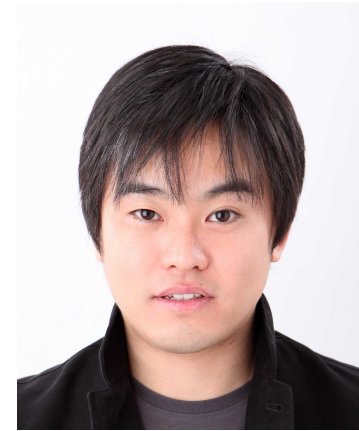


Realization of common platform technologies, facilities and equipment that create innovative knowledge and products

Development of a technology for operand 3D biodynamics imaging

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Summary :

We aim to develop a technology for real-time, in situ analysis of 3D biodynamics in living organisms. This technology dominates optical microscope market for life science and medical applications.

Dynamics of cells and molecules have the millisecond order time scale in 3D space. However, it is difficult to analyze such dynamics in real time using current optical microscopy such as confocal microscopy. Here, we will develop a technology to extract 3D positions of all cells in millisecond order and optically illuminate those positions for manipulating their activities. Furthermore, we will develop an operand 3D super-resolution microscopy. To achieve POC by evaluating these cutting-edge technologies, we will apply them for analyzing neural circuit dynamics underlying behavior and liquid-liquid phase separation dynamics in cells.

