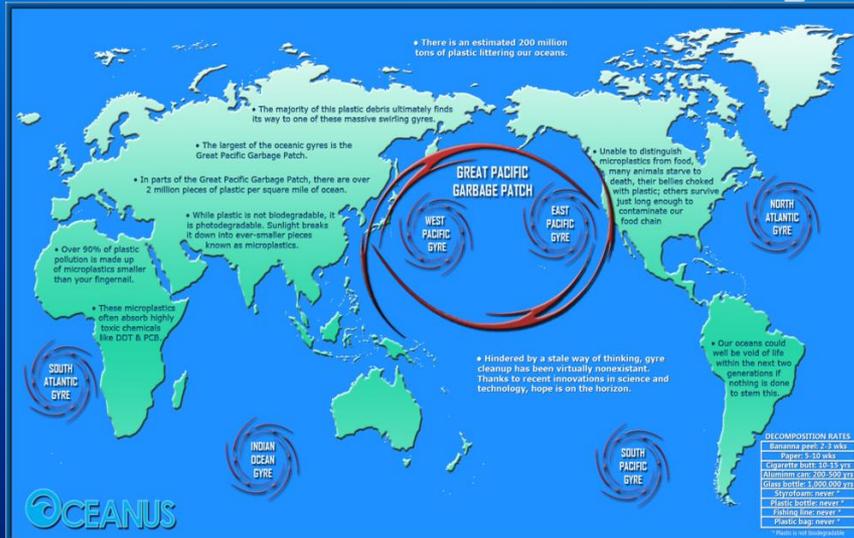




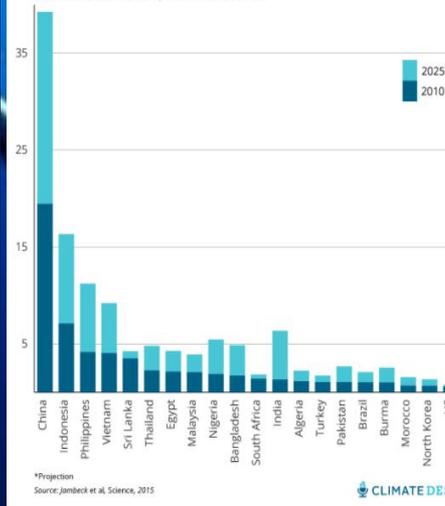
# Saving Planet Earth

*Mr. Isara Vangkanonta*  
*Vice President*  
*R&D Customer Solution*  
*IRPC Public Company Limited*

# RETHINK THINKING



Total annual output of mismanaged plastic waste by coastal populations, top-ranked countries by billions of pounds



## ReThink

# This is the Time!!

to act and to protect the health of our planet. In 2018, it is also a suitable moment to reflect on plastic, the harmful impacts of plastic waste on our environment and society, and the ways industry can curb consumer plastic use and waste.

# Innovations Saving the Planet

## Recycled-Content

Recycled content demonstrates your commitment to conserve natural resources and can qualify your products for LEED and environmentally preferable purchasing (EPP) programs, and supports your sustainability goals.



## Recyclability

Recycling is one of the most important actions currently available to reduce impacts and represents one of the most dynamic areas in the plastics industry



## Biodegradable / Compostable

plastics that can be decomposed in the environment by the action of living organisms, usually bacteria.



