Tri-University
International Joint Seminar & Symposium 2017

October 23rd – 27th, 2017 at Mie University

Population, Food, Energy, Environment and Children

Global for Local, Local for Global

Glocal University Network
for
Sustainable Development Goals

Scope: Two years ago, UN member countries adopted a set of goals to end poverty, protect the planet, and ensure sustainable prosperity for all the people in the world. Local universities in Asia which are also struggling in the waves of globalization should work for achieving this movement. Let's make a tight glocal university network and go hand in hand to accomplish this mission for future generations.

Contents

Congratulatory Message

1577 Kurimamachiya-cho, Tsu city, Mie Pref.,
514-8507, Japan
Telephone: +81-59-231-9924
E-mail: tri-u.info@cie.mie-u.ac.jp

Welcome Message

It is a great honor for Mie University to host the 24th Tri-U International Joint Seminar and Symposium at our main campus in Tsu city, Mie Prefecture. On behalf of the organizing committee and Mie University, I would like to extend a warm welcome to all the distinguished guests and delegates.

This Seminar and Symposium was established by three universities, Jiangsu University, Chiang Mai University and Mie University in 1994, and from 2011, Bogor Agricultural University has been the host of this event.

In the 24th Seminar and Symposium, in addition to our original four topics of Population, Food, Energy and Environment, we have chosen "Children" as main topic. As the main theme, we decided on "Global for Local, Local for Global - Glocal University Network for Sustainable Development Goals." In 2015, the United Nations adopted seventeen Sustainable Development Goals to address a range of global issues. Many universities in Asia, including Mie University, are also struggling to cope with the massive waves of globalization and need to tackle the challenges being generated and contribute to achieving a range of difficult goals. Let's create a tightknit glocal university network and go forward together to accomplish our missions for sake of our children and future generations.

I sincerely hope that participants from each institution will engage in active discussions, which will hopefully produce spectacular outcomes for us who must support the next generation.

October 23rd, 2017

Yoshihiro Komada, MD, PhD.
President of Mie University, Japan

Congratulatory Message
Mie University

On behalf of Chiang Mai University, it is an honor for me to congratulate Mie University for hosting "The 24th Tri-University International Joint Seminar and Symposium".

It is a great pleasure for Chiang Mai University to have this important opportunity to exchange ideas and share the knowledge gathered through research and teaching programs at the Tri-University Seminar. I would like to extend my heartfelt congratulations to all the staff, students and researchers in providing this opportunity to share knowledge and experiences on the global theme of "Population, Food, Energy, Environment and Children".

As a university, we all have the same goal which is not only to cultivate the seeds of the new generation to develop and enhance their integrated knowledge for successful working skills, but also to increase in diverse areas their interests in the welfare of their community. It's in the communities that we are living in that are becoming more afflicted due to the world's population growth, shortage of food and food nutrition, renewable energy and energy saving, environmental crisis or even child abuse and education inequality. Thus it is important that a good conscience be cultivated in each student together with a strong responsibility for the community and other members. Indeed society needs the clever young generation and their social responsibility and I hope to see this mindset grow during the symposium and to encourage others who are not attending this event to build a better community, a better world.

Chiang Mai University is very proud to partner with Mie University through collaborative activities and we warmly wish Mie University a successful 24th Tri-University International Joint Seminar and Symposium.

Professor Emeritus Avudh Srisukri, M.D.
Vice Chairman of University Council
Acting President of Chiang Mai University

江蘇大學
JIANGSU UNIVERSITY

Congratulatory Message

September 25, 2017

On behalf of Jiangsu University, I would like to extend my sincere gratitude and congratulations to the President and the members of Mie University at this moment when the 24th Tri-U opens.

Since 1994, when the first Tri-U was initiated and convened, Jiangsu University has witnessed its successive and high-speed prograss as one of the founders of the Tri-U. This Seminar and Symposium has become a worldly famous event after the 23 years of all the concerned people. It is a significant conferece with the purpose of improving social awareness of young generation. The participants enjoy the intercultural communications; especially students benefit a lot from such kind of academic exchange.

The 24th Tri-U offers us topics as Populations, Food, Energy, Environment and Children, which will arouse creative inspirations among the young scholars, and help broaden our international horizon. I appreciate very much what Mie University has done for this big event.

At last, I would like to aprreciate the organizers of the seminar and symposium for their hard work and wish the 24th Tri-U International Joint Seminar and Symposium a grand success.

Prof. Yan Xiaohong

President of Jiangsu University, China

地址ADD:中国江苏省镇江市学府路301号
电话TEL:(511)88780030 传真FAX:(511)88791739
邮编P.C:212013 Http://www.ujs.edu.cn

Congratulatory Remark for 24th Tri-U International Joint Seminar & Symposium

On behalf of Bogor Agricultural University, I am delighted to hearty congratulate Mie University, Japan to host the 24th Tri-U International Joint Seminar & Symposium this year. The 24th meeting has been nicely designed to include four interesting topics i.e Population, Food, Energy, Environment, Children. Tri-U International Joint Seminar and Symposium which has been held annually for 24 years indicates the strong commitment of its member universities, especially Mie University as one of the founders. The international seminar and symposium has been one of the great achievements of the consortium. Maintaining activities for 24 consecutive years is solid and robust evidence that this program has benefited all the involved parties.

Bogor Agricultural University proudly joining the consortium from 2011 has witnessed the strong family-like relation among the members. Strong focus to students and young scientist has provides unique feature to the consortium. The symposium has offered good platform for the young talented students to show their work and communicate their ideas. The event is also an opportunity for interactions with foreign students from more than 10 different universities. Tri-U International Joint Seminar & Symposium has laid down foundation to build stronger trust among member universities. The collaboration among member universities widen also into student exchanges and joint research activities. Our collaboration with international partners contributes significantly to our research activities leading to not only scientific publication but also IPB's innovation. Therefore IPB is known as the most innovative campus in Indonesia.

