

## Job Description & Key Responsibilities

We are inviting applications for a **Research Assistant** position to join our dynamic and interdisciplinary team focused on developing a portable wireless reader. The successful candidate will support research activities at the interface of reader hardware, embedded firmware, interface software, and point-of-care (POC) biomedical diagnostics.

This role offers hands-on experience in building and testing portable electrochemical reader systems, interface software, and basic AI-enabled analytics pipelines to translate multiplex sensor signals into clinically meaningful outputs.

### Key Responsibilities:

- Reader Hardware and Embedded System:
  - Assist in prototyping portable electrochemical reader hardware, including potentiostat front-end circuits, data acquisition components, and power management systems.
  - Support embedded firmware development for sensor control, data acquisition, device calibration, and basic self-test routines.
  - Perform hardware testing, troubleshooting, and performance characterization (noise, stability, reproducibility).
- Software Platform, User Interface & AI Analytics Integration
  - Assist in developing and maintaining interface software (mobile, tablet, and PC) for device control, test workflows, and data visualization.
  - Support integration of signal processing and basic AI analytics modules for automated data interpretation.
  - Assist with wireless communication setup, data transfer validation, and system reliability testing.
  - Help document system performance, testing protocols, and cybersecurity or data handling procedures where applicable.

Successful candidate will be offered a full time (contract) as a member of the laboratory.

## Requirements

### Qualifications:

- Bachelor's or Master's degree in Electrical Engineering, Computer Engineering, Biomedical Engineering, Computer Science, or a related field.
- Practical experience (through coursework, projects, or research) in embedded systems, electronics, or software development.
- Basic knowledge of data acquisition systems, microcontrollers, or sensor interfacing.
- Strong organizational and problem-solving skills with attention to detail.
- Ability to work effectively within multidisciplinary research teams.

### Preferred Skills:

- Experience with microcontrollers, analog front-end circuits, and wireless communication modules.
- Familiarity with electrochemical sensing systems or measurement hardware.

- Basic signal processing or data analysis (Python, MATLAB, or similar tools).
- Experience developing simple user interfaces or data visualization tools.
- Interest in portable diagnostics, hardware-software integration, and applied biomedical engineering.

To apply, please send your cover letter, CV and names of 3 references (name, institution, email) to Prof Lim Chwee Teck at [ctlim@nus.edu.sg](mailto:ctlim@nus.edu.sg). Only shortlisted candidates will be contacted.