



Office of the Principal Scientific Adviser  
to the Government of India

A JOINT INITIATIVE BY THE S&T CLUSTERS



# COMPENDIUM OF DEPLOYABLE TECHNOLOGIES IN HEALTHCARE





# MESSAGE

In an era defined by unprecedented challenges and groundbreaking advancements, the synergy of Science and Technology (S&T) clusters has emerged as a driving force in the healthcare sector. This compendium delves into a diverse spectrum of projects and initiatives undertaken by various S&T clusters, shedding light on their transformative contributions to the ever-evolving landscape of healthcare. Notably, the technologies that these start-ups are building are all ready to deploy, underscoring their practical impact on healthcare.

The healthcare sector is no longer just a domain of medical practitioners. It has become an area where innovation converges with science, where technology amplifies the reach and impact of medical interventions, and where collaboration powers progress. S&T clusters, with their multidisciplinary approach, are at the forefront of this dynamic transformation.

This compendium is a testament to the collective efforts of S&T clusters, their commitment to improving healthcare outcomes, and their unique ability to bridge the gap between research and practical application. The projects featured herein encompass a wide range of fields, from telemedicine and data analytics to biomedical research and drug development. Through these endeavors, S&T clusters are shaping the future of healthcare, optimizing patient care, and enhancing the efficiency of healthcare delivery systems.

As you delve into the following pages, you will gain insights into the innovative solutions, cross-sector collaborations, and the profound impact that S&T clusters have had on the healthcare sector. It is our hope that this report not only informs but also inspires further exploration and collaboration in this vital area of human well-being.



**Bengaluru Science and  
Technology Cluster (BeST)**



**Pune Knowledge Cluster  
(PKC)**



**Bhubaneswar City Knowledge  
Innovation Cluster (BCKIC)**

A central graphic consisting of seven thick, curved, interlocking bars in shades of blue and green, arranged in a circular pattern around the central text.

**SCIENCE &  
TECHNOLOGY  
CLUSTERS**



**Jodhpur City Knowledge and  
Innovation Cluster (JCKIC)**



**Delhi Research, Implementation,  
and Innovation (DRIIV)**



**RICH**  
Research and Innovation  
Circle of Hyderabad

**Research and Innovation Circle of  
Hyderabad (RICH)**



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# TECHNOLOGY READINESS LEVEL 9

## AISTETH IS AI-ENABLED STETHOSCOPE TO SCREEN, DETECT AND PREDICT CARDIO-RESPIRATORY DISORDERS. OUR GOAL IS TO REDUCE 25% PREMATURE DEATHS DUE TO NCDS BY 2025!

<b>Application:</b>	AsMAP (AiSteth Murmur Analysis Platform) accuracy for detection of Murmurs in Valvular Heart Disorders screening is 98.34% with specificity of 99.73%. We have completed screening of more than 20,000 patients in India in less than a year of launch.
<b>Company Name:</b>	Ai Health Highway India Pvt Ltd
<b>Founder(s) Name:</b>	Dr (Maj) Satish S Jeevanavar
<b>Technology Readiness Level (TRL):</b>	TRL 9 - Commercialization and post market studies

### PROBLEM ADDRESSED:

1. Adult Cardiology - Screening & Detection of murmurs for Valvular Heart Disorders as part of NCDS Screening for Adults
2. Pediatric Cardiology - Screening & Detection of murmurs for Valvular Heart Disorders under School Health Screening Program

### FUND RAISED/ACHIEVEMENTS:

1. Raised Pre-Seed & Seed Rounds - cumulative \$0.5Mn. Social Alpha (Tata Trusts) Lakshmi Narayanan (Cognizant) Keiretsu, The Chennai Angels, Lead Angels, IIM Calcutta, Venture Catalysts, Brijesh Agrawal (Indiamart)
2. Grants \$200k - MTI (US) Atal Innovation Mission, MeitY, CITI Bank
3. PHC Tech Challenge Winner 2021 - PATH, MoHFW, Stanford Biodesign
4. One of the 27 most promising ML companies selected for ML Elevate 2022 in partnership with AWS Amazon, Accel, Intel & YourStory
5. One of the 6 winners of Pfizer INDOvation Digital Health Challenge 2022

### USP:

Advantages of Technology:

- » Can be used both as a traditional and digital stethoscope with an offline module (in case of no internet)
- » Continued upskilling of service providers with Visualization and Machine Learning (ML) algorithms
- » Access to a wider population-based screening of cardiorespiratory disorders
- » Recorded data can be easily shared with specialists for remote monitoring or second opinion Challenges addressed at primary level
- » Shortage of GP's & specialists in PHCs for screening & diagnostic tests and interpreting reports
- » Availability of trained healthcare staff at PHC to evaluate the heart/lung sounds
- » Data recording and transmitting to secondary/tertiary level for second opinion

### ABOUT THE TECHNOLOGY:

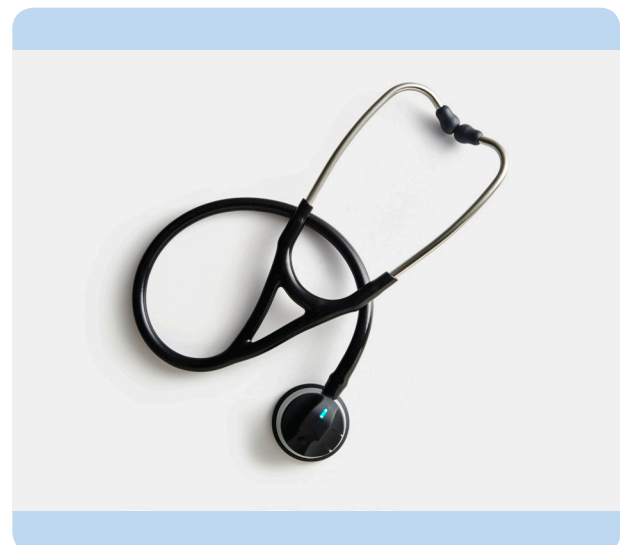
AiSteth is a platform with 3 key technology components - Device + Data + Intelligence.

1. Device - Ai-enabled smart stethoscope that picks up the heart / lung sounds
2. Data - A mobile app (both Android and iOS) that records these heart sounds data and converts into visual wave formats for smart interpretation
3. Intelligence - A cloud-based intelligence platform using start-of-the-art AI/ML models that can screen, detect abnormal heart sounds, and helps the doctor in diagnosis

### END USERS/CUSTOMERS:

Doctors, Nurses and allied healthcare professionals 2. NCDS Screening Program - National Health Mission 3. B2B & B2G

### PRODUCT IMAGES:



## AI ACCELERATED MEDICAL IMAGING SOLUTIONS FOR ACCURATE AND QUICK PATIENT CARE DELIVERY

<b>Application:</b>	Aikenist's QuickSuite crafted to meet radiologist diverse needs. QuickSuite reduces end to end Radiology process time from Appointment to Reports by 70% (15 Hr to 3Hr).
<b>Company Name:</b>	Aikenist Technologies Pvt Ltd
<b>Founder(s) Name:</b>	Ashwin Amarapur
<b>Technology Readiness Level (TRL):</b>	TRL 9 - Commercialization and post market studies

### PROBLEM ADDRESSED:

"Slow and Costly Scanning Process. MRI takes 30min - 1hr for scanning Appointment to Treatment takes days instead of hours Slow Radiologist Response time Delay in reports to Patients and Physicians"

### FUND RAISED/ACHIEVEMENTS:

- » **Funds:** 1.5 Cr INR from C-CAMP & MARL US fund
- » **Awards:** Karnataka Elevate 100, TIDE 2.0 MEITY grant, CE Emerging Unicorn

### USP:

Aikenist is the only company which is providing solution to accelerate acquisition, diagnosis and better care delivery together. Aikenist is awarded patent for faster MRI acquisition proces

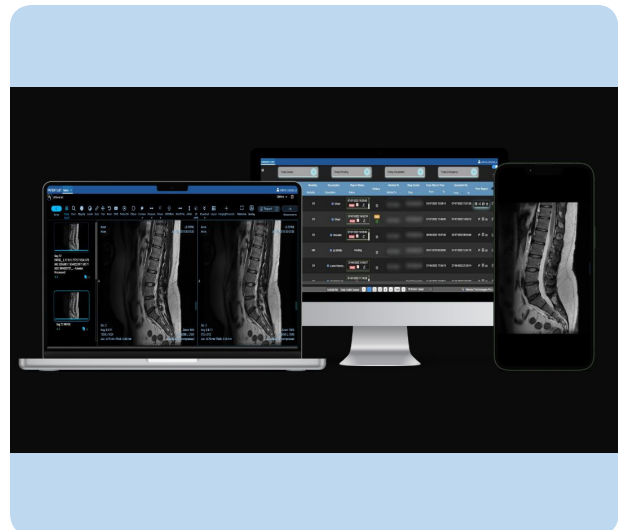
### END USERS/CUSTOMERS:

Radiology Dept in Hospitals & Diagnostic Centres Medical Device Companies Teleradiology/ Healthtech

### ABOUT THE TECHNOLOGY:

Aikenist is a smart radiology diagnostic software that delivers quality patient care at 50% faster rate because it uses proprietary AI/ML models which are optimized for MRI, CT and other Radiology use cases.

### PRODUCT IMAGES:



## AI POWERED PFT IN A BOX FOR SCREENING AND DIAGNOSIS OF CHRONIC RESPIRATORY AILMENTS

<b>Application:</b>	Screening & Diagnosis of Chronic Respiratory Conditions such as Asthma, COPD (Chronic Respiratory Obstructive Disease), Post TB Management, Monitoring of other conditions such as Cystic Fibrosis, Interstitial Lung Diseases
<b>Company Name:</b>	Briota Technologies Private Limited
<b>Founder(s) Name:</b>	Dr.Gajanan Sakhare, Mr.Shardul Joshi
<b>Technology Readiness Level (TRL):</b>	TRL 9 - Commercialization and post market studies

### PROBLEM ADDRESSED:

Globally every 1 person out of 10 and in India every 3 people out of 10 have CRD condition. Yet research shows more than 75% or more cases of CRDs are undiagnosed. Undiagnosed or late diagnosed patient faces delayed treatment, poor quality of life, increased costs, missed school and work days and in many cases early death. While spirometry is considered to be a GOLD standard, it is underutilized.

The main issues in making it a viable solution for masses are:

1. High cost of procurement, calibration and maintenance
2. Unavailability of trained technicians to conduct an effort induced test
3. Unavailability of pulmonologists to interpret Spirometry and Impulse Oscilometry tests

### FUND RAISED/ACHIEVEMENTS:

- » Supported by BIRAC Government of India and Technology Development Board Government of India
- » Won several national and international awards including JanCare Healthcare Innovation Startup of India 2023, OPPI's Most Innovative MedTech Startup of India 2021, ZS Most Disruptive Healthcare Startup of India 2023, MIT Solve Global Health- care Challenge Finalist 2023.

### USP:

We are revolutionizing screening and diagnosis of Chronic Respiratory Diseases (CRDs) – Asthma, COPD and Post-TB Lung Impairment.

Pulmonary Function Test (PFT), a GOLD standard for CRD screening and diagnosis is costly, requires trained man power to conduct and requires trained pulmonologist to interpret the results. Hence PFT becomes a privileged test – only available in big cities and at secondary and tertiary care. Briota's PFT In A Box™ PFT available, affordable and accessible for all at Primary care.

### ABOUT THE TECHNOLOGY:

Briota's innovative product PFT In A Box™ uses Make In India technology with No Contact AI and IOT to address the above 3 challenges. Briota's SAVE™ (Spirometry Assisted Virtually Early) has adopted a holistic and battle field tested approach for early screening and precise diagnosis of CRDs using PFT adjusted to Indian Ethnicities.

### END USERS/CUSTOMERS:

Community Health Workers/ASHA workers at Primary Health Care Centers, Subcenters, Civil Hospital, District Health Hospital, District Council

### PRODUCT IMAGES:



## AFORA - A PORTABLE, EASY-TO-USE PLANTAR PRESSURE SYSTEM. SPECIALLY DESIGNED FOR INDIAN PRACTITIONERS GENERATES THE REPORT INSTANTLY.

**Application:** The Diabetic Foot Lab serves a valuable role in evaluating the foot, offering significant benefits for both preventing diabetic ulcers in patients without existing foot conditions and managing those currently dealing with ulcers. Our thorough diabetic foot assessment aids in assessing the risk of ulcer development and pinpointing the areas with the highest risk. For individuals already dealing with ulcers, it offers crucial insights for designing orthotics to expedite ulcer healing and reduce the likelihood of recurrence.

**Company Name:** Kan Innovations Private Limited

**Founder(s) Name:** Riday Nakhate

**Technology Readiness Level (TRL):** TRL 9 - Commercialization and post market studies

### PROBLEM ADDRESSED:

According to a study published in the journal "Diabetes Care", India has the highest number of diabetic foot amputations in the world, with an estimated 450,000 amputations performed each year. Comprehensive foot assessments and early action can prevent most of them.

### FUND RAISED/ACHIEVEMENTS:

- » We are a bootstrapped company. Our technology is available in more than 150 hospitals and centres across India. We won a RICH grant last year of 1L

### USP:

We are the only company manufacturing our key technologies in India. We are the first company to bring all the above onto one platform. We are also an open platform and willing to work with other companies to onboard newer and better technologies onto our platform. The biggest difference is the Ai. We are currently building an Ai to assess the risk of diabetic foot using all the above parameters.

