

FemtoSense Precision

Revolutionizing Health Measurement with the Femtoampere Meter



Positive Impact

Lowering the signal detection limit to improve medical research, early-stage disease detection, drug-testing, and much more!



Initial Validation

CERN has tested and validated the functionality under rigorous conditions at leading research facilities and medical centres.



Solution

The femto-ampere meter designed at CERN, the European Organization for Nuclear Research, is unique due to its capabilities tailored specifically for the high-energy physics experiments conducted at the facility. It provides **high accuracy** and **sensitivity** coupled with **high robustness** and reliability, therefore a suitable device for high-stakes environments where precise current measurements are critical. Moreover, such a device will **cost ~80% less** than the current state of the art.



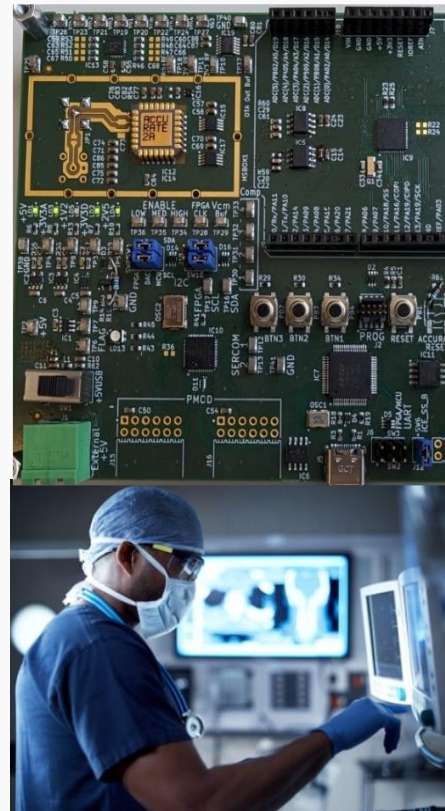
Problem

A femto-ampere meter, typically abbreviated as "fA meter," is a highly sensitive instrument used to measure extremely low currents on the order of femto-amperes (10^{-15} amperes). Current femto-ampere meters are **expensive and cumbersome**.

However, lower detection limits can improve the **early-stage detection**, recording and analysis of electrical activity in biological systems such as the heart, brain, and muscles

Technology

- A novel Application Specific Integrated Circuit (ASIC) have been designed, build and thoroughly verified.
- 130 nm process
- Measures currents from 1 femtoamperes to 20 microamperes resolution of 0.2 fA, without band switching. -4 fA leakage



Call to Action !!!

We are looking for business developers, medical market experts, electrical engineers, nanotechnology and material scientists, physicists, optical engineers to develop this technology into a market ready product.

If you are interested, please reach out to entrepreneur@hightechxl.com



Potential Markets

- Healthcare: Utilize the Femtoampere Meter for critical health measurements, for example, conducting tests using just one droplet of fluid, significantly reducing the sample size required and speeding up diagnosis.
- Biomedical Research: Enable precise measurements at the cellular and molecular levels.
- Environmental measurements: Precise air quality, temperature fluctuations, humidity, and gas concentrations measurements at a large scale with remote sensors in an IoT network