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Aug. 8-12, 2018 /  
Incheon, Korea



# STEAM Platform : Asian Hub for Knowledge, Skills, Reserach and Partnership for Sustainability

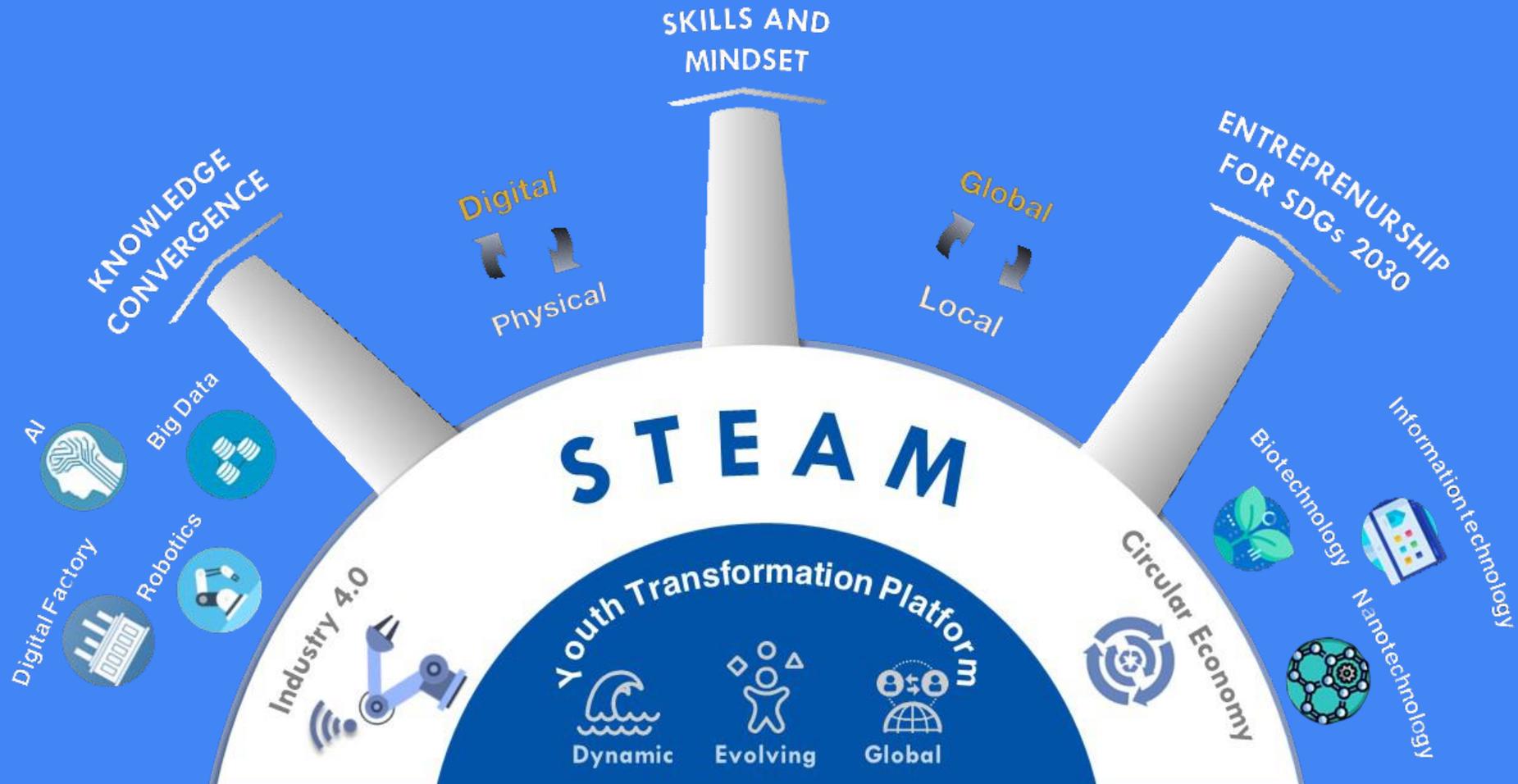
December  
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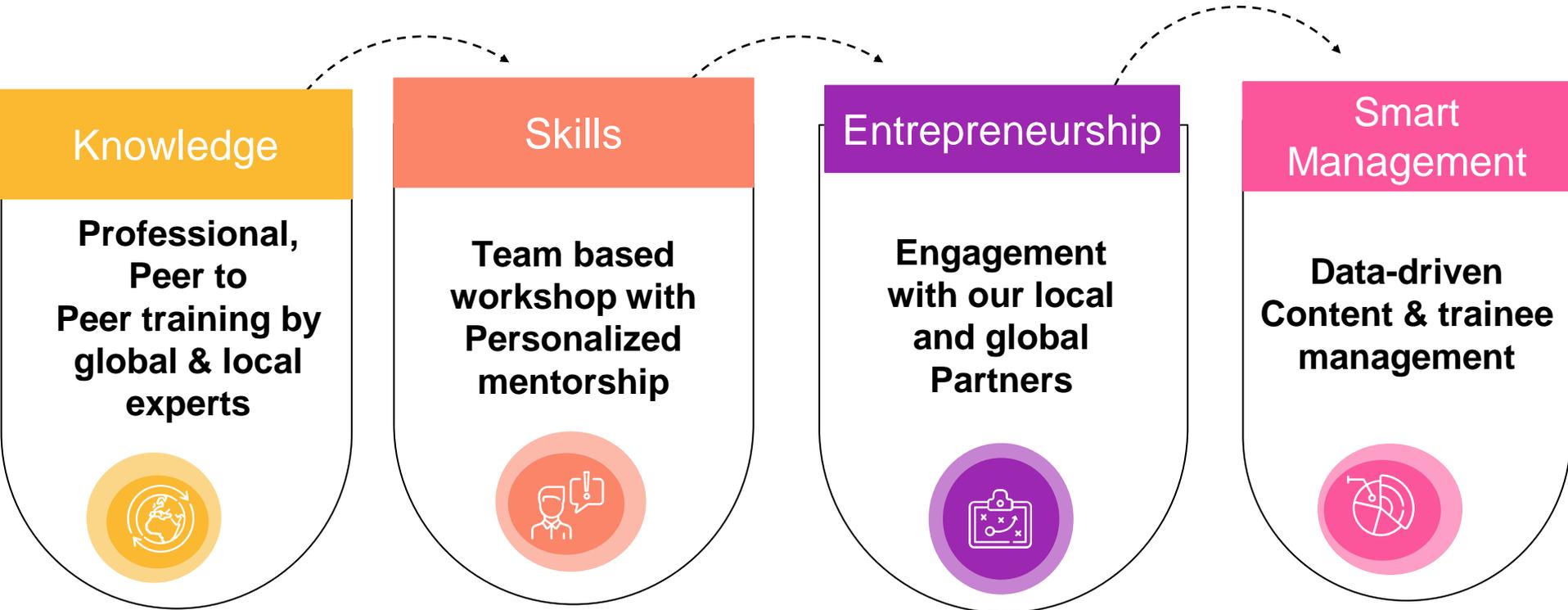
STEAM Platform team