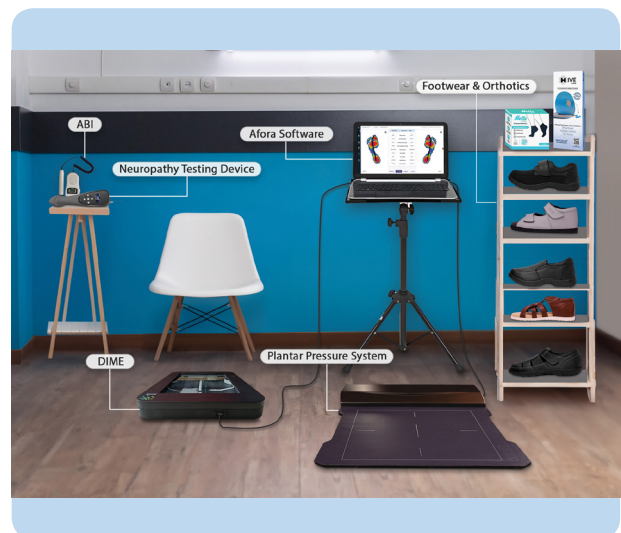
### END USERS/CUSTOMERS:

Diabetologists, diabetic foot surgeons, foot and ankle surgeons, general surgeons.

### ABOUT THE TECHNOLOGY:

Afora- The Diabetic Foot Lab, Comprises Of Dynamic Plantar Pressure Scanning, Small And Large Fiber Neuropathy Testing, Rgb Imaging For Ulcer Tracking and Circulation That Is Assisted By Ai To Determine The Risk Of Diabetic Foot.

### PRODUCT IMAGES:



## STATE OF THE ART ASSESSMENT & GAMING REHAB TECHNOLOGY FOR PHYSIOTHERAPISTS

<b>Application:</b>	The OHM series plantar pressure systems offer a versatile solution for assessing and rehabilitating patients across all age groups. These systems serve various purposes: Comprehensive Assessment - OHM series plantar pressure systems are invaluable tools for evaluating patients' static weight bearing, balance, and gait, Sports-Specific Evaluation and Training, Orthotic and Footwear Guidance, Rehabilitation Through Gaming, Enhanced Treatment Planning
<b>Company Name:</b>	Kan Innovations Pvt. Ltd.
<b>Founder(s) Name:</b>	Mr. Riday Nakhate
<b>Technology Readiness Level (TRL):</b>	TRL 9 - Commercialization and post market studies

### PROBLEM ADDRESSED:

The OHM series aims to tackle the following challenges within the PMR department:

1. The absence of a report-based approach in PMR
2. The lack of evidence-based assessment and rehabilitation tools.
3. High patient dropout rates due to a limited success metric beyond pain management.
4. A dearth of patient motivation for long-term rehabilitation.
5. The absence of cost-effective, domestically produced advanced technology for practitioners in India.

### FUND RAISED/ACHIEVEMENTS:

As a completely self-funded company, Kan has successfully reached several significant milestones:

1. Placements exceeding 150+ across India.
2. Pioneering as the first Indian manufacturer to design and develop a plantar pressure system in the country.
3. Securing a grant of Rs. 1,00,000 from RICH-Aid.
4. Establishing a presence in over 22+ states across India.
5. Supplying technology solutions to diverse healthcare sectors, including physiotherapy, diabetology, orthopedics, and the P&O department.

### USP:

1. Proudly Made in India.
2. Combining assessment and gaming-based rehabilitation on a unified platform.
3. Automated feedback and remarks generated at the conclusion of each test.

### END USERS/CUSTOMERS:

PMR department

### ABOUT THE TECHNOLOGY:

Kan Innovations provides cutting-edge technology within the PMR domain:

- » The OHM series utilizes piezoresistive sensors, integrating assessment and rehabilitation modules into a single system.
- » This system harnesses the capabilities of advanced hardware and sophisticated software to deliver an exceptional user experience.

### PRODUCT IMAGES:





## REDEFINING 24X7 CONTINUOUS HEART MONITORING

<b>Application:</b>	upBeat (study device) - a small, wire-free, adhesive, water-resistant single lead ECG monitoring patch
<b>Company Name:</b>	Monitra Healthcare Private Limited
<b>Founder(s) Name:</b>	Ravi Bhogu
<b>Technology Readiness Level (TRL):</b>	TRL 9 - Commercialization and post market studies

### PROBLEM ADDRESSED:

Helping clinical cardiologists in solving two most difficult problems:  
Unexplained Palpitations and unexplained fainting in patients.

### FUND RAISED/ACHIEVEMENTS:

- » 2.5 Crore in grants from BIG, BIRAC and USISTEF
- » 2 Crore via CCPS in 2019
- » 3 Crore via CCD in 2021
- » 3.5 Crore via CCD in pre-series A in 2023

### USP:

- » 24-bit resolution sensing which gives 250 times higher clarity in ECG
- » Comprehensive review of computer annotated data which increases the diagnostic yield

### END USERS/CUSTOMERS:

Cardiologists, EP Physicians, Neurologists

### ABOUT THE TECHNOLOGY:

There is increase in the development of small, portable ECG patch devices to overcome the cost patient inconvenience and relatively low diagnostic yield of the 'gold standard' Holter monitoring in arrhythmia detection. One such portable device upBeat (study device), is a small, wire-free, adhesive, water-resistant single lead ECG monitoring patch with 24 bit sensor resolution for better p wave capture. This device can continuously monitor patients anywhere from 1 day to 40 days.

### PRODUCT IMAGES:



## AI - POWERED IDEATION TO COMMERCIALIZATION IN NUTRACEUTICALS

<b>Application:</b>	Ideation automation, Product design automation and Commercialization
<b>Company Name:</b>	Nutoday Private Limited
<b>Founder(s) Name:</b>	Amit Srivastava
<b>Technology Readiness Level (TRL):</b>	TRL 9 - Commercialization and post market studies

### PROBLEM ADDRESSED:

Clinical and regulatory validated label claim generation for India and other countries

### FUND RAISED/ACHIEVEMENTS:

- » 6 Crores / Economic Times AI Innovation Award, Outlook Business Award for AI in Nutraceuticals
- » ISO 9001 certified

### USP:

Nutrify Today is a responsible nutrition business enablement marketplace AI enabled platform that takes the entire process of ideation, design and commercialization in the shortest period of time, while doubling up the innovative differentiated portfolio in reduced time.

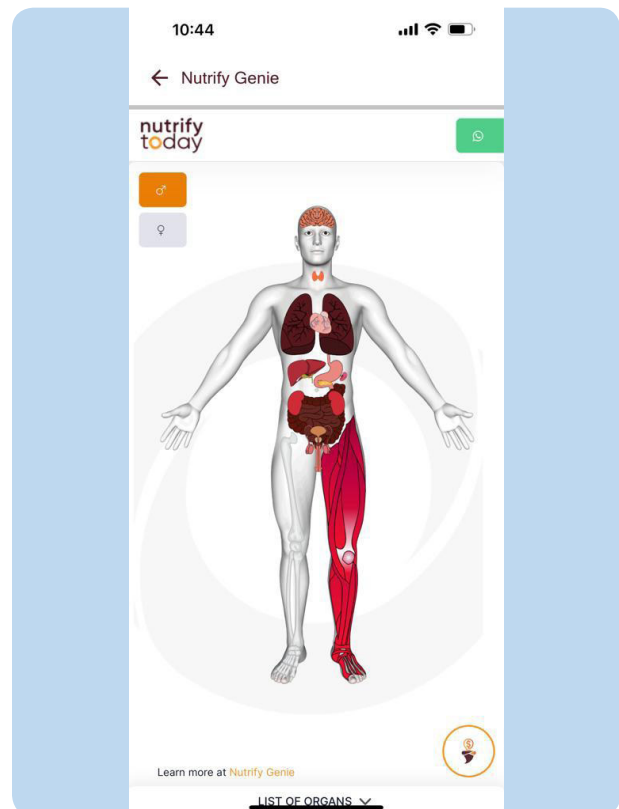
### END USERS/CUSTOMERS:

Business Development and R&D Department of Pharmaceuticals, FMCG and Nutraceutical companies

### ABOUT THE TECHNOLOGY:

Curated and hybrid technology commercialized as IT enabled cloud based product that scans through 2.8 million data points in nutraceutical ingredients, products, clinical papers, toxicology, IP and Non IP data and supply chain network to ideate, design and commercialize clinically validated products.

### PRODUCT IMAGES:



## PSYPACK IS AN ONLINE PSYCHOMETRIC TESTING SOFTWARE DESIGNED FOR BEHAVIORAL HEALTH PROFESSIONALS, STREAMLINING ASSESSMENTS AND DOCUMENTATION TO ENHANCE CLINICAL CARE AND OUTCOMES.

<b>Application:</b>	PsyPack's primary application is to assist behavioral health professionals in conducting psychometric assessments and documenting their clients' mental health conditions and treatment progress.
<b>Company Name:</b>	PsyPack
<b>Founder(s) Name:</b>	Abhay Singhal
<b>Technology Readiness Level (TRL):</b>	TRL 9 - Commercialization and post market studies

### PROBLEM ADDRESSED:

**PsyPack addresses several critical problems in the field of behavioral health:**

- » **Efficiency and Convenience:** Traditional paper-based assessments and documentation can be time-consuming and cumbersome for behavioral health professionals. PsyPack streamlines the process by offering an online platform, making assessments and documentation more efficient.
- » **Diagnosis and Tracking:** Accurate diagnosis and ongoing tracking of mental health conditions are vital for effective treatment. PsyPack provides tools and assessments like PHQ-9, GAD-7, IES-R, and PCL-5 to aid in the diagnosis and continuous monitoring of mental illnesses.
- » **Insurance Claims and Value-Based Care:** The software may help practitioners with insurance claims by providing comprehensive and standardized documentation, aligning with the value-based care approach that emphasizes positive clinical outcomes.
- » In summary, PsyPack addresses various challenges faced by behavioral health professionals, ultimately aiming to enhance the quality of care, streamline administrative processes, and improve the overall experience for both providers and clients in the field of behavioral health.

### ABOUT THE TECHNOLOGY:

**PsyPack is an online psychometric testing software designed to support behavioral health professionals in their clinical practice. Here are some key aspects of the technology:**

- » **Psychometric Assessments:** The software provides a range of psychometric assessments commonly used in the field of behavioral health. These assessments may include tools like the Patient Health Questionnaire-9 (PHQ-9), Generalized Anxiety Disorder 7 (GAD-7), Impact of Event Scale-Revised (IES-R), and Posttraumatic Stress Disorder Checklist for DSM-5 (PCL-5), among others.
- » **Diagnosis and Monitoring:** Behavioral health professionals can use PsyPack to diagnose mental health conditions and continuously monitor clients' progress over time. These assessments help in determining the severity of symptoms and tracking changes in mental health status.
- » **Clinical Documentation:** PsyPack assists practitioners in generating clinical reports and documentation automatically based on the assessment results. This feature streamlines the process of creating comprehensive and standardized client records.
- » **Enhancing Client Confidence:** By providing evidence-based assessments and clear documentation of progress, PsyPack can help increase client confidence in therapy and improve client-provider relationships.
- » **Support for Value-Based Care:** The software's documentation and data may support value-based care approaches, which emphasize achieving positive clinical outcomes as a basis for reimbursement.
- » **Security and Compliance:** PsyPack likely prioritizes data security and compliance with healthcare regulations to ensure that client information remains confidential and meets legal requirements.

Overall, PsyPack is a technology solution that leverages online accessibility and psychometric assessments to aid behavioral health professionals in diagnosing and treating mental health conditions efficiently while also improving the overall quality of care and documentation.

## FUND RAISED/ACHIEVEMENTS:

- » Combination of grant and soft loan (50:50) of INR 12,00,000 from IKP Knowledge Park (<https://www.ikpknowledgepark.com/>).

Combination of grant and soft loan (50:50) of INR 30,00,000 from Department of Science & Technology (NEB Division), Ministry of Science & Technology, Government of India (<https://isba.in/cawach/>).

- » Angel investment of INR 25,00,000 from DLabs Incubator Association (<https://www.isbdlabs.org/en.html>).
- » Angel investment investment of INR 4,96,926 from an angel.
- » Grant in aid of INR 4,00,000 under MeiTy (GOI) Tide 2.0 (3rd call) through STEP-TIET, Patiala.
- » Grant of INR 1,00,000 under RICH - Acceleration Initiative for Diagnostics Cohort 2.

## USP:

The Unique Selling Proposition (USP) of PsyPack, the online psychometric testing software for behavioral health professionals, lies in its ability to:

**Streamline Clinical Workflow:** PsyPack simplifies and accelerates the diagnostic and treatment process for mental health professionals. Its user-friendly interface and automated features save time and effort, allowing clinicians to focus more on patient care.

**Evidence-Based Assessments:** PsyPack offers a comprehensive range of evidence-based psychometric assessments, enabling practitioners to make more accurate diagnoses and track treatment progress effectively.

**Improved Clinical Outcomes:** By providing practitioners with valuable insights into their clients' mental health status and progress, PsyPack contributes to better clinical outcomes and the delivery of more targeted and effective care.

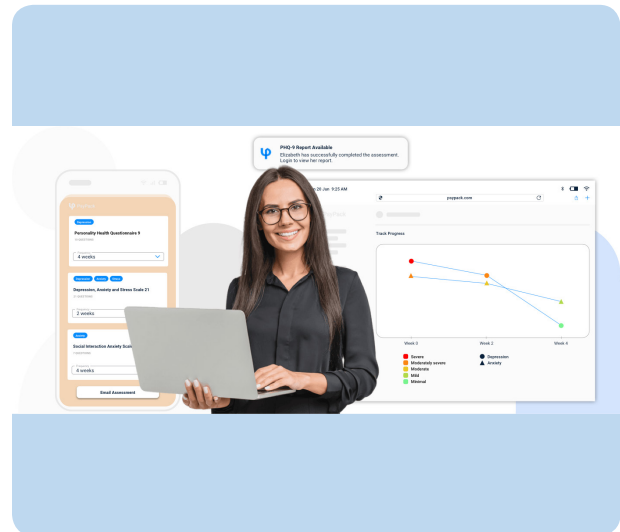
**Time Savings:** PsyPack's automation features, such as report generation and documentation, save practitioners valuable time, allowing them to see more clients or allocate their time to other essential tasks.

