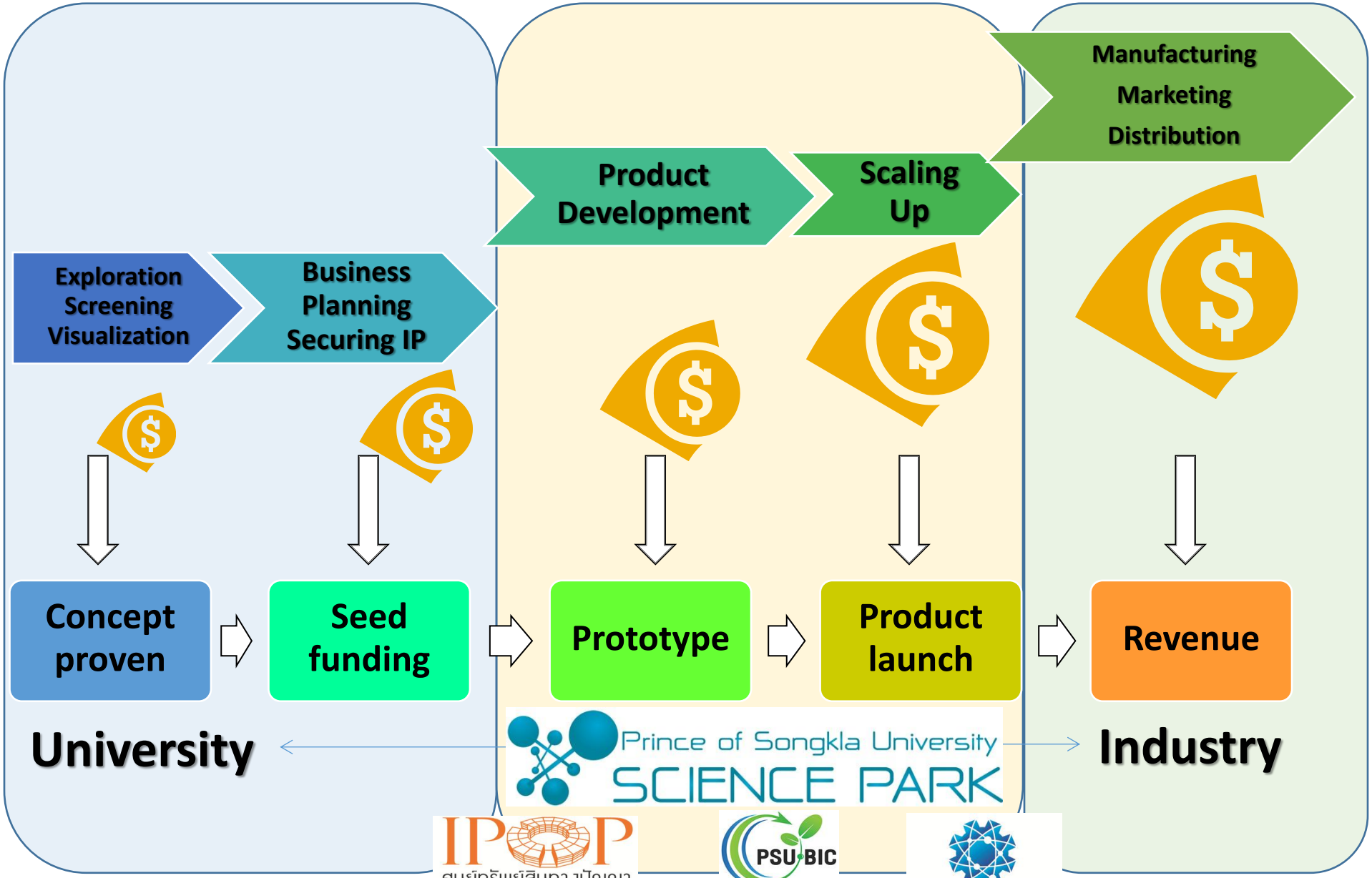
Commercializing University Intellectual Property for the Benefit of Society

Akkharawit Kanjana-Opas, Ph.D.
Director
Prince of Songkla University Science Park

Photo was taken from facebook.com/hatyaifromtheair

Prince of Songkla University Research Commercialization



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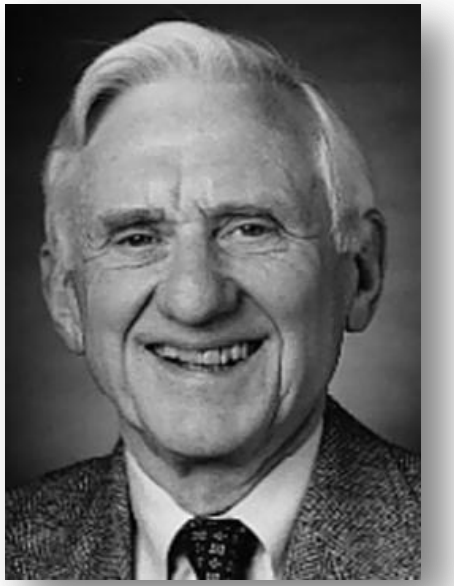
PSU BIC ศูนย์บ่มเพาะวิสาหกิจ จุฬาภรณวิทยาศาสตร์ มหาวิทยาลัยสงขลานครินทร์

