



上海交通大学
SHANGHAI JIAO TONG UNIVERSITY



UTM
UNIVERSITI TEKNOLOGI MALAYSIA

“2nd International Seminar on Sustainability & Resource Recycling” (iSSRR)

“Strategies on Integrated Resources Recycling”

In conjunction to

**SJTU Global Engagement Program
“Malaysia-China Innovative Practice on Sustainable
Development & Resource Recycling”**

全球挑战计划

“中马城市可持续发展与资源循环利用创新实践”

12-27th August 2019

Kuala Lumpur, Johor Bahru

Jointly organized by,

School of Environmental Science & Engineering,
Shanghai Jiao Tong University, China
&

School of Chemical & Energy Engineering,
Universiti Teknologi Malaysia, Malaysia



环境科学与工程学院
SCHOOL OF ENVIRONMENTAL SCIENCE AND ENGINEERING

UTM-LOW CARBON ASIA
RESEARCH CENTRE



PREFACE 序

The theme for the 2nd International Seminar on Sustainability & Resource Recycling (iSSRR) is “Malaysia-China Innovative Practice on Sustainable Development & Resource Recycling”. It will be held in Universiti Teknologi Malaysia from 12th to 27th August 2019. This is a joint event organized by Universiti Teknologi Malaysia (UTM), Malaysia and Shanghai Jiao Tong University (SJTU), China, following the successful organization of the 1th iSSRR in SJTU, China, in 2018.

We acknowledge the special grant from SJTU, approved under the Global Engagement Program, termed as “Malaysia-China Innovative Practice on Sustainable Development & Resource Recycling”, to realize the organization of this program in Malaysia.

iSSRR serves as the platform to promote knowledge exchange among the participating universities to drive on the effort of sustainability via real site visit, lectures and team project.

The goals for iSSRR are:

- To groom young graduates as global leaders to promote sustainability activities through cross-cultural communication & interactions
- To study the cross-nation economic activities in promoting green technology among the fast developing countries in Asia
- To strengthen student and staff exchanges with long-term goals towards joint research activities, student co-supervision and joint publication among the participants.

The successions of this program will encourage delegates to apply the knowledge they learnt and help create environmental awareness for the society towards a green lifestyle and sustainable development. This program also aims to promote and strengthen regional knowledge sharing and capacity building, for the academics and the policy makers or drivers such as the local authorities, which is in-line with China’s One Belt One Road initiative.

Key Program Advisors,

Prof. Lee Chew Tin & Prof Haslenda Hashim (UTM)

Assoc. Prof. Li Chunjie Li & Dr. Gao Yueshu (SJTU)

FOREWORDS 前言

UTM ADVISOR

Distinguished guests from SJTU,
Dear teachers and students,

I cordially invite you to join the 2nd International Seminar on Sustainability & Resource Recycling (iSSRR) with the theme: “Malaysia-China Innovative Practice on Sustainable Development & Resource Recycling” hosted by Universiti Teknologi Malaysia (UTM) from 12th to 27th August 2019. This is a joint event organized by Universiti Teknologi Malaysia (UTM), School of Chemical & Energy Engineering (SCEE), Malaysia and Shanghai Jiao Tong University (SJTU), School of Environmental Science and Engineering (SESE), China, following the successful organisation of the 1st iSSRR in SJTU.

iSSRR serves as the platform to promote the knowledge exchange among the participating universities to drive on the effort for sustainability via real site visit, lectures and team project. UTM has been recognised as a world-class Entrepreneurial Research University. UTM is now regarded as Malaysia’s premier institution in engineering, science and technology and ranked in the top 1% league and ranked 53th in the 2018 QS World University Rankings by Subject in Engineering & Technology. UTM Green DNA Society has been promoting sustainability and recycling within UTM and communities around Malaysia. Through this program, the students and staff will exchange knowledge and strengthen future research collaboration to move forward sustainable development. This program also shows the great enthusiasm of both universities to catalyse action plans on Sustainable Development Goals (SDGs) through students’ activity and community services. I acknowledge the support from all parties to make this event a success.

I look forward to welcome you to UTM and making this international event a great success.

Yours truly,

Prof Dr Lee Chew Tin

School of Chemical & Energy Engineering, UTM.

SJTU ADVISOR

Greetings to all,

I would like to congratulate the committee members and all parties involved who have worked so hard to realise the organisation of the 2nd International Seminar on Sustainability & Resource Recycling (iSSRR) 2019. Special thanks goes to the host, Universiti Teknologi Malaysia (UTM), for hosting this event.