In summary, PsyPack's USP is its capacity to optimize the behavioral health practice by combining user-friendly technology, evidence-based assessments, and automation to facilitate more efficient and effective care, leading to improved clinical outcomes and greater client satisfaction.

## END USERS/CUSTOMERS:

Therapists/Psychologists in Private Practice, Mental Health Clinics, Hospitals, University Wellness Centres, School Counsellors

## PRODUCT IMAGES:





# SYSTEMS AND METHODS FOR DETECTION OF INFECTIOUS RESPIRATORY DISEASES

**Application:** Its mission is to use artificial intelligence to make healthcare more accessible and affordable.

**Company Name:** Qure.ai

**Founder(s) Name:** Mr. Prashant Warier

**Technology Readiness Level (TRL):** TRL 9 - Commercialization and post market studies

## PROBLEM ADDRESSED:

1. Potential to reduce consultant radiologist workload by 58% by transferring cases to radiographer reportin
2. 99%+ accuracy in triaging chest X-rays as normal
3. Freeing up 2 hours per day of senior radiologist's time to concentrate on specialist and complex imaging reports

## ABOUT THE TECHNOLOGY:

Qure.ai is a healthcare technology company that focuses on developing artificial intelligence (AI) solutions for medical imaging. The company utilizes deep learning algorithms to analyze and interpret medical images, with a particular emphasis on improving diagnostic accuracy and efficiency.

Here are some key aspects of Qure.ai's technology:

1. Radiology Solutions
2. Product Offerings
3. AI Algorithms
4. Diagnostic Support
5. Clinical Applications
6. Global Impact

## FUND RAISED/ACHIEVEMENTS:

Patents - Systems and methods for detection of infectious respiratory diseases; Patent number: 11308612

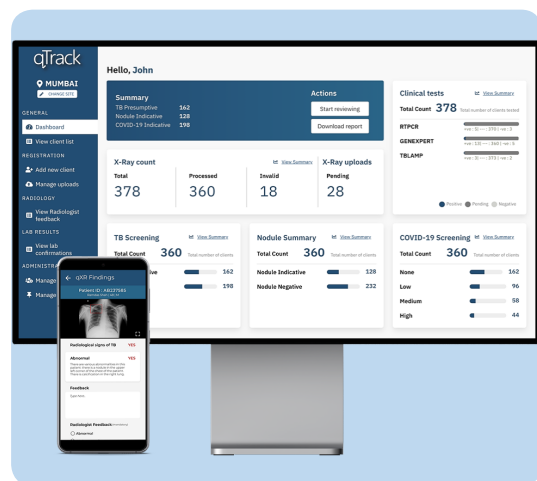
## USP:

1. Advanced Imaging Analytics
2. Efficiency and Speed
3. Automation of Routine Tasks
4. Scalability
5. Diverse Applications
6. Clinical Validation and Accuracy
7. Integration with Existing Systems

## END USERS/CUSTOMERS:

Radiologists, Healthcare Providers and Hospitals, Medical Imaging Centers, Medical Professionals

## PRODUCT IMAGES:



## MEDICAL DEVICE AND IN VITRO DIAGNOSTIC KITS MANUFACTURING

<b>Application:</b>	Ramja Genosensor is the first Indian company of the state-of-the-art technology for infection detection and AMR. They are engaged in the business of medical device and in vitro diagnostic kits manufacturing. The solution detects the most common bacterial infections and their resistant to antibiotics in with in 90 mins.
<b>Company Name:</b>	Ramja Genosensor
<b>Founder(s) Name:</b>	Dr. Pooja Goswami, Founder & CEO
<b>Technology Readiness Level (TRL):</b>	TRL 9 - Commercialization and post market studies

### PROBLEM ADDRESSED:

As per WHO, Antimicrobial Resistance (AMR) is one of the top 10 global public health threats facing humanity, which need immediate attention.

### FUND RAISED/ACHIEVEMENTS:

Patents and Trademark: 2 Trademark (RAMJA and NANOSHOT)

1. PM Modi Launched this device' beta version in startup Expo as top 75 innovations of the country
2. Top 5 innovation as per NHSRC health ministry and family and welfare
  - » BIRAC, BIG -12 grant award of 50 Lakh in 2018
  - » Pfizer grant of 1 Lakh for intellectual property in 2020
  - » Facebook small business grant of 1 Lakh in 2021
  - » Nidhi Covid Grant of 10 Lakh in 2021
  - » SIDBI Swablamban challenge grant of 35 Lakh in 2022
  - » TOP 10 Finalist of ASIA Pacific MedTech Innovator 2022
  - » Winner of Pfizer Inndovation award grant of 65 Lakh 2022
  - » Winner of BIRAC WinER Award grant of 5 Lakh 2023
  - » Top 5 Winner of Bio-Asia grant of 50k 2023
  - » Top 6 winner of Together 2023 (Indo Canadian Programme)
3. Start-up Achievement
  - » DPIIT Recognized
  - » ISSO-9001 Certified
  - » US-FDA Approved
  - » Gem-OEM authorized vendor
  - » CDSCO approved
  - » SANDOBOX Approved
  - » Onboarded on DRIIV Cluster IIT delhi

### END USERS/CUSTOMERS:

Infectious Disease Specialists, Pharmaceutical and Biotech Companies, Public Health Agencies, Clinical Laboratories, Hospitals and Healthcare Institutions

### ABOUT THE TECHNOLOGY:

RAMJA Genosensor is the world's first company that is providing first time-ever ultra-fast, rapid, easy, and cost-effective solution: a noble paper-based device that can detect any infection and antimicrobial resistance in just 90 minutes. It's an electrochemical DNA Biosensor, which detects the gene-specific bacteria based on the redox reaction taking place on the screen-printed electrode as a result of a 3-dimensional sandwich between the capture-detector probe and Target sequence.

### USP:

The solution offered by Ramja Genosensor is :

- » Quick : Results in 90 min
- » Adaptable
- » Economical: reduces the cost of infra upto 95% and almost 80% reduction in staff.
- » Tested: Clinical Trail done in AIIMS Delhi
- » User Friendly
- » Accurate

They are partnered with:

- » FITT
- » pfizer
- » Startup India
- » facebook
- » sidbi
- » AIIMS
- » IIT Delhi

### PRODUCT IMAGES:



## SWAASA: ARTIFICIAL INTELLIGENCE PLATFORM AS A SCREENING TOOL AND DIAGNOSTIC AID IN THE ASSESSMENT OF RESPIRATORY DISEASES

<b>Application:</b>	Swaasa can identify underlying respiratory lung conditions by analyzing a 10 second (solicited) cough sound recording. Swaasa can be thought of as PoC SaMD for instant evaluation of respiratory health. The equivalent of home monitoring for Blood Glucose and Blood Pressure- for respiratory health
<b>Company Name:</b>	Salcit Technologies Pvt Ltd
<b>Founder(s) Name:</b>	Narayan Rao Sripada
<b>Technology Readiness Level (TRL):</b>	TRL: 8 (Early Revenue Generation Phase)
<b>Intellectual Property:</b>	PCT Application No.: PCT/IN2018/050745 Indian Patent Grant No.: 308156

### PROBLEM ADDRESSED:

Screening for respiratory diseases is an unmet need as due to limited human expertise and lab facilities, it is not possible to do pulmonary function tests at primary care level centres. The inability to screen, diagnose and monitor lung health at scale, in real-time is causing significant global burden on respiratory diseases

### ABOUT THE TECHNOLOGY:

Our product, Swaasa, is able to detect respiratory diseases by analyzing cough sounds remotely. Over 300,000 assessments have been done on our platform. Swaasa is HIPAA, ISO27001, SOC2, ISO13485/IEC62304 compliant/certified. Backed by seven clinical trials we are on the path to regulatory approvals (FDA/CE/ HealthCanada/TGA). The core technology also has international patents and publications. Swaasa is the ideal tool to selftest/ monitor for lung health anywhere, anytime especially since it is a SaMD (Software as a Medical Device) so no hardware needed. Using timely alerts and interventions can be a powerful tool for preventing acute episodes of chronic lung conditions.

### FUND RAISED/ACHIEVEMENTS:

- » Received ISO and IEC Certifications for the product
- » SASACT fund of INR 24 lakhs from KIIT TBI
- » BIRAC BIG grant of INR 50 lakhs
- » B2B –Enterprise health service providers, tele and home health service providers, Occupational health service providers
- » B2G –Public health

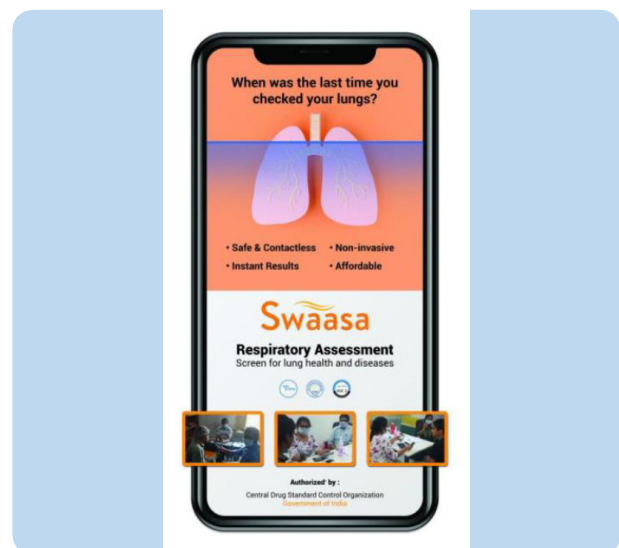
### USP:

The Swaasa AI platform provides easy and cost-effective tests to reach larger populations at a much higher frequency of testing.

### THE PLATFORM:

- » Doesnot require trained professionals
- » Doesnot require any specific hardware-can work on smartphone, tablet or laptop
- » No other consumables needed
- » Requires very low-bandwidth

### PRODUCT IMAGES:





## PHEEZEE - A WEARABLE PROGNOSTIC DEVICE THAT CAN MONITOR AND TRACK THE FUNCTIONAL RECOVERY OF PATIENTS UNDERGOING PHYSIOTHERAPY.

<b>Application:</b>	Medical device that can access and track the recovery of patients undergoing physiotherapy post musculo-skeletal and neuro-muscular ailments
<b>Company Name:</b>	Startoon Labs Private Limited
<b>Founder(s) Name:</b>	Er. Suresh Susurla
<b>Technology Readiness Level (TRL):</b>	TRL 9 - Commercialization and post market studies

### PROBLEM ADDRESSED:

There is no way scientific way to assess, monitor and track the recovery of patients undergoing physiotherapy post musculo-skeletal and neuro-muscular ailments. Also, the various stakeholders - surgeons, physiotherapists, patients and their caretakers stay disconnected in a pre- and post operative setting. Technology has the capability to bring the stakeholders together.

### FUND RAISED/ACHIEVEMENTS:

Raised around 4.5 crores till date.

- » Supported by Dept. of Science and Technology, Department of Biotechnology, Ministry of Electronics and Information Technology, IKP Knowledge Park, Atal Incubation Centre - CCMB, T-Hub Telangana State Innovation Cell, WE Hub, A Government of Telangana Initiative, Research and Innovation Circle of Hyderabad, Biotechnology Industry Research Assistance Council (BIRAC) DBT BIRAC, Cogniphly.
- » It is ISO9001 and ISO13485 certified and has been recognized for it's contribution to the IT SECTOR of the State of Telangana by Government of Telangana.
- » Startoon Labs has stringent quality measures and its flagship product - PHEEZEE, is USFDA Cleared.

### USP:

Its a wearable device that has very precise Range of Motion assessment sensors and a bioamplifier to measure the movements of the various joints and the strength of the corresponding muscles simultaneously. The device is USFDA Cleared. Pheeze also generates detailed scientific digital reports that show the recovery of the patient and the same can be shared with the stakeholders. The Company also offers technology enabled services to patients and help them recover from severe ailments with proper physiotherapy offerings.

### ABOUT THE TECHNOLOGY:

Pheeze exactly addresses the aforementioned problem. Its a wearable device that has very precise Range of Motion assessment sensors and a bioamplifier to measure the movements of the various joints and the strength of the corresponding muscles simultaneously. The device also generates detailed scientific digital reports that show the recovery of the patient and the same can be shared with the stakeholders.

### END USERS/CUSTOMERS:

Physiotherapists & patients

### PRODUCT IMAGES:





## TRUELAB REAL TIME QUANTITATIVE MICRO PCR SYSTEM PROVIDING RESULTS WITHIN 90 MINUTES.

<b>Application:</b>	The Truelab Real Time Quantitative micro PCR system is a compact, battery-operated system which provides test results at the point of care within 90 minutes. This enables same day reporting and initiation of evidence-based treatment of tuberculosis, which reduces the risk of infection spreading while waiting for test results and facilitates faster recovery due to early initiation of treatment
<b>Company Name:</b>	Truenat
<b>Founder(s) Name:</b>	Co. Founders- Dr. Sriram Natarajan, Dr. Chandrasekhar Nair
<b>Technology Readiness Level (TRL):</b>	TRL 9 - Commercialization and post market studies

### PROBLEM ADDRESSED:

Problems Addressed:

1. Rapid Diagnosis of Tuberculosis.
2. Point-of-Care Testing.
3. Timely Diagnosis.
4. Real Time Analysis.

### FUND RAISED/ACHIEVEMENTS:

Have multiple certificates:

1. Quality: Quality Management System Standard ISO 13485:2016 certificate
2. Declaration of Conformity:
  - Certificate Importer Exporter Code IEC
  - EC\_DOC Truenat Dengue Chikungunya
  - EC-DOC Truelab Duo
  - many more...
3. Free Sale certificates:
  - Molbio Free Sale Certificates for Truenat Tests
  - Molbio Free Sale Certificate for Truenat HCV
  - any more...