Bogor Agricultural University would also like to congratulate all the member universities who have been able to provide active and positive contribution to the consortium. We believe that strong support of the member universities is one of the key factors for the success and sustainability of the consortium and more specifically to the Tri-U International Joint Seminar and Symposium. Our sincere hope that this program is a great success.

Bogor, October 2017

Prof. Dr. Ir. Herry Suhardiyanto, MSc

廣西大學 Guangxi University
NO.100 Daxue Road, Nanning,Guangxi, 530004 P.R. China
Tel:+86-771-3238638 Fax:+86-771-3237734 E-mail: gjc@gxu.edu.cn Web: www.gxu.edu.cn

Sep. 15, 2017

Congratulatory Letter

Honorable President of Mie University Yoshihiro Komada,

It is my great pleasure to know that the 24th Tri-U International Joint Seminar and Symposium is going to be held during October 23rd to 27th, 2017 in Mie University, Japan. On behalf of all staff and students in Guangxi University, I would like to extend our sincere greetings to the staff and students of Mie University and all participants in this forum, and wish the forum a great success.

The Tri-U International Joint Seminar and Symposium was initiated by Jiangsu University (China), Mie University (Japan) and Chiang Mai University (Thailand) in 1994, aiming at establishing a platform for communication among the students from the three countries. Based on issues related to human society including population, food, energy, environment and children, the forum makes students explore the harmonious development path of future society, improve collaborative awareness and global concepts of Asian young generation and strengthen friendly relationships among Asian countries. In 2000, with the invitation from Mie University, Guangxi University participated in the forum and has become an active participant and supporter from then on. Since 1994, the forum has gone through 23 years, and the participating countries have already far exceeded the three sponsor countries so that becomes a great annual event joined by teachers and students from different countries.

On the occasion, I would like to extend my heartfelt gratitude to the three sponsor universities! I would like to heartily wish that the forum achieve greater success, and hope that all participants are able to gain knowledge and friendship from this activity. Finally, my special thank goes to the Organizing Committee of the forum and the staff of Mie University for their hard work to prepare the forum.

Prof. Dr. Zhao Yueyu
President of Guangxi University

上海海洋大學
SHANGHAI OCEAN UNIVERSITY

地址(Add)：上海市临港新城沪城环路999号 邮编：201306
999 Hucheng Huan Road,Nanhui District Shanghai 201306
电话(Tel)：+86 21 61900296 传真(Fax)：+86 21 61900000
网址(Web Site)：http://www.shou.edu.cn

Congratulatory Message

Mie University

August 1, 2017

On behalf of Shanghai Ocean University, I would like to extend my congratulations to President Yoshihiro Komada and everyone at Mie University for hosting the 24th Tri-University International Joint Seminar and Symposium. I would also like to express my sincere gratitude to conference organizers for your great efforts in your work.

It is a great pleasure and honor for Shanghai Ocean University (SHOU) to have this important opportunity to exchange ideas and share the knowledge on the global theme of "Population, Food, Energy, Environment and Children" at the 24th Tri-University International Joint Seminar and Symposium .

As the world moves forward, there are many challenges both at the national and international level and we firmly believe that Mie University will be an excellent leader in taking on those challenges. Shanghai Ocean University is very proud to collaborate with Mie University through academic activities and we warmly wish the 24th Tri-University International Joint Seminar and Symposium a grand success.

程裕東

Prof. Dr. Cheng Yu-dong
President of Shanghai Ocean University

Thammasat University
2 Prachan Road, Bangkok 10200
Thailand

MOE 0516/ 1295

August 31 , 2017

Professor Yoshihiro Komada
President
Mie University
1577 Kurimamachiya-cho Tsu city
Mie 514-8507
JAPAN

Dear Professor Yoshihiro Komada,

On behalf of Thammasat University, I sent my warmest congratulations to Mie University for hosting the 24th Tri-University International Joint Seminar & Symposium 2017 on October 23rd – 27th, 2017.

The symposium has taken a long journey in providing the platform for students, faculties and researchers from various universities to exchange knowledge and creating collaboration network. The continuous success of such event is undoubtedly the result of the dedicated effort of Tri-University members. I firmly believe that this symposium will continue to provide a great opportunity to younger generation to cultivate their awareness on global issues, while at the same time to develop their interpersonal and problem-solving skills in an international environment.

Once again, I sincerely appreciate the effort of Mie University in organizing the event and hope that all participating universities will experience a successful and fruitful event.

Yours sincerely,

Somkit Lertpaithoon

Professor Dr. Somkit Lertpaithoon
Rector

Congratulatory Message

On behalf of the Maejo University, Chiang Mai, Thailand, I congratulate the 24th Tri-U International Joint Seminar & Symposium, Mie University, Japan, 23-27 October 2016. I expect that there will be even more participants from a Tri-U family countries joining the conference this year as the reputation of this conference continues to grow, becoming even more successful each time.

Tri-U International Joint Seminar & Symposium has been held since 1994. The objectives of the conference are to encourage students, researchers, and interested person to present their works, to create research cooperating network mainly in Population, Food, Energy, Environment & Children, to publish the research works for academic and industry sectors, to collaborate integrated association with public and private organizations.

I hope the conference will be success and strengthen the network of national and international research scholars in the future. Finally, I would like to acknowledge the team of conference organizers, 24th Tri-U IJSS and the Mie University (MU), for their hard work during this past year. I strongly believe that the 24th Tri-U will further contribute to the development and dissemination of integration, be a great success.

