VENTURE RISE THAILAND 2025

INNOVATION CATALOG

MEDICAL & WELLNESS


Medical
&
Wellness

AI NOSE

ROBOTIC BREAST CANCER SCREENER

Dr.Chalermpon Punnotok

CT Asia Robotics Co., Ltd.

MED-001

Highlight

Key features and Strengths

The Robotic Breast Cancer Screener is an innovative medical device that detects breast cancer (Stage II and above) through breath analysis using advanced VOC (Volatile Organic Compounds) sensors and AI-based pattern recognition. Designed for use by certified medical personnel in sterile hospital environments, the screening process involves exhaling into a sterilized plastic air bag, which is analyzed by the AI system to identify cancer-related biomarkers. The device delivers results within 30 minutes, offering a fast, non-invasive, and reliable tool that enhances early cancer detection and supports preventive healthcare.

Status and Potential of Research and Innovation

Current Status

Not yet commercialized or transferred for use

Standards and Certification Status

- Currently under FDA registration process
- Certified under IEC 62304

Intellectual Property (IP) Rights

Granted IP protection or approved Invention Disclosure

Market Readiness

Prototype developed but not yet tested in the market

FLUVAX H5

(H1N1)

Government Pharmaceutical Organization

MED-002

Highlight

Key features and Strengths

In response to the global outbreak of the highly pathogenic avian influenza virus (H5N1), which caused severe disease in poultry worldwide, Thailand has strengthened its preparedness through the development of medical countermeasures, particularly vaccines and antiviral drugs, to enhance public immunity. The Government Pharmaceutical Organization (GPO) has undertaken a research and development project on a live attenuated avian influenza vaccine, subtype H5N2, under the name “FluVac H5,” which is capable of inducing immune protection against the H5N1 virus. The project received conditional approval for emergency use during pandemic situations and was supported by The Institute of Experimental Medicine (IEM), Czech Republic, which provided a master donor virus that had been attenuated for safety and proven capable of eliciting effective immune responses. Building on this success, the project was further advanced to develop a pilot-scale production process for the H5N2 vaccine using embryonated chicken eggs, in collaboration with the Faculty of Pharmacy, Silpakorn University. This initiative enhances Thailand’s capacity in vaccine manufacturing and biopharmaceutical security, reinforcing national self-reliance and preparedness for future pandemics.

Status and Potential of Research and Innovation

Current Status

Not yet commercialized or transferred for use

Standards and Certification Status

Currently under FDA registration process

Intellectual Property (IP) Rights

No IP protection filed and no Invention Disclosure submitted

Market Readiness

Prototype developed but not yet tested in the market

HXP-GPO VAC

(COVID-19 VACCINE)

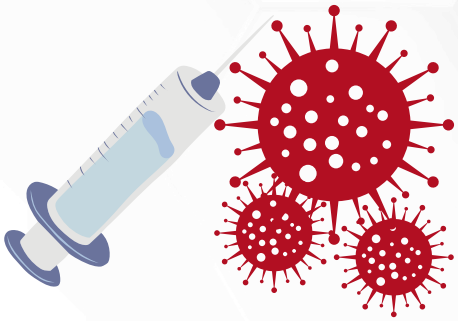
Government Pharmaceutical Organization (GPO)

MED-003

Highlight

Key features and Strengths

HXP–GPOVac is an inactivated COVID-19 vaccine developed by the Government Pharmaceutical Organization (GPO) using an internationally recognized egg-based viral culture technology — the same standard platform used for influenza vaccine production. The vaccine was created by inserting the gene encoding the Spike protein, the key antigen responsible for inducing immunity against SARS-CoV-2, into the shell of the Newcastle Disease Virus (NDV), allowing the hybrid virus to replicate efficiently in embryonated chicken eggs. Incorporating HexaPro technology further enhances the structural stability of the spike protein and significantly improves immunogenicity, resulting in a robust NDV-HXP-S viral construct suitable for large-scale manufacturing. The industrial production process includes virus harvesting, purification, inactivation, formulation, and sterile filtration before final filling. The HXP–GPOVac vaccine has undergone comprehensive evaluations for quality, efficacy, and safety, and received Full Market Authorization from the Thai Food and Drug Administration (FDA) on 22 October 2024. This milestone marks a major achievement in strengthening Thailand's biopharmaceutical security and advancing national self-reliance in vaccine production.



Status and Potential of Research and Innovation

Current Status

Not yet commercialized or transferred for use

Standards and Certification Status

Fully registered and approved by the FDA

Intellectual Property (IP) Rights

No IP protection filed and no Invention Disclosure submitted

Market Readiness

Prototype developed but not yet tested in the market

SIDE2SIDER

AUTOMATIC PATIENT TURNING DEVICE

Dr.Narongrat Sawattikanon

Department of Rehabilitation Medicine, Faculty of Medicine, Chiang Mai University

MED-004

Highlight

Key features and Strengths

The Automatic Patient Turning Device is an innovative medical technology that automatically repositions bedridden patients without manual effort, reducing caregiver workload and minimizing the risk of injury during patient handling. Designed to ensure patients are turned every two hours as recommended by medical standards, the device is officially registered with the Thai FDA and certified under IEC 60601-1 and IEC 60601-1-2 for safety, performance, and electromagnetic compatibility. Its air-pressure system operates on an inflate–hold–deflate mechanism through an integrated air mattress and compressor, enabling continuous left–right turning over 24 hours to relieve pressure points, prevent pressure ulcers, and reduce heel stress. Compatible with both hospital and home beds, it is ideal for bedridden, elderly, paralyzed, and ICU patients who cannot move independently. Supported by research and protected by intellectual property rights, this innovation enhances patient quality of life and significantly eases the burden on caregivers.

Status and Potential of Research and Innovation

Current Status

Technology transferred under an exclusive license, granting full commercialization rights to a single partner or enterprise

Standards and Certification Status

- Fully registered and approved by the FDA
- Certified under IEC 60601-1 and IEC 60601-1-2 international standards

Intellectual Property (IP) Rights

Granted IP protection or approved Invention Disclosure

Market Readiness

Commercially available in the domestic market

Unit Price

50,000 baht/units

TETRA FLUVAZ TF

(INFLUENCA VACCINE INACTIVATES, SPLIT) 2019 SEASON – SOUTHERN HEMISPHERE

Government Pharmaceutical Organization (GPO)

MED-005

Highlight

Key features and Strengths

Tetra Fluvac TF is a tetravalent seasonal influenza vaccine (split inactivated) developed and manufactured domestically by the Government Pharmaceutical Organization (GPO). It contains two influenza A strains (A/H1N1 and A/H3N2) and two influenza B strains (B/Yamagata and B/Victoria), expanding protection coverage compared to the previous trivalent formulation, Tri Fluvac. The vaccine underwent Phase 1/2 clinical trials in Thai volunteers to evaluate safety and immunogenicity, with results demonstrating that it is safe and effectively stimulates immune responses. Moreover, Tetra Fluvac is provided in a pre-filled syringe format to enhance convenience, ensure safe administration, and reduce the risk of contamination during vaccine preparation. This innovation strengthens Thailand's vaccine security, reduces dependency on imports, and serves as an important foundation for the future development of influenza vaccines within the country.

Status and Potential of Research and Innovation

Current Status

Not yet commercialized or transferred for use

Standards and Certification Status

Currently under FDA registration process

Intellectual Property (IP) Rights

No IP protection filed and no Invention Disclosure submitted

Market Readiness

Prototype developed but not yet tested in the market

TRI FLUVAC

TRIVALENT SEASONAL INFLUENZA VACCINE (EGG-BASED TECHNOLOGY)

Government Pharmaceutical Organization (GPO)

MED-006

Highlight

Key features and Strengths

Tri Fluvac is a trivalent seasonal influenza vaccine (split inactivated) developed by the Government Pharmaceutical Organization (GPO) in collaboration with The Chemo-Sero-Therapeutic Research Institute (KAKETSUKEN), Japan. It is produced using egg-based technology, a globally recognized standard for inactivated influenza vaccine manufacturing, ensuring high quality, safety, and strong immunogenicity. The vaccine provides protection against two influenza A strains (A/H1N1 and A/H3N2) and one influenza B strain (B/Victoria), following the annual recommendations of the World Health Organization (WHO).

Tri Fluvac has undergone human clinical trials and received Full Market Authorization from the Thai Food and Drug Administration (FDA) on 15 March 2024. The GPO is currently expanding production to a commercial scale to reduce the cost per dose, ensure sufficient domestic supply, and strengthen Thailand's competitiveness in the global vaccine market.

Status and Potential of Research and Innovation

Current Status

Not yet commercialized or transferred for use

Standards and Certification Status

Fully registered and approved by the FDA

Intellectual Property (IP) Rights

No IP protection filed and no Invention Disclosure submitted

Market Readiness

Product currently undergoing market testing

BOTULINUM ANTITOXIN TYPE A AND TYPE B

Prof. Emer. Dr. (Pharm.) Garnpimol Ritthidej

Queen Saovabha Memorial Institute, The Thai Red Cross Society

MED-007

Highlight

Key features and Strengths

Botulism outbreaks occur periodically in Thailand and worldwide. The treatment requires the use of botulinum antitoxin, a life-saving medication that is difficult to obtain and costly, as it is classified as an orphan drug due to limited global production and reliance on imports. Recognizing the critical need for national self-sufficiency, Queen Saovabha Memorial Institute (QSMI) has undertaken the development and production of botulinum antitoxin to ensure adequate supply for domestic medical use. The institute has established an end-to-end production process, beginning with the preparation of concentrated bulk monovalent antitoxin derived from horse crude plasma, followed by purification and formulation into a bivalent botulinum antitoxin. The product has been tested according to pharmacopeial standards, shown satisfactory stability, and successfully completed preclinical studies in animal models. Quality data from these studies have been submitted to the Thai Food and Drug Administration (FDA) for registration under the Orphan Drug Program, marking an important step toward ensuring national preparedness for botulism treatment.