### USP:

Truenat have close to 35 Products, namely Truenat® Malaria Pv/ Pf, Truenat® Dengue/Chikungunya, Truenat® H1N1, Truenat® Rabies, etc.

Have distribution network in 50 countries.

### END USERS/CUSTOMERS:

Clinical Laboratories, Public Health Institutions, Research Institutions, Pharmaceutical and Biotechnology Companies, Veterinary Laboratories, Global Health Organizations, Blood Banks.

### ABOUT THE TECHNOLOGY:

Truelab Real Time Quantitative micro PCR system. This technology appears to be a promising and impactful solution for the rapid diagnosis of tuberculosis, particularly in point-of-care settings.

Technology Overview:

The Truelab Real Time Quantitative micro PCR system is a compact and battery-operated system.

It utilizes micro PCR technology for real-time quantitative analysis of genetic material, allowing for the detection of tuberculosis.

The system is designed to provide test results at the point of care within 90 minutes, enabling quick diagnosis and initiation of evidence-based treatment.

Key Features:

- » Fully Automatic
- » Three Wavelength System
- » Performs 20-24 Tests in 8 Hours
- » Completely Randomized Operation
- » Runs on any Truenat Chip
- » Portable
- » Battery Operated

### PRODUCT IMAGES:



## AI BASED CARDIAC RHYTHM MONITORING PLATFORM TO ALLEVIATE THE STROKE BURDEN

<b>Application:</b>	A cutting-edge technology device that redefines cardiac rhythm monitoring by introducing a discreet, comfortable patch capable of continuously recording every heartbeat during daily activities.
<b>Company Name:</b>	Waferchips Techno Solutions Pvt Ltd
<b>Founder(s) Name:</b>	Sonia Mohandas
<b>Technology Readiness Level (TRL):</b>	TRL 9 - Commercialization and post market studies

### PROBLEM ADDRESSED:

The problem addressed is the inadequacy of existing cardiac rhythm monitoring solutions for patients with asymptomatic symptoms, such as syncope and palpitations. Current methods, including holter monitors and event recorders, suffer from limitations like short monitoring durations, high costs, and poor patient compliance. Consequently, a substantial percentage of potentially life-threatening cardiac rhythm abnormalities, affecting over 2% of the population, go undetected. Addressing this issue is crucial to improve early diagnosis, patient outcomes, and the cost-effectiveness of cardiac care in the field of cardiology.

### FUND RAISED/ACHIEVEMENTS:

- » Grants from BPCL, HDFC, SCTIMST-TiMed. Seed fund from AIC CCMB

### USP:

Biocalculus' USP lies in its ability to provide continuous, real-world cardiac monitoring with an AI-driven, cloud-based analysis, ensuring unparalleled accuracy and convenience for patients. By offering this innovative solution at an affordable cost, Biocalculus is poised to democratize advanced cardiac care, making it accessible to a broader spectrum of patients.

### END USERS/CUSTOMERS:

Customers-Cardiologist, Neurologist, End users- Post operative cardiac patients, Early symptom patients

### ABOUT THE TECHNOLOGY:

Biocalculus is a cutting-edge technology that redefines cardiac rhythm monitoring by introducing a discreet, comfortable patch capable of continuously recording every heartbeat during daily activities. This innovation transcends traditional monitoring methods, enabling clinicians to detect cardiac rhythm abnormalities in real-world, non-clinical settings, thus improving patient care. Its core value proposition lies in providing consistent ECG data with minimal artifacts, catering to clinicians seeking enhanced diagnostic yield and a streamlined monitoring process. With its proprietary AI algorithm, Biocalculus analyzes data in the cloud, generating verified reports for clinicians. Remarkably, Biocalculus is designed for affordability, making it a cost-effective option accessible even to underserved populations, reaffirming its position as a transformative technology in cardiac care.

### PRODUCT IMAGES:





## WASTEWATER SURVEILLANCE DASHBOARD FOR COVID-19 IN PUNE (METROPOLITAN REGION)

<b>Application:</b>	This live dashboard showcases data of disease wastewater surveillance in a user-friendly format, providing information on the SARS-CoV-2 viral load found in wastewater.
<b>Company Name:</b>	Pune Knowledge Cluster
<b>Founder(s) Name:</b>	
<b>Technology Readiness Level (TRL):</b>	TRL:9
<b>Intellectual Property:</b>	

### PROBLEM ADDRESSED:

Clinical diagnosis of COVID-19 is typically determined by the detection of acute infection targets in the genome of SARS-CoV-2 present in nasopharyngeal, nasal, and saliva swab samples. However, the virus can also be detected in other specimens from infected individuals, notably faeces. Proposed as a complement to clinical testing, Wastewater Surveillance of samples collected from treatment systems of communities is proved to be extremely effective for early detection of community-wide disease prevalence, notably for poliovirus, noroviruses, flu, and recently COVID-19.

### USP:

- » This dashboard is the result of collaborative efforts between five organizations. It is a first of its kind, student-powered platform enabled by PKC.
- » This is a customisable dashboard that can be used to represent data for various diseases.

### FUND RAISED/ACHIEVEMENTS:

This platform is a part of a National consortium focused on tracking and identification of new COVID-19 variants. The project is funded by the Rockefeller Foundation and enabled by CSIR-Centre for Cellular and Molecular Biology (CCMB).

### END USERS/CUSTOMERS:

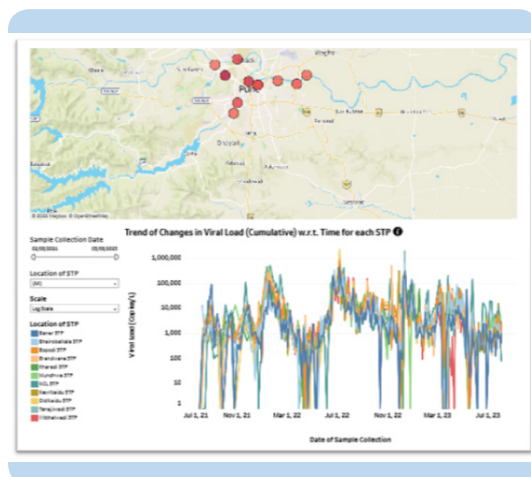
- B2C: Diabetic Patients, Hypertension Patients, Geriatric People, Genetic Disposition, Preeclampsia survivors, etc.
- B2G: PHC, Screening Camp, Asha Workers
- B2B: Tier II & III city and rural area diagnostic labs

### ABOUT THE TECHNOLOGY:

The wastewater samples were collected from various locations across the Pune Metropolitan Region, including the Pune Municipal Corporation Region and the Pimpri-Chinchwad Municipal Corporation Region, from Sewage Treatment Plants, drains, etc. This dashboard presents the results of wastewater surveillance in a user-friendly format, providing information on the SARS-CoV-2 viral load found in WWS, making it simple for various stakeholders to interpret the data.

It was developed by PKC and students from MIT- Art Design Technology (ADT) University on the data visualization platform Tableau using the data generated by CSIR-National Chemical Laboratory and Symbiosis School of Biological Sciences.

### PRODUCT IMAGES:



## INNOVATIVE ACTIVE COLD CHAIN SOLUTIONS FOR HEALTHCARE SECTOR

<b>Application:</b>	Transport any temperature sensitive healthcare items - medicines, diagnostic tissue samples, cell cultures, vaccines, reagents, blood products, donated organs, from point A to point B with complete safety and tracking without the need for ice/gel packs.
<b>Company Name:</b>	ZedBlox Logitech Pvt Ltd
<b>Founder(s) Name:</b>	Rao Korupolu
<b>Technology Readiness Level (TRL):</b>	TRL 9 - Commercialization and post market studies

### PROBLEM ADDRESSED:

Existing passive solutions leave gaps in medical cold chains due to their passive nature, complex processes, low skill levels in cold chain management and lack of monitoring/regulation. Current single use boxes generate environmental headaches.

### FUND RAISED/ACHIEVEMENTS:

- » About 3 crore INR raised. Supported by Nidhi Seed Support Scheme. Incubated at Centre for Cellular and Molecular Biology (CCMB).
- » India patent granted. ISO 13485 medical device certification, NABL lab certified, validated at CCMB.

### USP:

Accurate temperature control, no freezing infrastructure needed, remote live tracking of GPS and temperature with mobile alerts, medical certifications

### END USERS/CUSTOMERS:

Central govt, Bharat Biotech, Manipal diagnostics, Hospitals, medical colleges

### ABOUT THE TECHNOLOGY:

ZedBlox ActiPod is a Make in India, India patented, innovative cold box that is battery powered, does not need any frozen ice or gel packs and provides remote live tracking of GPS location and temperature audit trail. It is guaranteed to maintain desired temperature between -15 to +25C and can work for 12-24 hrs on a single charge, vehicle charging available. Reusable device that lasts 5 years.

### PRODUCT IMAGES:





# TECHNOLOGY READINESS LEVEL 8

## INTELLIGENT VISION ANALYZER MAKING EYECARE ACCESSIBLE TO ALL

<b>Application:</b>	Glaucoma testing (Visual Field Test) in Eye care centers.
<b>Company Name:</b>	Alfaleus Technology Pvt Ltd
<b>Founder(s) Name:</b>	Sandal Kotawala
<b>Technology Readiness Level (TRL):</b>	TRL 8 - Pre-commercialization

### PROBLEM ADDRESSED:

Glaucoma is the leading cause of blindness across the globe and is also known as a silent killer of vision generally occurring in people above 40 years of age. The current visual field perimetry for glaucoma detection utilizes heavy and costly machines that are uncomfortable for the patients (wearing eye patch, sitting in uncomfortable posture). Also, the machines are available at institutional level or big private hospitals and hence rural outreach is a bit difficult, which is a growing problem since Glaucoma needs constant monitoring and checkup.

### FUND RAISED/ACHIEVEMENTS:

- » INR 40 lakhs in Loan
- » INR 64.3 lakhs in Grants (BIRAC)
- » INR 44 lakhs in Equity

### USP:

Our device is "10 times Affordable, 100 times Compact and Infinity times Comfortable" than a conventional visual field testing device.

### END USERS/CUSTOMERS:

Ophthalmologists, Neuro-ophthalmologists and Optometrists

### ABOUT THE TECHNOLOGY:

The Intelligent Vision Analyzer (IVA+) uses a Virtual Reality setup that is comfortable to the patient as well as affordable to the practitioner (1/10th the cost of conventional machine). The test is conducted in a similar manner to that of a conventional testing machine, and the report generated is also similar. The device removes the need for an eye patch, and the test can be performed by lying on a bed as well. This increases the number of tests in a given time, and since the device is portable, the number of tests can be increased at all levels of society.

### PRODUCT IMAGES:



## DEVELOPMENT OF ADVANCED 3D BIOPRINTER

<b>Application:</b>	Avay manufactures and customizes 3D printers which can be used for biomedical, pharmaceutical and biotechnology research
<b>Company Name:</b>	Avay Biosciences Pvt Ltd
<b>Founder(s) Name:</b>	Adithya VS Suhridh Sundaram
<b>Technology Readiness Level (TRL):</b>	8 (Early Revenue Generation Phase)
<b>Intellectual Property:</b>	Filed for a trademark of "MITO" Patent filing process under progress

### PROBLEM ADDRESSED:

The 3D Bioprinters available in the market are non-customizable and often do not provide required delivery of Low Volume customized parts to the patients. Also, long supply chains don't allow quick manufacturer-to-patient solutions and reduces the affordability of the device for printing of implants, tissues and pharmaceutical tablets. Moreover, the centrally managed supply chain of 3D bioprinters leads to frequent disruption, especially during natural calamities

### FUND RAISED/ACHIEVEMENTS:

- » BIRAC BIG Grant of INR 50 lakhs
- » Private Capital of \$288,000 raised as Seed Round
- » Raised INR 4 Cr from Aeravti Ventures

### USP:

- » Hardware design capabilities for customizations often required for research
- » In house software development team of print strategy
- » Formulation of proprietary printing biomaterials to suit particular research applications for recurring revenue
- » Strong after-sales service model serving as brand building

### END USERS/CUSTOMERS:

Research and Medical Institutes, Biomedical and 3D Printing companies, Prototyping and Fabrication labs

### ABOUT THE TECHNOLOGY:

Avay provides bioprinters to R&D institutes & academia in Tissue Engineering, Cell Culture and Material Science projects, and also works on biomaterial formulations that can be used on our printers. The focus of research is to be able to replicate tissues and organs artificially, thereby solving a large problem for the medical/healthcare sector, as well as pharmaceutical testing.

### PRODUCT IMAGES:





## AI AND ML-BASED NEUROIMAGING SOLUTIONS FOR NEUROSURGEONS, PSYCHIATRISTS AND NEUROLOGISTS.

<b>Application:</b>	AI and ML-based neuroimaging solutions to construct and analyze computer-generated images with big data to understand the brain's structural connections with an emphasis on functional implications. Their neuroinformatic platform, VoxelBox, provides doctors with objective, precise, and personalized information about their patient's brain functioning.
<b>Company Name:</b>	BrainSight AI
<b>Founder(s) Name:</b>	Laina Emmanuel, Co-founder & CEO; and Dr. Rhimjim Agarwal, Co-founder & CTO
<b>Technology Readiness Level (TRL):</b>	TRL 8 - Pre-commercialization

### PROBLEM ADDRESSED:

Problems Addressed:

1. They are the only Indian health tech company in the mental health space.
2. Data-assured diagnosis and Data-predicted prognosis.
3. Help patients shorten the path to recovery and good health.