Asst. Prof. Dr. Chamnian Yosraj, Ph.D,

President of Maejo University, Thailand

MAEJO GO ECO

Maejo University 63 Sansai-Phrao Road, Nongharn, Sansai District, Chiang Mai, 50290 Thailand
Tel: +66 53 875 460-65 Mobile: +66 87 578 1118 Fax: +66 53 873 181 E-mail: inter-a@mju.ac.th

Ministry of Education and Science of the Russian Federation
Federal State Budgetary Educational
Institution of Higher Education
Khabarovsk State University of Economics & Law
134, Tikhookeanskaya Str.;
Khabarovsk, 680042, Russia
Phone/fax: +7-(42-12)-76-54-49
+7-(42-12)-22-49-06
Web-site: www.ael.ru;
E-mail: iro-ksael@rambler.ru

Министерство образования и науки Российской Федерации
Федеральное государственное бюджетное образовательное
учреждение высшего образования
Хабаровский государственный университет
экономики и права
680042, Россия, г. Хабаровск
ул. Тихоокеанская 134,
Тел./факс: +7-(42-12)-76-54-49;
+7-(42-12)-22-49-06
Веб-сайт: www.ael.ru;
E-mail: iro-ksael@rambler.ru

Administration of Federal State Budgetary Educational Institution of Higher Education «Khabarovsk State University of Economics and Law» (KSUEL) has an honor to give a warm welcome to all the participants and guests of 24th Tri-University International Joint Seminar and Symposium 2017 in the walls of Mie University!

It is great that a close partnership and friendship was established between the universities-participants. KSUEL participates in the Tri-University International Joint Seminar & Symposium for the fifth time. It seems that participation in this event has become a good tradition. Thus it is considered that the objectives and content of the symposium are important and interesting for us.

There are students, teachers and scientists from different countries of the world and this venue is a good place for creation and development of partnerships between them. We hope that we will meet our closest friends, colleagues and find new partners.

On behalf of our university we would like to express our deepest gratitude from the Russian side. We delighted with all the arrangement and care of Mie University once again. KSUEL would like to thank the President of Mie University, Doctor Yoshihiro Komada, for the invitation to participate in this symposium and the entire team of organizers, who made it possible for all the delegations.

We wish you all a successful and fruitful work!

Sincerely yours,

Yury Plesovskikh, Ph.D.
Rector
Khabarovsk State University of Economics and Law

Naresuan University

Division of International Development
Phitsanulok 65000 Thailand
Tel : +66 55 962378-83 Fax: +66 55 962380
E-mail: international@nu.ac.th
Website: www.english.nu.ac.th

Congratulatory Message

On behalf of Naresuan University, Phitsanaulok, Thailand, I would like to extend my heartfelt congratulations to Mie University, Japan, the host of the 24th Tri-U International Joint Seminar and Symposium during October 23-27, 2017.

Since its inauguration in 1994, the convention has played a key role in promoting the exchanges and interactions among students, researchers and interested people with a focal point of research and development directed towards population, food, energy, environment and children. We have realized that the conference will not only provide a unique opportunity for stakeholders to share their points of view towards current issues in multifaceted dimensions of the above mentioned areas in the rapidly changing globe, but also showcase the importance of fostering mutual empowerment in research communities among partnered universities and other soon-to-be-partnered ones.

To the upcoming platform, we do appreciate your committed effort and wish the organizer a successful and productive conference.

Honorary Professor Dr. Kanchana Ngourungsi
President, Naresuan University

General Information

General information

Hotels you are staying at:

<Hotel Green Park Tsu (near Tsu Station)>

Address: 700 Hadokoro-cho, Tsu city, Mie Pref. 514-0009

Phone 059-213-2111

URL: http://www.greens.co.jp/gptsu/

<Hotel Econo Tsu (near Tsu Station)>

Address: 3-258-1, Sakae-machi, Tsu city, Mie Pref. 514-0004

Phone: 059-225-7601

URL: http://www.greens.co.jp/hetsueki/

Contact Number in Emergency:

TEL: +81-(0)59-231-9057

E-mail: kokusai@ab.mie-u.ac.jp

The emergency mobile phone number, as stated on another slip of paper, is available during the Seminar. When you are in emergency such as somebody, including yourself, is sick or injured and needs medical attention, and/or you are lost in town, you can call the number at any time. Especially when you are involved in a matter of life and death, do not hesitate to call.

The Steering Committee members will take turns to attend emergency calls basically from 8:00 AM to 9:00 PM every day from Oct. 23 to Oct. 27

Oral Presentation:

Oral presenters will be given 15 minutes for oral presentations plus 5-minutes question time (total: 20 minutes). The presenters are requested to operate the PC at the podium during the presentation or to make arrangements for assistance of operation in advance.

Poster Presentation:

Posters will be mounted on a floor standing board (1190 mm [vertical] by 840 mm [horizontal]). Put up your poster on the board just after registration on Oct. 23. The staff can help you locate your assigned panel with your paper number.

Posters will be displayed continuously during the Seminar. Presenters are required to be at their posters for their scheduled poster sessions. Take your poster down after the closing ceremony. Make sure that you clean up your poster area. We cannot be responsible for any materials left behind.

Prayer Room for Muslims:

We prepare a prayer room for Muslims in the building belonging to Regional Innovation building. Please check the maps. Muslims are also served with special meal (halal foods) for a religious reason.

General information

Tri-U 2017 Tote Bag

All participants are given the 24th Tri-U IJSS Tote Bag at the reception desk on the first day of the Seminar and Symposium.

Internet Access:

Wireless internet connection is available in Mie university campus. The Wi-Fi ID and password is stated at attachment in tote bag.

Study Tour

Study tour is planned on Oct. 25. All participants will visit one of the four satellites. You are already divided into four groups and you can check where you will visit with the color of the frame of your name tag. You can also get the schedule of this tour and other information in this booklet.

