

## Development of an Optimization Method for Myoelectric Signal Processing by Active Matrix Sensing in Robot Rehabilitation

**Authors :** Noriyoshi Yamauchi, Etsuo Horikawa, Takunori Tsuji

**Abstract :** Training by exoskeleton robot is drawing attention as a rehabilitation method for body paralysis seen in many cases, and there are many forms that assist with the myoelectric signal generated by exercise commands from the brain. Rehabilitation requires more frequent training, but it is one of the reasons that the technology is required for the identification of the myoelectric potential derivation site and attachment of the device is preventing the spread of paralysis. In this research, we focus on improving the efficiency of gait training by exoskeleton type robots, improvement of myoelectric acquisition and analysis method using active matrix sensing method, and improvement of walking rehabilitation and walking by optimization of robot control.

**Keywords :** active matrix sensing, brain machine interface (BMI), the central pattern generator (CPG), myoelectric signal processing, robot rehabilitation

**Conference Title :** ICRR 2017 : International Conference on Rehabilitation Robotics

**Conference Location :** Boston, United States

**Conference Dates :** April 24-25, 2017