



Job Title: Senior Electronics Engineer (Hardware + Embedded Systems)

Location: Thiruvananthapuram, Kerala (Bio360 Life Sciences Park)

About Us:

Accubits Invent is a pioneering research and development company committed to innovation in material sciences, and advanced diagnostics. We specialise in transforming scientific ideas into impactful solutions with a focus on healthcare, environmental sustainability, and agricultural applications. Our patented products, such as VolTrac, exemplify our mission to revolutionise diagnostics and global health systems.

Role Objective:

Own and execute the electronics architecture, circuit design, PCB development, bring-up, and validation for proprietary sensor-powered devices—taking them from prototype to design-locked pilot builds, and enabling certification-ready documentation and test workflows.

Key Responsibilities:

Hardware & Electronics Development

- Design analog front-end + mixed-signal circuits for chemi-resistive VOC sensor readouts (low-noise measurement, multiplexing, calibration hooks).
- Develop multi-channel sensor acquisition systems (array readout, switching/mux, stable excitation, ADC strategy, drift compensation).
- Design power systems (battery/adapter), protection, charging, thermal considerations, and low-power modes.
- Integrate supporting subsystems: pumps/valves, heaters, flow sensing/MFC interfaces (where applicable), environmental sensing (T/RH), safety interlocks.

PCB Design, Bring-Up, and Debug

- Create schematics, layout, and releases using Altium/KiCad/Eagle (or equivalent).
- Perform board bring-up: soldering/rework, oscilloscope/logic analyzer debugging, EMI noise tracing, signal integrity checks.
- Own BOM, component selection (availability, alternates), and cost-performance tradeoffs.

Prototype → Pilot Manufacturing Enablement

- Drive DFM/DFT: panelization inputs, assembly notes, programming fixtures, test points, calibration ports.
- Build production-lean test workflows: test jigs, QA checklists, acceptance criteria, yield tracking.
- Manage vendor coordination: PCB fab/assembly, enclosure integration, harnessing, connectors, programming stations.

Verification, Documentation, and Certification Support

- Plan and execute electronics verification: functional tests, reliability screening, stress tests, and environmental tolerance.



- Support certification readiness for products (CE/RoHS/EMC as applicable) and medical device pathway (documentation discipline aligned to ISO 13485-style practices).
- Maintain clean documentation: design history notes, revision control, test reports, calibration procedures, and traceability.

Cross-Functional Collaboration

- Work closely with sensor/material teams and software/AI team to ensure signal quality and data integrity.
- Translate clinical/pilot needs into robust electronics and sampling workflows.

Required Skills

- Strong fundamentals in analog + digital electronics, mixed-signal design, and instrumentation.
- Proven capability in schematic + PCB design and board bring-up/debug.
- Comfort with lab tools: DMM, scope, logic analyzer, power supplies; hands-on soldering/rework.
- Understanding of noise, grounding, shielding, filtering, and stable measurement techniques.
- Practical experience converting prototypes into buildable, repeatable pilot hardware.

Preferred

- Experience with medical devices or regulated hardware (design controls, documentation discipline).
- Familiarity with EMC/ESD considerations and pre-compliance testing practices.
- Embedded familiarity (ESP32/STM32/NRF etc.), BLE/Wi-Fi, UART/I2C/SPI, OTA concepts.
- Test automation using Python, scripts for production testing, calibration routines.
- Experience with sensors (gas/VOC/chemical), low-level resistance measurement, multiplexed arrays.

Qualifications

We value capability over credentials. Degrees are not a filter if your work demonstrates you understand the underlying science and engineering.

Show evidence: prior PCBs, prototypes, test setups, GitHub, photos, reports, or a portfolio.

Why Join Us?

- Work on a patent-backed VOC sensing platform with real clinical and deployment roadmaps.
- High ownership in a small, execution-focused team; direct access to leadership and rapid iteration.
- Performance-linked growth pathway and long-term upside (role-dependent).

How to Apply: [Application Link](#)



INVENT

If you are passionate about advancing the frontiers of Material Science and Nanotechnology, we would love to hear from you!

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