OFFICE OF INDUSTRIAL LIAISON สำนักงานความร่วมมืออุตสาหกรรม

GISSCO

GISSCO COMPANY LIMITED

บริษัท กิสโก จำกัด



Prof. Flemings

Co-Founder

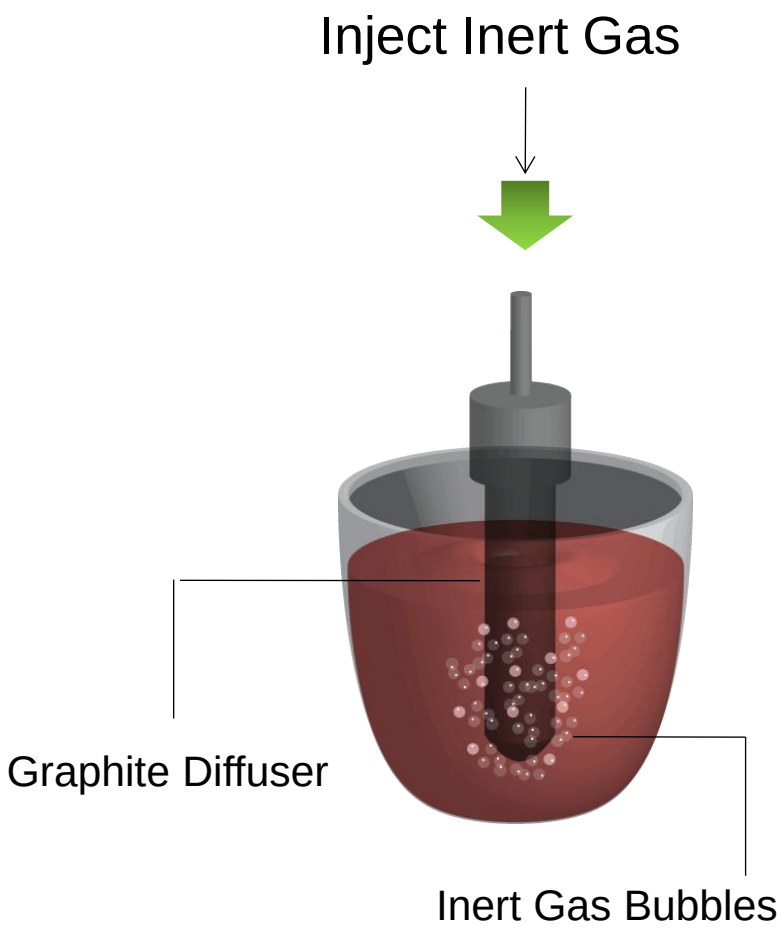
Dr. Jessada Wannasin

Co-Founder

Massachusetts Institute of Technology

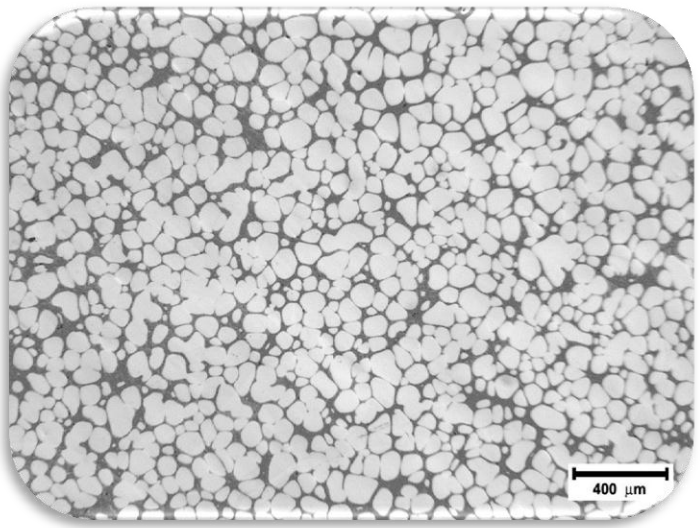
Prince of Songkla University

