

Project Summary – INTERN3



PROJECT INFORMATION

BeFC produce paper-based fuel cells that use enzymes to convert natural fuels (glucose and oxygen) into electricity. BeFC technology provides an environmentally-friendly, thin, flexible and metal-free energy source for low-power electronics.

This student project will involve the design and optimisation of short-range antennas for near-field communication (NFC) and Bluetooth Low Energy (BLE) communication to be incorporated into an electronic platform including a paper-based biofuel cell.

The student will develop a multiphysics model for finite element analysis (FEA) to be used to explore the effect of antenna geometry and interrogate any interference caused by materials used in the BeFC platform.

Finally, the student will experimentally verify the passive components used to tune the antennas and empirically validate the model using experimental radio frequency (RF) measurements of the various designs, integrated with biofuel cells provided by BeFC.

A range of electronic test equipment will be available to the student to complete the project (e.g., oscilloscope, digital multimeter, waveform generator, RF analyser).



PROJECT SCHEDULE

