



CATALOG  
**BIO PLASTICS**  
By Plastics Institute of Thailand

ผลิตภัณฑ์พลาสติกชีวภาพ  
ภายใต้โครงการส่งเสริมและพัฒนาอุตสาหกรรมคอมพาวด์  
และการแปรรูปพลาสติกชีวภาพ (bio plastics)

ปีงบประมาณ พ.ศ.2559



## Biodegradable Candy Packages

(PLA compound containing 20% Shellac)

Materials Designed by  
Plastics Institute of Thailand  
and



Rajamangala University Of Technology Thanyaburi

## Biodegradable Cake Tray

(PLA compound containing 5% silica extracted from rich hull ash)

Materials Designed by  
Plastics Institute of Thailand  
and



Rajamangala University Of Technology Rattanakosin



## Antimicrobial Biodegradable Bowl

(PBS compound containing 20% Sandal wood powder)

Materials Designed by  
Plastics Institute of Thailand  
and  
Srinakharinwirot University



## Biodegradable Compact Powder

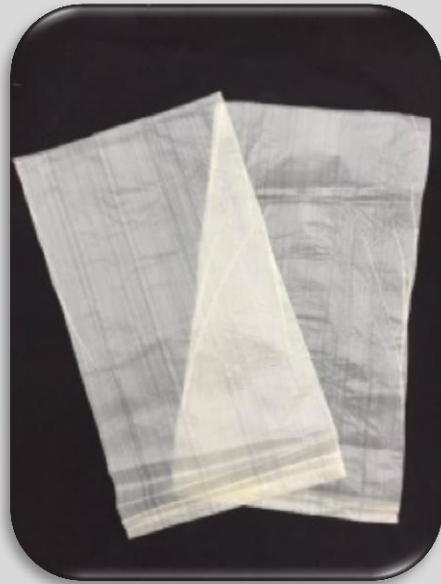
(PBS compound containing 10% rice starch)

Materials Designed by  
Plastics Institute of Thailand  
and



Rajamangala University Of Technology Rattanakosin





## Biodegradable Trash Bag

(PLA base compound containing 10% Thermoplastic starch)

Materials Designed by  
Plastics Institute of Thailand  
and  
Silpakorn University



## Biodegradable Ice-Cream Spoon

(PLA compound containing 8% rice bran)

Materials Designed by  
Plastics Institute of Thailand  
and



Rajamangala University Of Technology Thanyaburi





## Biodegradable Nursery Bag

(PLA compound containing 10% rice husk ash)

Materials Designed by  
Plastics Institute of Thailand  
and



Srinakharinwirot University

## Biodegradable Card

(PLA base compound containing 20% Thermoplastic starch)

Materials Designed by  
Plastics Institute of Thailand  
and



Silpakorn University





## Biodegradable Mobile Case

(PBSA base compound containing 20% Thermoplastic starch)

Materials Designed by  
Plastics Institute of Thailand  
and  
Silpakorn University



## Biodegradable Bath Kits Packaging

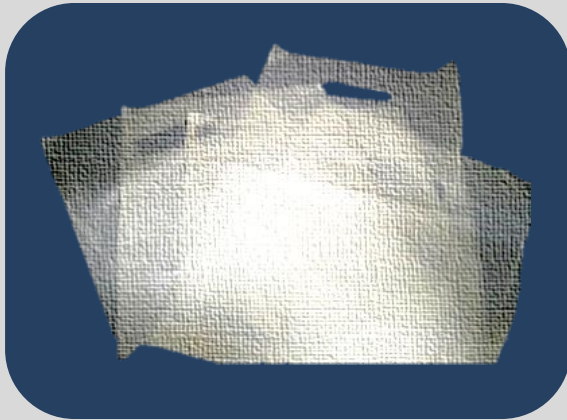
(PBSA compound containing 10% rice starch)

Materials Designed by  
Plastics Institute of Thailand  
and



Rajamangala University Of Technology Rattanakosin





## Biodegradable Shopping Bag

(PLA base compound containing 20% rice starch)

Materials Designed by  
Plastics Institute of Thailand  
and  
Silpakorn University



