

# Project Summary – INTERN4



## 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 studying the power requirements of the latest ST Microelectronics 32-bit Arm® Cortex® system on a chip (SoC) platform with sub-GHz radio designed for low power wide area network (LPWAN) (e.g., LoRa™ and sigfox™) connectivity, along with auxiliary sensors (e.g., temperature, inertia, pressure). The student will first investigate the theoretical power consumption of data transmission of sensor data within a range of defined scenarios.

Next, the student will experimentally test their theoretical assumptions, and refine their previous estimates. Based on the experimental findings, the student will optimise the firmware with the objective of minimising the power burden, whilst retaining suitable data transmission efficiencies.

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

## PROJECT SCHEDULE

