

BioSyM Seminar Series 2018

Oblique scanning 2-photon light-sheet fluorescence microscopy for rapid volumetric imaging

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Time : 12 pm to 1 pm

Venue : Level 5, Perseverance Room



Abstract

Light-sheet fluorescence microscopy (LSFM) is a powerful tool for biological studies because it allows for optical sectioning of dynamic samples with superior temporal resolution. However, LSFM using 2 orthogonally co-aligned objectives requires a special sample geometry, and volumetric imaging speed is limited due to physical sample translation. We developed an oblique scanning 2-photon LSFM (OS-2P-LSFM) that eliminates these limitations by using a remote-scan 2-photon Bessel beam and a refractive scanning-descanning system. The OS-2P-LSFM hold promise for studying structural, functional and dynamic aspects of living tissues and organisms because it allows for high-speed, translation-free and scattering-robust 3D imaging of large biological specimens.

Short Biography

Younghoon Shin joined SMART-BioSyM in 2018 as a Postdoctoral Associate under Prof. Peter So. He has completed his PhD from the Department of Biomedical Engineering and Science, Gwangju Institute of Science and Technology (GIST), South Korea in 2017. His research interests involves the development of high-speed and deep tissue fluorescence microscopes and modeling of tissue scattering process.