



# National Hub for Healthcare Instrumentation Development

Medical Devices Development &  
Commercialization Product Profiles



**Partnering Institutions:** Anna University-ECE, CME, DBT, E&I, DME,  
REC, IISc, VIT & CMC, TANUVAS, MERF and Stanley Medical College

# COMMERCIALIZED AND IN MARKET

## CMCdaq - Data Recording System for Physiology



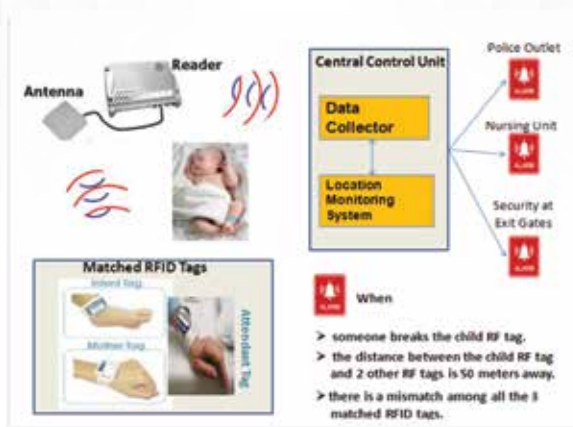
CMCdaq is a recording system designed for long term monitoring of Physiological data for human recording with full electrical isolation. It can be operated with Desktop, Laptop, Netbook or similar computer system using standard Microsoft Windows. Despite of its small size this sophisticated electronic system ensures high quality recording and it has the capability to record for several hours & display data in real time during recording.

## Synthetic Milk Testing Meter



Synthetic Milk Testing Meter is a “Dip and Read” device can be made to rapidly assess synthetic milk contamination and to screen milk samples in collection centers. It has the additional capability of differentiating cow milk & buffalo milk and detecting adulteration by mineral salts. Owing to its compact design, it is easy to carry anywhere without any hazard. And it is an advantageous device to safeguard society from milk adulteration.

## RFID – Based Infant Theft Prevention System



Radio-Frequency Identification (RFID) system has been specially developed with an innovative design to meet the challenges of preventing infant theft in highly crowded government hospitals with little regulatory mechanisms and porous structure. RFID method utilizes radio waves; the reader then converts the radio waves to a more usable form of data. Information collected from the tags is then transferred through a communications interface to a host computer system, where the data can be stored in a database and analyzed at a later time.

# Centre for Calibration and Testing of Medical Equipment (CCTME)

## NHHID – TESTING & CALIBRATION CENTRE

THIS UNIQUE CENTRE IN UNIVERSITY SET-UP IS FIRST-OF-ITS-KIND TO ENABLE STANDARDIZED QUALITY INSTRUMENT-BASED HEALTHCARE IN THE COUNTRY. (VISIT OUR WEBSITE FOR MORE DETAILS ([www.nhhid.org](http://www.nhhid.org)))



Centre for Calibration and Testing of Medical Equipment (CCTME) is a first of its kind sophisticated laboratory established by NHHID and equipped with state-of-the-art calibrating equipments, IEC standards, operating procedures and trained professionals guided by faculty experts to perform calibration of medical devices to ensure reliable performance for quality healthcare. Credible traceability certificates along with detailed calibration reports make it a preferred destination. CCTME has set a trend which is now included in NABH accreditation. CCTME has applied for NABL accreditation for specific criteria of medical device (NABL - 126) and increasing it's capability to 62 medical devices.

## Development of material for anchor and non-biodegradable suture for orthopaedic applications



The fully threaded suture anchor featuring dual threads for ligament bone suturing as in shoulder surgeries. This is an import substitute made available at one third of the imported anchor cost. It has a covered saddle tip to protect the sutures and is cannulated to channel growth factors. It is manufactured with PEEK material which is a thermoplastic material with excellent biocompatibility & bio-stability characteristics.

# TECHNOLOGY TRANSFERRED FOR COMMERCIALIZATION



## Mass screening gadget for ophthalmic lesions



Artificial Intelligence (AI) based detection of glaucoma and diabetic retinopathy from fundus images. These eye conditions do not show any symptoms and if untreated, may lead to permanent loss of vision. It can be used in screening for glaucoma and diabetic retinopathy and even by the para medical personnel using the fundus cameras as in camps or public screening.

## IgM-Sensor based fluorimetric detection of Leptospirosis



Leptospira IgM ELISA test was developed by TANUVAS – being the referral lab with the same performance characteristics as the currently popular MAT has been developed using an engineered recombinant polypeptide consisting of eight epitopes that can detect different pathogenic leptospiraserovars.

## Hystero Electrical Activity Mapping (HEAM) Device



Totally non-invasive with disposable electrodes (eliminating the cumbersome belt) is a patented innovative design. The status of the fetus can be continuously monitored which is vital during labor. When the fetus is under stress it is mandatory to monitor the fetus for fetal heart rate in relation with uterine contraction during pregnancy and labor. This is essential to assess the condition of the fetus and hence decide on the course of the delivery procedure in a short critical time. It has been clinically validated.

# FOR TECHNOLOGY TRANSFER & COMMERCIALISATION

## Automated Antibiogram Device



A totally indigenously developed R&D outcome from Anna University. It is based on our own discovery, inexpensive method developed and in-house fabricated prototype not available anywhere else globally. The clinically validated superior new technique and technology is meant for highly affordable Physician's Aid for Antibiotic Sensitivity (PAAS), for effective antibiotic treatment, morbidity and mortality reduction, multidrug resistance identification and antibacterial screening. This fully customizable antibiotic panels and device will bring better compliance to antibiogram tests before treatment with antibiotics and reduce spread of MDR.