Status and Potential of Research and Innovation

Current Status

Not yet commercialized or transferred for use

Standards and Certification Status

Currently under FDA registration process

Intellectual Property (IP) Rights

No IP protection filed and no Invention Disclosure submitted

CEMNETLESS BIPOLAR HIP PROSTHESIS

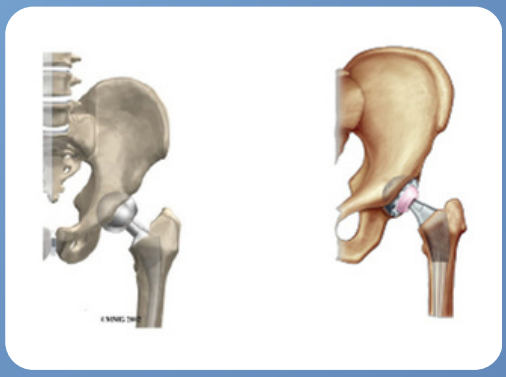
Assoc. Prof. Dr.Pairat Tangpornprasert,
Assoc. Prof. Dr.Chanyaphan Virulsri
Department of Mechanical Engineering, Faculty of Engineering,
Chulalongkorn University

MED-008

Highlight

Key features and Strengths

At present, there is no domestic manufacturer in Thailand capable of producing hip prostheses, resulting in total dependence on imported products for hip replacement surgeries. This project focuses on the development of a Cementless Bipolar Hip Prosthesis, which has shown increasing clinical demand. A major innovation lies in its design, which utilizes anatomical data of the Thai femur, resulting in a prosthesis that matches the body structure and morphology of Thai patients more accurately. The Bipolar Hip Prosthesis features a double-layer metallic femoral head with an inner liner made of Ultra-High Molecular Weight Polyethylene (UHMWPE) to reduce friction between the femoral head and the acetabulum, thereby minimizing wear compared to Unipolar Hip Prostheses and prolonging acetabular surface lifespan. The research team has successfully developed a functional prototype and completed performance testing and biocompatibility testing, demonstrating Thailand's capability to develop and manufacture high-quality hip prostheses domestically.



Status and Potential of Research and Innovation

Current Status

Not yet commercialized or transferred for use

Standards and Certification Status

Not yet submitted for FDA registration

Intellectual Property (IP) Rights

No IP protection filed and no Invention Disclosure submitted

Market Readiness

Prototype developed but not yet tested in the market

MYOELECTRIC-CONTROLLED PROSTHETIC ARM

FOR PERSONS WITH BELOW-ELBOW AMPUTATION

Dr.Pisak Chermprayong and Asst. Prof. Dr.Mattana Santasnachok

Faculty of Engineering, Burapha University

MED-009

Highlight

Key features and Strengths

The project focuses on developing a myoelectric prosthetic arm to enhance the quality of life for below-elbow amputees by utilizing electromyography (EMG) technology to capture muscle signals and translate them into natural arm and hand movements. These signals are processed by a microcontroller that drives miniature motors in the fingers, enabling precise and intuitive motion control. The arm structure is designed to be lightweight, durable, and ergonomically comfortable, manufactured using 3D printing technologies—Selective Laser Sintering (SLS) and Fused Deposition Modeling (FDM)—to customize each component according to the user's anatomy from the elbow to the fingertips. The research team has developed high-precision control circuits, embedded software, and mechanical actuation systems to ensure smooth, reliable performance. Currently, the prototype is undergoing industrial standard testing in preparation for registration as a domestically produced medical device, representing a significant advancement in Thailand's medical innovation and self-reliance in assistive technologies.

Status and Potential of Research and Innovation

Current Status

Not yet commercialized or transferred for use

Standards and Certification Status

Not yet submitted for FDA registration

Intellectual Property (IP) Rights

In the process of filing for IP protection or preparing an Invention Disclosure

Market Readiness

Product currently undergoing market testing

HIGH-PURITY OXYGEN GENERATOR

FOR HOSPITALS AND SMALL HEALTHCARE FACILITIES

Dr.Pattanaphong Janphuang

Technical and Engineering Development, Synchrotron Light Research Institute (Public Organization)

MED-010

Highlight

Key features and Strengths

The prototype High-Purity Oxygen Generator has been developed to support hospitals and small healthcare facilities by employing Pressure Swing Adsorption (PSA) technology to separate oxygen from ambient air. The system can produce medical-grade oxygen with a purity of 90±3% by volume and a maximum flow rate of 60 liters per minute through a parallel configuration of three PSA units, each capable of generating 20 liters per minute. The system uses Zeolite JLOX-101 as an adsorbent, which selectively captures nitrogen molecules while allowing high-purity oxygen to pass into the buffer tank. Operation is controlled by a microcontroller-based system with a touch-screen interface that records operating data for preventive maintenance and provides real-time monitoring of oxygen purity, humidity, temperature, and PM2.5 levels through an intuitive user display. The device is currently undergoing certification under IEC 60601-1:2005 and ISO 7396-1:2016 standards. Designed for portability and ease of installation, the system is suitable for various medical settings, including community hospitals, sub-district health-promoting hospitals, and remote healthcare units, thereby enhancing Thailand's medical oxygen security and self-reliance in essential healthcare technologies.

Status and Potential of Research and Innovation

Current Status

Not yet commercialized or transferred for use

Intellectual Property (IP) Rights

No IP protection filed and no Invention Disclosure submitted

Market Readiness

Prototype developed but not yet tested in the market

THAI SPINAL IMPLANT INNOVATION FOR COMMERCIALIZATION

REDUCING IMPORTS AND EXPANDING ACCESS TO TREATMENT

Mr.Winit Ritshima

ORTHOPEASIA CO., LTD.

MED-011

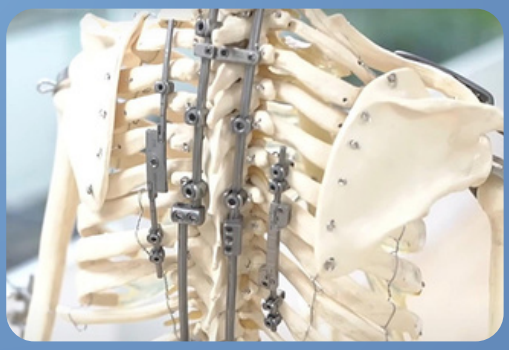
Highlight

Key features and Strengths

Amid Thailand's transition into an aging society and the increasing prevalence of spinal disorders caused by modern lifestyles, Orthopeasia Co., Ltd. has conducted extensive research and development to create innovative spinal fixation implant systems covering the entire spine — from the cervical to the sacral region. These innovations are engineered to improve patients' quality of life through advanced design that makes the implants smaller, thinner, yet stronger, providing superior bone anchorage while minimizing bone damage. The designs are tailored to Asian anatomical characteristics, enhancing surgical outcomes. In addition, the development of high-precision surgical instrument sets allows for faster, more accurate procedures with reduced radiation exposure, thereby improving the well-being of medical professionals.

All products are certified to meet international quality and safety standards, and are categorized into five main groups:

1. NEPTUNE – Thoracolumbar spinal fixation system (from thoracic to lumbar region)
2. MERCURY II – Anterior cervical plating system
3. DenFIXs – Anterior C2 fixation screw system
4. NARAI – Lateral lumbar interbody fusion cage
5. PLUTUS II – Standalone anterior cervical interbody fusion cage with integrated plate



Status and Potential of Research and Innovation

Current Status

Technology transferred under an exclusive license, granting full commercialization rights to a single partner or enterprise

Standards and Certification Status

Fully registered and approved by the FDA

Intellectual Property (IP) Rights

Granted IP protection or approved Invention Disclosure

Market Readiness

- Product currently undergoing market testing
- Commercially available in the domestic market

HUMODEL-PV

Asst. Prof. Dr.Kingfa Sanglee et al.

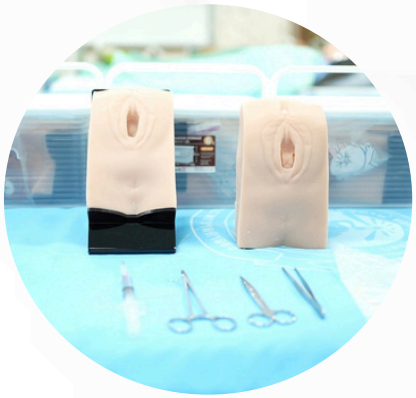
Faculty of Nursing, Chiang Mai University

MED-012

Highlight

Key features and Strengths

HuModel-PV is a female genital simulation model designed for training in the assessment of labor progression. It is constructed from high-quality silicone material that provides excellent durability, flexibility, and a realistic tactile experience, closely mimicking human tissue. The model accurately represents both the external and internal female reproductive anatomy, with soft and elastic characteristics that simulate the vaginal canal for realistic hands-on practice. The model enables learners to practice cervical dilatation assessment ranging from 1 to 10 centimeters, cervical effacement from 0 to 100%, and fetal head station evaluation. It also allows for the observation and training of fetal head movements and mechanisms of labor, including flexion, deflexion, internal rotation, and fetal positioning, in accordance with anatomical and obstetric principles. This innovation supports nursing and midwifery students in developing clinical competency in performing internal examinations to assess labor progression with accuracy and confidence. It enhances readiness before clinical practice, reduces the likelihood of medical errors, and strengthens professional skills in maternal care—contributing to higher standards in nursing and midwifery education and practice.



Status and Potential of Research and Innovation

Current Status

Technology transferred under a non-exclusive license, allowing multiple partners to adopt and apply the innovation freely

Intellectual Property (IP) Rights

In the process of filing for IP protection or preparing an Invention Disclosure

Market Readiness

- Product currently undergoing market testing
- Commercially available in the domestic market

Unit Price

20,000 baht/units

HUMODEL - PERISUTURE

Asst. Prof. Dr.Kingfa Sanglee et al.

Faculty of Nursing, Chiang Mai University

MED-013

Highlight

Key features and Strengths

HuModel - PeriSuture is a perineal simulation model developed for nursing and midwifery training, designed to support hands-on practice in episiotomy, local anesthesia administration, and perineal suturing in accordance with clinical and anatomical accuracy. The model aims to enhance learners' proficiency and confidence before performing these procedures in real clinical settings. It is anatomically modeled after the female perineal structure post-delivery, featuring realistic representations of the perineum, vaginal opening, and vaginal canal for comprehensive training. The model is made from high-quality silicone material that provides excellent elasticity, softness, and durability, closely mimicking real human tissue. It can be reused multiple times without deformation. The design is available in two primary types:

The first type is a perineal suturing training model, which allows learners to practice various suturing techniques, including Single Interrupted Stitches, Continuous Stitches, and Subcuticular Stitches, with realistic tactile feedback and resistance similar to real tissue.

The second type is a local anesthesia injection training model, which enables practice in performing local infiltration anesthesia prior to episiotomy procedures, including Right Mediolateral Episiotomy, Left Mediolateral Episiotomy, and Median Episiotomy. The silicone's realistic texture allows for repeated injection practice without material damage. This innovation offers significant educational value by providing a realistic and safe environment for nursing and midwifery students to develop and refine essential clinical skills. It enhances competency in administering anesthesia, performing episiotomy, and suturing perineal wounds with precision and confidence, thereby reducing the risk of complications such as perineal wound separation, infection, postpartum hemorrhage, and needlestick injuries during actual procedures. Moreover, it helps build confidence and readiness among students before entering real labor ward practice, making it a vital training tool that elevates the quality and safety of maternal and newborn care education.