## Biodegradable Food Tray

(PLA base compound containing 20% rice starch)

Materials Designed by  
Plastics Institute of Thailand  
and



Silpakorn University







## Controlled-Release Capsule (Carrageenan)

Materials Designed by  
Plastics Institute of Thailand  
and



King Mongkut's Institute of Technology Ladkrabang

## Controlled-Release Fertilizers

(Alginate modify with Chitosan+  $\text{Fe}_2(\text{SO}_4)_3$ +CaCl)

Materials Designed by  
Plastics Institute of Thailand  
and



King Mongkut's Institute of Technology Ladkrabang





## Biodegradable Packaging for Cans

(Tapioca flour containing 15% rice straw)

Materials Designed by  
Plastics Institute of Thailand  
and



Rajamangala University Of Technology Thanyaburi

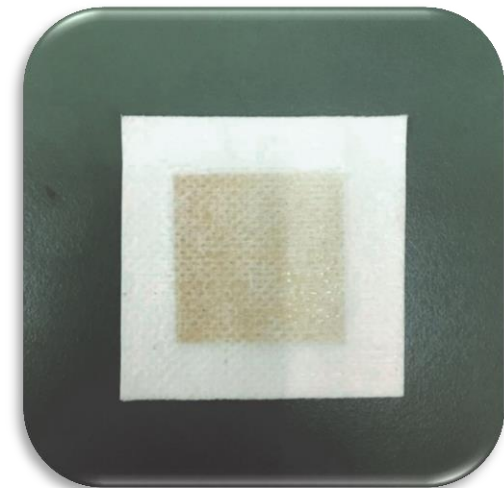
## Controlled-Release medical plaster

(Chitosan/Salicylic acid/Alginate)

Materials Designed by  
Plastics Institute of Thailand  
and



King Mongkut's Institute of Technology Ladkrabang





## Cotton Fiber Tray

(PP compound containing 16% Micro-Cellulose of cotton fibers)

Materials Designed by  
Plastics Institute of Thailand  
and



Thammasat University

## Clamshell Egg Tray

(Polyolefin compound with 1% rice straw)

Materials Designed by  
Plastics Institute of Thailand  
and



Kasetsart University





## Chocolate Tray

(Polyolefin compound containing 1% rice starch)

Materials Designed by  
Plastics Institute of Thailand  
and



Kasetsart University

## Bento Tray

(HDPE compound containing 9% starch)

Materials Designed by  
Plastics Institute of Thailand  
and



Rajamangala University Of Technology Thanyaburi





## Artificial Rattan

(HDPE compound containing 3% starch)

Materials Designed by  
Plastics Institute of Thailand  
and



Rajamangala University Of Technology Thanyaburi

## Bottle

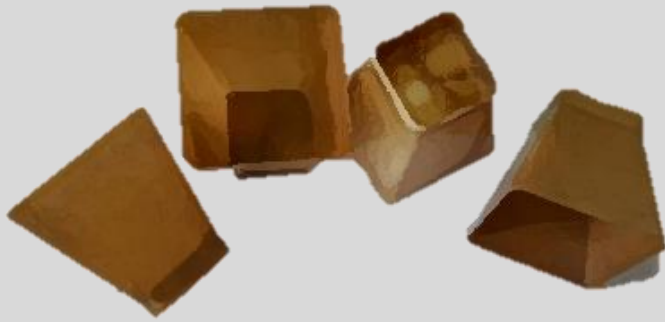
(LDPE compound containing 5% starch)

Materials Designed by  
Plastics Institute of Thailand  
and



The Petroleum and Petrochemical  
College, Chulalongkorn University





## Ice-Cream Cup

(PS compound containing 2% rice bran and 9% starch)

Materials Designed by  
Plastics Institute of Thailand  
and



Rajamangala University Of Technology Thanyaburi

## Spoon Case

(HDPE compound containing 20% rice starch)

Materials Designed by  
Plastics Institute of Thailand  
and



Rajamangala University Of Technology Thanyaburi





## Plastic Knives

(PS compound containing 9% rice starch)