Gas Induced Semi-Solid (GISS) Process

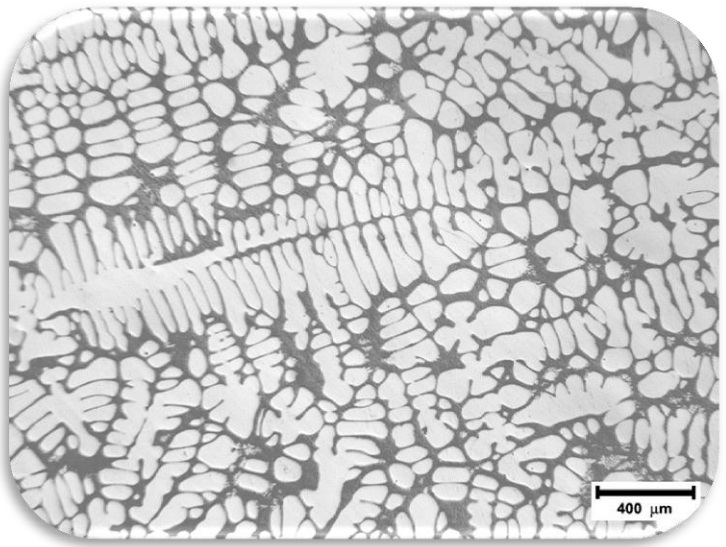


Forging

Solidified Semi-Solid Metal



Solidified Liquid Metal



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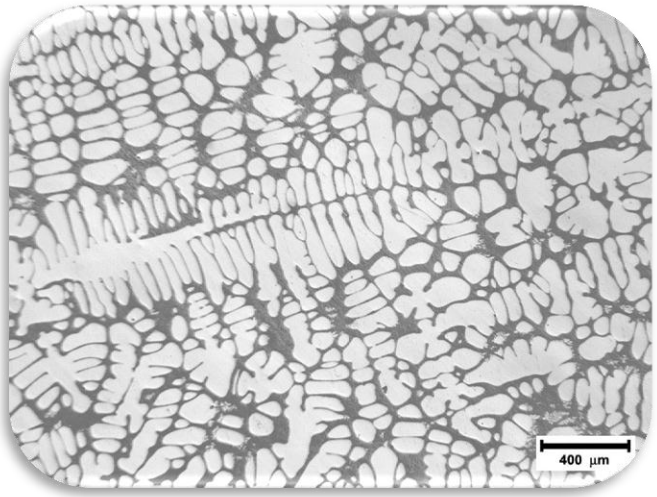
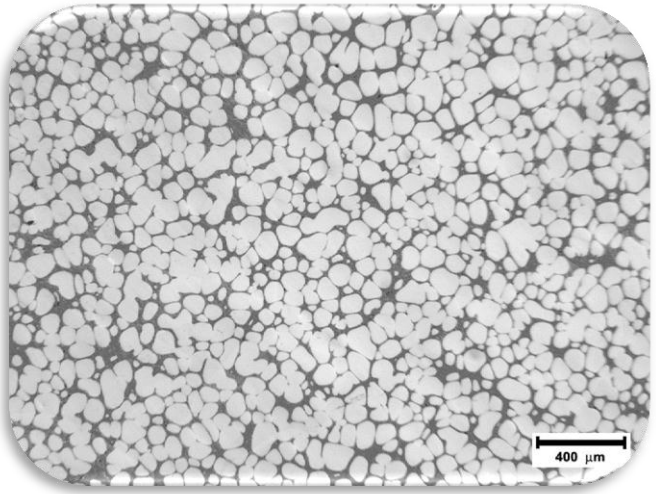
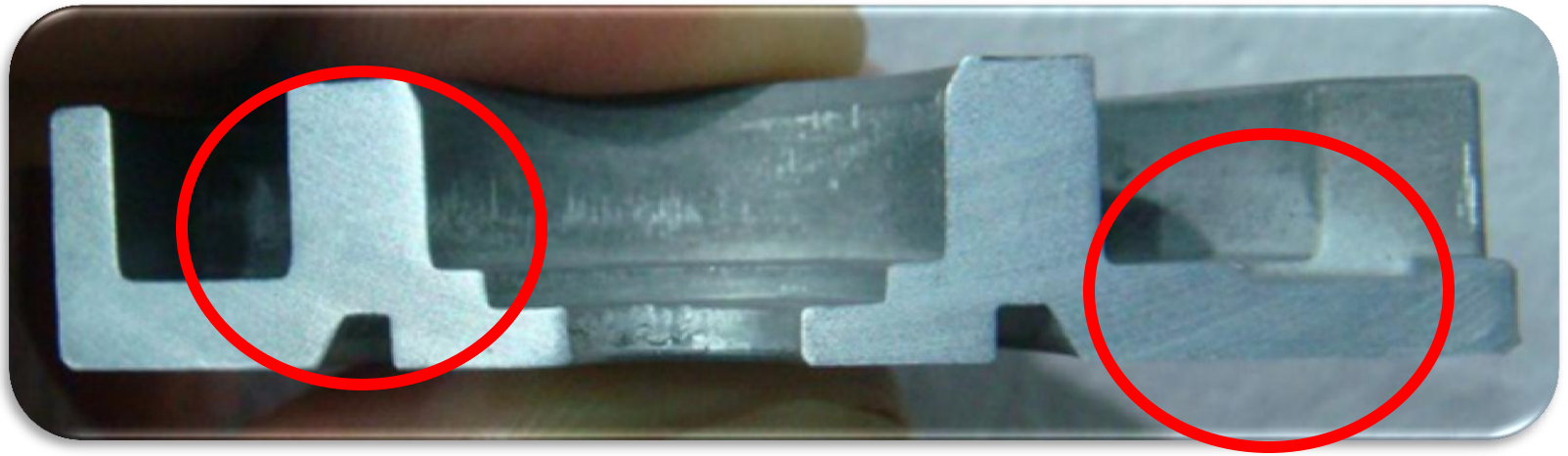
Benefits of Semi-Solid Metal



