

# Submicron Resolution Broad View 2-D & 3-D Microscope

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Microscope in applicationary use

## Technology Summary

Existing microscope optics make tradeoffs between the field of view and resolution. At the same time, modern CMOS sensors have reached over 100 million pixels in a single chip, well beyond the amount of information that can be recovered digitally with existing microscope optics. This invention provides an effective solution: the first optics capable of making use of large-format CMOS sensors with a diffraction-limited resolution matched to a far larger field of view than is presently available in high-magnification objective lenses. This invention provides the resolution of a 40x objective lens with a field of view of a 4x objective, and over 2 orders of magnitude improvement in field of view over commercial microscope optics for the same resolution.

## Application & Market Utility

The new optics will allow for rapid image acquisition from large areas of samples with sub-cellular resolution for a wide range of new applications: in-situ monitoring and screening large cell culture and tissue samples in both transmission and fluorescence modes; rapid sample scanning in histology combined with machine learning to automate disease diagnosis; micro-CT with sub-cellular resolution for large biomedical samples including whole animals, human surgical pathology specimens, and materials science samples.

## Next Steps

Working prototypes are being tested and validated in numerous applications. Patent pending. Seeking licensing opportunities.

TECHNOLOGY READINESS LEVEL

4-7

### Seeking

Investment | Licensing | Research

### Keywords

- Imaging
- Histology
- Medical Device
- Drug Discovery

### Researchers

#### Keith Cheng

Professor, Department of Biochemistry & Molecular Biology

[Online Bio Website](#)

#### Yuxin Wang

Graduate Student Researcher

### Originating College

College of Medicine

### Office of Technology Management Contact

Martinez, Alison



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