

# Real-Time Antigen-Antibody Detections (RTAAD)

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## Abstract

- **RTAAD** device is an advanced medical diagnostic tool designed to provide real-time, accurate, and reliable antigen-antibody detection for various conditions, such as infectious diseases and autoimmune disorders. It offers enhanced sensitivity and significantly reduces the risk of errors in test interpretation.
- **Objectives:** Improve diagnostic speed, accuracy, and efficiency by automating antigen-antibody detection on real-time results to make better-informed decisions.
- **Impact:** The device is expected to transform healthcare systems, reducing diagnostic errors and improving patient outcomes globally.
- **Feasibility:** The technology is feasible with existing diagnostic tools.
- **Expected Results:** Faster, more accurate test results will improve clinical decision-making, reduce costs, and optimize healthcare delivery.

## Methodology

- **Test Mechanism:** RTAAD operates based on the principle of antigen-antibody binding and real-time signal detection:
  1. **Sample Application.**
  2. **Binding & Complex Formation.**
  3. **Signal Detection.**
  4. **Signal Amplification.**
  5. **Real-Time Data Processing**
- **Technological Alignment:** Utilizes advanced diagnostic technologies, including real-time signal detection, signal amplification, and automated data processing, keeping pace with global technological advancements.

## Introduction

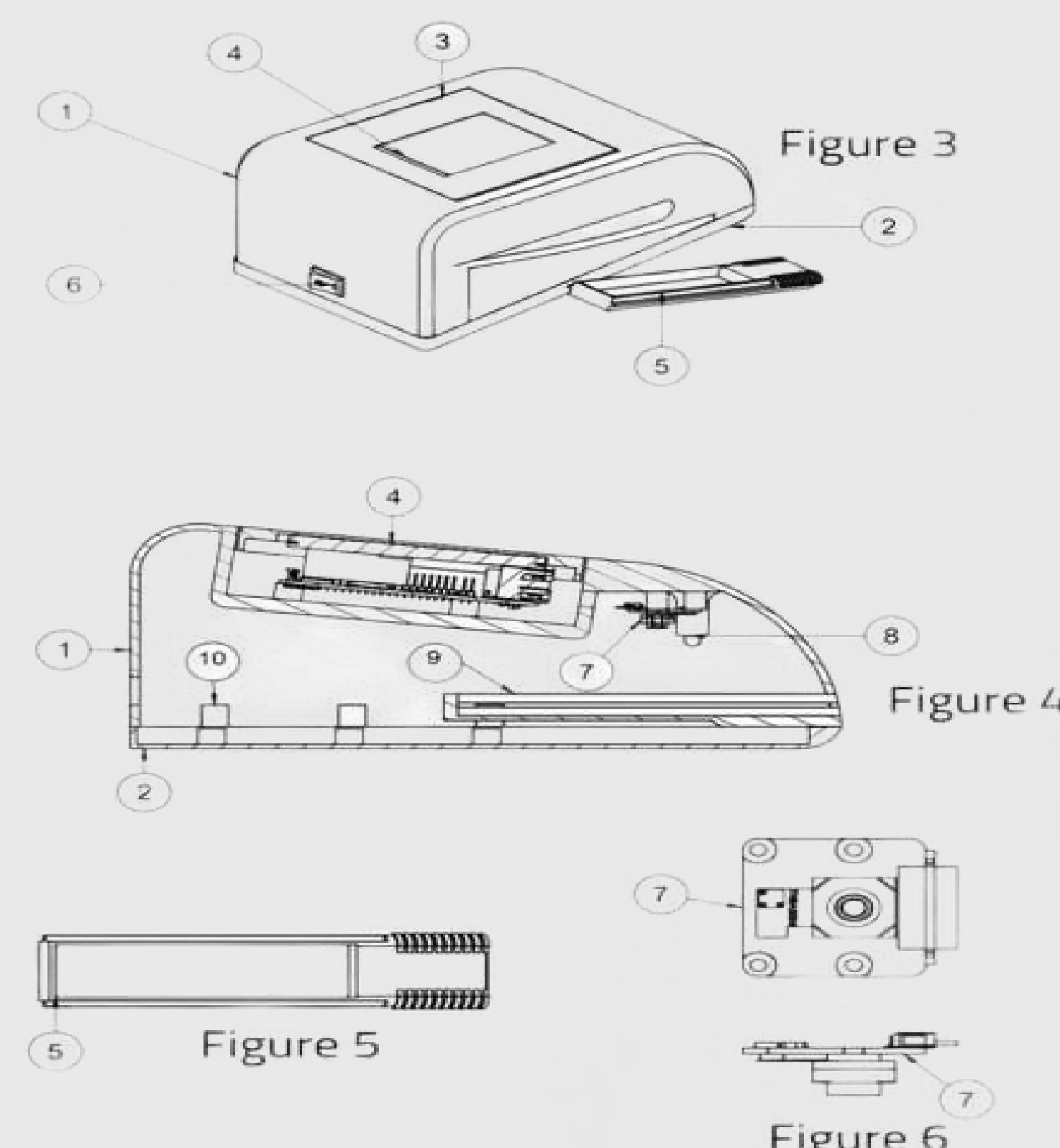
- **Background:** Accurate antigen-antibody detection is a critical aspect of diagnosing numerous diseases, such as infections and autoimmune disorders.
- **Problem:** Manual diagnostic methods lead to delays in diagnosis.
- **Solution:** RTAAD provides a groundbreaking solution by offering automated, real-time diagnostic results that enhance accuracy and reduce errors.
- **Alignment with KSA Priorities:** RTAAD aligns with KSA Vision 2030 goals to improve healthcare quality, enhance research and innovation in healthcare technologies.
- **Global Goals:** This invention supports Good Health and Well-being Goal by improving access to diagnostic tools, reducing healthcare costs, and better health outcomes.

