
Bionic Technologies Australia

Restoration through Innovation

Established in 2005, Bionic Technologies Australia draws on the collective scientific research capabilities and impressive bionic technology commercialisation experience of its members to establish an Australian based bionic industry platform capability that provides an effective link between industry and academia.

The foundation members are:

The Bionic Ear Institute

Commonwealth Scientific & Industrial Research Organisation (CSIRO)

Intelligent Polymer Research Institute (IPRI), University of Wollongong

PolyNovo Biomaterials Pty Ltd

St Vincent's Hospital (Melbourne) Ltd

Bionic Technologies Australia has established expertise in converting early stage research into product outcomes and investment ready patent positions. The scope of our research includes both bionic and medical devices. The science capabilities of our partners have been organised within Bionic Technologies Australia in order to provide core development capabilities in:

- Neuroscience
- Biomedical Engineering
- Biomaterials
- Drug from Device Delivery

RESEARCH PROGRAMS

Peripheral nerve repair

Traumatic damage to nerves causes catastrophic loss of function in organ systems controlled by nerve function. Our Peripheral Nerve Repair Program utilises polymer tubular scaffolds with inbuilt features to encourage nerve growth initially aimed at repairing traumatic nerve damage in limbs. The device under development is designed to replace a segment of damaged nerve. It is sutured between the distal and proximal ends of the nerve and encourages new nerve growth down the conduit.

Infection control for implantable devices

Infection associated with implantable devices such as cardiac pacemakers, shunts, cochlear implants, and prosthetic joints continues to be an important medical consideration for surgeons and their patients. The Infection Control Program is developing a device coating that minimizes the risk of bacterial infection following implantation. This will be achieved using a bioerodable polymer that releases an antibacterial agent in a controlled fashion.

Epilepsy control

Epilepsy is a serious neurodegenerative disorder where approximately a third of patients do not respond to current pharmacological interventions. The Epilepsy Control Program interfaces signal processing technology with deep brain stimulation to produce a closed-loop electronic implantable device. This implant will recognise and control epileptic seizures either by the stimulation of target regions within the CNS or by the controlled release of therapeutic drugs.

OUR RESEARCH CAPABILITIES

- Design and synthesis of novel biocompatible synthetic polymers
- Development of cell-based biomaterial scaffolds
- Textile fabrication of biomaterials
- Innovation and evolution of material technologies tailored to defined market and clinical needs
- Biocompatibility: understanding and characterisation of cell-material interactions
- Animal studies
- Signal processing and analysis
- Neurophysiology and biology
- Microelectronics

OUR DEVELOPMENT CAPABILITIES

- Established expertise in taking new biomaterials technologies through from laboratory to production to market
- Recognised experience with scale-up, process stabilisation and manufacture appropriate for the medical device industry
- Experience with regulatory framework
- Formulation of clinically safe biomaterials, electrode development, biological testing and evaluation (in vitro and in vivo)
- Prototype production
- Clinical feedback

CONTACT DETAILS

Dr Russell Tait
CEO
Bionic Technologies Australia

384-388 Albert Street, East Melbourne
Victoria 3002 AUSTRALIA

T +61-3-9667-7545 F +61-3-9667-7518

E Russell.Tait@bionicttechnologies.com.au

W www.bionicttechnologies.com.au

Restoration through Innovation

Supported by the Victorian Government's Science, Technology and Innovation Initiative

