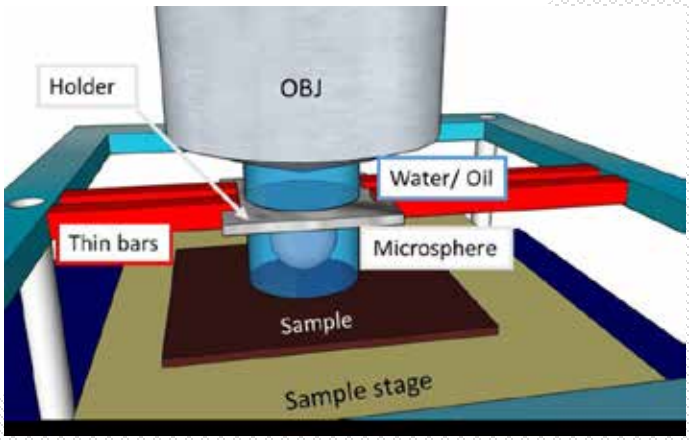
Optical Microsphere Nanoscope

LUX PHOTONICS CONSORTIUM SINGAPORE

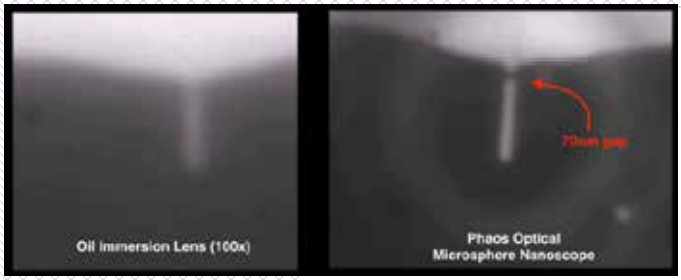
Technology Overview

§ The Optical Microsphere Nanoscope enables real-time, low cost, super resolution imaging with just white light
§ Utilizing the microsphere technology, sub-100 nanometer resolution can be achieved
§ It has almost no requirement on sample preparations, able to work in an ambient environment and has the ability to image live biological samples and non-conductive soft materials



Technology Features

§ Provides a cheap and easy-to-use alternative to achieve super- resolution imaging under white light illumination at room conditions
§ Image objects of sub-100nm feature sizes (down to about 25nm), real-time and at a long working distance of 1 micron, under either reflective or transmission mode
§ The core techniques in this technology can be made into a low-cost add-on device



Benefits

§ Ability to do optical, non-contact, non-invasive, super- resolution imaging
§ Cheaper than Scanning Electron Microscope (SEM)
§ The add-on device will upgrade existing microscope from a 20x magnification to 100x magnification

Potential Applications

§ Artificial cell and tissue design and culturing
§ Sub-cell activities research
§ Clinical laboratory examination
§ Semiconductor production line

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