SJTU is one of the oldest and most prestigious universities in China with a shining history of more than 122 years. Among its 29 schools or departments, the School of Environmental Science and Engineering is a young and vigorous, about to celebrate its 20th anniversary. With great determination and efforts, we have experienced rapid development and received recognition both at home and abroad. The discipline of environmental science and engineering was chosen as the first class discipline by the Shanghai Municipal Government in 2013; the discipline of environmental science has been ranked 62nd in the 2017 QS World University Rankings by Subject; and the discipline of environmental science and engineering was rated A minus in the fourth round of discipline assessment by the Ministry of Education of China.

Under the One Belt and One Road Initiative, SJTU and UTM signed a Letter of Cooperation in 2017. iSSRR is an on-going program to strengthen the collaboration between both universities. SJTU and UTM have the shared interest to promote sustainability. This program will enable more interaction and knowledge exchange among the participants of both universities. Finally, I would like to thanks all parties involved and hope this collaboration will continue in the future.

Yours truly,

Assoc. Prof. Dr. Li Chunjie

School of Environmental Science & Engineering, SJTU

STUDENT HEADS 学生负责人

HEAD OF UTM STUDENTS

We would like to extend our gratitude and thanks to SJTU for hosting this event.

The program aims to learn about sustainable development, resource recycling and green technology in China and Malaysia. The knowledge gained will be most beneficial for all students. We believe this program will be a great platform to promote sustainability and increase the awareness and sustainable lifestyle among the students. We look forward to the group work with SJTU students on various aspect of sustainability.

Special thanks to our program advisors from UTM and SJTU, UTM Office of Students Affairs, and UTM International which have supported this international event in UTM. On behalf of UTM students, we cordially welcome you to UTM and Johor Bahru!

Yours truly,

Hong Caiyue 熊彩月(Head, Miss)

HEAD OF SJTU STUDENTS

I would like to express my gratitude and appreciation to be able to serve as the head of SJTU students for this international event which provides me the great opportunity to learn on green technology and sustainable development towards a more sustainable society.

We look forward to work with UTM students on a range of interesting topics relevant to sustainability.

We believe this program will enhance the academic and multicultural interactions of students from both institutions.

On behalf of SJTU students, we thank you for hosting this event and looking forward to meet you all soon in Johor Bahru!

Yours truly,

Zhang Qi 张琦(Head, Miss)

SPEAKERS 主讲人



Assoc. Prof. Li
Chunjie

Li Chunjie serves as an Associate Professor in School of Environmental Science and Engineering, Shanghai Jiao Tong University. He received his PhD from Tong Ji University, China (04/2001). He was the visiting scholar at Stanford's Civil and Environmental Engineering Department (04/2014-04/2015). He is the member of International Water Association (IWA), China Society of Environmental Sciences (Sub-Committee on Water Environment), and Shanghai Society of Environmental Sciences (Sub-Committee on Water Environment). His research interest focuses on sustainable wastewater treatment and closed-loop concepts for resource recovery. He specialises in the advanced technologies notably in biological treatment, membrane and ecological engineering.

Public Lecture: Prospects and Challenges of Aquaponics for the Sustainable Development of Food Production in Urban Smart Farming

Aquaponics, a land-based system that combines recirculating aquaculture system with hydroponics, has been greatly developed as a promising approach for industrialised food production to meet the increasing needs during expanded urbanization. In the system, the metabolised products from the residual fish feed and excreta in the effluent of aquaculture section could be converted to nutrients via microbial conversion and degradation. The nutrients could be circulated to the agricultural land and uptaken by the vegetable plants in the hydroponics section. The effluent of hydroponics section is treated, recycled and reused as clean water source in the aquaculture section. Home-based aquaponics (HA), factory-based aquaponics (FA) and building-based aquaponics (BA) are the typical forms of aquaponics for different urban development. The major challenge of this system is how to enhance the efficiency of nutrient recovery from the fish sludge produced from the aquaculture effluent and to optimise a mass balance loop of nutrient generation and demand. A novel aquaponic system with biological aerated filtration (BAF), using a model of multiple-level ecological loop, is designed for the optimal recovery of nutrient from the fish sludge.

