

The Office of Technology Management

UNIVERSITY OF TEXAS  ARLINGTON

Tech ID: UTA 15:49

Flexible Micro-Channel Regenerative Interface Electrode for Peripheral Nerve Regeneration

INVENTORS: Young-Tae Kim & Muthu Wijesundara

TECHNOLOGY NEED

The peripheral nerves are a complicated and vast network of nerves that facilitates the communication between brain and spinal cord with different parts of the body. Common causes for peripheral nerve injuries (PNI) include drug injection injury, electrical injury, compression, stretch/ traction injury and laceration. Every year, over half a million of people suffer from transected PNI. Electrical stimulation of peripheral nerve has been prescribed as a form of therapy for these patients. However, most of the peripheral nerve electrode arrays either invasively penetrate the nerve or are difficult to implement for nerves less than 500 μm in diameter. A non-penetrating implantable electrode array for small nerves is needed.

INVENTION DESCRIPTION/SOLUTION

Researchers in UTA and UTARI have developed an implantable electrode array specifically to accommodate nerves less than 500 μm in diameter. The electrode array allows electrical stimulation of peripheral nerves without invasive penetration and accommodates small nerves, as small as 25 μm in diameter. This electrical array is made of flexible transparent materials, which give surgeons a lot of flexibility to perform various nerve regeneration procedures. Electrical interfacing with the nerve using this device will be useful for many applications, including electrical therapies and neurally controlled interfaces.

APPLICATIONS

- Nerve Regeneration
- Advanced Prosthetic Limbs
- Nerve Systems Research
- Diagnostic Tool
- Electrical Stimulation Therapy

KEY BENEFITS

- Customized Nerve Size
- Customized Retrieve Method
- Customized Implant Time
- Flexible Material
- Accurately Locate the Injured Nerve with Device using Transparent Material

STAGE OF DEVELOPMENT

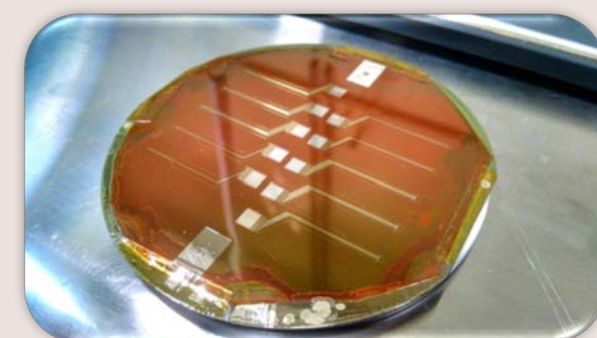
Prototyped

INTELLECTUAL PROPERTY STATUS

PCT Application

RELATED TECHNOLOGY

[UTA 14:14 UTA Regenerative Interface Electrode \(UTARIE\)](#)



More about the inventors:

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