Status and Potential of Research and Innovation

Current Status

Technology transferred under a non-exclusive license, allowing multiple partners to adopt and apply the innovation freely

Intellectual Property (IP) Rights

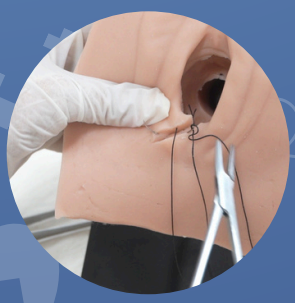
No IP protection filed and no Invention Disclosure submitted

Market Readiness

- Product currently undergoing market testing
- Commercially available in the domestic market

Unit Price

15,000 baht/units



“DINSAW”
MEDICAL SERVICE ROBOT FOR PATIENT CARE

Dr.Chalermpon Punnotok

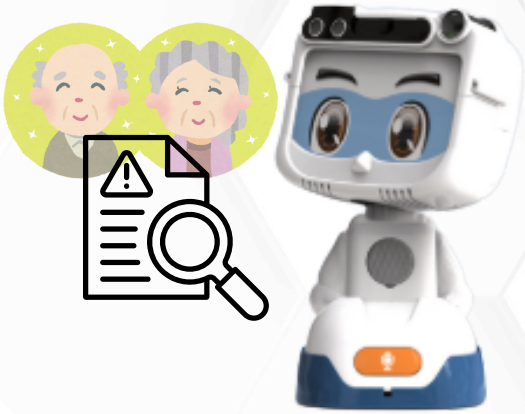
CT Asia Robotics Co., Ltd.

MED-014

Highlight

Key features and Strengths

Currently, the Dinsaw Robot Series includes Dinsaw OPD, Dinso Mini IPD, and Dinso Mini Home AI models. The Dinsaw robot is an intelligent service robot designed to assist patients and the elderly in various aspects of healthcare and daily living. Its key features include interactive voice and visual communication, medication reminders, vital sign monitoring, hospital service support, and AI-based cancer screening sensors. Dinsaw robots can navigate within designated environments and are designed with a compact and agile structure, enabling smooth mobility and efficient operation in clinical and home care settings.



Status and Potential of Research and Innovation

Standards and Certification Status

- Not yet submitted for FDA registration
- Certified or accredited under other recognized standards: Thai Innovation List (MIT)

Intellectual Property (IP) Rights

Granted IP protection or approved Invention Disclosure

Market Readiness

Commercially available in the domestic market

Unit Price

80,000 - 2,000,000 baht/units

WEARABLE ROBOTIC EXOSKELETON

FOR ASSISTED WALKING WITH TRANSFORMABLE ELECTRIC WHEELCHAIR AND AUTOMATIC SIT-TO-STAND SUPPORT MECHANISM

Assoc. Prof. Dr.Ronnapee Chaichaowarat

International School of Engineering, chulalongkorn university

MED-015

Highlight

Key features and Strengths

The Wearable Robotic Exoskeleton with Integrated Wheel-Drive System combines the mobility advantages of a powered wheelchair with the functional versatility of a walking-assist robot. Designed for smooth and energy-efficient movement on flat surfaces, it ensures high stability and minimizes the risk of falling. In wheelchair mode, the system bypasses the complexity of gait control and sensor interference, utilizing compact, low-torque wheels that enable a lightweight and streamlined structural design compared to conventional wheelchairs. The robot is equipped with a lift mechanism that assists users in transitioning from a seated to a standing position, allowing them to reach objects easily and engage with others at eye level. When not in use, both the wheel-drive and lift mechanisms can be folded neatly onto the back, leaving only the feet in contact with the ground to support independent walking, including stepping over obstacles and navigating stairs. Additionally, the robot can operate in body-weight support mode for gait training and rehabilitation, where the leg-worn exoskeleton coordinates with the adjustable lift and wheeled base to facilitate safe and effective walking exercises.

Status and Potential of Research and Innovation

Current Status

Not yet commercialized or transferred for use

Standards and Certification Status

Not yet submitted for FDA registration

Intellectual Property (IP) Rights

In the process of filing for IP protection or preparing an Invention Disclosure

Market Readiness

Prototype developed but not yet tested in the market

BODIIRAY P

COMPACT MOBILE DIGITAL X-RAY MACHINE

Dr.Nattawut Sinsuebphon

National Electronics and Computer Technology Center (NECTEC), National Science and Technology Development Agency

MED-016

Highlight

Key features and Strengths

BodiiRay P is a Portable Digital Radiography System developed by the National Electronics and Computer Technology Center (NECTEC) and the National Science and Technology Development Agency (NSTDA). Designed for use in confined or limited spaces, the system integrates an X-ray generator, a wireless digital detector, and a portable computer to enable fast, high-quality imaging. Its compact and lightweight design allows for easy mobility across various locations. Built on the Full Digital Synchronization concept, the system can be fully operated via a touch-screen interface with instant image display. The user-friendly software offers versatile functionality with flexible operation, while the virtual grid technology minimizes radiation exposure to patients. Moreover, BodiiRay P supports seamless connectivity with Hospital Information Systems (HIS) and Picture Archiving and Communication Systems (PACS), ensuring efficient image management and data transfer. Developed and manufactured under the ISO 13485 medical device quality management system, the BodiiRay P has passed rigorous radiation and electrical safety tests and is officially registered with the Thai Food and Drug Administration (FDA) as a certified medical device.

Status and Potential of Research and Innovation

Current Status

Technology transferred under a non-exclusive license, allowing multiple partners to adopt and apply the innovation freely

Standards and Certification Status

Fully registered and approved by the FDA

Intellectual Property (IP) Rights

Granted IP protection or approved Invention Disclosure

Market Readiness

Commercially available in the domestic market

Unit Price

1,500,000 baht/units

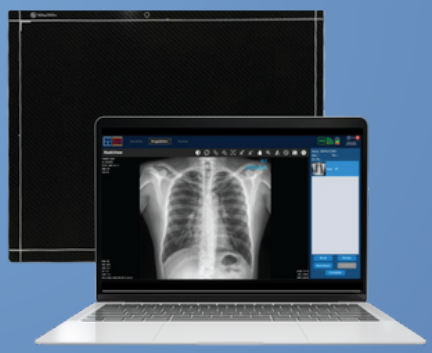
BODIIRAY R

DIGITAL RADIOGRAPHY CONVERSION SYSTEM

Dr.Nattawut Sinsuebphon

National Electronics and Computer Technology Center (NECTEC), National Science and Technology Development Agency

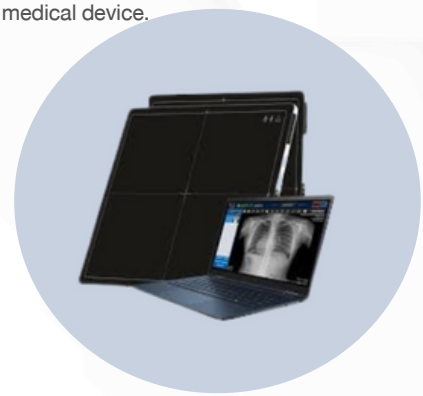
MED-017



Highlight

Key features and Strengths

BodiiRay R is a Digital Radiography Retrofit System developed by the National Electronics and Computer Technology Center (NECTEC) and the National Science and Technology Development Agency (NSTDA). The system includes a wireless digital detector, a computer unit, and proprietary BodiiRay image-processing software, enabling conventional X-ray machines to be instantly upgraded into full digital radiography systems without replacing the existing X-ray generator. This significantly reduces equipment costs while offering flexibility and adaptability for various medical applications. The system features an advanced virtual grid technology that minimizes radiation scatter, provides instant high-quality imaging, and seamlessly connects to the Picture Archiving and Communication System (PACS) for efficient medical data management. The research, development, and manufacturing processes of BodiiRay R comply with the ISO 13485 medical device quality management standard, and the system is officially registered with the Thai Food and Drug Administration (FDA) as a certified medical device.



Status and Potential of Research and Innovation

Current Status

Technology transferred under a non-exclusive license, allowing multiple partners to adopt and apply the innovation freely

Standards and Certification Status

Fully registered and approved by the FDA

Intellectual Property (IP) Rights

Granted IP protection or approved Invention Disclosure

Market Readiness

Commercially available in the domestic market

Unit Price

730,000 baht/units

BODIIRAY S

DIGITAL X-RAY SYSTEM FOR CHEST IMAGING

Dr.Nattawut Sinsuebphon

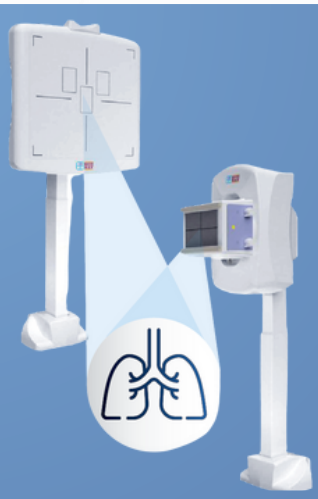
National Electronics and Computer Technology Center (NECTEC), National Science and Technology Development Agency

MED-018

Highlight

Key features and Strengths

BodiiRay S is a digital chest X-ray system developed by the National Electronics and Computer Technology Center (NECTEC) and the National Science and Technology Development Agency (NSTDA). Designed primarily for lung screening and preliminary diagnosis, the system integrates an X-ray source with a digital imaging detector in a compact, easy-to-install form suitable for both stationary and mobile X-ray units. The height of the X-ray tube and detector panel can be adjusted simultaneously via remote control, enhancing convenience and minimizing patient contact. Its digital imaging technology provides instant, high-quality results while reducing radiation exposure compared to conventional systems. Equipped with user-friendly software, BodiiRay S enables efficient image and data management and seamless connectivity with the Picture Archiving and Communication System (PACS). Certified by the Thai Food and Drug Administration (FDA) and compliant with international safety standards for electrical and radiation performance, BodiiRay S has been developed and manufactured under the ISO 13485 medical device quality management system—offering a safe, efficient, and high-performance solution for modern medical imaging.



Status and Potential of Research and Innovation

Current Status

Technology transferred under a non-exclusive license, allowing multiple partners to adopt and apply the innovation freely

Standards and Certification Status

Fully registered and approved by the FDA

Intellectual Property (IP) Rights

Granted IP protection or approved Invention Disclosure

Market Readiness

Commercially available in the domestic market

Unit Price

2,500,000 baht/units

SILKLIFE GEL

AS A BINDER FOR POWDERED ACTIVE INGREDIENTS

Assoc. Prof. Dr.Juthamas Ratanavaraporn

Faculty of Engineering, Chulalongkorn University

MED-019

Highlight

Key features and Strengths

SilkLife Gel is a next-generation sterile hydrogel developed and produced from silk fibroin protein under the SilkLife Technology platform, a premium Thai biomaterial innovation designed as a biomaterial platform for efficient binding and integration of powdered medical active ingredients such as Demineralized Bone Matrix (DBM) and Hydroxyapatite (HA). The gel can be molded and shaped freely to support personalized medical applications and demonstrates excellent biocompatibility and biodegradability, being naturally resorbable and non-inflammatory. Its microstructure enables a sustained release system, allowing controlled and continuous delivery of active substances to improve therapeutic outcomes while reducing treatment frequency. With high flexibility, adaptability to various tissues, and proven safety and efficacy through both in vitro and in vivo studies, SilkLife Gel stands out as a versatile, safe, and high-performance biomaterial platform. It paves the way for future medical innovations in tissue engineering and regeneration, bone and soft tissue repair, and advanced drug delivery systems, reinforcing Thailand's position as a regional leader in biomedical innovation.