## Arthroscopic implant-less transosseous cuff repair system



A totally indigenously developed surgical device meant for a superior shoulder surgery procedure as a replacement for the current anchor type for better attachment between the bone and the ligament, treatment efficacy and to reduce surgical cost. Arthroscopic Trans-osseous repair blends the benefits of both cuts & cost.

## Real Time Urinometer



Urine volume measurement is vital clinical information required to assess fluid management for hospitalized patients. It is measured from input & output charts by bedside staff often done with poor time accuracy. This Urinometer is developed to measure the flow and volume of urine of Acute Kidney Injury patients (Sepsis, Hypovolemia, Biological toxins, Nephrotoxic drugs, surgical causes & Obstetrical causes). The attender is alerted when the urine output is low or patient is likely to suffer kidney injury within 12hrs.

## Low Cost Sweep VEP System



The sweep VEP device helps to have an objective assessment of vision to people in whom it is difficult to assess and also who cannot respond to routine assessment such as young children, preverbal children and people with cognitive disabilities. The device also helps in deciding surgical intervention where vision is difficult. It aids in assessing the visual pathway in neurological disorders. The main aspect of this device is to take less time and easier to administer than conventional preferential looking tests that are used to assess vision in very young children.

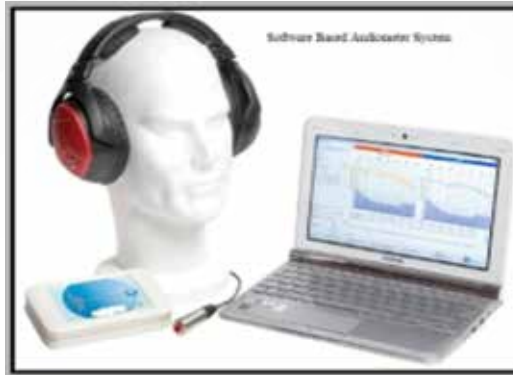


# Design and Development of Automated External Defibrillator



“MITIE AED” Industry prototype has the automatic vernacular language selection and the accurate energy delivery mechanism based on patient’s thoracic impedance. A built-in computer checks a victim’s heart rhythm through adhesive electrodes. The computer calculates whether defibrillation is needed. If it is, a recorded voice prompts the rescuer to press the shock button on the AED.

## Web Based Audiometer



This soft-audiometer is a calibrated, low-cost and efficient computerized audiometer for audiological investigations using vernacular language for obtaining proper audiogram and early detection of hearing defects with customized audiological investigations. The developed soft-audiometer is easy to install in any multimedia computers without the requirement of any additional hardware components except the headphone. It is provided with options to present customer required frequencies and decibel levels. Words from multiple native languages for speech audiometric test can be included easily.

# IN SERVICE FOR COMMERCIALISATION

## Single Unit Wireless Device for Salivary Stimulation in management of Xerostomia



Wireless Salivary Stimulation device sends electrical impulses through the electrodes to the body (conductor) and serves to stimulate the nerves which results in stimulation of salivation. In order to improve the volume of saliva produced, the device works at a low frequency so that the parasympathetic nerves are stimulated and thereby stimulates serous salivation.

## “Padma Pada” –A foot abduction brace with a compliance monitor for clubfoot deformity in children



Clubfoot is the most common orthopaedic congenital deformity (2.5/ 1000 live births) where child is born with an inward twisted foot. Treatment includes correction with plasters followed by a foot abduction brace application for the next 2 to 5 years. The commonest cause of treatment failure is noncompliance with the traditional clubfoot braces which do not allow movements of the child's lower limb and foot. Our team has developed a brace named “Padma Pada” which allows four degrees of freedom and is equipped with novel compliance monitoring device and software.

## NHHID – FACULTY BEHIND THE ORGANIZATION



**Prof. S. Muttan**

Coordinator

Tel: 044 – 2235 8880

Email: muthan\_s@annauniv.edu



**Prof. S. Meenakshisundaram**

Co-Coordinator

Tel: 044 – 2235 9100

Email: meenakshi@annauniv.edu



**Prof. K. Sankran**

National Networking Consultant

Tel: 044 – 2235 7939

Email: ksankran@yahoo.com



**Dr. M. Sasikala**

Deputy Coordinator

Tel: 044 – 2235 8906

Email: sasikala@annauniv.edu



**Dr. M. Sasikala**

Deputy Coordinator

Tel: 044 – 2235 8906

Email: sasikala@annauniv.edu



**Dr. M. Sasikala**

Deputy Coordinator

Tel: 044 – 2235 8906

Email: sasikala@annauniv.edu

## FOR FURTHER DETAILS

### Networking, Business and Collaboration related queries

Name Mr. P. Krishnamoorthy  
Designation Business Liaison Officer  
Contact 044 2235 7941, 7598132728  
E-mail blo.nhhid@yahoo.com

### Testing & Calibration of Medical Devices

Name Mr. G. Srinivasa Raja  
Designation Project Scientist, Centre for Testing & Calibration  
Contact 044 2235 7942, 9840862782  
Email nhhidcalib@yahoo.com / gmail.com

### Admin and General queries

Name Mr. Prakash Ayyappa  
Designation Special Officer  
Contact 044 2235 7938 ; 7953, 9003416681  
E-mail au.nhhid@gmail.com / yahoo.com

### Address

National Hub for Healthcare Instrumentation Development (NHHID)  
2nd Floor, Opposite to Mining engineering, Kalanjyam Building,  
CEG Campus, Anna University, Chennai - 600 025.  
Ph. 044-2235 7938  
Website: [www.nhhid.org](http://www.nhhid.org)