### FUND RAISED/ACHIEVEMENTS:

Funds Raised: \$925k

- » BrainSightAI is featured in CB Insight's 150 digital health startups to look out for in 2022!
- » 1 of 6 startups invited in Digital Health Exhibition in Goa,
- » Patent Granted: System for analyzing the activity of the brain using Magnetic Resonance Imaging (MRI) data.
- » Awarded a Grant from Pfizer
- » We are proud to announce that we have received incubation support from Atal Innovation Mission (AIM), NITI Aayog, and IIT Delhi in partnership with Pfizer.
- » Attended the 75th Annual IRIA 2023 Conference.

### USP:

We are the only Indian health tech company that is using deep tech like AI and ML to solve the most pressing problems in the mental health space. Leading establishments have placed their trust in us through partnerships, research grants and affiliation to accelerator programs.

Partner Include:

- » NEXUS Incubator
- » STANFORD ANGELS Grant Body
- » IKP EDEN Grant Body
- » ENTERPRENEUR FIRST Grant Body

### ABOUT THE TECHNOLOGY:

BrainSightAI is an AI enabled application suite developed by a diverse and expert team of scientists, researchers and designers. It provides evidence-based treatment hooks for neurosurgeons, psychiatrists and neurologists; and a private and empathetic digital aid for patients.

We enable greater precision in diagnosis and prognosis for neurological and psychiatric disorders, using AI on fMRI, sMRI and digital phenotypes

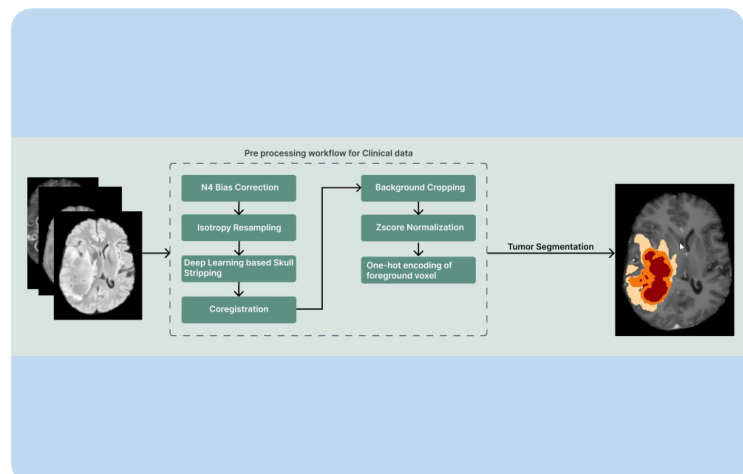
Benifetes of the technology:

- » Access rs-fMRI, fMRI, DTI, sMRI and psychological insights
- » Standardised processing steps
- » Simplify scientific workflows
- » Automatic edema corrections
- » Automatic Post-Processing
- » Accelerate your neuroimaging research publication

### END USERS/CUSTOMERS:

Psychiatrists and Neurologists

### PRODUCT IMAGES:





## AN ANTIGEN-BASED DETECTION KIT TO DETECT BOVINE TB.

<b>Application:</b>	An antigen-based detection kit to detect bovine TB and differentiate between tuberculous & environmental mycobacterium infections, thus minimizing false positive cases.
<b>Company Name:</b>	CisGEN Biotech Discoveries Private Limited
<b>Founder(s) Name:</b>	Dr. Maroudam Veeraswami
<b>Technology Readiness Level (TRL):</b>	TRL 8 - Pre-commercialization

### PROBLEM ADDRESSED:

They are working towards the development of novel products and services for animal health. They have commercialised innovative products in veterinary field, medical device for animal productivity enhancement and services for other unmet needs in one health.

### ABOUT THE TECHNOLOGY:

Bovine tuberculosis (bTB) is a chronic inflammatory disease of cattle caused by members of the Mycobacterium tuberculosis complex, and in addition to being an important animal health problem, bTB also poses a significant threat to public health. It has been estimated that annual worldwide economic losses associated with bTB are ~USD 3 billion. The disease is well-controlled in high-income countries, however, bTB remains endemic in most low- and middle-income countries (LMICs), including India where bTB has significant impacts in terms of decreased productivity, increased mortality and zoonotic threat. While national control programs involving test-and-cull strategies have proven to be hugely successful in high-income countries, such approaches are often not feasible in LMICs for both social and economic reasons.

The prescribed tuberculin skin tests with purified protein derivative (PPD) for diagnosis of bTB preclude the use of Bacille Calmette-Guérin (BCG)-based vaccination because of the antigenic cross-reactivity of vaccine strains with Mycobacterium bovis and related pathogenic members of the M. tuberculosis complex (MTBC)

### FUND RAISED/ACHIEVEMENTS:

Awards:

1. DMA women entrepreneur super achiever
2. BIG award, DBT 7th call
3. SIBRI , BIRAC, DBT 2018
4. IITM BIRAC SEED 2019
5. India Health fund , TATA trusts, 2019
6. BMGF, Penn State University, 2020
7. IVP, EDI, TN - GEIC 2022

### USP:

- » Early Detection
- » High Sensitivity and Specificity
- » Rapid Results
- » Portability and Field Applicability
- » Cost-Effective
- » Long Shelf Life and Stability

### END USERS/CUSTOMERS:

- » Veterinarians
- » Livestock Farmers
- » Government Agricultural Agencies

### PRODUCT IMAGES:



## WEARABLE PATCH THAT MONITORS HUMAN VITALS CONTINUOUSLY AND PROVIDES INSIGHTS TO THE DOCTORS AND ATTENDANTS.

<b>Application:</b>	Wearable Patch that monitors human vitals continuously and provides insights to the doctors and attendants.
<b>Company Name:</b>	DeepFacts Private Limited
<b>Founder(s) Name:</b>	Vamsi Karatam
<b>Technology Readiness Level (TRL):</b>	TRL 8 - Pre-commercialization

### PROBLEM ADDRESSED:

Lack of accessibility and affordability in health care.

- » Lack of Resources - Medical Equipment and Supplies
- » High Cost of Healthcare - Delays the treatment due to unaffordable to the available health system.
- » Lack of Awareness - The importance of Preventive Healthcare, leads to critical conditions.

### FUND RAISED/ACHIEVEMENTS:

#### Funding:

- » Bootstrap by Founders
- » Friends & Family

#### Achievements & Awards:

- » Winner of Early Stage Startup Award - HYSEA
- » First in Innovation Call Challenge (AMTZ)
- » Navonmesh Challenge (STPI)
- » Chunauti2.0 Challenge (STPI)
- » Nidhi Prayas - Department of Science & Technology Grant
- » Stood Fourth place in State Level - Telangana (ECS India US Mission - STPI National Conclave)

### USP:

One platform for all healthcare essentials to deliver medical assistance at the right time.

### ABOUT THE TECHNOLOGY:

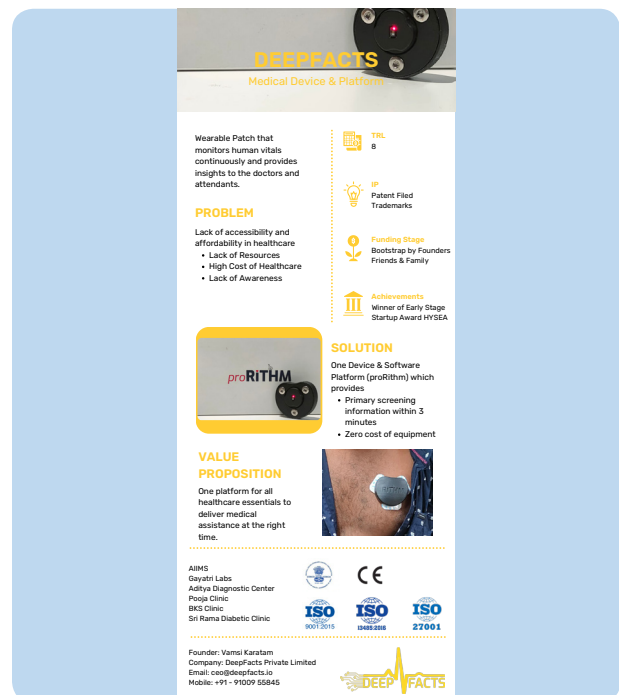
One Device & Software Platform (proRithm) which provides,

- » Primary screening information within 3 minutes
- » Zero cost of equipment
- » Increases the resource productivity

### END USERS/CUSTOMERS:

AIIMS, Gayatri Labs, Aditya Diagnostic Center, Pooja Clinic, BKS Clinic, Sri Rama Diabetic Clinic

### PRODUCT IMAGES:



**DEEPFACTS**  
Medical Device & Platform

Wearable Patch that monitors human vitals continuously and provides insights to the doctors and attendants.

**PROBLEM**  
Lack of accessibility and affordability in healthcare  
• Lack of Resources  
• High Cost of Healthcare  
• Lack of Awareness

**SOLUTION**  
One Device & Software Platform (proRithm) which provides  
• Primary screening information within 3 minutes  
• Zero cost of equipment

**VALUE PROPOSITION**  
One platform for all healthcare essentials to deliver medical assistance at the right time.

**TRL 8**

**IP Patent Filed Trademarks**

**Funding Stage**  
Bootstrap by Founders Friends & Family

**Achievements**  
Winner of Early Stage Startup Award HYSEA

AIIMS  
Gayatri Labs  
Aditya Diagnostic Center  
Pooja Clinic  
BKS Clinic  
Sri Rama Diabetic Clinic

CE  
ISO 9001:2015  
ISO 13485  
ISO 27001

Founder: Vamsi Karatam  
Company: DeepFacts Private Limited  
Email: info@deepfacts.io  
Mobile: +91 - 91009 55845

**DEEP FACTS**

## SAHAYATHA A SMART DEFECACTION CLEANSING ASSISTIVE DEVICE FOR IMMOBILE POPULATION

<b>Application:</b>	The smart defecation assistive device is a great boon to immobile population, the device can be used in old age homes, hospitals for bedridden patients to assist themselves in cleaning their body after defecation
<b>Company Name:</b>	Dhanvantri Biomedical Pvt Ltd
<b>Founder(s) Name:</b>	Sruthi Babu
<b>Technology Readiness Level (TRL):</b>	TRL: 8 (Early Revenue Generation Phase)
<b>Intellectual Property:</b>	Smart Locomotory Assistive Device App No: 201941015140 Us Patent : 17420525 Trade Mark:5023260 Design Patent : 355538-001 & 355539-001

### PROBLEM ADDRESSED:

- » In India 30.8 million are mobility impaired out of which 10 million requires defecation assistance.
- » About 4% death results each year during the transfer of patients to the toilets

### FUND RAISED/ACHIEVEMENTS:

- » Raised INR 5 Lakhs from Social innovation immersion program by BIRAC
- » INR 49.75 lakhs grant-in-aid from BIRAC BIG scheme
- » Raised INR 48 lakhs fund from DST NIDHI4COVID
- » Received INR 1 Cr from All Sharks in Shark Tank

### USP:

- » Inbuilt defecation cleaning assistance
- » Maintains hygiene with dignity
- » Reduces the patient transfer
- » Reduces the negligence associated with repeated manual care
- » Nurses /care giver can be more productive and effective
- » Hassel free experience
- » Independent defecation cleaning and locomotion

### END USERS/CUSTOMERS:

**End Users:** Elderly, Physically challenged and immobile population

**Customers:** Hospitals, Retirement Villas and NGOs

### ABOUT THE TECHNOLOGY:

- » Product Utility: Sahayatha a smart defecation cleansing assistive device for immobile population
- » Sahayatha assists the patients in defecation cleansing with inbuilt defecation and cleansing assembly.
- » Helps the patients to maintain their dignity with hygiene
- » Reduces the patient transfer which occurs to perform their defecation process.

### PRODUCT IMAGES:



## PHYGITAL PODIATRIC SOLUTIONS

**Application:** AI-powered CCDSS for the clinicians, enabling them to

- Diagnose various foot conditions related to diabetes
- Stage the Diabetic Foot Ulcer
- Recommend appropriate footwear / orthotics
- Recommend appropriate wound care
- Access experts in various specialties (telemedicine)
- Access specialty products / devices

**Company Name:** Dorina Turcanu

**Founder(s) Name:** Dr Sanjay Sharma

**Technology Readiness Level (TRL):** TRL 8 - Pre-commercialization

### PROBLEM ADDRESSED:

About 70 million diabetics in India, with ~50% (~30M) of them having a diabetic foot condition, ~20%(600K) with a Diabetic Foot Ulcer, of which ~20%(120K) would require an amputation, of which ~80% - '96000' can be prevented from appropriate podiatric interventions. Each patient with a diabetic foot ulcer spends about 130K until the ulcer heals. I.e., about 7800Cr is spent on wound healing in India, which can be prevented with appropriate podiatric care.

Diabetic patients usually are in the care of the local physicians, and it's important to equip these physicians with appropriate tools to diagnose and treat diabetic foot conditions to prevent ulcerations and amputations. Podiatric clinical recommendations and protocols that are available today are not applied by the clinicians to the patients especially in rural and semi-urban India due to the absence of knowledge and training in podiatry (podiatry is not as a subject in the medical curriculum and no specialty training in podiatry is available for the clinicians in India today)

This leads to frequent visits by the patients to tertiary care hospitals by the patients, late diagnosis and in the end non-healing ulcers and amputations.

