UNSW researchers have developed the next generation of conductive polymers for safer, non-metallic, wireless medical device implants.

INVENTION NUMBER: 14_2995

The invention

Demand for implantable devices is expected to grow in the coming years due to the ageing of the world population and the rising number of patients suffering from chronic disease. Pacing devices, neurostimulators and drug implants are leading the way.

Yet, the stiffness and the poor bio recognition of materials used in existing devices may lead to scarring of tissues, exposure of the tissue to high current and a poor quality of the signal at the interface.

This invention is a method for preparing an electro conductive polymer material; the next generation of conductive polymers. This will lead to safer, non-metallic wireless implantable devices.

Providing a better interaction between biological systems and implantable devices, this invention can revolutionize the paradigm of personalised medical diagnostics, monitoring and treatment.
Key Benefits

- Electrically conductive polymeric materials
- Less scar tissue (better biocompatibility)
- Safer smaller current for nerve interaction
- Improve quality of the signal
- Miniaturization
- No need for wires
- Prototype materials have been generated and are undergoing testing

Potential Applications

- Medical diagnostics and monitoring
- Implantable medical devices
- Biochips
- Prosthetic devices
- Artificial and bionic organs
- Medical imaging
- Environmental monitoring and remediation

The Opportunity

UNSW is seeking a partner to license this technology or to work with the researchers to further develop this technology. A patent application was filed (PCT/AU2015/050846) on December 2015.

Researcher and Technical Details

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Key Publications

Conducting Polymers for Neural Prosthetic and Neural Interface Applications

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