The Office of Technology Management

UNIVERSITY OF TEXAS ARLINGTON

Tech ID: UTA 13:24

Carbon Nanotube Sheet based Neural Electrode

INVENTOR: Young-tae Kim & Mario Romero-Ortega

TECHNOLOGY NEED

One in every 50 people lives with some form of paralysis. Despite the difficulty of not being able to move one's extremities, other complications that these individuals face are incontinence, difficulty with digesting food, difficulty with breathing, and ailments brought on by being stationary for prolonged times. Efforts to treat paralysis vary but one that is showing increased promise is stimulation of the remaining nervous system with implanted neural electrodes. Unfortunately, the current neural electrodes are plagued with the formation of scar tissue around the electrodes thus, rendering the electrode useless after a period of time.

INVENTION DESCRIPTION/SOLUTION

Researchers at UTA have developed a new carbon nanotube sheet (CNT-S) based neural electrode that resists the loss of capabilities due to the host's immune response. The CNT-S neural electrode improves the signal to noise ratio over the state of the art and enables signals to be gathered despite the formation of scar tissue. The device can also record other bio-signals to obtain an electrocardiogram or an electroencephalogram.

APPLICATIONS

- Advanced Prosthetic Limbs
- Nervous System Research
- Diagnostic Tool

KEY BENEFITS

- Implantable signal recording device
- A neural electrode with increased conductivity and decreased impedance
- Longer viability when implanted

STAGE OF DEVELOPMENT

Prototyped

INTELLECTUAL PROPERTY STATUS

US Patent Application

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