LECTURES



Prof Lee Chew Tin
Advisor, UTM Green DNA
“Sustainable Consumption and
Production (SCP)”



Prof Ho Chin Siong
Director, UTM Low Carbon Asia
Research Centre
“Introduction to Low Carbon
Economy in Iskandar Malaysia”

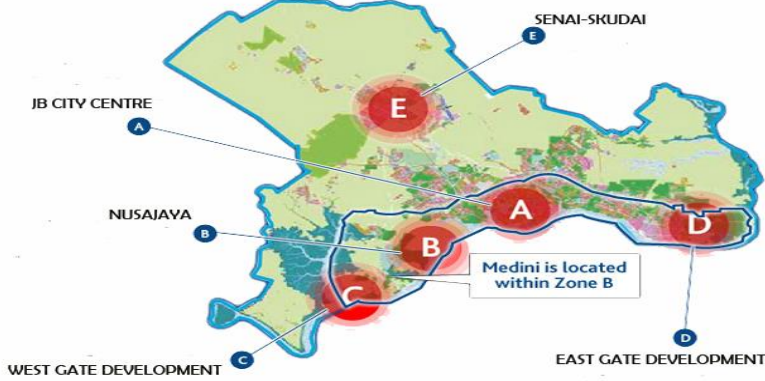


Prof Haslenda Hashim
Dean, UTM Sustainability Research
Alliance
“Sustainable Renewable Energy
Management”

PROGRAM

DAY	ACTIVITIES
12 Aug, Mon	<p>Arrival in Kuala Lumpur Airport</p> <p>Airport Pick up by UTM bus and UTM buddies</p> <p>Check-in to Kuala Lumpur hotel</p>
13 Aug, Tue	<p>Visit 1: Universiti Teknologi Malaysia (UTM) Kuala Lumpur Campus</p> <p>8:30am: Visit Malaysia-Japan International Institute of Technology (MJIT) and lab tour</p> <p>9:30 am: Departure</p> <p>10.30am: Visit Xiamen University Malaysia</p> <p>12:00 pm: Lunch</p> <p>4 pm: Check in hotel in Malacca</p>
14 Aug, Wed	<p>8am: Breakfast</p> <p>9 am: A' Famosa, Malacca Heritage Site</p> <p>12pm: Lunch</p> <p>2 pm: Depart to UTM Johor Bahru Campus</p> <p>4 pm: Check in to UTM Johor Campus Scholar's Inn</p>
15 Aug, Thurs	<p>7.30 am: Departure to Gunung Pulai National Park</p> <p>11 am: Lunch</p> <p>2:30pm Johor Bharu Chinese Heritage Museum and Old Town Heritage Walk</p>
16 Aug, Fri	<p>9 am: Course Briefing</p> <p>12 pm: Lunch</p> <p>2 pm: Group Discussion</p>
17 Aug, Sat	<p>10 am UTM Campus Tour</p> <p>12 pm: Lunch</p> <p>2-5 pm: Preparation for Workshop in Pulai School on 18th Aug 2019.</p>
18 Aug, Sun	<p>7:30 am: Departure</p> <p>8 am: Breakfast at Kangkar Pulai Chinese old town</p> <p>9:30 am: Visit Three Mountains' King Chinese Temple, Kangkar Pulai Village.</p> <p>10 am: Walk to Pulai Elementary Chinese School</p> <p>Workshop on " Implementation of Low Carbon Action for Schools towards Sustainable Development Goals (SDGs)", moderated by Prof Lee Chew Tin Lee & Prof Li Chunjie</p> <p>12 pm: Lunch at Pulai School</p> <p>1:30pm: Return to UTM Scholar's Inn</p>
19 Aug, Mon	<p>10am-5pm: Course Briefing & Preparation for Group Assignment</p>
20 Aug, Tue	<p>9 am – 12 pm: Lecture 1: Sustainable Consumption and Production (SCP), Prof. Dr. Lee Chew Tin</p> <p>12p m: Lunch</p> <p>1.30 pm: Departure from UTM</p> <p>2.15 – 3 pm: Visit 2: Iskandar Regional Development Authority (IRDA), talk by local authorities officer on Iskandar Malaysia Low Carbon Blueprint and Economy Growth</p> <p>4-5 pm Visit 3: Forest City: The Futuristic Green City: wastewater treatment in high-density urban area.</p> <p>5-7pm: Dinner at Kota Iskandar</p>