Status and Potential of Research and Innovation

Current Status

Not yet commercialized or transferred for use

Standards and Certification Status

Not yet submitted for FDA registration

Intellectual Property (IP) Rights

In the process of filing for IP protection or preparing an Invention Disclosure

Market Readiness

Prototype developed but not yet tested in the market

DEEPGI

Assoc. Prof. Dr.Peerapon Vateekul

Faculty of Engineering, Chulalongkorn University

MED-020

Highlight

Key features and Strengths

DeepGI is an AI-powered innovation jointly developed by engineers and medical doctors from Chulalongkorn University in collaboration with the private sector. It is designed to detect abnormalities in the gastrointestinal (GI) tract, aiming to reduce cancer incidence through early diagnosis—particularly for colorectal cancer, the third most common cancer worldwide. Despite Thailand having over 15 million people aged over 60, with about 10% at risk of GI-related cancers annually, less than 2% undergo colonoscopy screening. DeepGI enhances diagnostic accuracy and efficiency by assisting physicians during colonoscopy procedures, supporting multiple endoscope brands, and detecting abnormalities in both the colon and stomach. Tested in several hospitals, it has demonstrated proven effectiveness while remaining significantly more affordable than imported systems. This innovation not only strengthens Thailand's medical technology capabilities but also contributes to improving public health outcomes and reducing mortality rates from colorectal cancer.

Status and Potential of Research and Innovation

Current Status

Not yet commercialized or transferred for use

Standards and Certification Status

Fully registered and approved by the FDA

Intellectual Property (IP) Rights

Granted IP protection or approved Invention Disclosure

Market Readiness

Product currently undergoing market testing

OA-SILK: INJECTABLE HYDROGEL INTEGRATED WITH SILKLIFE TECHNOLOGY

Assoc. Prof. Dr.Juthamas Ratanavaraporn

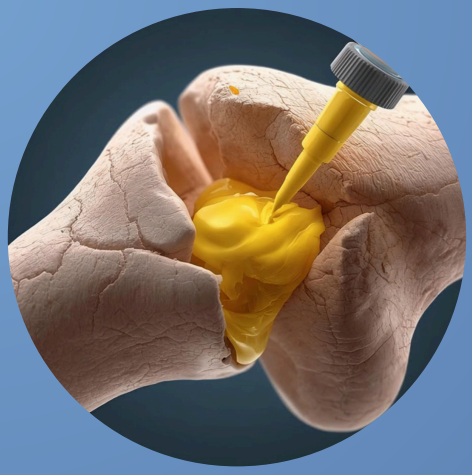
Faculty of Engineering, Chulalongkorn University

MED-021

Highlight

Key features and Strengths

OA-SILK is an innovative injectable silk hydrogel developed from the SilkLife Platform Technology, utilizing natural silk fibroin protein that mimics the properties of human synovial fluid in both lubrication and shock absorption. This enables OA-SILK to effectively reduce friction between articular cartilage, enhance joint mobility, and alleviate symptoms of osteoarthritis (OA). Its Silk-Fibroin Matrix Structure provides exceptional stability and strong tissue adhesion, allowing the material to remain longer within the joint cavity and provide sustained lubrication. The formulation is acellular and chemical-free, minimizing allergic reactions and side effects, while maintaining biodegradability and biocompatibility, ensuring natural decomposition without inflammation. OA-SILK serves as a non-surgical alternative for joint regeneration, reducing pain and recovery time for patients. By combining the natural safety of Thai silk with advanced biotechnology, OA-SILK represents a premium, sustainable innovation for joint restoration, redefining the standard of osteoarthritis care under the concept of Sustainable Joint Regeneration.



Status and Potential of Research and Innovation

Current Status

Not yet commercialized or transferred for use

Standards and Certification Status

Not yet submitted for FDA registration

Intellectual Property (IP) Rights

In the process of filing for IP protection or preparing an Invention Disclosure

Market Readiness

Prototype developed but not yet tested in the market

SILK DENTAL PLUG

3D CELL-SCAFFOLD (SILKLIFE)

Assoc. Prof. Dr.Juthamas Ratanavaraporn

Faculty of Engineering, Chulalongkorn University

MED-022

Highlight

Key features and Strengths

Silk Dental Plug is an innovative three-dimensional bioactive scaffold developed from silk fibroin protein under the SilkLife Technology platform. It is specifically designed to absorb fluids and promote natural wound healing after tooth extraction. The material can absorb up to 20 times its dry weight, effectively controlling blood and fluid flow, facilitating hemostasis, and creating an optimal environment for tissue regeneration. With its micro-porous architecture that supports cell adhesion and proliferation, Silk Dental Plug functions as a cell-guiding matrix, enabling rapid and effective tissue regeneration. It is biocompatible and fully biodegradable, naturally degrading within the body without the need for surgical removal, thereby reducing pain and recovery time for patients. This innovation represents a new generation of bio-dental materials, combining the natural safety of Thai silk with advanced biomedical technology to enhance treatment standards and sustainably improve patients' quality of life.

Status and Potential of Research and Innovation

Current Status

Not yet commercialized or transferred for use

Standards and Certification Status

Not yet submitted for FDA registration

Intellectual Property (IP) Rights

In the process of filing for IP protection or preparing an Invention Disclosure

Market Readiness

Prototype developed but not yet tested in the market

DISSOLVABLE MICRONEEDLES

FOR DISEASE TREATMENT AND DIAGNOSIS

Dr.Jeerapond Leelawattanachai et al.

National Nanotechnology Center (NANOTEC), National Science and Technology Development Agency (NSTDA)

MED-023

Hilights

Key features and Strengths

The Dissolving Microneedle Patch is an advanced medical innovation designed to enhance the efficiency, precision, and safety of transdermal drug delivery without pain or bleeding. Developed to replace traditional methods such as topical creams, adhesive patches, or injections, this microneedle technology enables direct delivery of active substances, biomolecules, or therapeutic agents through the skin in a controlled and minimally invasive manner. The microneedles, which can be fabricated in customizable lengths ranging from 100 to 2,000 micrometers, are arranged in a small patch similar to a regular adhesive plaster, making them convenient, safe, and easy to use. The formulation can be developed into dissolving microneedles, which fully dissolve in the skin after application, or coated microneedles, which deliver the active ingredient from their surface. The system allows precise control over drug dosage, delivery rate, and penetration depth, ensuring accurate and consistent treatment outcomes. Additionally, the microneedle composition can be tailored to exhibit antimicrobial properties without promoting drug resistance or to enhance the stability of encapsulated bioactive compounds. This technology represents a next-generation transdermal delivery platform that improves patient comfort, reduces infection risk, and expands the potential for both therapeutic and diagnostic applications, setting a new standard in minimally invasive healthcare innovation.

Status and Potential of Research and Innovation

Current Status

Not yet commercialized or transferred for use

Standards and Certification Status

Not yet submitted for FDA registration

Intellectual Property (IP) Rights

Granted IP protection or approved Invention Disclosure

Market Readiness

Prototype developed but not yet tested in the market

LIVING ORGANOID BIOBANK

FROM THAI CANCER PATIENTS WITH ACCOMPANYING DATA AND DRUG

Asst. Prof. Dr.Somponnat Sampattavanich

Faculty of Medicine Siriraj Hospital, Mahidol University

MED-024

Hilights

Key features and Strengths

A living organoid biobank integrated with molecular data and drug response profiles has been established to advance cancer research, drug development, and precision oncology. This resource enables the prediction of anticancer drug responses and the selection of optimal therapeutic options for individual cancer patients with higher accuracy and shorter turnaround time compared to traditional animal models. Moreover, the platform supports high-throughput screening comparable to cell line–based systems, enhancing research efficiency and accelerating personalized cancer treatment development.

Status and Potential of Research and Innovation

Current Status

Not yet commercialized or transferred for use

Standards and Certification Status

Not yet submitted for FDA registration

Intellectual Property (IP) Rights

No IP protection filed and no Invention Disclosure submitted

Market Readiness

Prototype developed but not yet tested in the market

SPERM SELECTION DEVICE

FOR REPRODUCTIVE TECHNOLOGY

Asst. Prof. Dr.Chainarong Choksuchat

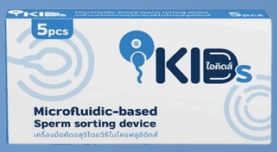
Faculty of Medicine, Prince of Songkla University

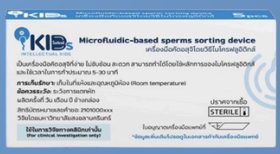
MED-025

Hilights

Key features and Strengths

The “Microfluidic Sperm Selection Device for Assisted Reproductive Technology (ART)” is an innovative medical device developed by a Thai research team to revolutionize sperm selection processes in fertility laboratories. Utilizing microfluidic technology that mimics the natural sperm selection mechanism within the female reproductive tract, the device effectively isolates healthy, highly motile, and genetically intact sperm without relying on traditional centrifugation methods that may damage DNA. Laboratory studies have demonstrated that sperm selected by this technology show significantly lower DNA fragmentation compared to the conventional Density Gradient Centrifugation (DGC) method, while maintaining normal motility and morphology. The device is made from flexible and biocompatible PDMS material, ensuring safety, low production cost, and scalability for local industrial manufacturing. This innovation received the Silver Medal and Special Award at the Geneva International Exhibition of Inventions 2025, as well as the National Research Award from NRCT. It is currently in the process of commercial patent expansion in collaboration with private partners for application in IVF clinics domestically and internationally. Under the concept of “Thai Innovation for Global Fertility,” this technology strengthens Thailand’s position as a regional Medical & Wellness Hub and promotes accessibility to advanced fertility treatment while driving sustainable medical innovation for the future.





Status and Potential of Research and Innovation

Current Status

Technology transferred under a non-exclusive license, allowing multiple partners to adopt and apply the innovation freely

Standards and Certification Status

Currently under FDA registration process

Intellectual Property (IP) Rights

Granted IP protection or approved Invention Disclosure

Market Readiness

Product currently undergoing market testing

DUAL-WAVELENGTH LASER DEVICE

Assoc. Prof. Dr.Amarin Ratanavis

Office of Science and Technology,
King Mongkut's University of Technology North Bangkok

MED-026

Hilights

Key features and Strengths

The dual-wavelength medical laser system is an advanced prototype designed to emit laser light at two key wavelengths—532 nm and 1064 nm—commonly used in dermatology, surgical, and regenerative medical applications. The system offers pulse durations of 5 nanoseconds and 500 picoseconds, with a maximum average power output of 5 watts, ensuring high precision, stability, and safety for clinical use. This development demonstrates Thailand's growing capability to engineer and manufacture high-performance medical laser technologies domestically, reducing dependence on imports while elevating national standards in medical device innovation. In parallel, a Laser Beam Testing Laboratory has been established to evaluate and validate laser beam performance, equipped with state-of-the-art instruments for measuring wavelength accuracy, energy density, and beam stability. This facility serves as a critical foundation for advancing Thailand's medical laser industry and holds strong potential to become a national standard laboratory for medical laser testing in the near future.