We are facing unprecedented climate crisis  
The developing world is much less equipped to cope with this crisis.  
**Knowledge, Partnership, and Entrepreneurship are the key**  
**Leadership and Youth are critical**  
**to Drive Transformation**





# STEAM Platform Methodology





**Extraction**  
Reduce

Bio  
Plastics



**Agriculture  
Production**  
Reduce



**Production**  
Reduce

Plastics



Recycle



Recovery



Clean



Reuse



Repair

**Collection for Reuse  
By Reverse Logistics**

Reduce



**End of Use**



Collection



Sorting



**End of Life**

Reduce

**Regeneration of  
Natural Resources**



**Distribution & service**  
Reduce



**Consumption**  
Reduce

Refuse

# Institutional Program

## *GEM Module*

# GEN352- Technology & Innovation for Sustainability



- Circular Economy (LCA, Waste management, Supply chain, Food/Agriculture, Materials, Energy and EcoDesign)

- Industry 4.0 (Advanced Robotics, Digital Factory, IoT, AI, Data Analytics)

- SDGs 2030

- Critical Thinking

- Communications

- Leadership

- Supply Chain Management for Sustainability

- Business Model Design with Principles of Sustainability and Circular Economy

- Impact on SDGs

## Assessment

- Class Participation (20%)
- Mid Term Assessment (40%) - Infographics communication of patented Innovations from KMUTT
- Final Project (40%) - Business Model Design and Impact Strategy for Circular Economy and SDGs2030

## Key Features

Which bag is better?