Conventional Liquid Die Casting





Semi-Solid Die Casting

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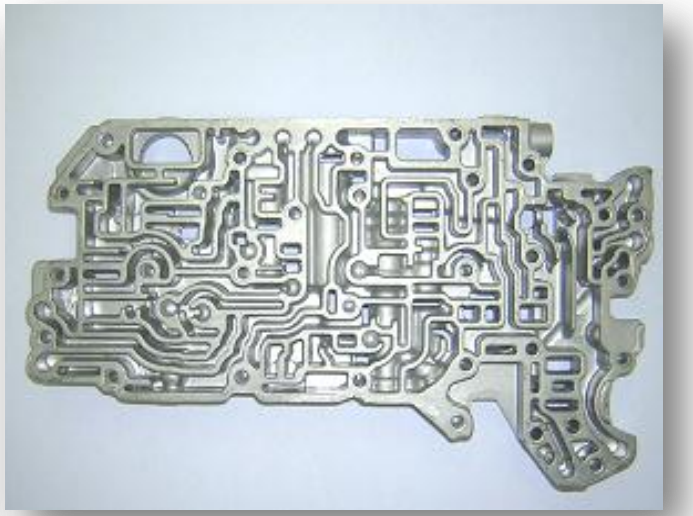
Industrial Applications

Formcast, USA



Valve Body, Hyundai-Kai, 2006 (ADC10)

SSR Wheel, Japan

Engine Block, Honda, Japan, 2005

Front Lower Arm, ART, 2006

Hot Metal Mold, USA

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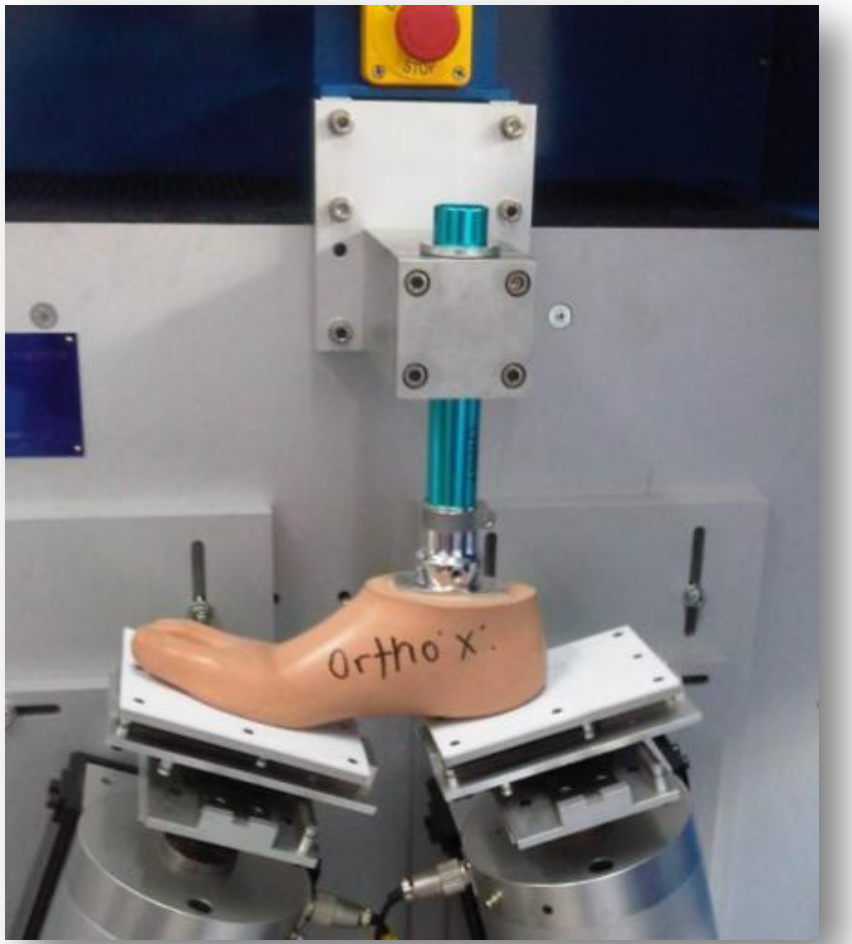
Light-Weight Prosthesis