### USP:

India's only phygital podiatric solutions, which includes technology in patient care for podiatric conditions

### FUND RAISED/ACHIEVEMENTS:

INR 5Cr, have been identified as the best podiatry clinic chain

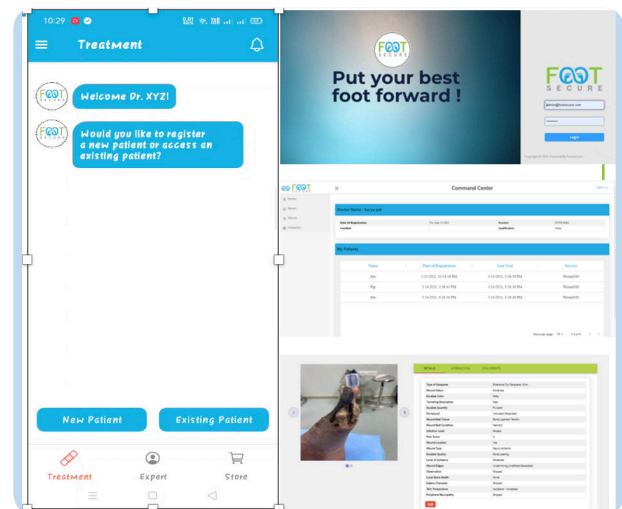
### ABOUT THE TECHNOLOGY:

CDSS, AI and Deep Learning Algorithms supports in Identifying, Classifying, Staging, Predicting and Managing various foot conditions and ulcers, based on the Inputs through images from a simple smartphone and physical signs, which can be elicited by health worker. These images and signs provide insights into Gait Abnormalities, Structural abnormalities and Wound area and characteristics. CDSS algorithms suggest preventive and curative measures by recommending various foot and wound management and amputation prevention methods. A continuous feedback loop will enable an opportunity for periodic updates to the decision support system's classification and prediction ability, further improving care quality with time.

### END USERS/CUSTOMERS:

Doctors, Nurses, Orthotists and Physiotherapists

### PRODUCT IMAGES:



## NEW TYPE OF HOSPITAL BED TO PREVENT THE CROSS CONTAMINATIONS AT THE HOSPITALS

<b>Application:</b>	cross-contamination prevention at hospital, AMR/superbug development prevention, prevention of biological diastser, ingeneral portable isolation for communicable & immunocompromized patients.
<b>Company Name:</b>	Edith Robotics Solutions Pvt Ltd
<b>Founder(s) Name:</b>	Shubham Shah
<b>Technology Readiness Level (TRL):</b>	TRL 8 - Pre-commercialization

### PROBLEM ADDRESSED:

The pressing issue we are addressing is the critical lack of suitable and accessible isolation facilities within the healthcare infrastructure of India. The prevailing challenges are multifaceted. Firstly, the existing healthcare system struggles to effectively manage patients with varying infectious diseases in the same setting. This deficiency not only demands extensive infrastructure expansion but also intensifies the risk of disease transmission among patients of differing severity levels within general wards and intensive care units. Secondly, the burden on frontline healthcare workers is exacerbated by the psychological strain of potential infection transmission despite personal protective equipment usage. Tragic loss of life among these professionals during the COVID-19 pandemic underscores the gravity of this concern. Hospital-acquired infections, notably prevalent in developing countries like India where rates can reach up to 37%, compound the crisis. Conventional isolation room construction is both time-consuming and resource-intensive, impeding swift response to emerging pathogens. Furthermore, the conventional drug development timeline of around two years for new pathogens presents a critical gap, potentially leading to millions of casualties in the interim. A holistic solution is imperative – a scalable, adaptable, and affordable isolation setup capable of mitigating pandemic risks until precise treatments are developed and disseminated.

### USP:

Experience the pinnacle of infection control with our revolutionary Portable Isolation System, meticulously designed to redefine safety. Within this system, airflow is expertly regulated, each breath purified by nanocoated H14 grade ULPA filters, boasting unrivaled antimicrobial capabilities. Post-filtration, a common dual-sided UVC 54 nm sterilization phase ensures the definitive deactivation of pathogens. But we don't stop there – our innovation reaches new heights with a virus burnout unit, elevating exit air to an impressive 121°C, rendering even the most resilient microorganisms powerless. Our commitment extends to patient comfort. The chamber effortlessly maintains negative and positive pressures tailored to individual needs, and air changes align with ISO 14644 cleanroom standards, guaranteeing uncompromising safety. This remarkable system is complemented by our 5-function ICU Isolation Bed, uniquely ergonomic and designed to accommodate the intricate requirements of ICU patients. Upholding the highest standards of IEC, ISO, and CE, our system operates in silence, stands portable, and integrates seamlessly with medical devices through airtight attachments. When it comes to space, our Medical Isolation Bed requires a minimal footprint – just 10 feet in length, 3.3 feet in width, and 6 feet in height. It draws power efficiently from a single-phase 240V 50hz supply, consuming an average of 350W (with a peak of 440W).

### FUND RAISED/ACHIEVEMENTS:

35 lakh INR

### ABOUT THE TECHNOLOGY:

Revolutionizing infection control and patient care, portable isolation solutions like the ICU Isolation Unit, Airborne Isolation Unit, and Mobile Isolation Unit redefine healthcare preparedness. These innovations incorporate cutting-edge features such as advanced filtration (UVC, ULPA), negative and positive pressure chambers, real-time monitoring, and customizable designs to contain highly contagious pathogens. These solutions ensure sterile environments, prevent cross-contamination, and enhance patient comfort. Compact, efficient, and compliant with standards, they protect immunocompromised patients, counter airborne infections, and provide safe transport options. These game-changing units epitomize the fusion of technology and healthcare, addressing critical needs in infection management.

### END USERS/CUSTOMERS:

Our target customer base spans diverse sectors within the healthcare industry: Hospitals: Ranging from small clinics to medium-sized facilities and Tier-1 multi-specialty hospitals, our solution caters to institutions with ICU and infectious disease patient units. It offers a comprehensive approach to isolation, enhancing patient safety and infection control. Homecare Service Providers: Companies specializing in home healthcare benefit from our portable isolation solutions, extending a secure and sterile environment to patients within their homes. This approach enhances the quality of care while minimizing infection risks. Medical Transport Services: Our innovation finds applicability in both air and road ambulances. Ensuring the safe transport of infectious or immunocompromised patients, our solution contributes to maintaining patient health during transit.

### PRODUCT IMAGES:



**Edith Healthcare**

Let's Prevent the Spread of Virus

Specially Designed for Infectious disease & Immunocompromised Patients

**Isolation Bed**

- 99.99% Filtration 0.1 micron (-Ve) & (+Ve) pressurized
- Leak Proof chamber
- Real time data monitoring
- ULPA Filtration
- UVC Sterilization
- Qualify ISO 14644 [ NABL LAB ]

**Contact Us**

Phone/WhatsApp on : +91 8849747995

www.edithhealthcare.in



## COSMO FOR RAPID STERILIZATION OF AIR, WATER & SURFACES

### Application:

Indoor decontamination solutions for densely occupied spaces: Eta Purification's COSMO technology provides 24x7 protection of both air and high-contact surfaces. Adopted from nature and is proven to be harmless to people with safe exposure limits our COSMO systems are currently operational in a variety of environments including:

- Hospitals and healthcare settings to reduce the spread & severity of secondary infections
- Mass transport, Professional facility environments & Institutions where protection from infections is needed most

### Company Name:

ETA Purification Pvt Ltd

### Founder(s) Name:

Dinesh Venkatachalam

### Technology Readiness Level (TRL):

TRL: 8 (Early Revenue Generation Phase)

## PROBLEM ADDRESSED:

The emergence of new life-threatening microbes such as Covid-19 pose a serious threat to individuals and communities alike. In particular, healthcare settings face special challenges, where healthy frontline personnel are more vulnerable due to high exposure risk. It is therefore obvious that rapid and effective disinfection/sterilization of air, aerosol & highcontact surfaces is vital to prevent further contamination. The innovative COSMO systems that produce controlled concentration of free-radicals such as O<sub>3</sub>, OH- & NO- utilizing our patented & proprietary micro-plasma technology to eliminate the pathogen colonies and prevent contamination.

## FUND RAISED/ACHIEVEMENTS:

- » Raised INR 5 Lakhs from Social innovation immersion program by BIRAC
- » INR 49.75 lakhs grant-in-aid from BIRAC BIG scheme
- » Raised INR 48 lakhs fund from DST NIDHI4COVID
- » Received INR 1 Cr from All Sharks in Shark Tank

## USP:

- » A broad-spectrum agent with sky-high efficiency levels
- » Completely chemical-free and consumes very less little energy
- » Designed and developed in the USA as per EPA standards
- » Tested, validated and accredited by hygiene institutes (NSF, AMPC etc.)

## END USERS/CUSTOMERS:

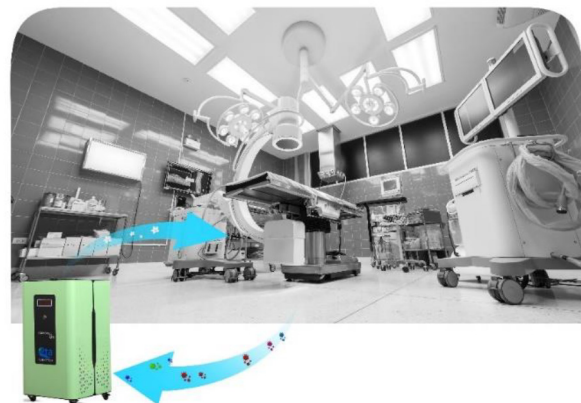
- » Hospitals & Healthcare Settings
- » Mass Rapid Transport & Transit
- » Food Processing and Storage
- » Pharmaceutical Processing Facilities
- » Professional Facilities
- » Educational Institutions, Entertainment Facilities and more

## ABOUT THE TECHNOLOGY:

Eta Purification's COSMO technology is backed by more than 15 years of R&D and protected by more than 80 international patents to offer efficient and effective solutions for humanity. Our philosophy is to utilize innovation for the betterment of the society using green principles. COSMO (Complete Sterilization by Micro-plasma Oxidation) utilizes the oxidative power of free-radicals, which are generated using our proprietary and patented non-thermal micro-plasma technology. The innovative products are scientifically validated by public health and safety organizations, research laboratories and industries for their effectiveness in the reduction of pathogens in air, water and surfaces.

Through continuous education, we help our customers understand the current global challenges that face humanity and provide solutions to create safer and cleaner environments.

## PRODUCT IMAGES:



## A FRUGAL MULTI THERAPEUTIC WOUND CARE SOLUTION FOR RESOURCE CONSTRAINT HEALTHCARE SETTINGS

<b>Application:</b>	The device can be used for venous leg ulcers, ischemic wounds, diabetic foot ulcers, pressure wounds, traumatic wounds, post surgical wounds and burns.
<b>Company Name:</b>	Inochi Care Pvt Ltd
<b>Founder(s) Name:</b>	Shivani Gupta
<b>Technology Readiness Level (TRL):</b>	TRL: 8 (Early Revenue Generation Stage)
<b>Intellectual Property:</b>	A wound dressing for combined negative pressure and fluid delivery system (App No: 202011056144, Indian Patent)

### PROBLEM ADDRESSED:

Non healing wounds are those which do not heal in the expected time frame, usually within thirty days. Wounds impact patients' physical, mental, and social well being, and adversely affect families and care providers. Complications to non healing wounds are vast, including severe pain, septicemia, hospitalization, and amputations. In India and other developing countries, the problem of wounds is compounded by other factors such as poor access to health care, inadequate health infrastructure, imported medical equipment, and affordability. Dependency on the imported products It will take at least another 10 or more years to make them available at community level healthcare settings

### FUND RAISED/ACHIEVEMENTS:

- » INR 49.07 lakhs grant-in-aid from BIRAC BIG scheme
- » INR 3 lakhs grant-in-aid from DST NIDHI PRAYAS
- » Winner for ASME 2022 and received cash prize worth 10,000 USD.
- » DRDO TDF Funds of 65 lakhs
- » Test license obtained from CDSCO
- » Certified product from ISO, IEC & NABL
- » Wholesale drug licence obtained from CDSCO

### USP:

- » Portable and light weight point-of-care device
- » Comes with multiple therapy modes and inbuilt data storage
- » Affordable and user friendly operations
- » The device comes with hypoxia and infection control systems
- » Highly efficient compared to other existing technologies
- » Battery powered operations

### ABOUT THE TECHNOLOGY:

Inochi Care is working on a frugal multi therapeutic wound care solution for resource constraint healthcare settings. They have developed an innovative smart plug and patch system which facilitates delivering multiple therapies at the wound site utilizing the existing resources and infrastructure to provide advance wound care modalities similar to imported technologies. The system can reduce the timeline of availability of advance wound care modalities at community healthcare settings from 10 years to 2 years. It will be one frugal solution to replace four different expensive products. This indigenous technology is expected to cost not more than 1/10th of the cost of existing devices for one or other kind of advance wound care therapy.

### END USERS/CUSTOMERS:

Research and Medical Institutes, Biomedical and 3D Printing companies, Prototyping and Fabrication labs

### PRODUCT IMAGES:



## ILAB & IRPM: REMOTE PATIENT MONITORING SYSTEM

<b>Application:</b>	The tele-health platform can be used for remote health monitoring of patients in hospitals, remote locations, etc
<b>Company Name:</b>	MedTel Healthcare Pvt Ltd
<b>Founder(s) Name:</b>	Lalit Manik Soumyakant Das
<b>Technology Readiness Level (TRL):</b>	TRL: 8 (Revenue generation phase)

### PROBLEM ADDRESSED:

Increasing burden of chronic diseases like – diabetes, hypertension, heart diseases, etc. have resulted in 70% deaths world wide. The major gap is in the constant real time health monitoring of chronic diseases which results in delay in the treatment procedures and eventually leads to death. Only 25% of hospitals are equipped with remote health monitoring system. Furthermore, the rural PHCs are not at all equipped with any health monitoring system through which the doctors can remotely treat the patients.