<p>21 Aug 2019, Wed</p>	<p>8:30 am: Departure 9 am – 11am: Lecture 2: Introduction to Low Carbon Economy in Iskandar Malaysia, Prof. Dr. Ho Chin Siong, Director, UTM Low Carbon Asia Research Centre 11 am-1pm: Lecture 3: Sustainable Renewable Energy Management, Prof. Dr. Haslenda Hashim 1 pm Lunch 2:30-5 pm: Visit 4: Johor Malay Cultural Village 5pm: Return to UTM</p>
<p>22 Aug 2019 Thurs</p>	<p>Visit 5: Desaru Beach, Fisherman Museum and Tropical Fruit Farm 8:30 am: Departure from Scholars Inn, UTM 9:30 am: Desaru Fruit Farm 12-2:30 pm: Lunch 2- 5 pm : Tanjung Balau Fishermen Museum 5pm: Return to UTM</p>
<p>23 Aug 2019, Fri</p>	<p>Visit 6: Tanjung Piai National Park (RAMSAR Site Wetland) & Homestay 1 pm: Departure 2 pm: Arrival and Check-in at Homestay 2-5 pm: Site Survey at Tanjung Piai National Park 7:30-9:30 pm: Multicultural Night & Homestay</p>
<p>24 Aug 2019, Sat</p>	<p>Visit 7: Community Composting site at Layang-layang, Johor 7.30 am: Breakfast at Homestay 8:30 am: Departure for Composting site at Layang-layang 10 am: Briefing & Demo at Community Composting Site at RTC Layang-Layang. 12 pm: Lunch at Traditional Malay Wedding 2 pm: Return to UTM 8-10 pm: Group Assignment Preparation</p>
<p>25 Aug 2019 Sun</p>	<p>10am-12pm: Public Lecture: “Prospects and Challenges of Aquaponics for the Sustainable Development of Food Production in Urban Smart Farming”, Assoc. Prof. Dr. Li Chunjie, Shanghai Jiao Tong University. 2pm: Preparation for Group Assignment & Presentation</p>
<p>26 Aug 2019, Mon</p>	<p>8.40 am: Departure 9am – 12 pm: Team Presentation and Closing Ceremony 12 pm: Lunch) 8- 10 pm : Farewell Dinner*(Provided) & Gift Exchange</p>
<p>27 Aug 2019,</p>	<p>Check out. Departure to Senai, Johor International Airport</p>



ISKANDAR REGION

An economic corridors that hosts the EduCity with 10 Transnational Campuses and the tourisms highlights (Legoland) and World-class property investments.



LOW CARBON VILLAGE & COMMUNITY COMPOSTING

Learn how a group of villagers conduct food waste segregation at source. Experience local culture and cuisine.



IRDA- A government authority promoting economic growth in southern Malaysia (Johor). Sharing on *Iskandar Malaysia Low Carbon Blueprint* and a range of green actions.



Pulai School Awards Winning GreenSchool Conducting a Low Carbon Action Workshop for Schools towards Sustainable Development Goals (SDGs).



Tanjung Piai National Park

An internationally reknown Ramsar site serves to conserve the wetland, flora & fauna.

VISITS



Desaru & Tropical fruit farm

A tourist spot wishing to experience true Malay resorts & tropical fruits.



Johor Bahru old town

Explore the old town famous with multi-religion old temple, museums, strait view over Singapore and multicultural cuisine.



Malay Cultural Village

Experience Malay traditional art, cuisine, practices.



Green City Development

Megacities with green features & advanced wastewater treatment for high-rise urban hub.

ASSIGNMENT 作业

Students are divided into teams of 6 members. Each team comprises of 4 international participants and 2 UTM local buddies. Each group will have a Group Leader to facilitate the progression of the program.

学生被分成 6 人小组。每个团队由 4 名国际学生和 2 名 UTM 学生组成。每个小组将有一个组长，以促进活动的进展。

INDIVIDUAL & GROUP ASSIGNMENT 个人和小组作业

The individual assignment is to prepare a short, daily reflection report. Reflection report should be compiled and submitted within one week after the program ends.

For group assignment, a topic will be assigned for each group. There are 3 lecture sessions and 6 visits in this program. Please complete the group assignments based on the instruction by the lecturers and your experience from the visits accordingly.

个人任务是准备一份简短的每日反馈报告。反馈报告应在项目结束后一周内完成和提交。

对于小组任务,将为每个组分配一个主题。此课程有 3 个讲座和 6 次访问。请根据讲师的指示和您访问的经历完成小组作业。

WORKSHOP 工作坊

On the 18th August 2019, there will be a workshop on “Implementation of Low Carbon Action for Schools towards Sustainable Development Goals (SDGs)” at Pulai Elementary Chinese School.

