

Faculty of Engineering

Summer Research Program 2022-2023

Project Title: Gold Nanowire Electronic Skins for Remote Biodiagnostics

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Objective

In this summer project, a selected student will work with lab researchers to learn about fabrication of gold nanowire tattoos and apply them as remote diagnostics tools for real-time monitoring cells and tissues. This will offer the solution to develop personalised medicine.

Project Details

Future electronics will evolve via a drive towards miniaturization, with a view to developing faster, softer, smaller, thinner and more integrated devices, which meet difficulties on rigid but brittle conventional semiconductor-based printed circuit boards. An alternative approach is to integrate the attributes of flexibility and stretchability to realize soft and human-friendly devices. Such soft materials could be exploited in the development of ultrathin and ultrasoft electronics that can be firmly attached to cells and/or tissues, which are considered as the ultimate version of future bio-integrated electronics.

In this context, the Monash Nanobionics lab has developed a powerful gold nanowire coating technologies enabling fabrication of a range of wireless biosensors that can detect a wide range of biometrical data including glucose, lactate, cationic ions and pH and wirelessly transmit data to a smart phone.

Additional Information

Applicants may be required to attend an interview