### FUND RAISED/ACHIEVEMENTS:

- » BIRAC LEAP fund worth INR 50 lakhs
- » Pre Series A: 5 Cr INR raised already. 2.5 Cr INR to be raised
- » Singapore based institutional funding
- » HNIs and Angels from Australia, USA and Europe
- » Majority of funds to be utilized in Business Development & Product Improvement

### USP:

- » 15+ Point of Care Devices
- » Personalized Tele Health App
- » Automated Prescription & Reports
- » Emergency Management Module
- » Integrated Payment Gateway

### END USERS/CUSTOMERS:

B2B & B2B2C model

- » Devices one time buy and Platform on Subscription
  - » Devices + Platform on rental subscription
- Sell to hospitals, polyclinics, healthcare organizations and others

### ABOUT THE TECHNOLOGY:

MedTel's RPM platform incorporates connected diagnostic devices, a smartphone app, and a webbased dashboard for hospital access and review. These devices include the digital blood pressure machine, body composition monitor, glucometer, pulse oximeter and many more. Our advanced solutions manage diseases like diabetes, hypertension & obesity and endeavor timely interventions. We also provide remote pregnancy care which reduces physical clinic visits and monitors complication parameters In the COVID-19 pandemic, connected healthcare and remote patient monitoring are important tools for hospitals, poly-clinics and individual practitioners.

### PRODUCT IMAGES:





## NEUKELP POSTURE: INTELLIGENT BODY POSTURE MONITORING DEVICE

<b>Application:</b>	A body posture monitoring device to keep humans free from Back and Neck Pain naturally. Moreover, an extension of this product would also help in curing Back Pain in the body. The device would help user to build a good habit of maintaining right body posture and keep themselves away from excruciating pain and a lot of other health issues.
<b>Company Name:</b>	Neukelp Innovation Technology Pvt Ltd
<b>Founder(s) Name:</b>	Saurabh Agarwal
<b>Technology Readiness Level (TRL):</b>	TRL: 8 (Early Revenue Generation Phase)
<b>Intellectual Property:</b>	Indian Patent has been applied Application no : 202031015928

### PROBLEM ADDRESSED:

Bad body posture is responsible for Back, Shoulder and Neck Pain. But there are several critical consequences of bad posture, like Cervical Spondylitis, Trapezius Muscle Pain, Herniated Disc, Poor breathing, Varicose Veins, Change in Spinal Curve, Carpal Tunnel Syndrome, Fatigue and so on. According to statistics, Back Pain itself is the second most common reason to doctor visit after upper respiratory infections. In addition sitting in a slouched position at desk for an extended period of time puts a great deal of stress on our upper body, especially if our body is not properly supported. The most common pain areas include: Lower back: 63 % Neck: 53% Shoulder: 38% Wrist: 33%. Besides Poor posture can also cause a misalignment in the spine and lead to even more pain along with the degradation of the tissues surrounding our joints. Thus there is a need to a device which can help us to maintain a suitable body poster to prevent critical consequences of bad posture.

### FUND RAISED/ACHIEVEMENTS:

- » Supported Under BIRAC BIG: 49.54 Lakhs
- » Startup Odisha: 2.40 Lakhs for 1 year
- » Startup Odisha: 12.50 Lakhs for 1 year
- » BIRAC SEED fund : 25 lakhs

### USP:

- » The function of the device is novel as it assists in maintaining ergonomically desired upper body posture by tracking lumbopelvic motion and detecting pelvis orientation and power efficient design to miniaturize it's size.
- » This device is very power efficient and small in size and it can be worn on the lower back very comfortably.
- » The sensor based devices can be connected to a mobile app for the constant monitoring and feed back notification using a wireless technology thus making them suitable for carrying.

### ABOUT THE TECHNOLOGY:

The proposed device is able to assists in maintaining ergonomically desired upper body posture by tracking lumbopelvic motion and detecting pelvis orientation. Lumbopelvic motion and pelvis orientation data can be continuously monitored and analyzed to assist the user to maintain ergonomically desirable body posture. It is able to track lumbopelvic rhythm and pelvis tilt and uses advance algorithm to detect unwanted bad posture from the data collected from sensors and gives feedback to the user either through vibrotactile feedback in the device or some other method of notification. User specific Algorithm are being used for posture detection and generated using advanced machine learning techniques. Device can be connected to a mobile application through wireless communication. Device itself has the capability to store data which can be shared with the mobile application.

### END USERS/CUSTOMERS:

Physiotherapist, Physician or Orthopaedician, Employees of corporate offices/Govt. offices

### PRODUCT IMAGES:



## MOBILAB - AFFORDABLE IOT ENABLED SMART MULTI DIAGNOSTIC DEVICE FOR CHRONIC DISEASES DETECTION

<b>Application:</b>	The device can be used as a point of use device for Kidney Function Tests, Liver Function Tests, Heart Function tests, and Pancreatic Function Tests.
<b>Company Name:</b>	Primary Healthtech Pvt Ltd
<b>Founder(s) Name:</b>	Sahil Jagnani
<b>Technology Readiness Level (TRL):</b>	TRL: 8 (Clinical trials are completed; Early Revenue Generation Phase)
<b>Intellectual Property:</b>	Portable Cuvette based Reagent Mixer (Application No – 202131038898) Portable low powered optical system for colorimetric analysis and characterization (Application no – 202231004664)

### PROBLEM ADDRESSED:

70% of people are dying because of Non-communicable diseases which are disease related to kidney, liver, heart, pancreas etc. There are rare symptoms of these disease and if detected early can be treated at primary care with proper medicine. But more than 50% of diagnosis happens only at later stage. Establishing laboratory set up in Rural and Semi-urban area is not economically viable for diagnostic companies. The solution in this case is the point of care diagnostic solution which can provide affordable, portable, accessible instant diagnosis.

### ABOUT THE TECHNOLOGY:

Nanotechnology principles have been used for antibody conjugation to improve Sensitivity of detection for better accuracy, Reduced steps of detection and improved Kinetics to reduce testing time. Detection of biomarkers have been done using colorimetry principles using Beer Lambert's Law where concentration is correlated to absorbance. We are also working on a microfluidics system to simultaneously detect various biomarkers with a drop of blood. Reader device internal arrangement and optical detection part has been patented which not only gives the compact size but also significantly reduces the cost of the device. Electronics part is optimized such that reader device requires ultra-low power and is driven using proprietary firmware. As internet and mobile phone usage is on rise, we have moved our entire system on cloud and all the tests and calculations are using processing power of mobile phones.

### FUND RAISED/ACHIEVEMENTS:

- » INR 50 lakhs from BIRAC BIG Grant
- » INR 25 lakhs from BIRAC SEED fund at KIIT TBI
- » Raised INR 25 lakhs from Pontaq Venture & STPI
- » INR 33 lakhs from MeITY SASACT
- » INR 25 lakhs from Villgro
- » Raised INR 1 Cr from Sage Venture

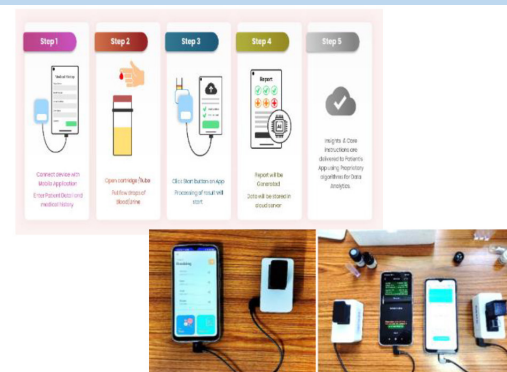
### END USERS/CUSTOMERS:

In house patients, Govt agencies, Hospitals, Insurance providers, Local Medical Centers

### USP:

- » **Affordability** - Device will be priced in sub-15k range and it will bring down the cost of tests by 1/10th using economic raw material.
- Portability** - Smartphone-sized device, needs no heavy set-up & can be used in home conditions while to set up a diagnostic lab a lot of space & infrastructure is required.
- » **Easy to Operate** - Anyone who understands how to use a phone can use it without difficulty, and testing simply takes four simple steps.
- » **Vernacular Language** - Our smartphone application is multilingual, with a goal to help technicians comprehend and use our device with ease.
- » **Battery operated** - Device is robust for low resource setups, it has a power backup of 4-6 hours.
- » **Modularity** - Modular architecture with specified modules, this makes the device future proof.
- » **Instant results with Few drops of Blood/Urine**
- » **Smart Clinical/ Technician App** - A dedicated Mobile application has been developed for clinician/ technician with data processing using our algorithms and data analysis to predict health parameters

### PRODUCT IMAGES:



## MAKE KNOWLEDGE DISCOVERABLE THROUGH LINKED DATA

<b>Application:</b>	SaaS platform for Genome Data Analysis
<b>Company Name:</b>	Semantic Web India Pvt Ltd
<b>Founder(s) Name:</b>	Asha Subramanian, Vijay Varahaswami
<b>Technology Readiness Level (TRL):</b>	TRL 8 - Pre-commercialization

### PROBLEM ADDRESSED:

Lack of affordable, automated tools for genome data analysis to diagnose rare genetic disorders in humans

### FUND RAISED/ACHIEVEMENTS:

- » MeiY TIDE 2.0 Entrepreneur-in-residence and Grant-in-Aid through AIC-CCMB
- » Startup India Seed Fund through DERBI Foundation
- » NIDHI SSS through DERBI Foundation
- » MeiY TIDE 2.0 Scale Up Fund through AIC-CCMB
- » PadUp Ventures - Pre-Seed Round

### USP:

- » Semantic AI powered SaaS based Knowledge Integration platform that democratizes access to cutting edge IT solutions
- » Affordable, comprehensive solution to analyse Genome data
- » No B2B conflict
- » Focus on shared local knowledgebases for effective diagnosis

### END USERS/CUSTOMERS:

Genetic Diagnostic Labs, Hospitals, Speciality Clinics, Genetic Research Organisations

### ABOUT THE TECHNOLOGY:

We harness multiple scientific knowledge bases pertaining to diseases, proteins, clinical variants and phenotypes, converting the information into a semantically linked knowledge graph. Graph algorithms and computational models are used to prioritize the annotated variants using rule driven scoring models. The underlying knowledge integration framework makes the variant analysis summaries findable, accessible, inter-operable and reusable.

### PRODUCT IMAGES:



# NANOROBOTICS FOR HEALTHCARE

**Application:** Using nanorobots to target bacterial infection and improve quality of life

**Company Name:** Theranautilus

**Founder(s) Name:** Debayan Dasgupta, Shanmukh Srinivas, Ambarish Ghosh

**Technology Readiness Level (TRL):** TRL 8 - Pre-commercialization

## PROBLEM ADDRESSED:

AMR infection in teeth, dental hypersensitivity

## FUND RAISED/ACHIEVEMENTS:

1.6cr

## USP:

precise drug delivery

## ABOUT THE TECHNOLOGY:

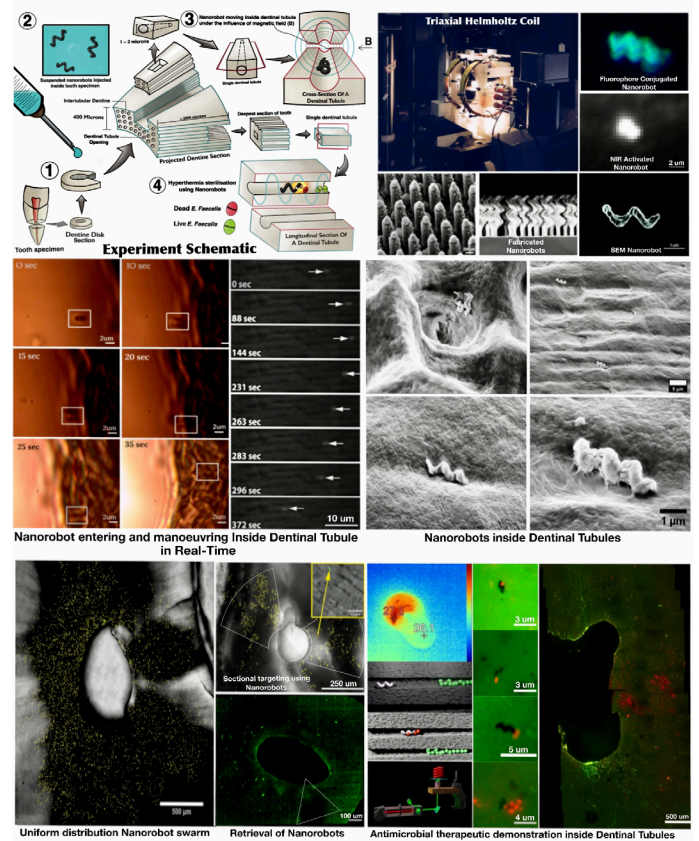
Novel technology to solve unsolved problems in oral health

## END USERS/CUSTOMERS:

Dental clinics and patients

## PRODUCT IMAGES:

### Manoeuvrability and Therapeutic Applications Of Nanorobots In Ex-vivo Teeth





# TECHNOLOGY READINESS LEVEL 7

## CLINIC-BASED, NON-INVASIVE TREATMENT DEVICE FOR DEVIATED NASAL SEPTUM (DNS)

### Application:

SWASAM, a groundbreaking medical device, finds innovative application in the treatment of Deviated Nasal Septum (DNS). Using controlled electrical currents, SWASAM facilitates Electromechanical Reshaping (EMR) of nasal cartilage, addressing the challenges posed by DNS. The device offers a non-invasive alternative to traditional surgical interventions, providing a precise and personalized approach. By reshaping the nasal cartilage, SWASAM aims to alleviate symptoms associated with DNS, enhancing nasal airflow and mitigating breathing difficulties. This application showcases SWASAM's potential to revolutionize the management of DNS, offering patients a minimally invasive, efficient, and patient-centric solution for nasal septum correction.

### Company Name:

Caldor Health Technologies Private Limited

### Founder(s) Name:

Harisharan Ramesh & Thilak Chakaravarthi

### Technology Readiness Level (TRL):

TRL 3

### PROBLEM ADDRESSED:

Septoplasty surgery is one of the most common surgeries performed in ENT specialty, due to its high prevalence and severity in reducing quality of life. Among the 4884 ENT and Multispecialty hospitals available in India, only about 4,50,000 such procedures happen every year annually, where studies estimate about 56 Million would have severe nasal obstruction indicating large unaddressed market segment who choose medical management using nasal decongestants and medications to temporarily alleviate symptoms. The conventional treatment procedures require nasal packing or splints after surgery, causing discomfort and inconvenience for patients reducing patient compliance and adherence to procedural recommendations.

