

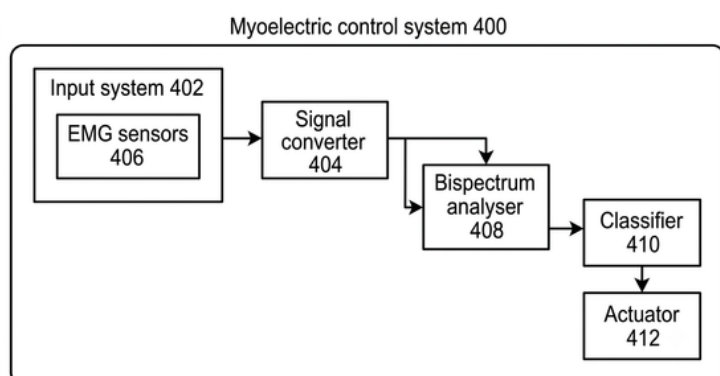
A COMPUTER-IMPLEMENTED METHOD USING EMG SIGNAL'S BISPECTRUM FOR FEATURE EXTRACTION

Seeking parties interested in licensing and commercialization of technology.

Technology Brief

This technology is a Myoelectric Control System (MCS) that utilizes electromyography (EMG) signals generated by muscle activity to control body-assistive devices such as prosthetic limbs and rehabilitation systems. The system captures EMG signals from muscle fibers and transforms them into a bispectral representation, enabling the extraction of robust and invariant features that accurately reflect the user's intended movements. By leveraging advanced bispectrum analysis, the technology improves signal interpretation, reduces the effects of noise and variability, and enhances movement classification accuracy. The extracted features are converted into control commands that drive actuators, resulting in responsive, precise, and natural device movements. The technology is well suited for prosthetics, rehabilitation robotics, exoskeletons, and human-machine interface applications, helping improve mobility and quality of life for users with motor impairments.

Block Diagram



Technical Applications

The technology combines higher-order bispectrum analysis, orientation-based invariant feature extraction, and a lightweight LDA classifier to deliver accurate, robust, and real-time EMG signal classification. Its ability to operate efficiently on low-cost embedded hardware makes it suitable for next-generation wearable medical devices, intelligent prosthetics, rehabilitation systems, and human-machine interface applications.

Salient Features

- ✓ Advanced Bispectrum Analysis
- ✓ High Accuracy & Noise Immunity
- ✓ Robust & Invariant Features

Glimpse of the Technology



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iTNT-TECH-0170



TECHNOLOGY SECTOR

Biotech & Healthcare



IP STATUS

Patent Granted



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TECHNOLOGY READINESS LEVEL

TRL 3

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