Colors of Name Tags:

The colors of the frame of name tags indicate your destination at the study tour.

RED: Hokusei Satellite (Yokkaichi and Suzuka area)

YELLOW: Iga Satellite (Iga area)

GREEN: Ise-Shima Satellite (Ise-Shima area)

BLUE: Higashi-Kishu Satellite (Owase and Kumano area)

PURPLE: VIP **GRAY:** Faculty

Study Tour

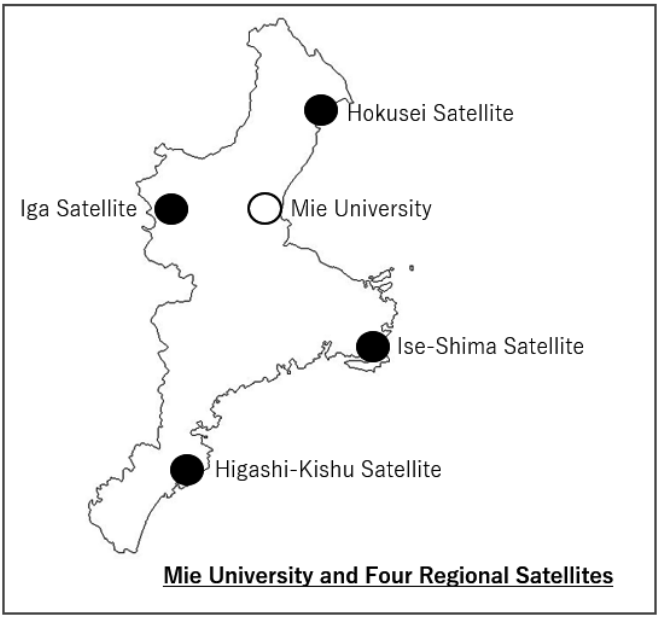
Study Tour

Study Tour Information on October 25th

Objective : The organizing committee organizes an one-day study tour to below listed four sites where Mie University has established so-called satellite offices for aiming regional revitalization. Each area has various regional characteristics with huge diversions, i.e. geologically, topographically, climatically, historically and industrially. Participants visit one of these four sites by coach and make a field study according to coordinator's direction.

Four visiting sites in Mie prefecture:

1. Hokusei Satellite (Yokkaichi and Kameyama area)
2. Iga Satellite (Iga area)
3. Ise-Shima Satellite (Ise-Shima area)
4. Higashi-Kishu Satellite (Owase and Kumano area)



Mie University and Four Regional Satellites

Study Tour Schedule for Each Area

1. Yokkaichi and Kameyama area

Area Information: Yokkaichi City, which suffered from Yokkaichi asthma due to the air pollutants from the Yokkaichi Petrochemical Complex that supported Japan's high economic growth, learned from the history that Yokkaichi Pollution was overcame by advanced environmental policy and international environmental cooperation. We will visit "Yokkaichi Pollution and Environmental Museum for Future Awareness" and “Yokkaichi Port Building Umiterasu 14",we also consider the mechanism of occurrence of Yokkaichi Pollution, the impact on ecosystem including human beings, environmental policy, environmental business, international environmental cooperation In the Sharp Corporation of Kameyama City boasting "Kameyama Model of the world", we learn about the ideal ways of environmental business to harmonize the environment and the economy. And taking a slogan “from Red beans to AZUKI" by the Imuraya Co. Ltd., which is growing as a global food manufacturer by environmental management, and learn about food loss zero.

Schedule

08:30	Departing from Hotel by coach after breakfast. Drive to the Sharp Corporation of Kameyama City.
09:30	"Kameyama Model of the world" of LCD television production tour at the Sharp Corporation of Kameyama City..
11:30	Lunch at the Sharp Corporation of Kameyama City.
12:30	Drive to "Yokkaichi Pollution and Environmental Museum for Future Awareness"
13:00	Learn from the Yokkaichi Pollution Lesson and discuss with Yokkaichi Pollution Narrators
15:00	Outlook of the Yokkaichi Port and Yokkaichi Petrochemical Complex at “Yokkaichi Port Building Umiterasu 14"
16:00	Drive to the Imuraya Co. Ltd., food manufacturer.
17:00	Learn about food loss and zero by environmental efforts and taste Azukibar and some sweets.
18:30	Drive to the Hotel, Tsu City

Study Tour

2. Iga Area

Area Information: The Iga Area is located along the main pathway connecting Kyoto and Nara Area with Ise Area, and historically the area has played a significant role in this regard. In recent years the area has gained a great popularity by its traditional culture represented as a home for NINJA. NINJA has received a global recognition for a number of years. And, its understanding varies including commercial mischiefs. This tour will visit the home of Iga Ninja in seek for the thorough understanding.

Also, Iga Research Satellite was initially founded at a research facility of Mie University. The facility focuses on regional creation through full usage of specific culture and regional resources. And, the study tour will deal with research topics including the history and culture of ninja, the collaborations with pharmaceutical corporations, the utilization of forest resources and other research activities.

Finally, attractions including Iga Ueno Castle, Ninja Museum, and Local Festival Museum (Danjiri Kaikan) will be visited to learn specifically about the local culture, how its essence is used in the modern town development, and the glocal enhancement of regional creation.

Schedule:

08:30	Departing from Hotel by coach after breakfast.
	Drive to Hitopia Iga Building of Iga City
10:00	Hitopia Iga. Change to ninja outfit
	Lecture by Professor Yuji YAMADA
11:30	Move to Iga Research Satellite
12:00	Lunch (Lunch box and Ninja Food)
12:30	Lectures on Scientific Approach to Ninja
13:30	Move to Iga Ueno Castle
14:00	Ninja Museum (15:00 – Ninja Show)
16:00	Photo Taking at Iga Ueno Castle
16:30	Local Festival Museum (Danjiri Kaikan) Returning Ninja outfit
17:30	Return to Hotel
18:30	Diner at the Hotel.