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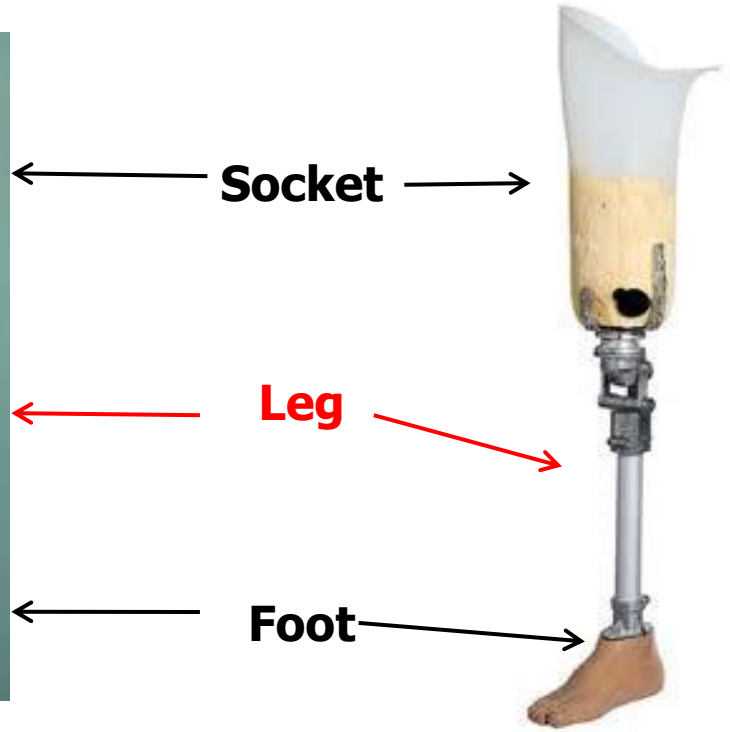
Motivation

- Approximately 50,000 Amputees in Thailand
- Types of Prosthesis

ขาเทียมแกนนอก (Exo-Skeletal)



ขาเทียมแกนใน (Endo-Skeletal)

Imported
(~30,000 THB)

SSM Prototype
(~15,000 THB)

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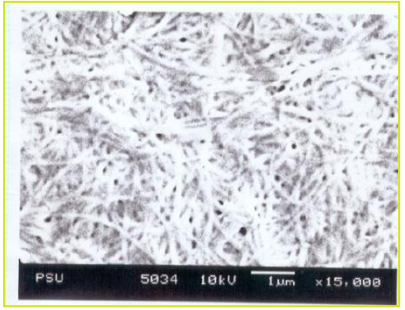
Raw Materials

Biocellulose (2 patent applications)

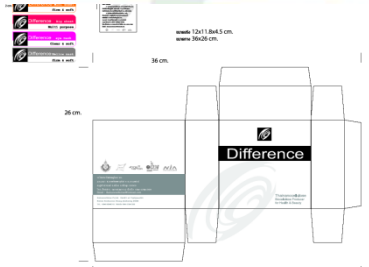


4 Prototypes

4 Commercialized product lines

Wound dressing materials

Cosmetic masks



Clinical Testing Results of Product in Patient with Level 2 Acute & Chronic Wound