Status and Potential of Research and Innovation

Current Status

Not yet commercialized or transferred for use

Standards and Certification Status

Certified or accredited under other recognized standards: Certified under IEC 62304: Software Life Cycle Processes and IEC 60601-1:2005 + AMD1:2012 Clause 14 – Programmable Electrical Medical Systems (PEMS) standards

Intellectual Property (IP) Rights

No IP protection filed and no Invention Disclosure submitted

Market Readiness

Prototype developed but not yet tested in the market

DENT BOOSTER

DESENSITIZING GEL FOR TOOTH SENSITIVITY

Assoc. Prof. Dr.Khrongkhwan Akkarachaneeyakorn

Center of Excellence in Chemical Innovation and Knowledge Center for Analytical Technology of Food, Environment, and Biological Resources, Kasetsart University

MED-027

Hilights

Key features and Strengths

Dentbooster is an innovative desensitizing gel developed from advanced dental biomaterial research. It is enriched with Amorphous Calcium Phosphate Nanoparticles (ACP)—ultrafine particles capable of deeply penetrating and sealing open dentinal tubules. Once applied, these nanoparticles effectively block external stimuli from reaching the dental nerves, providing rapid relief from tooth sensitivity from the very first use. In addition to sealing dentinal tubules, Dentbooster also promotes remineralization of tooth enamel, strengthening the tooth structure and reducing the risk of erosion and decay. Developed from peer-reviewed research and recognized with international innovation awards, Dentbooster guarantees both safety and proven efficacy. Designed for convenient home use, the gel can be applied directly to sensitive areas without causing irritation to oral tissues or affecting daily eating habits. It is ideal for individuals seeking preventive oral care alongside professional dental treatment. With its modern biomaterial technology, Dentbooster represents a new standard in dental innovation—combining effectiveness, safety, and user convenience to deliver lasting oral health and a confident smile.

Status and Potential of Research and Innovation

Current Status

Technology transferred under an exclusive license, granting full commercialization rights to a single partner or enterprise

Standards and Certification Status

Fully registered and approved by the FDA

Intellectual Property (IP) Rights

Granted IP protection or approved Invention Disclosure

Market Readiness

Product currently undergoing market testing

COLOSME®
COLOSTOMY BAG

Pharmacist Adisorn Apasuthirat

บริษัท Novatech Healthcare Co., Ltd.

MED-028

Hilights

Key features and Strengths

The “Colosme® Ostomy Output Management Set” consists of a skin barrier baseplate and an attachable waste collection pouch. The pouch can be easily detached, emptied, and cleaned for reuse. The baseplate is made from protein-free natural rubber adhesive combined with a hydrocolloid adhesive layer to minimize skin irritation and enhance user comfort. A medical-grade silicone ring ensures excellent adhesion to the skin and can be easily trimmed to fit the stoma size precisely. The collection pouch is produced from odor-resistant and noise-reducing materials, with a wide opening design for convenient cleaning and maintenance. Colosme® is available in three sizes, accommodating various stoma dimensions. This innovative product has been officially listed in the Thai Innovation List and recognized by the National Health Security Office (NHSO) for use under Thailand’s Universal Coverage Scheme (Gold Card Program), enabling patients to access safe, high-quality, and locally developed ostomy care solutions.

Status and Potential of Research and Innovation

Standards and Certification Status

Fully registered and approved by the FDA

Intellectual Property (IP) Rights

Granted IP protection or approved Invention Disclosure

Market Readiness

Commercially available in the domestic market

Unit Price

170.70 baht/units

ProX: PROTEIN-FREE NATURAL RUBBER GLOVES

Ms.Piyada Suwandittakul

National Metal and Materials Technology Center (MTEC),
National Science and Technology Development Agency (NSTDA)

MED-029

Hilights

Key features and Strengths

ProX is an innovative technology for producing natural rubber gloves that effectively and permanently reduce allergenic proteins through the “Protein Crosslinking” mechanism. This process modifies the protein structure in natural latex, rendering it insoluble in water and unable to trigger allergic reactions in users. The technology meets international safety standards, with protein levels verified using Modified Lowry and ELISA techniques. The resulting gloves maintain their mechanical strength and elasticity according to industrial standards and can be seamlessly integrated into existing production lines without the need for new machinery—significantly lowering production costs. ProX embodies the concept of “Bridging Innovation and Business” by elevating Thai natural rubber products into the premium hypoallergenic market segment, enhancing the competitiveness of Thai manufacturers, and expanding high-value agricultural exports in alignment with the Medical and Wellness Hub and BCG Economy strategies.

Status and Potential of Research and Innovation

Current Status

Not yet commercialized or transferred for use

Standards and Certification Status

Not yet submitted for FDA registration

Intellectual Property (IP) Rights

Granted IP protection or approved Invention Disclosure

Market Readiness

Prototype developed but not yet tested in the market

sPACE: DYNAMIC PROSTHETIC FOOT

Assoc. Prof. Dr.Pairat Tangpornprasert

Department of Mechanical Engineering, Faculty of Engineering
Chulalongkorn University

MED-030

Hilights

Key features and Strengths

Thailand has a significant number of individuals with lower-limb amputations. According to the National Statistical Office (2017), there are approximately 40,836 people with leg amputations, and the demand for prosthetic limbs far exceeds the capacity of hospitals and related organizations to provide them. Existing prosthetic feet in the country are either imported—at a very high cost—or locally produced with limited functionality and lower quality compared to international products.To address this gap, a research team from the Center of Excellence in Orthopedic Implants and Medical Devices, Faculty of Engineering, Chulalongkorn University, has developed the ASPES Dynamic Prosthetic Foot, a high-quality, dynamic prosthetic designed to match the performance of imported models. The innovation has been tested and certified according to the ISO 10328 international standard in Germany and complies with the ISO 13485 medical device quality management system. Clinical trials with real users have also been successfully conducted, confirming the product's safety, durability, and efficiency for practical use.

Status and Potential of Research and Innovation

Current Status

Technology transferred under an exclusive license, granting full commercialization rights to a single partner or enterprise

Standards and Certification Status

Fully registered and approved by the FDA

Intellectual Property (IP) Rights

Granted IP protection or approved Invention Disclosure

Market Readiness

Commercially available in the domestic market

Unit Price

29,000 baht/units

ARTIFICIAL TEARS

0.28% SODIUM HYALURONATE: VISMAX

Dr.Sujintana Tantaterdtham, M.D.

Ultra Medica Co., Ltd.

MED-031

Hilights

Key features and Strengths

Vismax is an innovative 0.28% sodium hyaluronate eye drop developed to effectively treat dry eye syndrome and restore ocular surface health. The formulation provides long-lasting adhesion to the corneal surface, offering anti-inflammatory effects and protecting corneal epithelial cells. It is preservative-free, ensuring safety and minimizing irritation or tissue damage, and features hypo-osmolarity, which promotes natural corneal wound healing and helps restore tear film balance. The product is packaged in sterile blow-fill-seal (BFS) single-dose vials (0.5 mL each), available in boxes of 20 or 30 vials for convenient and hygienic use. It is FDA-approved in Thailand for the treatment of dry eyes, post-cataract and LASIK surgery recovery, as an adjunct therapy for glaucoma patients, and for relieving eye strain caused by dust, heat, air conditioning, prolonged screen exposure, or contact lens use. Clinical studies have shown that Vismax demonstrates significantly greater efficacy than 0.18% sodium hyaluronate in corneal wound healing, improved visual acuity, and reduced dry eye symptoms, leading to better overall quality of life. The product has been listed in the Thailand Innovation List, certified with SME-GP and Made in Thailand (MiT) marks, reflecting its quality and domestic innovation. Additionally, Vismax includes an online self-assessment application for dry eye evaluation, offering users a comprehensive and affordable eye care solution.

Status and Potential of Research and Innovation

Current Status

Not yet commercialized or transferred for use

Standards and Certification Status

Fully registered and approved by the FDA

Intellectual Property (IP) Rights

Granted IP protection or approved Invention Disclosure

Market Readiness

- Commercially available in the domestic market
- Commercially available in international markets

Unit Price

- Domestic market: 265 Baht per box and Private sector (including VAT): 312 Baht per box
- International market: Lao PDR, with a retail price of 312 Baht per box (including VAT)

KEEP ON SLEEP

(SILKLIFE)

Dr.Slila Chayanun

Leben Better Co., Ltd.

MED-032

Hilights

Key features and Strengths

KEEP ON SLEEP (SilkLife) is an innovative transdermal patch designed to deliver hemp extract efficiently and precisely using Controlled Skin Diffusion Technology combined with SilkLife Technology, a proprietary platform derived from Thai silk fibroin protein. This unique formulation enables a sustained and consistent release of active compounds through the skin, ensuring optimal absorption levels for long-lasting relaxation and improved natural sleep quality without the need for chemical-based sleeping aids. The patch offers exceptional convenience and safety — simply applied to the skin without irritation or interference with daily activities. Its transdermal delivery system allows the active ingredients to enter the bloodstream directly, bypassing the digestive system and liver, resulting in higher bioavailability and prolonged therapeutic effects. Moreover, the controlled-release mechanism minimizes the frequency of use while maintaining stable efficacy. Recognized for its excellence in innovation and research, KEEP ON SLEEP received the National Research Award 2025 (Invention Category), affirming its quality and potential for commercial scalability. This innovation exemplifies the integration of Thai silk biotechnology with modern medical science, positioning KEEP ON SLEEP as a next-generation wellness solution for sustainable health and better sleep.

Status and Potential of Research and Innovation

Current Status

Technology transferred under an exclusive license, granting full commercialization rights to a single partner or enterprise

Standards and Certification Status

Currently under FDA registration process

Intellectual Property (IP) Rights

Granted IP protection or approved Invention Disclosure

Market Readiness

Commercially available in the domestic market

Unit Price

3 pairs for 359 THB and 5 pairs for 549 THB

METALLIC BONE PLATE

WITH WING HEAD SCREW AND LOCKING HEAD SCREW

Ms.Thamonwan Angkuratipakorn

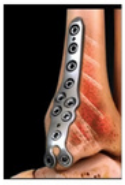
Digital Orthopedics Solution Co., Ltd.