## Applications

- **Primary Use:** RTAAD will be used for rapid and reliable diagnosis in hospitals, clinics, and point-of-care environments, providing healthcare providers with real-time results to make informed decisions.
- **Diseases and Conditions:**
  - **Infectious Diseases:** Can be used to diagnose **COVID-19, HIV, flu**, and other infectious diseases quickly.
  - **Autoimmune Disorders:** Valuable for diagnosing rheumatoid arthritis, lupus, and other autoimmune diseases.
- **Global Demand:** The device has the potential for worldwide demand, especially in countries with limited access to traditional diagnostic resources.
- **Continuous Need:** Diagnostics are needed year-round, with a consistent demand for rapid testing, particularly during pandemics or disease outbreaks.
- **Commercial and Economic Viability**

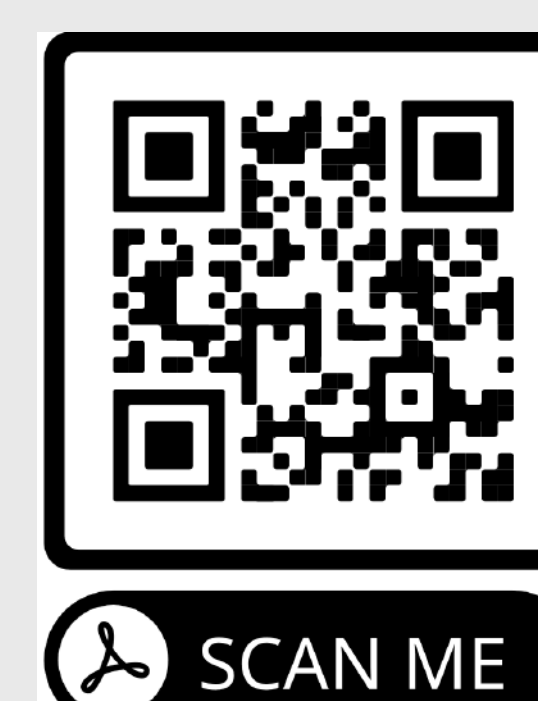
## Motivation

- **Need for Speed and Accuracy:** Traditional diagnostic methods are slow, and errors can occur due to manual interpretation. RTAAD addresses this need by delivering accurate and timely results, which are crucial for patient care.
- **Economic Impact:** Cost Reduction, Economic Returns, Demand, Geographical Scope
- **Commercialization Potential:** The device is easily scalable for mass production with high investment potential.
- **Global Adoption:** RTAAD can be marketed globally, especially in developing countries and emerging healthcare markets.



## Contact

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