

The Office of Technology Management

UNIVERSITY OF TEXAS  ARLINGTON

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Pressure Offloading and Redistribution for the Prevention of Pressure Ulcers

INVENTOR: Muthu B .J. Wijesundara & Wei Carrigan

TECHNOLOGY NEED

Work/sleep-related musculoskeletal discomforts are stressful and can result in life-threatening pressure ulcers. Numerous seat/ mattresses in the market claim to be comfortable, but none of them satisfy all types of people. A 240-pound person may describe a mattress as soft while a 130-pound person may describe the same mattress as firm. There are no ergonomic seat/ mattresses in the market that adjusts comfort level (without customization) to suit any individual's needs. Hence there is a need for an ergonomic technology that provides full control on individual's comfort with real-time pressure mapping and vibration reduction.

INVENTION DESCRIPTION/SOLUTION

Researchers have developed a novel sensorized bubble (fluid cell) actuator, a breakthrough in comfortable living seats/mattresses technology. The novel actuator creates an ergonomic surface with automated real-time pressure mapping according to individual's size, shape, and weight. The user interface displays the real-time pressure profile and allows the user to input requirements for selective offloading, redistribution, and repositioning for interface pressure modulation as well as vibration reduction.

APPLICATIONS

- Beds, mattresses, mattress overlay, seat cushions, and ergonomic chairs
- Airplane seats, automotive seats
- Medical and surgical beds

KEY BENEFITS

- Enhanced comfort
- Offloading and dynamic redistribution of pressure
- Real-time pressure mapping with minimized interface pressure
- Reduction of vibration using real-time dampening based measures
- Adaptability to an individual's size, shape, and weight (No customization needed)
- Recording pressure and vibration history

STAGE OF DEVELOPMENT

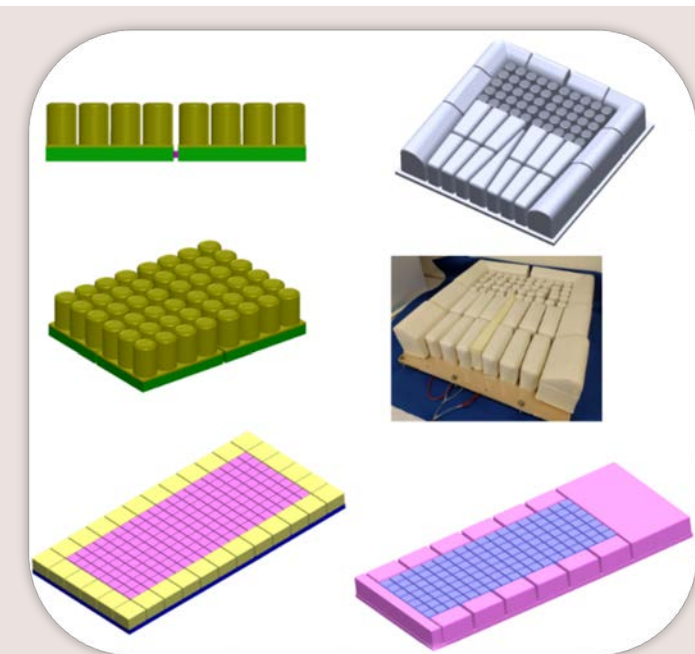
Prototyped

INTELLECTUAL PROPERTY STATUS

PCT Application

RELATED TECHNOLOGY

- UTA 13-27 [Concussive Gear](#) , [Automotive Seat Cushion](#), [Ergonomic Product & Prosthetics Liner](#)
- UTA 15-19 [Skeletal Muscle Recovery using Bubbles](#)
- UTA 16-35 [Diabetic foot Ulcer Prevention](#)
- UTA 16-40 [Variable Stiffness Surface](#)



More about the Inventor:
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