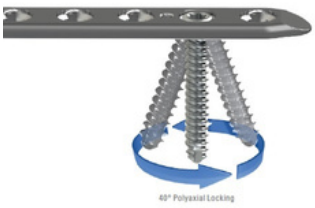
MED-033

Hilights

Key features and Strengths

The metallic bone plate has been designed with anatomical features and geometry tailored to the bone structure of Thai individuals. It represents a collaborative innovation in bone plate and screw system development between NSTDA, three leading medical schools—Thammasat University, Siriraj Hospital (Mahidol University), and Prince of Songkla University—and Digital Orthopedics Solution Co., Ltd. (DiOS). The design is based on anatomical data from Thai samples and incorporates enhanced properties to address surgical challenges and improve overall performance and efficiency in orthopedic operations.





Status and Potential of Research and Innovation

Current Status

Technology transferred under an exclusive license, granting full commercialization rights to a single partner or enterprise

Standards and Certification Status

Fully registered and approved by the FDA

Intellectual Property (IP) Rights

Granted IP protection or approved Invention Disclosure

Market Readiness

Commercially available in the domestic market

Unit Price

Locking plate 17,000 baht และ Locking screw 1,600 baht

FITSLOTH

AN INTEGRATED LIFESTYLE MEDICINE PLATFORM FOR OBESITY CARE

Dr.Nattadhanai Rajatanavin, M.D.

FitSloth Co., Ltd.

MED-034

Hilights

Key features and Strengths

FitSloth Care is Thailand's first Digital Therapeutic (DTx) platform designed for the management of obesity and non-communicable diseases (NCDs) such as diabetes, hypertension, and hyperlipidemia. The system integrates Lifestyle Medicine principles with a personalized health coaching model, providing users with guidance from certified dietitians and Lifestyle Medicine physicians. Each patient receives comprehensive advice covering nutrition, physical activity, sleep, stress management, and social determinants of health. The FitSloth App serves as a personal health assistant, offering 24/7 guidance on diet and behavioral changes. Its built-in AI Co-Pilot enhances data-driven analysis and supports health coaches in delivering precise, real-time recommendations. Meanwhile, physicians and hospitals can access the FitSloth Dashboard, enabling integrated monitoring and collaborative care with optimized efficiency. Developed by medical professionals experienced in NCD management and behavioral change, in collaboration with researchers from VISTEC, FitSloth Care represents an advanced Digital Health Innovation that connects patients, health coaches, and physicians within a medically supervised, data-secure ecosystem. The platform promotes sustainable lifestyle transformation, improves patients' quality of life, and reduces long-term healthcare costs — advancing Thailand's healthcare system toward a more proactive and preventive model.

Status and Potential of Research and Innovation

Current Status

Not yet commercialized or transferred for use

Standards and Certification Status

Fully registered and approved by the FDA

Intellectual Property (IP) Rights

In the process of filing for IP protection or preparing an Invention Disclosure

Market Readiness

Commercially available in the domestic market

Unit Price

Approximately 2,000 THB per month

Z-BRAND THERMAL NiTi ARCHWIRE

Assoc. Prof. Dr.Anak Khantachawana

Faculty of Engineering,
King Mongkut's University of Technology Thonburi

MED-035

Hilights

Key features and Strengths

The Z-Brand Thermal NiTi Archwire is a thermally activated orthodontic wire engineered to transition phase near intraoral temperature, delivering gentle and consistent tooth movement. Ideal for the leveling and alignment phase, the wire remains in a martensitic phase at room temperature, allowing easy engagement by the orthodontist. Once placed intraorally, it transforms into the austenitic phase, providing steady forces with high springback and a low load-deflection rate, ensuring optimal control of tooth movement. Its low-friction surface finish enhances sliding mechanics, making it suitable for both self-ligating and conventional brackets. Available in both round and rectangular cross-sections, it allows for effective torque and root control across different treatment stages, while reducing the frequency of wire changes and improving treatment efficiency and patient comfort. The wire is made from high-quality Nickel-Titanium (NiTi) and manufactured under ISO 13485-certified medical device production standards. It has been officially registered and approved by the Thai Food and Drug Administration (FDA), ensuring reliability, clinical safety, and international-quality performance for professional orthodontic applications.

Status and Potential of Research and Innovation

Current Status

Technology transferred under a non-exclusive license, allowing multiple partners to adopt and apply the innovation freely

Standards and Certification Status

Fully registered and approved by the FDA

Intellectual Property (IP) Rights

Granted IP protection or approved Invention Disclosure

Market Readiness

Commercially available in the domestic market

Unit Price

15 baht/units

ORTHOASSIST

AUTOMATIC BONE SAW TENSIONING UNIT

Assoc. Prof. Dr.Thanapon Chobpenthai, M.D

Srisavarindhira College of Medicine, Chulabhorn Royal Academy

MED-036

Hilights

Key features and Strengths

OrthoAssist is a semi-automatic robotic platform developed for orthopedic surgery using an electric bone saw. It is designed to enhance surgical precision, minimize cutting deviation, and reduce the risk of soft tissue injury through a 6 Degrees of Freedom (6DoF) control system integrated with real-time distance and temperature sensors that provide alerts and safety feedback during surgery. The system is compatible with standard electric saws and supports loads of up to 15 kilograms. The platform includes an interlock safety system, touchscreen control, and connectivity with mobile devices or VR systems. Its design and manufacturing processes comply with international standards — IEC 60601, IEC 62366, ISO 13485, and ISO 14971. Key advantages of OrthoAssist include improved bone-cutting accuracy, reduced tissue damage, and increased post-operative bone healing potential. Additionally, the system records surgical data and images for clinical review and training purposes. This innovation is suitable for clinical application and holds strong potential for future development in complex bone and orthopedic oncology surgeries, advancing surgical precision and patient safety in Thailand's medical technology landscape.

Status and Potential of Research and Innovation

Current Status

Technology transferred under a non-exclusive license, allowing multiple partners to adopt and apply the innovation freely

Standards and Certification Status

- Currently under FDA registration process
- Certified or accredited under other recognized standards: Complies with IEC 60601, IEC 62366, ISO 13485, and ISO 14971 standards

Intellectual Property (IP) Rights

Granted IP protection or approved Invention Disclosure

Market Readiness

Commercially available in the domestic market

Unit Price

4,800,000 baht/units

DENTIISCAN 2.0

CONE-BEAM COMPUTED TOMOGRAPHY (CBCT) SYSTEM FOR DENTAL APPLICATIONS

Dr.Saowapak Thongvigitmanee

National Electronics and Computer Technology Center (NECTEC), National Science and Technology Development Agency (NSTDA)

MED-037

Hilights

Key features and Strengths

DentiiScan 2.0 is a cone-beam computed tomography (CBCT) system designed specifically for dental applications. The system emits X-rays in a cone-shaped beam that passes through the patient's head toward a two-dimensional flat-panel detector positioned opposite the source. Both the X-ray tube and the detector rotate 360 degrees around the patient to capture multiple two-dimensional projection images. These images are then reconstructed into precise three-dimensional cross-sectional images using advanced reconstruction algorithms and displayed via dedicated 3D viewer software. DentiiScan 2.0 provides distortion-free 3D anatomical data, enhancing the accuracy and safety of diagnosis and surgical planning in dental and maxillofacial procedures, including implantology, wisdom tooth extraction, and oral–maxillofacial surgery. Compared to conventional medical CT systems, the device delivers significantly lower radiation doses to patients and accommodates multiple patient positions—standing, sitting, or in a wheelchair. The system has passed radiation safety testing by the Department of Medical Sciences, electrical safety certification from the Product Testing and Electrical and Electronics Center (PTEC), and clinical trials with real patients. It is ISO 13485–certified for medical device quality management by TÜV SÜD (since 2016) and registered as a medical device under the CSDT framework, affirming compliance with international safety and quality standards.

Status and Potential of Research and Innovation

Current Status

Technology transferred under a non-exclusive license, allowing multiple partners to adopt and apply the innovation freely

Standards and Certification Status

- Fully registered and approved by the FDA
- Certified or accredited under other recognized standards: Complies with ISO 13485 standards

Intellectual Property (IP) Rights

- In the process of filing for IP protection or preparing an Invention Disclosure
- Granted IP protection or approved Invention Disclosure

Market Readiness

Commercially available in the domestic market

DENTIISCAN DUO

3D AND 2D DENTAL X-RAY IMAGING MACHINE

Dr.Saowapak Thongvigitmanee

National Electronics and Computer Technology Center (NECTEC), National Science and Technology Development Agency (NSTDA)

MED-038

Hilights

Key features and Strengths

DentiiScan Duo is a dual-mode dental cone-beam computed tomography (CBCT) and panoramic X-ray machine developed as an advancement of the DentiiScan 2.0. It was designed to be more compact for clinics or small hospitals with limited installation space while reducing production costs. The DentiiScan Duo offers two imaging modes: the CBCT mode, which provides high-resolution, three-dimensional images without geometric distortion, enabling precise diagnosis and surgical planning for dental implant procedures, wisdom tooth extractions, and oral, maxillofacial, and facial surgeries; and the panoramic radiography mode, which captures a two-dimensional view of the teeth, upper and lower jaws, temporomandibular joints, and overall jaw structure in a single image—ideal for general dental applications. Currently, four units have been installed and are operational in Thailand, including two hospitals, one dental clinic, and one university. The DentiiScan Duo has undergone clinical testing at the Faculty of Dentistry, Chulalongkorn University, as well as radiation safety testing by the Department of Medical Sciences, Ministry of Public Health, and electrical safety testing by the Product Testing and Electrical and Electronics Center (PTEC). The system complies with ISO 13485 medical device manufacturing standards and has been registered under the Full CSDT medical device framework.

Status and Potential of Research and Innovation

Current Status

Technology transferred under a non-exclusive license, allowing multiple partners to adopt and apply the innovation freely

Standards and Certification Status

- Fully registered and approved by the FDA
- Certified or accredited under other recognized standards: Complies with ISO 13485 standards

Intellectual Property (IP) Rights

- In the process of filing for IP protection or preparing an Invention Disclosure
- Granted IP protection or approved Invention Disclosure

Market Readiness

Commercially available in the domestic market

DENTIISCAN TRIO

ADVANCED 3D AND 2D DENTAL X-RAY IMAGING MACHINE

Dr.Saowapak Thongvigitmanee

National Electronics and Computer Technology Center (NECTEC), National Science and Technology Development Agency (NSTDA)

MED-039

Hilights

Key features and Strengths

DentiiScan Trio is an advanced dental imaging system that integrates both three-dimensional and two-dimensional cone-beam computed tomography (CBCT) technologies. Evolved from DentiiScan 2.0 and DentiiScan Duo, this latest model is designed to enhance diagnostic precision and usability for dental professionals. It features three imaging modes—CBCT, Panoramic Radiography, and Cephalometric Radiography—to comprehensively support a wide range of dental procedures. The CBCT mode provides high-resolution 3D images without distortion, ideal for dental implant planning, wisdom tooth extraction, and endodontic treatment. The panoramic mode delivers detailed 2D images of the oral cavity in a single scan, suitable for general dentistry, while the cephalometric mode captures lateral skull and facial structures, essential for orthodontic and maxillofacial treatment planning. The system has been clinically tested with real patients and meets stringent standards for radiation and electrical safety, certified by the Department of Medical Sciences, Ministry of Public Health, and the Product Testing and Electrical and Electronics Center (PTEC). Furthermore, DentiiScan Trio is ISO 13485-certified and registered under the Full CSDT medical device framework, representing Thailand's cutting-edge advancement in dental imaging technology for precise, safe, and efficient patient care.