- Life Cycle Thinking
- Peer to Peer Learning
- Novel Business Model Design based on Sustainability and Circular Economy Principles
- Discussing Application and Implication of Industry 4.0
- Cutting Edge Technology and Global Trends
- Value Chain and Supply Chain Analysis

Circular Economy



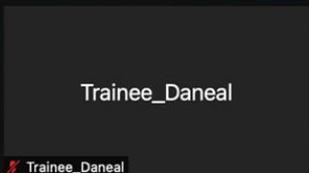
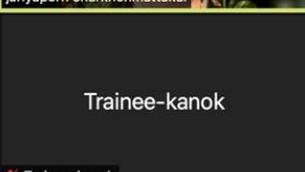
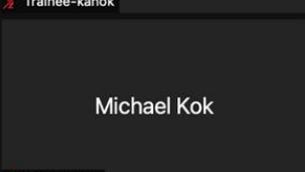
SUSTAINABLE DEVELOPMENT GOALS



**Training Program (Physical & Digital)**  
*Innovation & Entrepreneurship*

# Strategic Communication Training Program 2021

Recording... View

 <p>Prem Pruk</p>	<p>[Staff] Cheer_main</p> 	 <p>Nattapak Atichartakarn</p>	 <p>STEAM Platform</p>	 <p>Thos S. Qualy/CirPlas</p>
 <p>Aizhan from Kazakhstan. KazRobotics (Ed...</p>	 <p>Trainee Yo</p>	<p>Trainee_Daneal</p> 	 <p>yossavee atifuangsiri</p>	 <p>Bow Sirinchayaa</p>
 <p>jariyaporn charkhonmattakul</p>	 <p>Trainee_Julinthip (JUE)</p>	 <p>Mark Foley</p>	 <p>Nic Foster</p>	 <p>Trainee_Sukimplee_D</p>
<p>Trainee-kanok</p> 	 <p>Trainee_Kan_RSP</p>	 <p>Trainee_POP_Supitcha</p>	 <p>Trainee_Krittiwakorn_RSP</p>	 <p>Trainee_Thanakorn</p>
<p>Michael Kok</p> 	 <p>Lek Lapkiananapong</p>	 <p>Wisara Hunthanee</p>	 <p>Toto Teeramate</p>	 <p>Piengpen - KX/KMUTT</p>

# Circular Economy Leadership & Partnership Summit 2021

What Drives the  
**TRANSFORMATION**  
of a **CIRCULAR ECONOMY?**

# **Circular Economy Value Chain**

*Local & Global Leadership Practices*

# Circular Economy Value-Chain-Training



# ELIMINATING PLASTIC WASTE: MEET THE THAILAND PLASTIC WASTE GHOSTBUSTERS

Sun 17 Oct 2021

13:00 - 14:10

(Bangkok Timezone, GMT+7)



**Sirinchayaa Preechapatsakool**  
Ecosystem Consultant - Thailand



**Nattapak Atichartakarn**  
CEO & Co-Founder, Trash Lucky



**Prem Pruktayanon**  
CEO, Green2Get company limited



**Thosaphol Suppametheekulwat**  
CEO & Co-Founder, CirPlas Tech/Qualy Design

Webinar

REGISTER at [www.steamplatform.org](http://www.steamplatform.org)



THE  
INCUBATION  
NETWORK  
By The Circulate Initiative  
& SecondMuse



STEAM  
PLATFORM



# PLASTICS CIRCULAR ECONOMY HEROS: INNOVATION FOR ADDING VALUE TO PLASTIC WASTE

Fri 26 Nov 2021  
10:00 - 11:30

(Bangkok Timezone, GMT+7)



The  
Incubation  
Network



STEAM  
PLATFORM



**Lerwen LIU (moderator)**  
Director  
STEAM Platform & NanoGlobe Pte Ltd



**Sandhya Dovedy**  
Program Manager  
Network Development SecondMuse



**Woraporn Poonyakanok**  
Senior Research Engineer  
RISC, Thailand



**Ludovick Bernier-Michaud**  
Founder  
Recyco & Ludovintage, Canada



**James Baker**  
Senior Circular Economy Specialist  
Asian Development Bank



**Nicholas Foster**  
Operations Manager  
IQ Energy Australia



**Veena Sahajwalla**  
Laureate Professor  
The University of New South Wales



**Lili ZHANG**  
Senior Scientist  
A\*STAR, Singapore

Webinar  
REGISTER at [www.steamplatform.org](http://www.steamplatform.org)



