

IN VITRO DIAGNOSTICS: CHALLENGES & THE FUTURE

Addressing tough technical challenges early in the design stage boosts compatibility, reliability, and saves \$\$ on costly reengineering down the line.

Top 4 challenges of in vitro diagnostic (IVD) equipment development:

1. **Accuracy and Precision:** Accuracy and precision is critical to ensuring that results are reliable and reproducible. Errors in measurement can have significant consequences for patient care.
2. **Temperature Control:** Temperature is a critical aspect of IVD device performance as many of these devices require specific temperature conditions to ensure accurate and reliable results.
3. **Regulatory Compliance:** IVD devices are subject to strict regulatory requirements, and must meet them to receive clearance or approval for use.
4. **Data Analysis:** Large amounts of generated data must be analyzed and interpreted, requiring sophisticated algorithms and software that can be challenging to develop and validate.

The in vitro diagnostics market is expected to reach

\$106.9BN

in 2030.

Growing at a CAGR of 4.08% (2021-2030).

Approximately 5% of adults in the US, more than

12 million

individuals, experience a diagnostic error in the outpatient setting every year.



Technology Trend:

Advances in technology are driving innovation in the IVD market, with a focus on developing more accurate, sensitive, and specific diagnostic tests. Technologies such as next-generation sequencing, digital pathology, and artificial intelligence are expected to have a significant impact on the IVD market in the coming years.

Boston Engineering has expertise in design for X (DFX), embedded and control systems, mechanical design, digital solutions, and more!

Want to *Imagine the Impact?*

Visit us at www.boston-engineering.com/medical