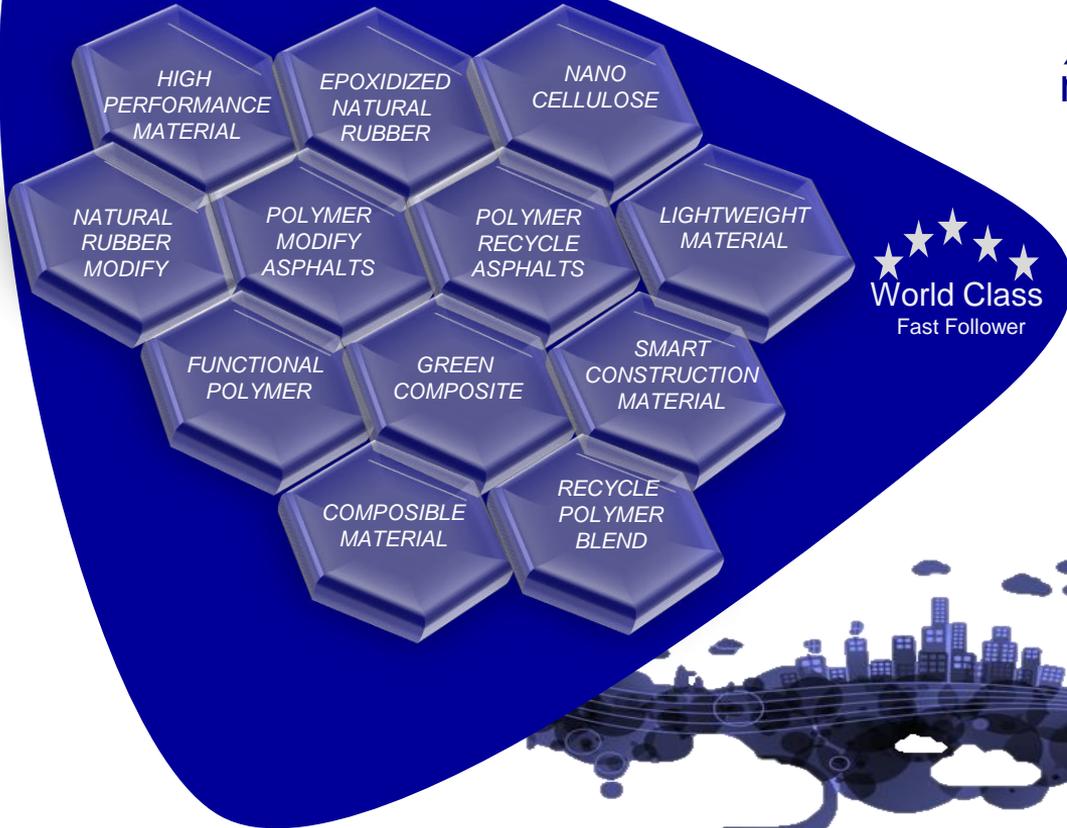
## Bio Based

plastics derived from renewable biomass sources, such as vegetable fats and oils, corn starch, straw, woodchips, food waste, agricultural by-products, etc.,

## Durability

It is a real challenge for the plastics industry to predict their product's durability depending on the aggressions (light, heat, chemical, stress, oxidation) it will suffer during its shelf life.

# Where do we go?



HIGH PERFORMANCE MATERIAL

EPOXIDIZED NATURAL RUBBER

NANO CELLULOSE

NATURAL RUBBER MODIFY

POLYMER MODIFY ASPHALTS

POLYMER RECYCLE ASPHALTS

LIGHTWEIGHT MATERIAL

FUNCTIONAL POLYMER

GREEN COMPOSITE

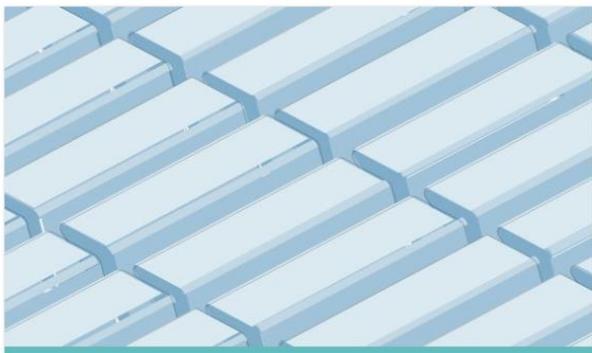
SMART CONSTRUCTION MATERIAL

COMPOSIBLE MATERIAL

RECYCLE POLYMER BLEND

World Class  
Fast Follower





### University of Pittsburgh

Recyclable, flexible and durable packaging created through nano-engineering.

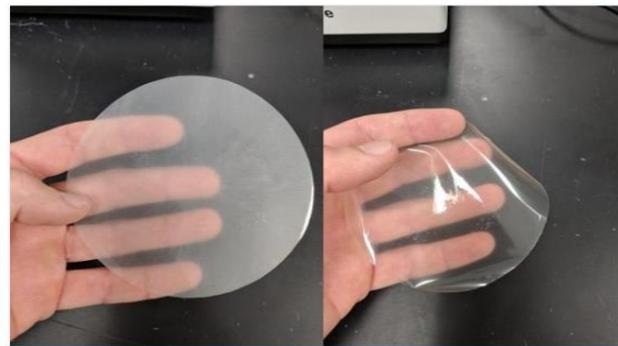
Circular Materials Challenge winner



### Evoware

Seaweed-based packaging that replaces billions of small bits of plastics with a nutrient boost.

Circular Design Challenge winner



### Full Cycle Bioplastics

Packaging made from wood and plant waste, which can be fed to bacteria and turned into new plastic again.

Circular Materials Challenge winner



### VTT Technical Research Centre of Finland

Packaging that looks and feels like plastic, but is made from wood.

Circular Materials Challenge winner



### Fraunhofer Institute for Silicate Research

An organic coating for plastic that makes fresh food packaging compostable.

Circular Materials Challenge winner



### MIWA

Delivering groceries without single-use packaging and cutting household plastic waste.

Circular Design Challenge winner



# PLASTIC ROAD



**3x  
LONGER**

The expected lifetime of the Plastic Road is two to three times as long as that of traditional road paving.



**70%  
FASTER**

The expected construction time of a new road will be reduced by approximately 70%.



**4x  
LIGHTER**

The Plastic road is four times as light as a traditional road structure.



**100%  
CIRCULAR**

The Plastic road is 100% circular and is made from recycled plastic as much as possible.



Plastic  
Road 

**IRPC**

# There's a Right Way to Use Plastic

Reusable packaging is part of the answer, we need to treat the causes as well as the symptoms. We need to come up with new approaches and systemic solutions.



Think



You



Before



Acts

# PLASTIC RIGHTS