Materials Designed by  
Plastics Institute of Thailand  
and



Rajamangala University Of Technology Thanyaburi

## Coconut Fiber Tray

(PP compound containing 20% coconut fibers)

Materials Designed by  
Plastics Institute of Thailand  
And



Thammasat University





## Detergent Scoop


(PP compound containing 20% rice starch)

Materials Designed by  
Plastics Institute of Thailand  
and  
 Kasetsart University

## Saucer

(LDPE compound containing 30% starch)

Materials Designed by  
Plastics Institute of Thailand  
and

 The Petroleum and Petrochemical  
College, Chulalongkorn University







## Plant Pot

(HDPE compound with 15%rice straw)

Materials Designed by  
Plastics Institute of Thailand  
and



Kasetsart University

## Plant Bag

(LDPE compound containing carbon black from waste agriculture)

Materials Designed by  
Plastics Institute of Thailand  
and



Thammasat University





## Seeds Tray

(HIPS compound containing carbon black from waste agriculture)

Materials Designed by  
Plastics Institute of Thailand  
and  
Thammasat University



## Plant Tray

(HDPE compound containing 0.75% rice husk)

Materials Designed by  
Plastics Institute of Thailand  
and



Kasetsart University





## Reinforce Film

(LLDPE compound containing nanosilica from rice)

Materials Designed by  
Plastics Institute of Thailand  
and



Thammasat University

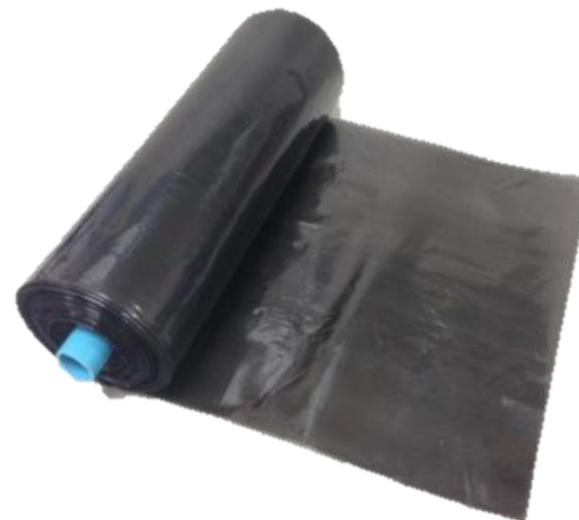
## Active Film

(LDPE compound containing carbon black from waste agriculture)

Materials Designed by  
Plastics Institute of Thailand  
and



Thammasat University





## Rubbish Bin

(PP compound containing 15% rice starch)

Materials Designed by  
Plastics Institute of Thailand  
and



Rajamangala University Of Technology Thanyaburi

## Medicine Bottle

(PP compound containing 6% rice straw)

Materials Designed by  
Plastics Institute of Thailand  
and



Kasetsart University





## Wood Plastic Composite Deck

(HDPE compound containing 30% teak sawdust)

Materials Designed by  
Plastics Institute of Thailand  
and



Srinakharinwirot University

## Wood plastic composite deck

(PP compound containing 30% rice hull)

Materials Designed by  
Plastics Institute of Thailand  
and



Srinakharinwirot University





## Card Holder

(HDPE compound containing 10% rice bran)

Materials Designed by  
Plastics Institute of Thailand  
and



Rajamangala University Of Technology Thanyaburi

## Shopping Bag

(LLDPE compound containing 10% starch)

Materials Designed by  
Plastics Institute of Thailand  
and



The Petroleum and Petrochemical  
College, Chulalongkorn University





## Photo Frame

(PP compound containing 10% rice starch)

Materials Designed by  
Plastics Institute of Thailand  
and



Rajamangala University Of Technology Thanyaburi

ผลิตภัณฑ์พลาสติกชีวภาพ  
ภายใต้โครงการส่งเสริมและพัฒนาอุตสาหกรรมคอมพาวด์  
และการแปรรูปพลาสติกชีวภาพ (bio plastics) และพัฒนาศูนย์การออกแบบ