Before

3 days

6 days

9 days

12 days

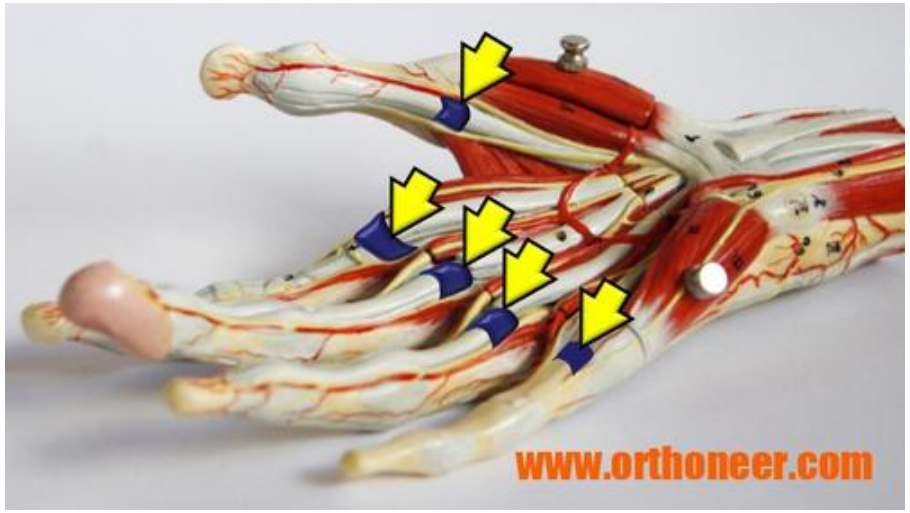
15 days

Commercial Wound Dressing Product

Industrial Technology Assistant Program (ITAP)

Collaborative R& D Grant from National Science and Technology Development Agency (NSTDA)

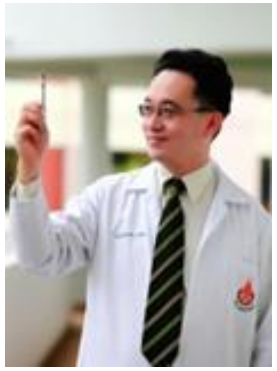
2006 Best Innovative Biomedical Product from National Research Council of Thailand



Two major health related problems in the South

Carpal Tunnel Syndrome (CTS)

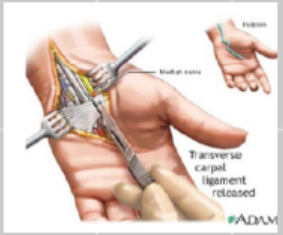
Trigger fingers



"In the beginning, I noticed that with limited resources and time, many patients were on a waiting list for CTR surgery. Some people had waited for more than 3 months. Mostly those who had conventional surgery (open-surgery) had palmar pain and a noticeable and painful scar. The post-op condition sincerely scared patients, so some of them decided not to follow-through with CTR surgery. *I met with patients who actually waited until their hand had become withered before they acquiesced and agreed to the surgery*. You can imagine how it hurts me as a doctor to see people in pain and anxiety, so they inspired me to develop a simple device which shortens the time for operation, causes less pain to patients, and allows them to recover and return to work faster, so that they can be happier. That's the reason I invented the MiniSURE Kit."

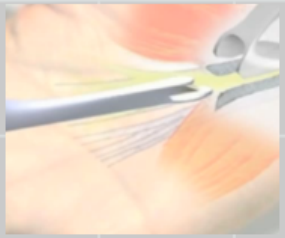
Sunton Wongsiri, M.D.

3 Approaches for Carpal Tunnel Release Surgery are:



Open Surgery, which allows the doctor to see more of the inner tissues, including the full width of the transverse carpal ligament where it is to be cut. Open surgery requires an incision in the palm and wrist, which disturbs more of the tissues in the hand, and requires a longer recovery period. It leaves a larger scar than does endoscopic and minimally invasive surgery. But there may be less chance of other complications.

Endoscopic Surgery, which requires only a small incision at the wrist (single-portal technique) or at the wrist and palm (two-portal technique), and Recovery is quicker than with open surgery. The scars heal more quickly, are smaller, and tend to be less painful at 3 months after surgery. The operation is much more expensive than the Open Surgery. There may be a higher rate of re-operation after the surgery.



A Minimally Invasive Surgery or Mini-Open Release Surgery. This requires a smaller incision than standard open carpal tunnel release surgery to minimize healing time and scar formation. But it also allows the surgeon to view the ligament directly during the surgery to minimize danger to the nerve itself. This is smart, simple, safe, speed and small.

Inventors

1. Asst.Prof.Suntorn Wongsiri, M.D.
2. Assoc.Prof.Boonsin Tangtragulwanich, M.D.
3. Asst.Prof.Sitthichoke Anantaseri, M.D
4. Porames Suwanno, M.D.
5. Warah Yeunyongwiwat, M.D.
6. Mr.Ekarin Wongsiri

Department of Orthopedics Surgery
Faculty of Medicine, PSU

PCT/TH2010/000002 and PCT/TH2010/000039

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ศูนย์ทรัพย์สินทางปัญญา
มหาวิทยาลัยสงขลานครินทร์
Intellectual Property Office of Prince of Songkla University

PSU-CARPAL TUNNEL RETRACTOR

MiniSURE Kit®:
A surgical set designed for Carpal Tunnel Release Surgery consists of 2 devices; MiniSURE View ® and MiniSURE Cut®

MiniSURE View ®

MiniSURE Cut ®

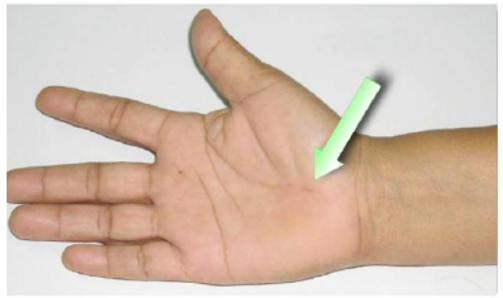
The retractor
is designed to improve visualization and to protect soft tissue around the Carpal Tunnel area. It also better passage for a cutting instrument in releasing the Transverse Carpal Ligament.

