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# A Simple In Line Digital Holography System For Measuring 3D Cell Shape

Tech ID: 32222 / UC Case 2020-207-0

## TECHNOLOGY DESCRIPTION

The invention disclosed is a simple in-line holographic method without the use of a separate reference beam for morphological analysis of cells. This technology will be especially useful in measuring three dimensional measurements such as thickness, shape, and volume of single cells (i.e. individual blood cells) or groups of cells. Previously, this approach required a separate reference beam for holographic imaging. However, the present technology achieves this objective without the separation of the reference beam and by increasing the distance between the cell and the hologram plane.

## VALUE PROPOSITION

- ▶ Cellular volumetric data can be calculated for live and fixed cells with real time imaging and analysis.
- ▶ Captured data is in the megabyte range, hence allowing the use of less intensive data storage and processing conditions.
- ▶ Faster workflow as multiple inline focal depth data are simultaneously obtained without the need to shift the light source or sample.
- ▶ Less than 10% measurement error.

## DATA AVAILABILITY

Under CDA upon request

## PATENT STATUS

Country	Type	Number	Dated	Case
Patent Cooperation Treaty	Published Application	<a href="#">WO 2022/032074</a>	02/10/2022	2020-207

## STATE OF DEVELOPMENT

Proof of concept

### CONTACT

Catherine Smith  
[Catherine.Smith2@ucsf.edu](mailto:Catherine.Smith2@ucsf.edu)  
tel: [510-646-0631](tel:510-646-0631).



### INVENTORS

- ▶ Ohgami, Robert

### OTHER INFORMATION

#### KEYWORDS

microscopy, single cell  
analysis, holography,  
imaging, cell volume

#### CATEGORIZED AS

- ▶ [Imaging](#)
- ▶ [Medical](#)
- ▶ [Molecular](#)

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2020-207-0

ADDRESS

UCSF

Innovation Ventures

600 16th St, Genentech Hall, S-272,  
San Francisco,CA 94158

CONTACT

Tel:

innovation@ucsf.edu

https://innovation.ucsf.edu

Fax:

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