3. Ise-Shima area

Area Information：The Shima Peninsula is a popular marine resort and sightseeing area among the urban populations. Due to its ideal marine environment various important fisheries industries including aquaculture, pearl farming and characteristic professional women divers' activities are being carried out, but nowadays this area is suffering from many problems like decrease of area population, especially young generations, and decline of industrial activities, etc.

Schedule：

08：30 Departing Hotel by coach after breakfast. Drive to Ise-Shima using Ise toll road.

10：30 Arriving to Shima City. In Kashikojima area where the G7 summit was held last year, get a lecture about Ago Bay, its geographical characteristics, pear farming industry and Satoumi Preservation Project by Shima City staff.

12：00 Arriving to Toba Observatory en route to Toba Sea-Folk Museum. Taking lunch at Toba Observatory.

13：00 Arriving to Toba Sea-Folk Museum. Have a lecture about professional women divers (Ama) activities and see museum exhibitions

15：00 Drive to Ijika area for visiting Ama village.
Leaving Ijika and move back to Hisai, Tsu City.

17：30 Visiting the Imuraya Co. Ltd., food manufacturer.

19：00 Arriving to Tsu city. Diner at the Hotel.

Study Tour

4. Owase and Kumano area

Area information: Owase and Kumano area have many historical places full of nature, particularly Kumano Kodo (Sacred Site and Pilgrimage Routes in the Kii Mountain Range) is registered as world heritages by UNESCO. Key industries of this area are fishery and forestry, and they are working with some new and unique ideas. On the other hand, this area is confronted with depopulation and natural disasters including Tsunami or severe tropical storm, etc. In the Study Tour of Owase and Kumano, everybody may come in touch with abundant nature, major industries and/or some issues for improvement.

Schedule：

08：00 Departing from your hotel by a sightseeing bus
09：30 Visiting Kumano Kodo Center in Owase city by the freeway of Ise and Kisei expressway.
11：00 Magose-toge pass (30 minutes' walking), very popular site because one of the most beautiful part of the Kumano Kodo.
12：00 Lunch at Yumekodo Owase: Buffet style restaurant
13：30 Visiting Owasebussann; General marine corporation with fish farming and fishery of coastal longline fishing.
15：00 Visiting a company or factory of forestry in Owase city or Miyama town.
17：30 Visiting Hajikami terrace for shopping
19：30 Coming back to the Hotel.

Delegations

Delegations

Delegations
(10 Universities from 5countries)


Mie University (MU)
Japan


Chang Mai University (CMU)
Thailand


Jiangsu University (JSU)
China


Bogor Agricultural University (IPB)
Indonesia


Guangxi University (GXU)
China


Shanghai Ocean University (SHOU)
China


Maejo University (MJU)
Thailand


Thammasat University (THU)
Thailand


Naresuan University (NU)
Thailand


Khabarovsk State University
of Economics and Low (KSUEL)
Russia

Schedule

Schedule

10/23 (Mon)	10/24 (Tue)	10/25 (Wed)
	6:30-8:00	6:30-8:00
	Breakfast (at Hotel)	Breakfast (at Hotel)
	8:00-8:45	8:30
	Mie University	Departing from Hotel
Arrival	9:00-10:30	
	Opening Ceremony Special Lecture Photo Session (at Sansui Hall - Main hall)	
	10:40-12:30	(all day) Study Tour to 4 areas of Mie Pref. ・Yokkaichi ・Iga ・Ise shima ・Higashi kisyu *Area is to be decided by Mie University for each participant Univ.
12:00 - 16:00 Optional tour (Suzuka Circuit)	Parallel Session / Presentation (at Mie Environmental & Informational Platform 3F)	
	12:30 - 13:30	
	Lunch (at Cafeteria I)	
13:00 - 17:00	13:30 - 18:30	
Registration (at Sansui Hall) Poster Setting (at Mie Environmental & Informational Platform)	Parallel Session / Presentation (at Mie Environmental & Informational Platform 3F) 18:30 - 19:00 Poter Presentation (at Mie Environmental & Informational Platform 1F)	
17:00 - 19:00	19:00 - 20:30	18:30 -20:30
Welcome Party (at Sansui Hall-Sub hall)	Introduction of Workshop & Social Dinner for Students (at Cafeteria II)	Dinner (at Hotel Green Park Tsu)
	19:30 - 21:30	
	Executive Dinner for Lecturers (at Hotel Green Park Tsu)	
Return to Hotel	Return to Hotel	Return to Hotel

Schedule

<table>
<tr><th colspan="2">10/26 (Thu)</th><th>10/27 (Fri)</th></tr>
<tr><td colspan="2">6:30–8:00</td><td>6:30–8:00</td></tr>
<tr><td colspan="2">Breakfast (at Hotel)</td><td>Breakfast (at Hotel)</td></tr>
<tr><td colspan="2">8:00–8:45</td><td>8:00–8:45</td></tr>
<tr><td colspan="2">Mie University</td><td>Mie University</td></tr>
<tr><td colspan="2">9:00–12:30</td><td>9:00–11:30</td></tr>
<tr><td colspan="2">Parallel Session / Presentation
(at Mie Environmental & Informational Platform 3F)</td><td rowspan="2">9:00 – 10:30
Presentation of
Workshop