ปีงบประมาณ พ.ศ.2560



## ขวดจากพลาสติกชีวภาพ



- บรรจุภัณฑ์
- ย่อยสลายได้ (Biodegradation)
- PLA + TiO<sub>2</sub>

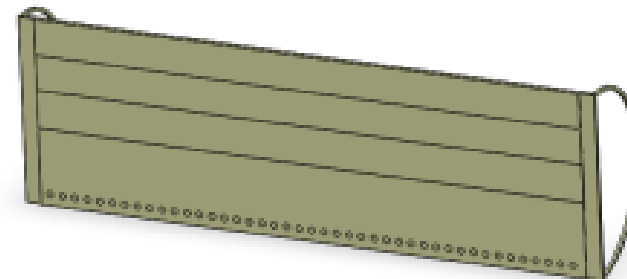
Materials Design by  
Plastics Institute of Thailand

And



Srinakharinwirot University

## หน้ากากป้องกันแบบใช้แล้วทิ้ง



- วัสดุอุปกรณ์ทางการแพทย์
- ย่อยสลายได้ (Biodegradation)
- PLA/PBS/ZnO nanoparticles

Materials Design by  
Plastics Institute of Thailand

And



Thammasat University

## อุปกรณ์ช่วยกายภาพบำบัด



- วัสดุอุปกรณ์ทางการแพทย์
- ย่อยสลายไม่ได้ (Non-degradation)
- PP recycle

Materials Design by  
Plastics Institute of Thailand

And



Kasetsart University

## ถุงระบายปัสสาวะ



- วัสดุอุปกรณ์ทางการแพทย์
- ย่อยสลายได้ (Biodegradation)
- PP+PLA

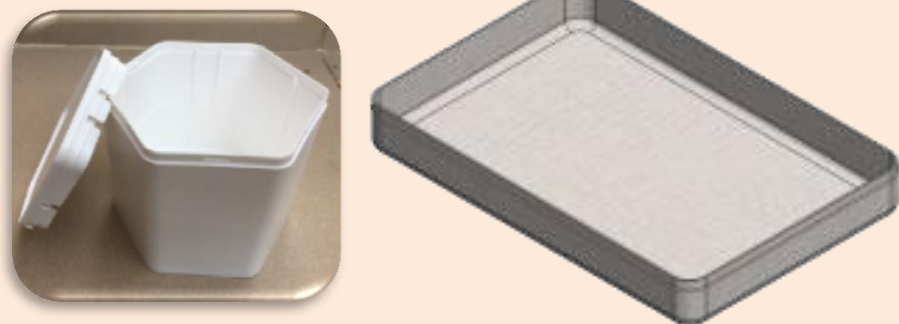
Materials Design by  
Plastics Institute of Thailand

And



Thammasat University

## กล่องบรรจุอาหารร้อน



- บรรจุภัณฑ์
- ย่อยสลายได้ (Biodegradation)
- PBS/CaCO<sub>3</sub>

Materials Design by  
Plastics Institute of Thailand  
And



Srinakharinwirot University

## บรรจุภัณฑ์แอกที่ฟ้ด้านออกซิเดชัน



- บรรจุภัณฑ์
- ย่อยสลายไม่ได้ (Non-degradation)
- PLA + TiO<sub>2</sub>LLDPE + TPS-GT

Materials Design by  
Plastics Institute of Thailand  
And



Rajamangala University of Technology Isan

## อุปกรณ์ที่ใช้ทางด้าน การแพทย์และเภสัชกรรม”



- วัสดุอุปกรณ์ทางการแพทย์
- ย่อยสลายไม่ได้ (Non-degradation)
- แบบที่เรียเซลลูโลสและเจลาติน

Materials Design by  
Plastics Institute of Thailand

And



Thammasat University

## ถุงเพาะชำ



- การเกษตร
- ย่อยสลายได้ (Biodegradation)
- PLA/TPS  
(สตาร์ชมันสำปะหลัง) /mTCP(กากมันสำปะหลัง)

