

The Office of Technology Management

UNIVERSITY OF TEXAS  ARLINGTON

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Skeletal Muscle Recovery using Bubbles

INVENTORS: Dr. Muthu Wijesundara

TECHNOLOGY NEED

People with orthopedic disorders and muscular weakness need exoskeleton to help improve their mobility and agility. The current market products are incredibly expensive, bulky in size, and the snapping elastic bands are difficult to maintain. Moreover, these are also limited to small size joints, variable strength requirements and complexity of control. Also, the soft actuators aren't able to deliver the high power demanded by various applications and have non-linear actuation. A need for a frugal and dexterous substitute to the current state of the art exoskeleton system is in high demand.

INVENTION DESCRIPTION/SOLUTION

Researchers at UTA have developed a bubble actuated exoskeleton system for rehabilitation of Joints. This innovative approach allows both - continuous passive motion and active resistive motion. The sensor actuated valves automatically manipulate the shape of dynamic surface while interacting with user. The benefits of rigid and soft actuators are included simultaneously. With this exoskeleton, the user can control the joints individually and efficiently, with minimum muscular stress and maximum comfort.

APPLICATIONS

- Skeletal Muscle Recovery
- Hand Safety gear
- Muscle Power Augmentation

KEY BENEFITS

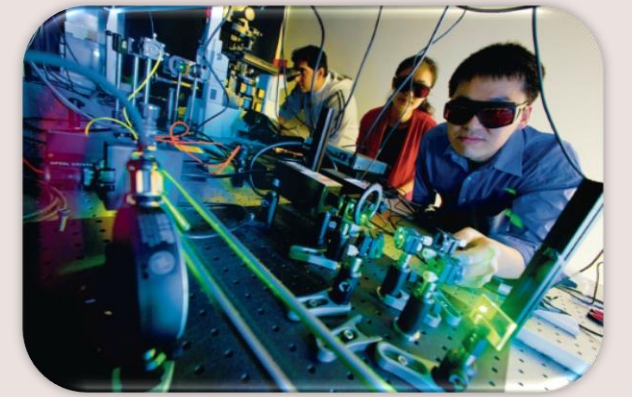
- Effective rehabilitation of Joints.
- Easily Customizable.
- Continuous Passive motion and active resistive control.
- Low Maintenance.

STAGE OF DEVELOPMENT

Prototyped and tested

Publication

[CBS 11 NEWS Link](#)



More about the Inventors:
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