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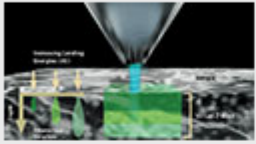
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# BIOPHOTONICS

BRINGING LIGHT TO THE LIFE SCIENCES

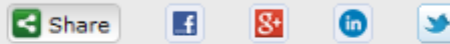
Wednesday, July 22, 2015

### SBF Imaging – Using SEM and LM to Create High-Resolution 3-D Reconstructions



In recent years, there have been considerable advancements in EM-based methods for 3-D reconstructions of large tissue volumes. In this article, we describe a new approach that combines in situ serial sectioning with a unique, multienergy deconvolution technique to generate 3-D reconstructions with isotropic resolution down to a few nanometers.

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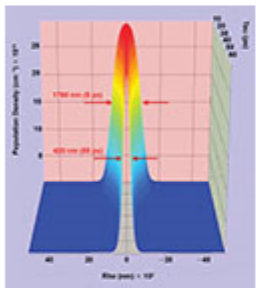
### Liquid Crystal Compound Lens Eyed for 3-D Imaging

Liquid crystal can be controllably formed into compound lenses similar to those found in insects, a team from the University of Pennsylvania (Penn) has demonstrated. These lenses produce sets of images with different focal lengths, a property that could be used for 3-D imaging.

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### Optimizing Experimental Conditions for STED and g-STED Microscopy



The advent of superresolution microscopy has been groundbreaking in its ability to image biological samples, allowing researchers to study previously inaccessible details within cellular processes. New software provides a unique imaging optimization method for STED and g-STED by simulating the entire process – including absorption, overlapping excitation and donut-shaped STED beams.

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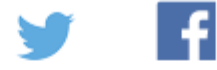
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#### OBLIQUE SINGLE PLANE ILLUMINATION MICROSCOPE (OSPI)

The oSPIM is two microscopes in one. The lower microscope can be used for conventional fluorescent imaging including WF, confocal, and TIRF. The bottom objective is also used for light sheet (SPIM) illumination, with light sheet imaging from the tilted top objective.

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