The surgical blade
is a cutting instrument to release the Transverse Carpal Ligament. It is equipped with the world class fine blade to ensure a complete cut in a single smooth motion.

The navigator tip
is designed to navigate and to create a space above the Carpal Tunnel. It separates the soft tissue from the Transverse Carpal Ligament and increases a space for the retractor application

The freer
is designed to be flat, thin and flexible to create a space inside the Carpal Tunnel.

OLD STANDARD INCISION



NEW PSU-CTR

WHY MiniSURE Kit?

Smart
- Minimize Operation Cost
- Less Post-Op Medication

Speed
- Speedy Recovery
- Shorten Operating Time

Simple
- Only 5 Easy Steps
- Less Complication

Small
- Wound Size
- Less Staff
- Less Post-Op Medication

Safe
- Visualize Carpel Tunnel

	Open Technique	Endoscopic Technique	Limited Technique	MiniSURE Technique
Quick service, no hospital admission, save operative time	30-60 Mins	30-60 Mins	20-30 Mins ✓	15-20 Mins ✓
Reduce wound size	3-6 cm.	1.5-2.0 cm. ✓	1.5-2.0 cm. ✓	1.5-2.0 cm. ✓
Reduce pain and complication	+++++ Big incision	++ Small incision	+++ Can't see inside Tunnel	+ Small incision ✓
Less staff and tools	3 nurses+1anes	3 nurses+1anes	1 nurses ✓	1 nurses ✓
Less surgical cost	$$$ Big surgical set + anes	$$$$$ Hi-tech machine + anes	$$ Small set + local anes	$ Small set + local anes ✓
Short recovery time	10-14 days	7-10 days	3-5 days ✓	3-5 days ✓

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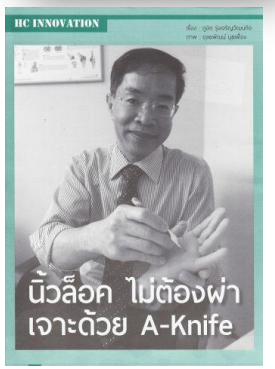
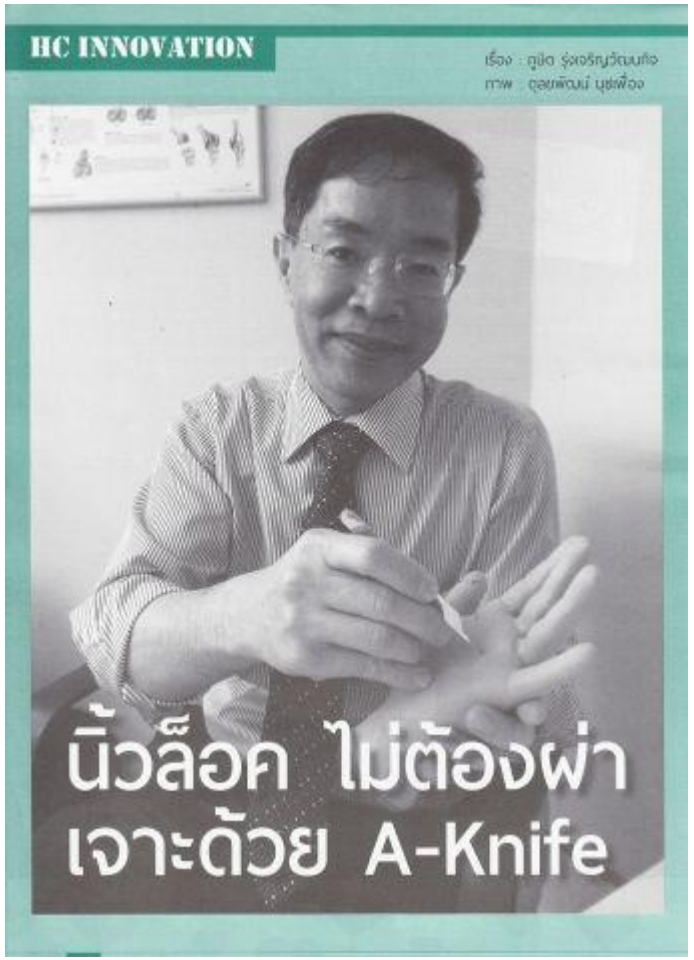


