated with incoherent light, combining the separate holograms to obtain a color complex hologram, and generating a reconstructed color holographic image of the object field. The reconstructed color holographic image can be focused at various distances.

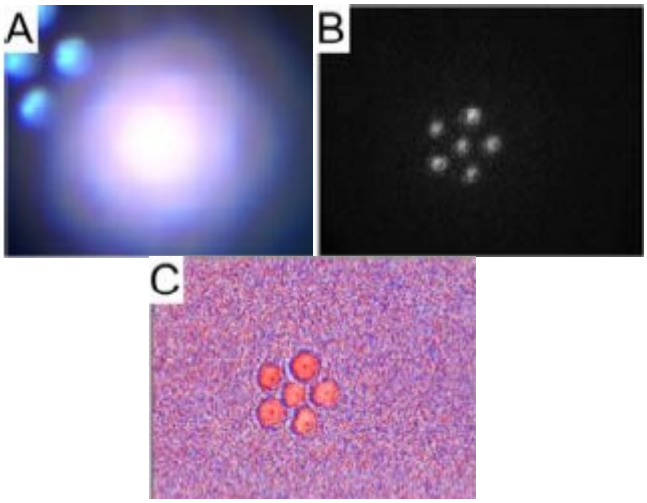
When compared with existing/emerging technologies, this self-interference color incoherent digital holography (SCIDH) device has better resolution and inherently faster processing. This system may also be adapted for video.

In addition to mass consumer appeal, the technology has niche applications in areas such as security, inspection, online publications/advertisements, scientific imaging, and more. It has a huge potential to transform the way consumers think about digital photography forever.

ADVANTAGES:

- **Better resolution than current SCIDH devices**
- **Inherently faster processing**
- **Can also be used for video**

Captures Color Holographic 3D Images Under Common Illumination



SCIDH of a white LED flash light: (A) A Frame Capture of the Charge Coupled Device (CCD) Camera. (B) Amplitude and (C) Phase of the Complex Hologram for the Red Channel

Tech ID # 13A029

University of South Florida | Technology Transfer Office
813.974.0994 (office) | 813.974.8490 (fax)
patents@research.usf.edu
http://www.usf.edu/research-innovation/pl/