



**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!

Accubits Invent Private Limited  
Bio360 Lifesciences Park, Thonnakkal  
Thiruvananthapuram, Kerala, India - 695317  
W: <https://ainvent.org>  
M: [admin@ainvent.org](mailto:admin@ainvent.org)  
P: +91 6282 40 6622 (IN)