1st Prizer Winner

True Innovation Awards 2012

A-knife for Trigger Finger Surgery



Research & Invention

IP Audit

document

seminar/conference

Patent Searching

Patent Mapping

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Innovation Screening

Patentability

Medical Innovation & IP Portfolios

Utilization & Commercialization

-Prototyping

IP Valuation & Feasibility Study

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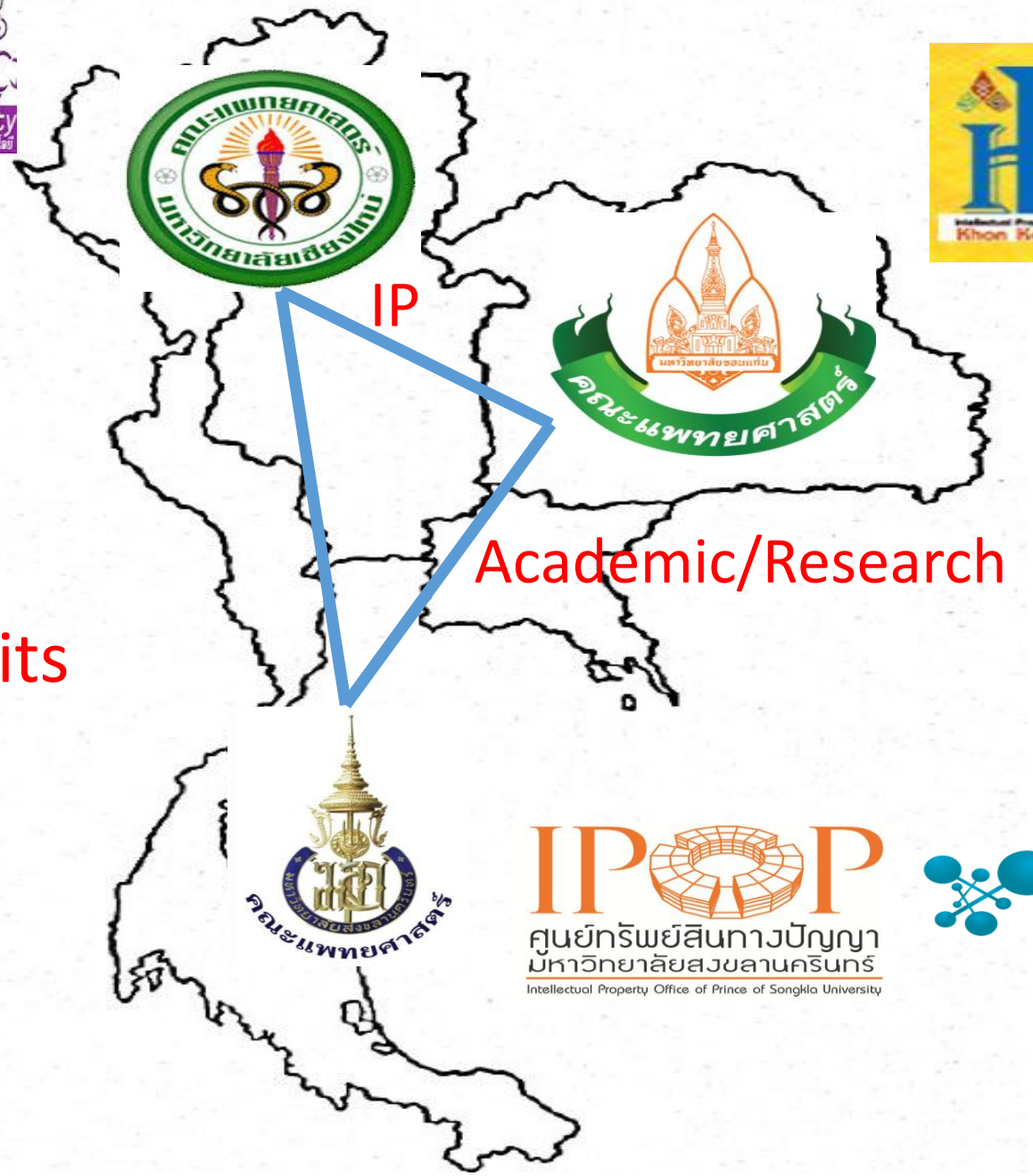
คณะแพทยศาสตร์ มหาวิทยาลัยสงขลานครินทร์

คณะแพทยศาสตร์ มหาวิทยาลัยขอนแก่น

คณะแพทยศาสตร์ มหาวิทยาลัยเชียงใหม่

Multi-center study/Research

Institutional Procurement



Procurement

-Benefits

-cost saving

-patient benefits

-Risks

Prince of Songkla University Science Park