Status and Potential of Research and Innovation

Current Status

Technology transferred under a non-exclusive license, allowing multiple partners to adopt and apply the innovation freely

Standards and Certification Status

- Fully registered and approved by the FDA
- Certified or accredited under other recognized standards: Complies with ISO 13485 standards

Intellectual Property (IP) Rights

- In the process of filing for IP protection or preparing an Invention Disclosure
- Granted IP protection or approved Invention Disclosure

Market Readiness

Commercially available in the domestic market

DENTIPLAN

DENTAL IMPLANT SURGICAL PLANNING SOFTWARE

Dr.Walita Narkbuakaew

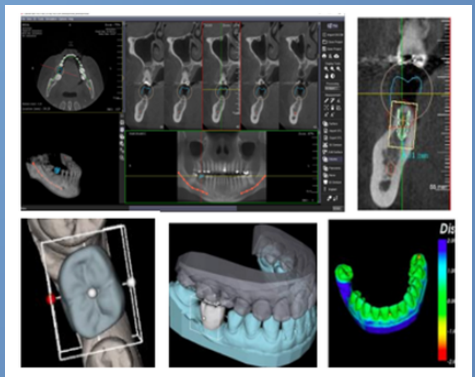
National Electronics and Computer Technology Center (NECTEC), National Science and Technology Development Agency (NSTDA)

MED-040

Hilights

Key features and Strengths

DentiPlan is a dental implant surgical planning software developed by the National Electronics and Computer Technology Center (NECTEC) to support dentists in achieving faster, more precise, and highly accurate implant surgery planning. The software is compatible with standard DICOM imaging files and provides multi-plane visualization, including axial, coronal, and sagittal views, as well as oblique and automatically generated panoramic cross-sections. It includes intuitive tools for defining jaw curvature lines, measuring distances, angles, and tissue density, and generating detailed 3D surface models and virtual anatomical reconstructions. DentiPlan also allows the import of STL surface scan data from intraoral or dental cast scanners, supports interactive tracing and editing of mandibular nerve canals, and enables the precise design of prosthetic tooth positions, sizes, and orientations in both 2D and 3D views. Implant models can be freely adjusted in position and direction based on a built-in implant library, and the completed surgical plan can be exported as an STL file for accurate guide fabrication. By integrating advanced 3D visualization, measurement, and simulation tools, DentiPlan empowers dentists to communicate treatment plans more effectively, enhance surgical precision, and build greater confidence for both clinicians and patients.



DentiPlan

Status and Potential of Research and Innovation

Current Status

Not yet commercialized or transferred for use

Standards and Certification Status

Fully registered and approved by the FDA

Intellectual Property (IP) Rights

No IP protection filed and no Invention Disclosure submitted

Market Readiness

Product currently undergoing market testing

MINIISCAN 2.0

HIGH-RESOLUTION COMPUTED TOMOGRAPHY (CT) SCANNER FOR INTRAOPERATIVE BREAST TISSUE IMAGING

Dr.Saowapak Thongvigitmanee

National Electronics and Computer Technology Center (NECTEC), National Science and Technology Development Agency (NSTDA)

MED-041

Hilights

Key features and Strengths

MiniiScan is a high-resolution cone-beam computed tomography (CBCT) system specifically designed for breast tissue imaging. It enables precise three-dimensional radiological assessment of excised breast tissue, particularly in areas with microcalcifications or cancerous lesions, supporting breast-conserving surgery (BCS). The system ensures that tumors are completely removed during surgery, enhancing surgical confidence while reducing re-operation rates, operating time, and patient costs. The MiniiScan employs a micro-focus X-ray tube to deliver ultra-high image resolution, achieving up to 50 micrometers. It has passed comprehensive safety testing for radiation by the Bureau of Radiological and Medical Devices, Department of Medical Sciences, Ministry of Public Health, and for electrical and electronic safety by the Product Testing and Electrical Laboratory (PTEC). Clinical trials have also been successfully completed. The device is ISO 13485 certified for medical device quality management and has been officially registered with the Thai Food and Drug Administration (FDA). MiniiScan represents a major step forward in localized, precision breast imaging technology, combining safety, performance, and accessibility for modern surgical applications.

Status and Potential of Research and Innovation

Current Status

Not yet commercialized or transferred for use

Standards and Certification Status

- Fully registered and approved by the FDA
- Certified or accredited under other recognized standards: Complies with ISO 13485 standards

Intellectual Property (IP) Rights

- In the process of filing for IP protection or preparing an Invention Disclosure
- Granted IP protection or approved Invention Disclosure

Market Readiness

Product currently undergoing market testing

MOBIISCAN

MOBILE 3D COMPUTED TOMOGRAPHY (CT) SCANNER

Dr.Saowapak Thongvigitmanee

National Electronics and Computer Technology Center (NECTEC), National Science and Technology Development Agency (NSTDA)

MED-042

Hilights

Key features and Strengths

MobiiScan is a mobile cone-beam computed tomography (CBCT) scanner that provides high-resolution, three-dimensional internal anatomical images without distortion. It is designed for diagnostic imaging and surgical planning in oral, maxillofacial, and craniofacial procedures, including treatment for patients with cleft lip and palate or facial trauma. MobiiScan's mobile design allows the device to be transported directly to the patient in a lying position, enhancing convenience and reducing the need for patient transfer. The system delivers precise imaging for surgical positioning and treatment planning, improving surgical accuracy, efficiency, and patient safety. The technology employs a cone-beam X-ray source paired with a flat-panel digital detector that rotates 360 degrees around the patient to capture raw image data from multiple angles. These data are processed through advanced reconstruction algorithms to generate detailed three-dimensional cross-sectional images of the oral and maxillofacial region, viewable in both 2D and 3D via dedicated viewer software. MobiiScan has passed radiation safety verification by the Division of Radiological Health and Medical Devices, Department of Medical Sciences, and electrical and electronic safety testing by the Electrical and Electronic Products Testing Center (PTEC). It has undergone successful clinical trials, achieved ISO 13485 certification, and is registered with the Thai Food and Drug Administration (FDA) as an approved medical device.

Status and Potential of Research and Innovation

Current Status

Not yet commercialized or transferred for use

Standards and Certification Status

- Fully registered and approved by the FDA
- Certified or accredited under other recognized standards: Complies with ISO 13485 standards

Intellectual Property (IP) Rights

- In the process of filing for IP protection or preparing an Invention Disclosure
- Granted IP protection or approved Invention Disclosure

Market Readiness

Commercially available in the domestic market

NomAdML

WEB APPLICATION FOR AI MODEL TRAINING

Dr.Teesid Leelasawassuk

National Electronics and Computer Technology Center (NECTEC), National Science and Technology Development Agency (NSTDA)

MED-043

Hilights

Key features and Strengths

NomadML (No-code Machine Learning Platform) is a user-friendly web application designed for training AI models on image datasets without requiring programming expertise. The platform supports a wide range of customizable training parameters and integrates automated optimization tools that enable users to achieve high model accuracy comparable to that of expert-trained models. With its intuitive workflow, users simply upload image datasets, configure training parameters, and initiate the training process. Once completed, NomadML automatically evaluates and compares model performance, allowing users to download the best-performing model in a ready-to-use format. NomadML supports three primary types of computer vision tasks: image classification (identifying object categories within images), object detection (locating and recognizing specific objects), and image segmentation (separating image regions based on object types). Designed with accessibility and versatility in mind, NomadML lowers the technical barriers to AI development—enabling researchers, developers, and general users to create and deploy efficient machine learning models with ease and precision.

Status and Potential of Research and Innovation

Current Status

Technology transferred under a non-exclusive license, allowing multiple partners to adopt and apply the innovation freely

Standards and Certification Status

Not yet submitted for FDA registration

Intellectual Property (IP) Rights

In the process of filing for IP protection or preparing an Invention Disclosure

Market Readiness

Product currently undergoing market testing

RADIIVIEW-DENTIICLOUD:

CLOUD-BASED VIEWER & TELECONSULTATION

Dr.Walita Narkbuakaew

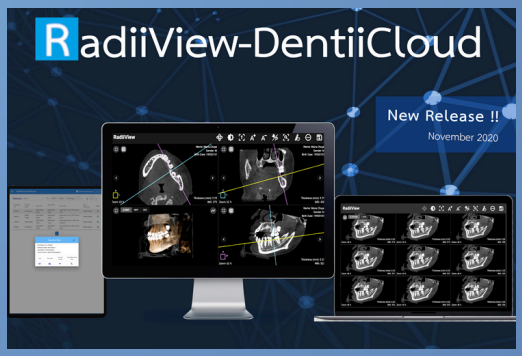
National Electronics and Computer Technology Center (NECTEC), National Science and Technology Development Agency (NSTDA)

MED-044

Hilights

Key features and Strengths

RadiiView is a cloud-based platform for storing, displaying, and managing 2D/3D images and DICOM files from NECTEC's dental CBCT systems, including DentiiScan 2.0, DentiiScan Duo, DentiiScan Trio, and MobiiScan 1.2. It enables seamless data upload to the cloud with secure access control, efficient data management, and a fast search function that allows users to view, download, or share datasets directly through a web browser on smartphones, tablets, or computers—without installing additional software. The system supports distance and angle measurements, annotations, interactive 3D anatomical model visualization, multi-planar cross-sectional views, automatic panoramic curve generation, and customizable cutting planes, with all measurements and annotations recorded for future review. RadiiView is also designed for interoperability with other imaging platforms and supports annotation for AI training datasets, as well as displaying AI inference results within the interface, making it a modern and versatile solution for dental imaging and research.



Status and Potential of Research and Innovation

Current Status

Not yet commercialized or transferred for use

Standards and Certification Status

Fully registered and approved by the FDA

Intellectual Property (IP) Rights

In the process of filing for IP protection or preparing an Invention Disclosure

Market Readiness

Product currently undergoing market testing

BURN WOUND HYDROGEL

WITH SILVER NANOPARTICLE

Ms.Vanissa Darakai

Walailak University

and Navavit Science and Development Agency Co., Ltd.

MED-045

Hilights

Key features and Strengths

Burn injuries often lead to severe complications due to secondary infections, requiring advanced dressings that support moisture balance, gas exchange, infection control, and scar-free healing. In response, the team developed a Burn Wound Hydrogel with Silver Nanoparticle from Kratom Leaf Extract, formulated with halal-certified gelatin and glycosaminoglycans (Hyaluronic Acid and Chondroitin Sulfate) to promote tissue regeneration and reduce inflammation. The addition of asiatic acid and silver nanoparticles produced from kratom extract provides strong antibacterial and antifungal activity. This hydrogel patch supports safer, less painful treatment, reduces dressing frequency and antibiotic use, and shortens healing time—helping healthcare professionals manage patients more efficiently while lowering costs. Its halal formulation accommodates cultural needs, enhances patient quality of life, and offers a sustainable, environmentally friendly solution with strong potential for medical and commercial adoption both nationally and internationally.