# Emerging Advanced Technologies

*Deep-tech Driven Innovations*

# Technology Analysis-Training

- It is a **systematic process** to research innovative technology to ascertain its competitive advantage, and market penetration potential, and potential deployment



**WHY** (Problem Statement)



**WHAT** (What is your solution for the problem identified?)



**HOW** (What does your innovation contain and how will you address the issue?)



**IMPACT** (What is your business model and what's is the impact of your solution?)



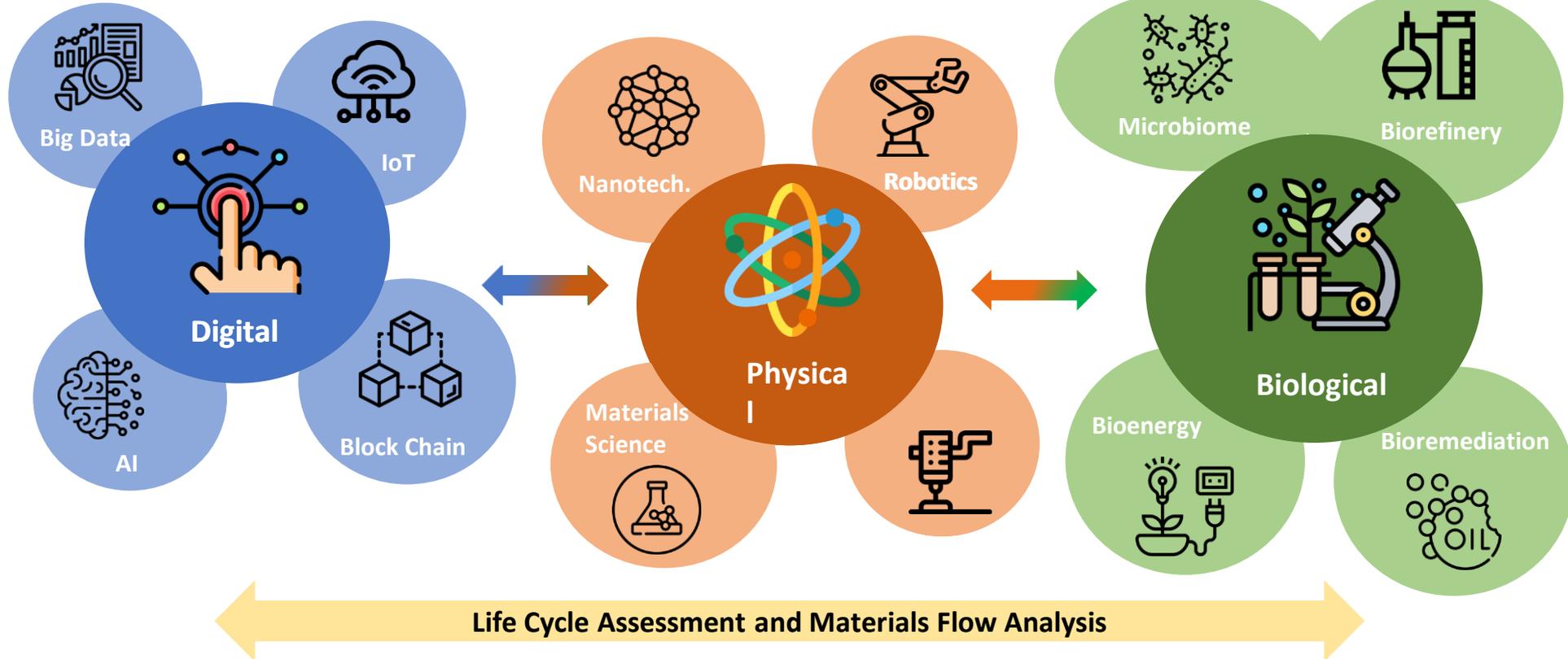
**SUSTAINABILITY** (Does your solution enable circular economy, and which of the SDGs 2030 are you contributing towards?)

