

Center for International Research on Integrative Biomedical Systems

# S. TAKEUCHI LAB.

## [Biohybrid Systems]

Centre for International Research on Integrative Biomedical Systems

<http://www.hybrid.iis.u-tokyo.ac.jp>

**MEMS / Bionanotechnology / Tissue engineering**

Mechano-Informatics Dept. Information Science and Technology / Life Science Dept. Arts and Sciences

## Biohybrid Muscle Actuators

Bio-robot with skeletal muscle was created by culturing muscle-derivative cells (myoblasts) three dimensionally on the actuator made with micro-fabrication technology.

The constructed skeletal muscle could be moved by expanding and contracting the selected skeletal muscle through electrical stimuli. The skeletal muscle movement is known to have effect on its functions such as carbohydrate metabolism, and this actuator could be used for future skeletal muscle function analysis.