Status and Potential of Research and Innovation

Current Status

Technology transferred under an exclusive license, granting full commercialization rights to a single partner or enterprise

Standards and Certification Status

Currently under FDA registration process

Intellectual Property (IP) Rights

Granted IP protection or approved Invention Disclosure

Market Readiness

Product currently undergoing market testing

BLURIBBON & BLUGEL

Pharmacist Adisorn Apasuthirat

Novatech Healthcare Co., Ltd.

MED-046

Hilights

Key features and Strengths

An advanced wound dressing utilizing two nanotechnologies — Nanobiocellulose and Blue Nano Silver — available in two product forms: wound dressing sheet and wound care gel. It is designed for the treatment of chronic and hard-to-heal wounds, such as diabetic ulcers, pressure sores, and burn wounds. This is the only wound dressing material that changes color when the silver content is fully released, serving as a visual indicator for dressing replacement. The product received the National Innovation Award (Social Category, 2012) and the Gold Medal – The Grand Prix at the 40th International Exhibition of Inventions of Geneva (2012).

Status and Potential of Research and Innovation

Current Status

Technology transferred under an exclusive license, granting full commercialization rights to a single partner or enterprise

Standards and Certification Status

Fully registered and approved by the FDA

Intellectual Property (IP) Rights

Granted IP protection or approved Invention Disclosure

Market Readiness

Commercially distributed both in domestic and international markets such as Vietnam, Myanmar, Sri Lanka, the Maldives, and Mongolia.

BODIIRAY PX

PORTABLE BATTERY-POWERED DIGITAL X-RAY MACHINE

Dr.Nattawut Sinsuebphon

National Science and Technology Development Agency (NSTDA)

MED-047

Hilights

Key features and Strengths

BodiiRay PX is a portable battery-powered digital radiography system developed by NECTEC and NSTDA as an advanced evolution of the BodiiRay P mobile X-ray unit. It integrates a swappable lithium battery system that powers both the X-ray generator and the embedded computer, enabling continuous imaging operations without reliance on external power sources. Designed for use in limited-space or mobile environments, the compact system comprises an X-ray generator, a wireless flat panel detector, and an embedded image processing computer. Developed under the Full Digital Synchronization concept, the device allows convenient and rapid operation via a touchscreen interface, supporting real-time image display and a wide range of clinical applications. Its proprietary image processing software includes a virtual grid system that minimizes radiation scattering without the need for a physical grid. Furthermore, BodiiRay PX offers seamless integration with hospital information systems (HIS) and picture archiving and communication systems (PACS). The system has been developed under ISO 13485 medical device quality management standards, passed radiation and electrical safety certifications, and is registered with the Thai Food and Drug Administration (FDA).

Status and Potential of Research and Innovation

Current Status

Not yet commercialized or transferred for use

Standards and Certification Status

Fully registered and approved by the FDA

Intellectual Property (IP) Rights

Granted IP protection or approved Invention Disclosure

Market Readiness

Prototype developed but not yet tested in the market

VIRTUAL NURSING LEARNING MODULE

Assoc. Prof. Dr.Jutamas Chotibang

Faculty of Nursing, Chiang Mai University

MED-048

Hilights

Key features and Strengths

The virtual scenario–based learning system enables nursing students to engage in realistic practice and gain confidence in performing procedures on critically ill patients. It also enhances the skills of nursing students and nurses in caring for pediatric patients who require endotracheal intubation and in managing abnormal childbirth through the use of Virtual Reality (VR) combined with Artificial Intelligence (AI), thereby reducing the risk of medical errors. In addition, educational institutions offering nursing and midwifery programs that are required to establish virtual nursing laboratories under the accreditation standards of the Thailand Nursing and Midwifery Council can effectively support students in practicing clinical procedures, problem-solving, and clinical decision-making through high-fidelity virtual nursing scenarios.

Status and Potential of Research and Innovation

Current Status

Not yet commercialized or transferred for use

Standards and Certification Status

Fully registered and approved by the FDA

Intellectual Property (IP) Rights

Granted IP protection or approved Invention Disclosure

Market Readiness

Commercially available in the domestic market

Unit Price

490,000 baht/units

HIGH-PERFORMANCE ABSORBABLE POLYMER

FOR MEDICAL DEVICES

Assoc. Prof. Dr.Winita Punyodom

Department of Chemistry, Faculty of Science,
Chiang Mai University

MED-049

Hilights

Key features and Strengths

This innovation features biodegradable polyester medical-grade polymer pellets that can be synthesized in the laboratory from biomass-based agricultural raw materials such as corn, sugarcane, and cassava. Examples include poly(L-lactide) (PLL), poly(L-lactide-co-Ɛ-caprolactone) (PLC), and poly(L-lactide-co-glycolide) (PLG), marketed under the trade names CMU-Bioplasorb PLA, CMU-Bioplasorb PLC, and CMU-Bioplasorb PLG. These polymers are priced at 78,000–90,000 THB per kilogram, significantly lower than imported equivalents, which range from 120,000–200,000 THB per kilogram. Production is carried out in a laboratory certified under ISO 13485 (Quality Management System for Medical Device Manufacturing) by TÜV SÜD, USA. The polymers serve as raw materials for biodegradable medical devices such as absorbable sutures, nerve guidance conduits, drug delivery systems, and various medical instruments, including dental materials, screws, and fixation plates. The medical-grade absorbable polymers produced meet ASTM F1925 standards (Standard Specification for Semi-Crystalline Poly(lactide) Polymer and Copolymer Resins for Surgical Implants) and have undergone domestic testing, ensuring performance equivalent to commercial-grade materials at a lower cost.

Status and Potential of Research and Innovation

Current Status

Not yet commercialized or transferred for use

Standards and Certification Status

Certified or accredited under other recognized standards: Certified under ISO 13485:2016

Intellectual Property (IP) Rights

In the process of filing for IP protection or preparing an Invention Disclosure

Market Readiness

Commercially available in the domestic market

Unit Price

- CMU-Bioplasorb PLA 78,000 ฿/1 kg,
- CMU-Bioplasorb PLC 90,000 ฿/1 kg
- CMU-Bioplasorb PLG 30,000 ฿/100 g

VIRTUAL NURSE LAB

Assoc. Prof. Dr.Piyanut Xuto

Faculty of Nursing, Chiang Mai University

MED-050

Hilights

Key features and Strengths

Virtual Nurse Lab is a cloud-based virtual laboratory integrated with artificial intelligence (AI) to enhance nursing students' competencies and readiness before clinical practice in hospital wards. It includes learning modules in Maternal and Newborn Nursing, Surgical Nursing, and Medical Nursing, and is available in five languages: Thai, English, Chinese, Japanese, and Indonesian.

Status and Potential of Research and Innovation

Current Status

Not yet commercialized or transferred for use

Standards and Certification Status

Certified or accredited under other recognized standards: Certified as a nursing innovation by the Prince of Songkla University Science Park and the Nursing and Health Innovation Association

Intellectual Property (IP) Rights

Granted IP protection or approved Invention Disclosure

Market Readiness

Product currently undergoing market testing

PRK DENTAL LMPLANT SYSTEM

Mr.Parinya Sutthirak

Mahasawat Technology CO., LTD.

MED-051

Hilights

Key features and Strengths

The PRK Dental Implant is a Class 3 high-risk implantable medical device developed with a uniquely engineered external thread design that optimally aligns with the anatomical structure and density of human bone. The implant's outer threads are specifically structured according to bone density levels and are divided into three main sections: the head, the hollow cylindrical body, and the solid apex. The head features a double micro-thread configuration that helps reduce resistance within the cortical bone—the densest bone layer. The body section, designed with an expanded cutting profile, contains thicker thread crests to enhance stability, while the apex features sharp-tipped threads. Portions of the body and apex threads are self-cutting, enabling efficient bone cutting and insertion, particularly in softer spongy bone regions. Both sections incorporate continuous dynamic flutes extending from the self-cutting edges to minimize insertion torque and improve osseointegration efficiency. The PRK Dental Implant has been certified under international quality standard ISO 13485, registered with the Thai Food and Drug Administration (FDA), and listed in the Thai Innovation List by the Bureau of the Budget. Since 2022, the PRK Dental Implant has been included in the National Health Security Office (NHSO) benefits package, with more than 200 accredited healthcare facilities nationwide currently providing treatment services.

Status and Potential of Research and Innovation

Current Status

Not yet commercialized or transferred for use

Standards and Certification Status

Fully registered and approved by the FDA

Intellectual Property (IP) Rights

Granted IP protection or approved Invention Disclosure

Market Readiness

Commercially available in the domestic market

Unit Price

3,300 - 6,000 Bath

THE CMF ORTHOGNATHIC SOLUTION

DESIGNED FOR PERSONALIZED JAW REPOSITIONING SURGERY

Assoc. Prof. Dr.Boonrat Tohwongwatana

Meticuly Co., Ltd.

MED-052

Hilights

Key features and Strengths

The CMF Orthognathic Solution" is a comprehensive innovation for orthognathic surgery (jaw repositioning surgery), designed to revolutionize precision and treatment efficiency. At the heart of this innovation lies the use of Virtual Surgical Planning (VSP) technology combined with 3D printing and AI-assisted design, to create patient-specific titanium fixation plates. Each plate is meticulously designed to achieve a perfect anatomical fit with the patient's unique bone structure, eliminating the need for intraoperative plate bending. This significantly reduces operative time while enhancing postoperative stability and fixation accuracy. An even greater highlight is the surgical guide, which is custom-manufactured in parallel. This guide enhances surgical precision by directing osteotomy cuts and plate placement in exact accordance with the digital surgical plan, effectively minimizing potential freehand errors during the operation. Ultimately, "The CMF Orthognathic Solution" represents not merely the creation of a medical device, but the delivery of a predictable surgical outcome — enabling surgeons to operate with greater ease, safety, and confidence, while providing patients with results that closely match their expectations.

Status and Potential of Research and Innovation

Current Status

Technology transferred under a non-exclusive license, allowing multiple partners to adopt and apply the innovation freely

Standards and Certification Status

- Fully registered and approved by the FDA
- Certified or accredited under other recognized standards: Certified ISO 13485 MDR

Intellectual Property (IP) Rights

In the process of filing for IP protection or preparing an Invention Disclosure

Market Readiness

Commercially available in the domestic market

Unit Price

- Domestic market: 265 Baht per box and Private sector (including VAT): 450,000 Bath
- International market: United Kingdom, Singapore, Malaysia (price: USD 22,000 per unit)

VR

VENTURE RISE THAILAND 2025