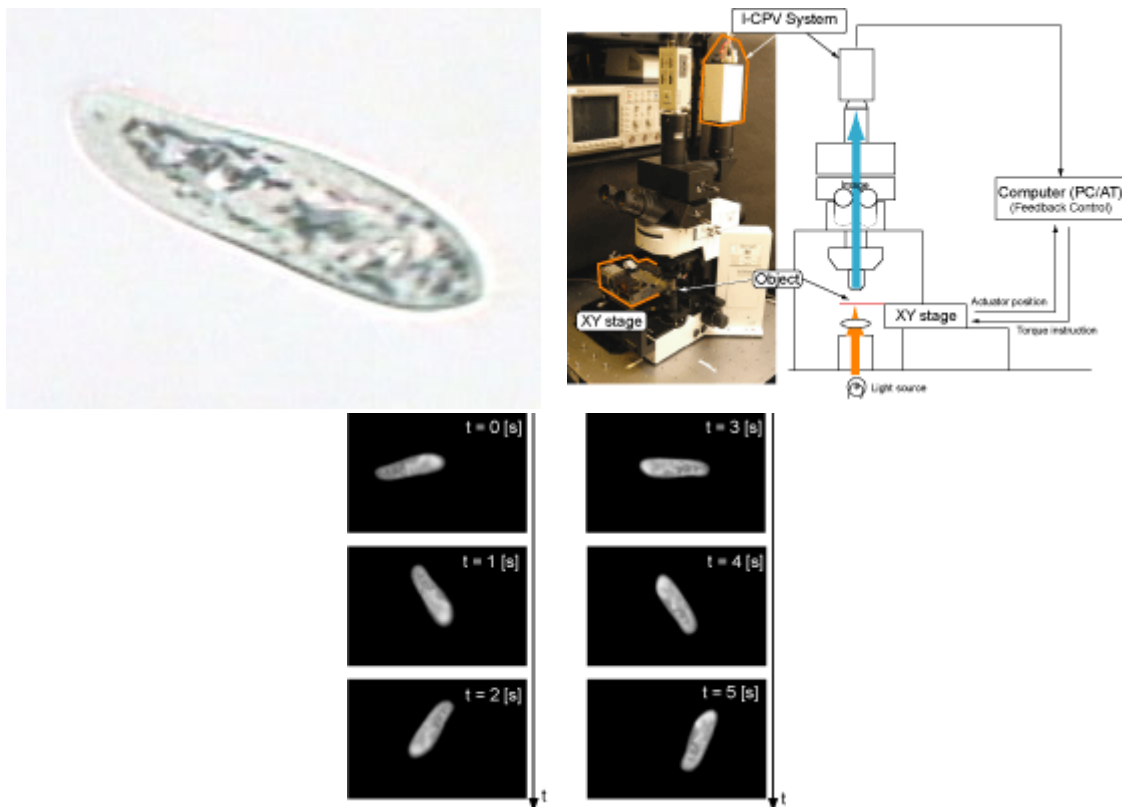


Microscopic Visual Feedback

Concept

With the rapid development of micro technology, it becomes more important to handle micro objects such as Micro-Electro-Mechanical Systems (MEMS) and cells. For human beings, however, handling micro objects through microscope is very difficult. To solve this problem and realize automatization of manipulation of micro objects, we proposed MVF (Micro Visual Feedback). MVF is a technique that uses High-Speed Vision as a sensor to control micro objects. It has three advantages: high precision, high-speed, and no physical contact. By using MVF, systems can automatically control micro objects.



Research

Microscopic Visual Feedback (MVF)

With the rapid development of micro technology, it becomes more important to handle micro objects such as LSIs and cells. For human beings, however, handling micro objects through microscope is very difficult. To solve this problem and realize automatization of manipulation of micro objects, we proposed MVF (Micro Visual Feedback), which means to control micro objects using high-speed visual feedback.

Organized Bio-Modules using Microorganisms (OBM)

Our goal is the realization of a super-large-scale microsystem that provides flexible and various functions, by integrating microorganisms as modules into information processing systems.

A Variable-Focus Lens with 1-kHz Bandwidth

We propose a variable-focus lens with 1-kHz bandwidth for high-speed focusing. The lens transforms its shape rapidly using the liquid pressure generated by a piezo stack actuator.