Materials Design by  
Plastics Institute of Thailand

And



Kasetsart University

## ปุ๋ยควบคุมการปลดปล่อย ด้วยพลาสติกชีวภาพ



- การเกษตร
- ย่อยสลายได้ (Biodegradation)
- โพลีเอทิลีนอัลลิจิเนต

Materials Design by  
Plastics Institute of Thailand  
And



King Mongkut's Institute of Technology Ladkrabang

## วัสดุเชิงประกอบพลาสติก ผสมเส้นใยปาล์ม



- วัสดุเชิงประกอบ
- ย่อยสลายได้บางส่วน (Partial Biodegradation)
- เส้นใยปาล์ม/epoxy

Materials Design by  
Plastics Institute of Thailand  
And



Si Wichai Rajamangala University  
of Technology Rattaphum

# ถุงเพาะชำพืช + เปลือกถั่วลิสง



- การเกษตร
- ย่อยสลายได้ (Biodegradation)
- PLA/PBAT/ ผงเปลือกถั่ว

Materials Design by  
Plastics Institute of Thailand

And



Chulalongkorn University

# ซองสบู่



- สุขภาพและความงาม
- ย่อยสลายได้ (Biodegradation)
- PLA+ผงถ่านไม้ไฟ

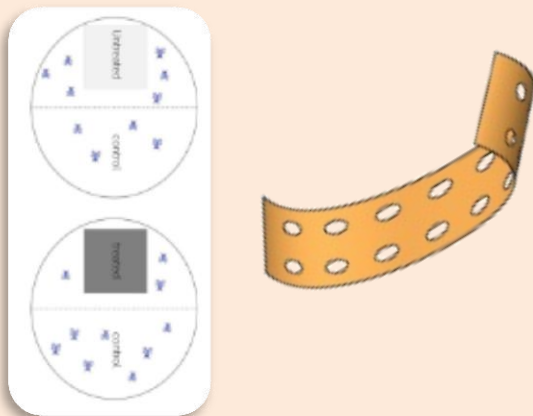
Materials Design by  
Plastics Institute of Thailand

And



Rajamangala University of  
Technology Thanyaburi

# ฟิล์มพลาสติก ย่อยสลายป้องกันแมลง



- การเกษตร
- ย่อยสลายได้ (Biodegradation)
- PLA

Materials Design by  
Plastics Institute of Thailand

And



Thammasat University

# แผ่นดูดซับน้ำเสีย จากโรงงานอุตสาหกรรม



- เคมีภัณฑ์
- ย่อยสลายไม่ได้ (Non-degradation)
- นาโนเคลย์+ไคโตซาน

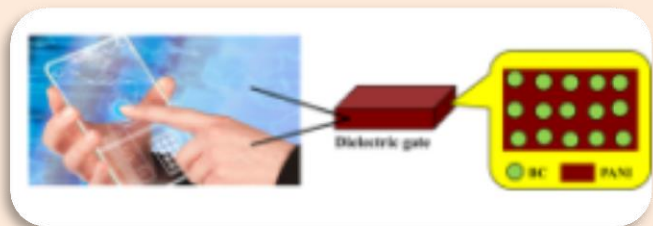
Materials Design by  
Plastics Institute of Thailand

And



Thammasat University

# แผ่นซับสเตอร์ท ของอุปกรณ์อิเล็กทรอนิกส์



- ชิ้นส่วนอุปกรณ์อิเล็กทรอนิกส์
- ย่อยสลายไม่ได้ (Non-degradation)
- แบบที่เรียยเซลล์ลอสBC/พอลิอะนิลีนPANI

Materials Design by  
Plastics Institute of Thailand



And  
Thammasat University

# 3D filament



- อุตสาหกรรมสนับสนุน
- ย่อยสลายได้ (Biodegradation)
- PLA+เปลือกมันบด  
ละเอียด

Materials Design by  
Plastics Institute of Thailand



And  
Silpakorn University



## ถุงเพาะชำพืช+กากมัน



- การเกษตร
- ย่อยสลายได้ (Biodegradation)
- PLA/PBAT/ชานอ้อย

Materials Design by  
Plastics Institute of Thailand

And



Chulalongkorn University

## T-golf



- วัสดุเชิงประกอบ
- ย่อยสลายได้ (Biodegradation)
- PLA/PBAT/PBS

ผสมแกลบ

Materials Design by  
Plastics Institute of Thailand

And



Silpakorn University