### FUND RAISED/ACHIEVEMENTS:

Caldor achieved significant milestones, winning the National Bio Entrepreneurship Competition 2022, securing the Startup India Seed Fund from AIC CCMB, and obtaining the DST-Nidhi Prayas Grant from SINE IITB. Additionally, strategic collaborations with Marathwada MedTech Lab and Morphedo Technologies have propelled prototype development and market readiness. In this short span, Caldor has raised substantial funds, driving advancements in EMR technology. Caldor also gained recognition in prestigious programs such as I-NCUBATE at GDC IIT Madras and the IIT Startups Accelerator Program.

### END USERS/CUSTOMERS:

» ENT Surgeons

### ABOUT THE TECHNOLOGY:

"SWASAM," a portable minimally invasive non-surgical method for reshaping the nasal septal cartilage via electromechanical reshaping. This results in stress relaxation within the cartilage, allowing it to be reshaped within 15 minutes. The procedure can be performed under local anaesthesia at an ENT clinic enabling the doctors to perform more procedures in both affordable and accessible manner.

### USP:

SWASAM's USP lies in its revolutionary approach to medical interventions, particularly in EMR. Unlike conventional methods, SWASAM offers a non-invasive solution for reshaping auricular and nasal cartilage, introducing a paradigm shift in medical device technology. The device's ability to administer controlled electrical currents within specified dosimetries sets it apart, providing a precise and personalised treatment for conditions like Deviated Nasal Septum. SWASAM's USP lies in its commitment to minimising patient distress, promoting safety, and enhancing the efficacy of cartilage reshaping procedures. With its innovative technology, SWASAM stands as a pioneer in reshaping medical approaches, promising a transformative impact on patient care.

### PRODUCT IMAGES:







## DEVELOPING DISEASE MODELS FOR ANIMAL FREE DRUG TESTING

<b>Application:</b>	Preclinical Trials for cosmetics, pharmaceutical, ayurvedic and vetnary medicine
<b>Company Name:</b>	Cellverse Pvt Ltd
<b>Founder(s) Name:</b>	Dr Kanika Singroha
<b>Technology Readiness Level (TRL):</b>	TRL 5

### PROBLEM ADDRESSED:

Non matching Drug Testing results at Preclinical and clinical trials

### USP:

making drug discovery 15 times faster. More accurate and precise.

### FUND RAISED/ACHIEVEMENTS:

» 1.5 Cr from Government and Venture capitalists

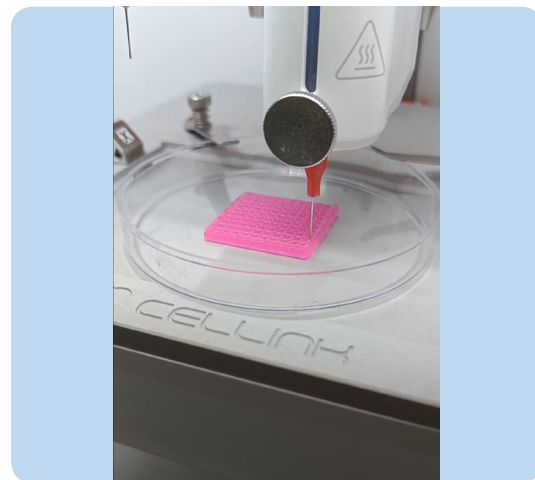
### END USERS/CUSTOMERS:

Pharmaceutical industry

### ABOUT THE TECHNOLOGY:

Developing Disease Models through Bioprinting and Tissue engineering

### PRODUCT IMAGES:



## SINGLE OPERATOR SYRINGE FOR ULTRASOUND GUIDED PROCEDURES

<b>Application:</b>	Ultrasound Guided Injection and aspiration procedures, Pain Management, Regional Anaesthesia, Cystic fluid aspiration, Regenerative Procedure
<b>Company Name:</b>	Healyantra Medical Technologies
<b>Founder(s) Name:</b>	Dr. Varun Khandelwal, Divesh Kumar Awasthi, Dr. Hardik Kothadia
<b>Technology Readiness Level (TRL):</b>	TRL4

### PROBLEM ADDRESSED:

Two operator ultrasound guided procedure is made easy and the solution can effectively reduce the total treatment time by 50% and total treatment cost by 20%

### USP:

Excellent Stability during the US guided procedure, Auto-Aspiration, Cost and Time effective

### FUND RAISED/ACHIEVEMENTS:

» 9 Lakhs

### END USERS/CUSTOMERS:

Pain management Clinics, Anesthesiologist, Orthopedic Surgeons, Radiologists, Oncologists.

### ABOUT THE TECHNOLOGY:

The Novel Syringe has autoaspiration function based on differential pressure and mechanical actuator for injection or aspiration without changing the grip.

### PRODUCT IMAGES:





## THORACARE: A NON-INVASIVE EASY TO USE EARLY STAGE HEART AND LUNG ABNORMALITIES SCREENING DEVICE

<b>Application:</b>	The device can be used as non-invasive portable device for advance screening of Heart and Lung disease using two step detection procedure.
<b>Company Name:</b>	Larkai Innovations Pvt Ltd
<b>Founder(s) Name:</b>	Pritam Dhalla Abhilash Chakraverty
<b>Technology Readiness Level (TRL):</b>	TRL: 7 (Validated & Market Ready)
<b>Intellectual Property:</b>	PCT Application No.: L-92172/2020 Indian Patent Application No.: 202031010803

### PROBLEM ADDRESSED:

Cardiovascular diseases (CVDs) and Lung diseases are the leading cause of deaths globally with an estimated 17.3 million and 3.2 million annual deaths respectively. CVDs are expected to reach over 23 million by 2030 and COPD has grown at 11.6 % in the last 25 years. India contributes to 20 – 35 % of the global mortality rate for the cardiovascular and pulmonary diseases. To further add to the issues of high mortality rate, a recent study published in British Medical Journal found that the doctor to patient ratio in India is 1:1278 with about 70% of the rural population having minimal access to healthcare professionals. The number of villages that doesn't have presence of doctors is reported to be around 43.5 %. Physicians are responsible for the treatment, it is often the nurses who are the primary users of such medical devices. In these environments, devices should be designed in a way that they can be used by untrained and low-skilled users.

### ABOUT THE TECHNOLOGY:

ThoraCare is a portable device that replaces several distinct elements of a traditional ECG and Stethoscope setup. A novel AI algorithm which diagnose early stage real-time heart impulse and valvular disease for futuristic predictive analysis. The device provides comprehensive heart and lung condition screening report within 30 seconds and this report can also be examined by a low skilled person. The Model Available is a Desktop model.

### FUND RAISED/ACHIEVEMENTS:

- » DST-NIDHI EIR: INR 3.6Lakhs.
- » MeitY- TIDE 2.0 Grant : INR 7 lakhs
- » Received Startup Odisha Product Development Grant worth INR 15 lakhs
- » Received "The Best Young Entrepreneur" in The BENGAL
- » PRIDE AWARDS 2021
- » Raised INR 2.5 Cr from Qi Venture & Real Time Angel Fund

### END USERS/CUSTOMERS:

Healthcare centers, Hospitals, Physicians

### USP:

- » Screens Heart and Lungs at one Point of Care, providing a comprehensive test
- » Real time AI powered impulse and auscultation waveform and data on screen
- » Real time noise reduced sound of Heart and Lungs with recording feature
- » Standalone device, requires no external power or accessories to function
- » Our device's working principle is based on bio signal acquisition and their analysis -
- » For the screening of the Heart- beat-to-beat Heart signal acquisition done by recording ECG (Electrocardiogram) and PCG (Phonocardiogram) and analyzing them using AI based system for detection of any abnormal impulse or heart auscultation related abnormalities.
- » For screening of the Lungs- respiratory signal acquisition by recording Bronchial and Vesicular breath sounds and comparing them using the AI based system for detection of any abnormal lung conditions in a few seconds.

### PRODUCT IMAGES:



## PREVENTION OF HOSPITAL ACQUIRED INFECTION

**Application:** ICUs  
**Company Name:** Medvocare Private Limited  
**Founder(s) Name:** Ramkishore Jangid  
**Technology Readiness Level (TRL):** 3

### PROBLEM ADDRESSED:

Because of poor oral hygiene pneumonia has developed while patient on ventilation

### USP:

Automatic, compact and compatible to oral cavity

### FUND RAISED/ACHIEVEMENTS:

» MSME-15lak

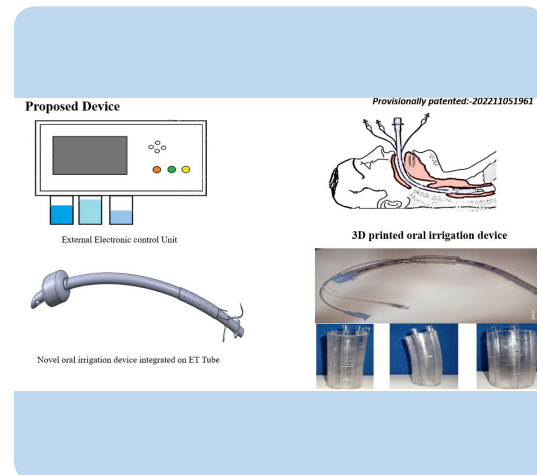
### END USERS/CUSTOMERS:

Ventilated Patient

### ABOUT THE TECHNOLOGY:

Oral care device

### PRODUCT IMAGES:



## MANUFACTURING AND COMMERCIALIZATION OF URINE MICROALBUMIN MEASUREMENT SYSTEM PROFLO-U®

<b>Application:</b>	The kit can be used for urine microalbumin measurement for early diagnosis of CKD in diabetic patients, hypertension patients, geriatric people, etc.
<b>Company Name:</b>	Prantae Solutions Pvt Ltd (OPC)
<b>Founder(s) Name:</b>	Sumona Karjee Mishra
<b>Technology Readiness Level (TRL):</b>	TRL: 7 (The final MVP is ready and currently the product is under extensive field trials)
<b>Intellectual Property:</b>	Patent Number: 308432 & 360496 Design Registration: 316100-001324401-001, 322092-001 Trademark: Proflo-U® , PregaMo®

### PROBLEM ADDRESSED:

Chronic Kidney Disorder (CKD) one of the major noncommunicable disorder with global prevalence of 10%. Unfortunately, it has been reported the kidney damage can progress upto 70% without any clinical symptom manifestation. At this stage reversal of damage is very difficult and patient eventually progresses to end stage renal disorder. However, early diagnosis can save lives and even reverse kidney damage. At present, the early diagnosis can happen only in centralized diagnostic laboratories. They are expensive and cumbersome. Proflo-U® with its innovative technology enables early diagnosis with convenience and cost effectiveness

### ABOUT THE TECHNOLOGY:

It is an inventive and innovative technology. It is noninvasive method where an early biomarker for CKD from the urine specimen. The process has lab in cuvette where the sensing mechanism is fluorescence. The fluorescence is analyzed by a palm size reader with optimized optical and electronic system. The optical intensity is converted into concentration of the biomarker (urine albumin) through a smart phone interface based on the standard curve fed in the backend, generated through 1000+ data points collected with the system.

### FUND RAISED/ACHIEVEMENTS:

- » Founder Sumona Karjee Mishra has received BIRAC SIIP Fellowship
- » INR 1.2 Cr from BPCL Ankur
- » INR 30 lakhs from Millenium Alliance
- » BIRAC GCE India worth INR 35 lakhs
- » MeITY SASACT Fund worth INR 20 lakhs
- » BIRAC TiE WinER Award worth INR 5 lakhs
- » Swayam Siddha Samman worth INR 1 lakh
- » TATA Trust Harvard SAI worth INR 5 lakhs
- » BIRAC – Ignite Award 2019
- » Pride of Odisha Award (Make in Odisha Conclave 2018)

### USP:

- » No requirement of cold chain logistics
- » Simple to operate test result in 3 steps
- » Rapid time from sample preparation to Result 3mins
- » Simple interactive interface of the App
- » Bluetooth enabled
- » Internet connectivity not required for its operation
- » Can operate with simple 9 V alkaline battery
- » Portable system with the palm size reader device

### END USERS/CUSTOMERS:

- B2C: Diabetic Patients, Hypertension Patients, Geriatric People, Genetic Disposition, Preeclampsia survivors, etc.
- B2G: PHC, Screening Camp, Asha Workers
- B2B: Tier II & III city and rural area diagnostic labs

### PRODUCT IMAGES:





**Bengaluru Science and Technology Cluster (BeST)**

Website: <https://www.bestkc.in>  
Email: [ravi.tennety@bestkc.in](mailto:ravi.tennety@bestkc.in)



**Bhubaneswar City Knowledge Innovation Cluster (BCKIC)**

Website: <https://bckic.in>  
Email: [ceo@bckic.in](mailto:ceo@bckic.in)



**Delhi Research, Implementation, and Innovation (DRIIV)**

Website: <https://www.driiv.co.in>  
Email: [ceo@driiv.co.in](mailto:ceo@driiv.co.in)



**Research and Innovation Circle of Hyderabad (RICH)**

Website: <http://rich.telangana.gov.in/>  
Email: [ceo-rich@telangana.gov.in](mailto:ceo-rich@telangana.gov.in)



**Jodhpur City Knowledge and Innovation Cluster (JCKIC)**

Website: <https://jckif.iitj.ac.in/de/>  
Email: [drgstoteja2021@gmail.com](mailto:drgstoteja2021@gmail.com)



**Pune Knowledge Cluster (PKC)**

Website: <https://www.pkc.org.in>  
Email: [priya.nagaraj@pkc.org.in](mailto:priya.nagaraj@pkc.org.in)