# Role of Enabling Technologies in Circular Economy Transition

## Logistics Support & Process Automation

## Resource Recovery & Process Efficiency

## Biodegradability & Value-add to CE



### CAPABILITY BUILDING PLATFORM FOR FOOD INDUSTRY

FOOD SAFETY, FOOD BUSINESS, FOOD SCIENCE & INNOVATION, ESSENTIAL SKILLS

**STUDENT AIMS**

FOOD INDUSTRY is transformed into GRADUATE CLASSROOM, INDUSTRIAL PROBLEMS into PRACTICE LESSONS, PROCESSING LINES into LEARNING TOOLS, PRODUCTION LOSSES into TANGIBLE PROFITS.

**INDUSTRY CERTIFICATION PROGRAM**

MANDATORY TECHNICAL TRAINING: COMPLIANCE WITH TAX & INTERNATIONAL REGULATIONS

1. Better Process Control School, 2. Retail Operation and Thermal Process Evaluation (since 2015), 3. Process Supervision with The FSA (since 2015), 4. Food Engineering (since 2015)

FOOD ENGINEERING TECHNICAL & ESSENTIAL SKILLS TRAINING

Min Food Engineering (since 2015)

FOOD ENGINEERING TECHNICAL & ESSENTIAL SKILLS TRAINING

### INC363 Digital Factory 4.0

Visualisation and Production

Production Analytics and Prediction

Data Collection by Sensors

**Key Features**

- Problem Based
- Experiential Learning
- Integration of the 4th Industrial Revolution
- Industry 4.0

### INSPECTRA AI for RADIOLOGISTS

**WHY**

Reading chest X-rays takes 10-15 minutes of a radiologist's time. 1277 radiologists read 500,000 images.

**WHAT**

AI-powered chest X-ray analysis

**HOW**

AI-powered chest X-ray analysis

**IMPACT**

AI-powered chest X-ray analysis

### KMUTT RURAL DEVELOPMENT JOURNEY

**KMUTT SOCIAL LAB**

VISION: Empowering Rural Communities through Digital Innovation and Entrepreneurship

MISSION: Promoting Digital Innovation and Entrepreneurship in Rural Communities

VALUES: Empowering, Sustainable, and Inclusive

**FORWARD ARCHITECTURE**

1. Crop planting (soil, tree and water), 2. Storage capacity optimization (improving operation, harvesting and processing), 3. Irrigation system and water, 4. Data analysis and monitoring (big data analysis)

**TOBATO PRODUCTION, PROCESSING AND PACKAGING THROUGH THE ROYAL FACTORY**

1. Supply, 2. Processing, 3. Supply Chain

**FEATURES**

- Production
- Processing
- Supply Chain
- Marketing
- Finance
- Human Resource
- Environment
- Quality Control
- Logistics
- Information Technology
- Energy
- Water
- Waste Management
- Health and Safety
- Community Development
- Government Support
- Academic Support
- Industry Support
- Research and Development
- Education
- Training
- Extension
- Consulting
- Technical Support
- Financial Support
- Marketing Support
- Legal Support
- Insurance
- Risk Management
- Disaster Preparedness
- Climate Change Adaptation
- Sustainable Development
- Resilience
- Adaptability
- Innovation
- Collaboration
- Partnership
- Networking
- Communication
- Leadership
- Teamwork
- Problem Solving
- Decision Making
- Conflict Resolution
- Stress Management
- Time Management
- Organization
- Planning
- Execution
- Evaluation
- Reflection
- Learning
- Growth
- Development
- Progress
- Success
- Failure
- Resilience
- Adaptability
- Innovation
- Collaboration
- Partnership
- Networking
- Communication
- Leadership
- Teamwork
- Problem Solving
- Decision Making
- Conflict Resolution
- Stress Management
- Time Management
- Organization
- Planning
- Execution
- Evaluation
- Reflection
- Learning
- Growth
- Development
- Progress
- Success
- Failure

### LEARNING ADVANCED ROBOTICS

**Project Based Modules**

Learning advanced robotics with a project based approach

**Work Integrated Learning (WIL)**

Work Integrated Learning (WIL) is a learning approach that integrates work and learning. It is a learning approach that integrates work and learning.

