

Novel electrode surface treatment for corrosion prevention

BACKGROUND

Corrosion is the deterioration of materials (generally metals) or its properties by chemical interaction with their environment. Corrosion can cause dangerous and expensive damage. Estimated annual global cost of \$2.5 trillion could significantly be reduced by the use of effective corrosion prevention methods.

Corrosion is a significant issue in hearing aids and can be caused by body chemistry (eg. sweat), water contact, dead blood cells, hair products etc. These factors cause loss of device function, increase in product returns and repair costs and compromise of product warranties.

New technologies are needed to protect hearing aids and equipment from corrosion.

OUR SOLUTION

We have developed a novel, low-cost surface treatment method to prevent corrosion in hearing aid devices. We demonstrated significant enhancement of corrosion resistivity of electrodes in hearing device in mechanical stress tests (pull-in and pull-out tests 1000 times) followed by 47 cycles of corrosion testing (harsh environment eg. elevated temperature and humidity with salt and other chemicals).

This technology is particularly designed for electrodes (pins) used in implanted cochlear devices and meets key requirements associated with such products:

- Biocompatible coating that allows regulatory requirements and direct skin contact
- Conductive material not adding any resistance to the system, which can affect sound quality
- Nanoscale coating – meets sealing and waterproofing requirements.
- Durable coating that enables years of use without replacement.
- Scalable and adjustable to other metals, connectors and electronic circuits.

APPLICATIONS

- ✓ Hearing implant fabrication
- ✓ Hearing aid devices
- ✓ Electrical devices (headphones, speakers etc.)

INVENTORS

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ADVANTAGES	BENEFITS
Anti-corrosion	Simple to use
Durable	Low cost
Conductive	Adaptable to other metals, connectors and circuits
Biocompatible	Nanoscale coating

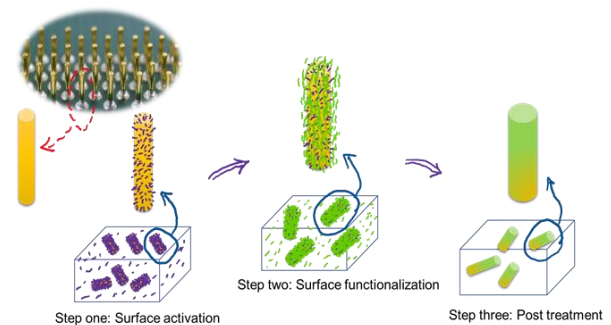


Figure 1. Basic outline of our novel surface treatment methodology

INTELLECTUAL PROPERTY POSITION

Provisional Patent Application

Corrosion resistant coatings

PARTNERING OPPORTUNITY

We are seeking an industry partner for further development and commercialisation of this technology through a research collaboration or technology licence.

WOULD YOU LIKE TO KNOW MORE?

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