2019 年 8 月 18 日, 在蒲莱华文小学将举办"实施可持续发展目标的学校低碳行动"工作坊。

TEAM PRESENTATION 小组作业发表会

On the 26th August 2019, there will be a presentation session and students will present their GROUP ASSIGNMENT using PowerPoint slides. Each group will be given 20 minutes (15minutes of presentation and 5 minutes of Q &A session).

2019 年 8 月 26 日, 将举行小组作业发表会, 每个小组将使用 PowerPoint 幻灯片展示他们的小组作业。每组将给予 20 分钟(15 分钟的演讲和 5 分钟的问答环节)。

ATTENDANCE 出席

Attendance is Compulsory for All programs. Any absence should inform UTM committee members. Please participate fully to ensure acquisition of Certificate of Participation.

所有行程的出席都是强制的。任何缺席都应通知 UTM 委员。请充分参与以确保获得课程证书。

ASSIGNMENT TOPICS 小组作业主题

1. Community Composting @ Mini RTC Layang-Layang, Johor
2. Green Campus: Asian University as Case Study
3. Green City Development in Southeast Asia Country
4. Sustainable Consumption and Production (SCP)
5. Iskandar Malaysia Low Carbon Economy: Case Study at Iskandar Regional Development Authority (IRDA)
6. Aquaponic System for Smart Urban Farming
7. Green City Development in Developed Country

ORGANISATION COMMITTEE SJTU

上海交通大学组委会

SJTU Coordinator:

Assoc. Prof. Dr. Li Chunjie 李春杰
SESE SJTU, Shanghai, China

SJTU Coordinator:

Chen Zhe 陈哲
Vice Secretary of CPC SESE Committee,
SESE SJTU, Shanghai, China

SJTU Coordinator:

Bao Chen Jing 包晨静
SESE, SJTU, Shanghai, China

SJTU Coordinator:

Dr. Gao Yueshu 高月淑
SESE SJTU, Shanghai, China

SJTU Coordinator:

Tang Haoming 汤淞溟
Secretary of CCYL SESE Committee,
SESE SJTU, Shanghai, China

SJTU Student Buddies Head

Zhang Qi 张琦
SESE, SJTU, Shanghai, China

ORGANISATION COMMITTEE UTM

大马理工大学组委会

Program Director/Coordinators:

Prof Lee Chew Tin 李秋婷
SCEE, UTM, Johor, Malaysia.
E-mail: ctlee@utm.my

Prof Mat Uzir Wahit

Associate Chair (Quality & Strategy)
SCEE, UTM, Johor, Malaysia.

Dr. Dayang Norulfairuz binti Abang Zaidel

Program Director (BioPolymer)
SCEE, UTM, Johor, Malaysia.

Dr Ong Pei Ying 王珮樱

UTM Innovation Centre in Agritechology for Advanced
Bioprocessing (ICA)

Prof Haslenda Hashim

Dean, UTM Sustainability Research Allianace
SCEE, UTM, Johor, Malaysia.

Prof Ho Chin Siong

Director, UTM Low Carbon Asia Research Centre
UTM, Johor. Malaysia.

Dr. Liew Peng Yen

Department of Chemical Process Engineering,
Malaysia - Japan International Institute of Tech(MJIIT), UTM
Jalan Sultan Yahya Petra, Kuala Lumpur, Malaysia.

UTM Student Buddies Head

Hong Cai Yue 熊彩月

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- ❖ **Shanghai Jiao Tong University (SJTU)**
School of Environmental Science & Engineering
International Office
- ❖ **Universiti Teknologi Malaysia (UTM)**
School of Chemical & Energy Engineering
International Office
Students Affairs
UTM Sustainability Research Alliance
Malaysia-Japan International Institute of Technology
UTM Low Carbon Asia Research Centre
UTM Green DNA Society

- ❖ **Biocompost Centre Layang-layang**
- ❖ **Iskandar Regional Development Authority**
- ❖ **Kulai Municipal Council**
- ❖ **Pulai Primary Chinese School**
- ❖ **Pusat Komuniti Desa (PKD) Layang-layang**
- ❖ **Xiamen University Malaysia**

COMMITTED TO

SUSTAINABLE DEVELOPMENT GOALS