10:50 – 11:30
Awarding & Closing
Ceremony
(at Sansui Hall – Main hall)</td></tr>
<tr><td colspan="2">12:30 – 13:00
Poster Presentation
(at Mie Environmental & Informational Platform 1F)</td></tr>
<tr><td colspan="2">13:00 – 14:00</td><td>12:00–13:00</td></tr>
<tr><td colspan="2">Lunch (at Cafeteria I)</td><td>Lunch (optional)</td></tr>
<tr><td>14:00 –17:30</td><td>14:00 – 17:30</td><td rowspan="5">Departure</td></tr>
<tr><td>Group Workshop
(at Mie Environmental & Informational Platform)</td><td>Key Persons'
Meeting
(Regional Innovation
Hall)</td></tr>
<tr><td colspan="2">18:00 – 21:00</td></tr>
<tr><td colspan="2">Farewell Party
・Cultural Performance from each university
(Sansui Hall –Sub hall)</td></tr>
<tr><td colspan="2">Return to Hotel</td></tr>
</table>

Oral Presentation Timetable

Oral Presentation Timetable

Oct.24	P1	Room A [Population]			
10:40-11:10	Key	Keynote Lecture	Akemi	Morita	P1-AKey
11:10-11:30	1	Jiangsu	Qianqian	Liu	P1-A1
11:30-11:50	2	IPB	Laras	Salsabila	P1-A2
11:50-12:10	3	Shanghai Ocean	Fengmei	Qi	P1-A3
12:10-12:30	4	Khabarovsk	Elina	Ivanova	P1-A4
Oct.24	F1	Room B [Food]			
10:40-11:10	Key	Keynote Lecture	Eko Hari	Purnomo	F1-BKey
11:10-11:30	1	Jiangsu	Xinjuan	Sun	F1-B1
11:30-11:50	2	IPB	Dhika Prita	Hapsari	F1-B2
11:50-12:10	3	Shanghai Ocean	Long	Zhang	F1-B3
12:10-12:30	4	Maejo	Kamolwan	Jermjun	F1-B4
Oct.24	EG1	Room C [Energy]			
10:40-11:10	Key	Keynote Lecture	Aunnop	Wongrueng	EG1-CKey
11:10-11:30	1	IPB	Abdul	Ghofur	EG1-C1
11:30-11:50	2	Maejo	Tanaporn	Sadcharoenwattha na	EG1-C2
11:50-12:10	3	Jiangsu	Li	Xie	EG1-C3
12:10-12:30	4	Maejo	Taweepong	Teptawee	EG1-C4
Oct.24	EV1	Room D [Environment]			
10:40-11:10	Key	Keynote Lecture	Hye-Sook	Park	EV1-Dkey
11:10-11:30	1	Mie	Takaaki	Yasui	EV1-D1
11:30-11:50	2	Shanghai Ocean	Yanan	Li	EV1-D2
11:50-12:10	3	Jiangsu	Fan	Hu	EV1-D3
12:10-12:30	4	Guangxi	Liyuan	Chen	EV1-D4

Oral Presentation Timetable

Oct.24	C1	Room E [Children]			
10:40-11:10	Key	Keynote Lecture	Ruizhen	Feng	C1-Ekey
11:10-11:30	1	Mie	Haruna	Yoshida	C1-E1
11:30-11:50	2	Jiangsu	Bocong	Chen	C1-E2
11:50-12:10	3	Guangxi	Wanyu	Sun	C1-E3
12:10-12:30	4	Guangxi	Xiaoxi	Wang	C1-E4
Oct.24	P2	Room A [Population]			
13:30-13:50	1	Jiangsu	Yongjie	Wang	P2-A1
13:50-14:10	2	Guangxi	Bingxin	Liu	P2-A2
14:10-14:30	3	Jiangsu	Maierhaba	Maimaiti	P2-A3
14:30-14:50	4	Chiang Mai	Chalisa	Paiyarom	P2-A4
Oct.24	F2	Room B [Food]			
13:30-13:50	1	Shanghai Ocean	Gan	Lin	F2-B1
13:50-14:10	2	Bogor Agriculture	Majesta Esa	Sofian	F2-B2
14:10-14:30	3	Maejo	Peewara	Kanta	F2-B3
14:30-14:50	4	Mie	Fittrie	Pratiwy	F2-B4
Oct.24	EG2	Room C [Energy]			
13:30-13:50	1	Maejo	Yinnittra	Khamnuengphon	EG2-C1
13:50-14:10	2	Guangxi	Yongqian	Wu	EG2-C2
14:10-14:30	3	Chiang Mai	Benjaporn	Kreatananchai	EG2-C3
14:30-14:50	4	Maejo	Kunyanat	Thongtep	EG2-C4
Oct.24	EV2	Room D [Environment]			
13:30-13:50	1	Jiangsu	Yinqi	Chen	EV2-D1
13:50-14:10	2	Bogor Agriculture	Muhammad Arfanul	Aziz	EV2-D2
14:10-14:30	3	Mie	Rui	Zhao	EV2-D3
14:30-14:50	4	Guangxi	Jiahong	Ning	EV2-D4

