Wrist/Arm Orthotic Device for Essential Tremor Patients

Description of Technology
The wrist/arm orthotic device is designed to increase fine motor functions for Essential Tremor patients or individuals with fine motor disabilities by suppressing the amplitude and frequency of hand tremors. Tremor suppression is achieved by utilizing mechanical dampers as well as viscoelastic materials to cradle the wrist and hand on a wheelchair or table mounted support device. This support device can be customized for a patient’s individual tremor motions. Steady-state hand tremors tend to exhibit simple harmonic motion associated with frequencies of 2-11 Hz, and maximum amplitudes of 7.8 inches. This technology will enable the user to accurately touch a 1 inch by 1 inch square.

Applications
This technology is meant for Essential Tremor patients or patients with fine motor disabilities to enhance arm control and suppress hand tremor movements in order to achieve simple everyday tasks.

Features & Benefits
- Customizable for reducing patient’s unique hand tremor motions
- Capable of mounting on table-tops or wheelchairs
- Adjustable to individual arm sizes and weights
- Made with lightweight materials
- Suitable for left & right hand users

Market Opportunity
There are approximately 1.5 million people in the United States suffering from Essential Tremor. Most treatments of moderate to severe tremors are expensive pharmaceuticals or invasive surgeries. The market for non-invasive treatments is growing. Research has increased dramatically in the last decade for wearable orthotic devices for tremor suppression.