**PROJECT-BASED MODULES**

1. Project Based Learning, 2. Project Based Learning, 3. Project Based Learning

**EDUCATION - RESEARCH - INDUSTRY COLLABORATION**

1. Education, 2. Research, 3. Industry

### STEAM Youth Leadership Towards the Smart Circular Economy

**KMUTT GEN 352**

Technology, Innovation & Entrepreneurship for Sustainable Development

**Why?**

1. Digital Transformation, 2. Sustainability, 3. Innovation

**On-site Cassava waste processing and management service**

1. Cassava, 2. Waste, 3. Management

**Assessment**

1. Assessment, 2. Assessment, 3. Assessment

**Key Features**

1. Key Features, 2. Key Features, 3. Key Features

**Circular Economy**

1. Circular Economy, 2. Circular Economy, 3. Circular Economy

**SUSTAINABLE DEVELOPMENT GOALS**

1. Sustainable Development Goals, 2. Sustainable Development Goals, 3. Sustainable Development Goals

### DC MICROGRID ENABLING SMART HOME WITH AN EV

**WHY**

1. Why, 2. Why, 3. Why

**WHAT**

1. What, 2. What, 3. What

**IMPACT**

1. Impact, 2. Impact, 3. Impact

**HOW**

1. How, 2. How, 3. How

**How does it work?**

1. How does it work?, 2. How does it work?, 3. How does it work?

### Peer to Peer Energy Trading Platform enabled by Community VPP & Blockchain

**Energy trading platform**

1. Energy trading platform, 2. Energy trading platform, 3. Energy trading platform

**Key Features in this trading platform**

1. Key Features, 2. Key Features, 3. Key Features

**Circular Economy for Sustainable Textile & Fashion**

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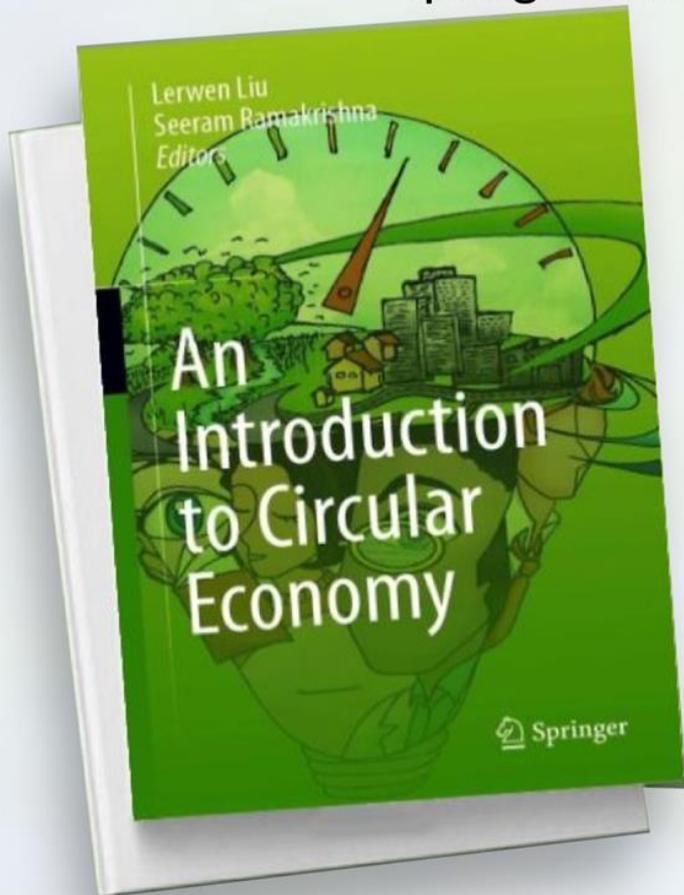
**STEAM KMUTT | The Power of Media Communication**

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**Circular Economy - The Sugarcane story**

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# Springer Nature's China New Development Award 2021



1<sup>st</sup> Textbook

**“An Introduction to  
Circular Economy”**

Published by Springer Nature  
Dec. 2020

<https://www.springer.com/gp/book/9789811585098>

**Next Step**  
*Global Partnership*



# **Circular Economy Knowledge Hub**

Provide you Resources and Connections  
Build Partnerships  
Implement Solutions



<https://www.celpsummit.org>



# THANK YOU



**Circular Economy Leadership Platform for Accelerating the Circular Economy  
Transformation Towards Sustainability**



[www.steamplatform.org](http://www.steamplatform.org)



STEAM Platform



STEAM Platform