Oral Presentation Timetable

Oct.24	C2	Room E [Children]			
13:30-13:50	1	Bogor Agriculture	Dairul	Fuhron	C2-E1
13:50-14:10	2	Guangxi	Yueqi	Wang	C2-E2
14:10-14:30	3	Guangxi	Shiyu	Pan	C2-E3
14:30-14:50	4	Mie	Ayaka	Yamasaki	C2-E4
Oct.24	P3	Room A [Population]			
15:10-15:30	1	Jiangsu	Xiaoyan	Yu	P3-A1
15:30-15:50	2	Mie	Kyohei	Yamaguchi	P3-A2
15:50-16:10	3	Jiangsu	Lingxiao	Wang	P3-A3
16:10-16:30	4	Khabarovsk	Saiyyna	Aianitova	P3-A4
16:30-16:50	5	Jiangsu	Yuanyue	Jiang	P3-A5
Oct.24	F3	Room B [Food]			
15:10-15:30	L	Bogor Agriculture	Sintho Wahyuning	Ardie	F3-BL
15:30-15:50	1	Guangxi	Yanglin	Hu	F3-B1
15:50-16:10	2	Chiang Mai	Ponwimon	Kaewkun	F3-B2
16:10-16:30	3	Bogor Agriculture	Sentanah	Limmase	F3-B3
16:30-16:50	4	Shanghai Ocean	Ying	Cheng	F3-B4
Oct.24	EG3	Room C [Energy]			
15:10-15:30	L	Thammasat	Monthien	Satimanon	EG3-CL
15:30-15:50	1	Chiang Mai	Siraprapa	Kawialmoon	EG3-C1
15:50-16:10	2	Maejo	Phuong Thi	Vu	EG3-C2
16:10-16:30	3	Naresuan	Tanyaluk	Chidkokruad	EG3-C3
16:30-16:50	4	Maejo	Boonyawee	Saengsawang	EG3-C4

Oral Presentation Timetable

Oct.24	EV3	Room D [Environment]			
15:10-15:30	L	Khabarovsk	Vladimir	Lebukhov	EV3-DL
15:30-15:50	1	Mie	Yoshiyuki	Fujita	EV3-D1
15:50-16:10	2	Chiang Mai	Jatuporn	Sukoum	EV3-D2
16:10-16:30	3	Mie	Yoko	Aoyama	EV3-D3
16:30-16:50	4	Shanghai Ocean	Xiaoxue	Du	EV3-D4
Oct.24	C3	Room E [Children]			
15:10-15:30	L	Jiangsu	Yun	Feng	C3-EL
15:30-15:50	1	Guangxi	Rong	Pan	C3-E1
15:50-16:10	2	Mie	Ayato	Oyama	C3-E2
16:10-16:30	3	Guangxi	Ying	Yin	C3-E3
16:30-16:50	4	Bogor Agriculture	Aviani	Harfika	C3-E4
Oct.24	PC	Room A [Population] ,[Children]			
17:10-17:30	1	Chiang Mai	Natnicha	Thonsungnoen	PC-A1
17:30-17:50	2	Jiangsu	Keshav	Khera	PC-A2
17:50-18:10	3	Mie	Naoko	Ishida	PC-A3
18:10-18:30	4	Guangxi	Chao	Zhang	PC-A4
Oct.24	F4	Room B [Food]			
17:10-17:30	1	Chiang Mai	Sittichai	Wongpia	F4-B1
17:30-17:50	2	Bogor Agriculture	Karimah	Khairunnisa	F4-B2
17:50-18:10	3	Maejo	Aekkapong	Wongket	F4-B3
18:10-18:30	4	Shanghai Ocean	Naimeng	Liu	F4-B4

Oral Presentation Timetable

Oct.24	EG4	Room C [Energy]			
17:10-17:30	1	Maejo	Ajcharapa	Chuanchai	EG4-C1
17:30-17:50	2	Jiangsu	Gabriel	Murillo Morales	EG4-C2
17:50-18:10	3	Chiang Mai	Suchada	Yodyudee	EG4-C3
18:10-18:30	4	Maejo	Phitchaphorn	Khammee	EG4-C4
Oct.24	EV4	Room D [Environment]			
17:10-17:30	1	Jiangsu	Zhe	Yang	EV4-D1
17:30-17:50	2	Mie	Takahiro	Takeuchi	EV4-D2
17:50-18:10	3	Bogor Agriculture	Fitria	Irsbawati	EV4-D3
18:10-18:30	4	Shanghai Ocean	Yuan	Chai	EV4-D4
Oct.24	C4	Room E [Children]			
17:10-17:30	1	Guangxi	Qinwen	Luo	C4-E1
17:30-17:50	2	Chiang Mai	Pattarapon	Saigerdsri	C4-E2
17:50-18:10	3	Guangxi	Ang	Mu	C4-E3
18:10-18:30	4	Guangxi	Yiming	Zhong	C4-E4
Oct.26	EG5	Room A [Energy]			
9:00-9:20	L	Jiangsu	Binjuan	Zhao	EG5-AL
9:20-9:40	1	Bogor Agriculture	Mu'minah	Mustaqimah	EG5-A1
9:40-10:00	2	Maejo	Wilawan	Khumhem	EG5-A2
10:00-10:20	3	Mie	Takuya	Hioki	EG5-A3
10:20-10:40	4	Maejo	Numchok	Manmai	EG5-A4
Oct.26	F5	Room B [Food]			
9:00-9:20	L	Khabarovsk	Kirill	Zemliak	F5-BL
9:20-9:40	1	Shanghai Ocean	Weixiang	Liu	F5-B1
9:40-10:00	2	Guangxi	Yuanyuan	Zhang	F5-B2
10:00-10:20	3	Mie	Sasicha	Chensom	F5-B3

Oral Presentation Timetable

Oct.26	EG6	Room C [Energy]			
9:00-9:20	L	Maejo	Rameshprabu	Ramaraj	EG6-CL
9:20-9:40	1	Shanghai Ocean	Mengying	Liu	EG6-C1
9:40-10:00	2	Chiang Mai	Phattarapong	Suwatee	EG6-C2
10:00-10:20	3	Maejo	Sasithon	Bunchuai	EG6-C3
10:20-10:40	4	Guangxi	Jiayi	Wang	EG6-C4
Oct.26	EV5	Room D [Environment]			
9:00-9:20	L	Thammasat	Khomsi	Meepukdee	EV5-DL
9:20-9:40	1	Mie	Adriana Anastasia	Jenahat	EV5-D1
9:40-10:00	2	Guangxi	Zhao	Pan	EV5-D2
10:00-10:20	3	Jiangsu	Zhaowei	Zhu	EV5-D3
10:20-10:40	4	Mie	Kenta	Sugiura	EV5-D4
Oct.26	EV6	Room E [Environment]			
9:00-9:20	1	Mie	E	Ridengaoqier	EV6-E1
9:20-9:40	2	Shanghai Ocean	Zexiu	Xiong	EV6-E2
9:40-10:00	3	Jiangsu	Feifan	Wang	EV6-E3
10:00-10:20	4	Bogor Agriculture	Angga	Dwinovantyo	EV6-E4
10:20-10:40	5	Mie	Chinami	Shinoda	EV6-E5
Oct.26	EG7	Room A [Energy]			
11:00-11:20	1	Maejo	Wasun	Junnoi	EG7-A1
11:20-11:40	2	Shanghai Ocean	Xiaoxiao	Feng	EG7-A2
11:40-12:00	3	Chiang Mai	Thanwit	Naemsai	EG7-A3
12:00-12:20	4	Maejo	Jumlong	Malaket	EG7-A4
12:20-12:40	5	Maejo	Sakonrat	Jindarak	EG7-A5

Oral Presentation Timetable

Oct.26	EV7	Room B [Environment]			
11:00-11:20	1	Shanghai Ocean	Yating	Song	EV7-B1
11:20-11:40	2	Chiang Mai	Phatthakon	Taotiang	EV7-B2
11:40-12:00	3	Jiangsu	Ying	Song	EV7-B3
12:00-12:20	4	Jiangsu	Qinhong	Zhang	EV7-B4
12:20-12:40	5	Mie	Misa	Horii	EV7-B5
Oct.26	EG8	Room C [Energy]			
11:00-11:20	L	Maejo	Yuwalee	Unpaprom	EG8-CL
11:20-11:40	1	Maejo	Praphatsorn	Rattanaphaiboon	EG8-C1
11:40-12:00	2	Naresuan	Natjira	Inmon	EG8-C2
12:00-12:20	3	Jiangsu	Xiaoyin	Zhang	EG8-C3
12:20-12:40	4	Maejo	Jiraporn	Kaewdew	EG8-C4
Oct.26	EV8	Room D [Environment]			
11:00-11:20	1	Bogor Agriculture	Eric	Faustine	EV8-D1
11:20-11:40	2	Shanghai Ocean	Caixia	Li	EV8-D2
11:40-12:00	3	Maejo	Kodchakorn	Palaphan	EV8-D3
12:00-12:20	4	Guangxi	Jianlin	Song	EV8-D4
12:20-12:40	5	Mie	Megumi	Murakami	EV8-D5
Oct.26	EV9	Room E [Environment]			
11:00-11:20	1	Jiangsu	Xingtao	Zhong	EV9-E1
11:20-11:40	2	Bogor Agriculture	Ken	Rizkyna	EV9-E2
11:40-12:00	3	Guangxi	Xiafei	Ouyang	EV9-E3
12:00-12:20	4	Mie	Mio	Yoshida	EV9-E4
12:20-12:40					

Special Lecture

Special Lecture

Local wisdom in the age of globalism

Terufumi Ohno
Director of Mie Prefectural Museum,
3060 Issinden-kozubeta, Tsu, 514-0061 Mie, Japan
e-mail:oonot03@pref.mie.jp

Abstract

People speak about globalism, which threatens existence of locals. However, the globe consists of mosaic of locals. Therefore, any local wisdom can not only help its community, but also can contribute in promoting other local communities. It is, therefore, of the foremost importance to dig out manifold local wisdom as well as to make platform where the local people bearing wisdom can meet together. Basing on my experience, I would like give some suggestions how we can make such platform.

―Profile―

Terufumi Ohno studied paleontology in Kyoto and Bonn. During his undergraduate and master course studies, he described a brachiopod fauna of the Early Devonian age from a Japanese locality. He then studied at Bonn University in Germany on a scholarship, where he made an experimental study on periodicities of growth line formation in bivalve mollusk shells.

Later he carried out several field works in Okinawa and Iriomote Islands in order to elucidate the origin of symbiosis between cockles and unicellular algae.

He became a member of the Kyoto University Museum in 1997 where put emphasis on motivating people's inquiry based learning. He actively developed learning programs for them and held many workshops. He was director of the museum between 2009 and 2015.

After he became director of Mie Prefectural Museum, he actively visited schools in Mie Prefecture, giving workshops for school pupils. He also tries to connect people interested in nurturing people's life-long learning.

Keynote Lecture

Keynote Lecture

P1-Akey

The Population Issues

・Akemi Morita

Department of Public Health and Occupational Medicine
Mie University Graduate School / Faculty of Medicine
e-mail: akemimo@doc.medic.mie-u.ac.jp

・**ABSTRACT**

Population issue is reviewed from the global or state's viewpoints.

The global human population has rapidly grown after the industrial revolution. According to the World Population Prospects, the world's population numbered nearly 7.6 billion as of mid-2017. Sixty % of the world's people live in Asia, 17 % in Africa, 10 % in Europe, and the remaining 14 % in America and Oceania. China and India remain the two most populous countries of the world. The world's population is projected to increase over the next 13 years, reaching 8.6 billion in 2030, and to increase further to 11.2 billion by 2100.

Japan's population problem is taken as an example for discussion at state level. Japan is expected to enter a long period of population decline. The total population will fall below 50 million by 2100, which is less than half of the present population. Japan is going to face the serious concerns of rapid aging and very low birth rate. The population of age 65 or older had 28 % of total population (35 million) as of mid-2017. On the other hand, the annual number of births in 2016 was 9.8 hundred thousand. It was first time ever since records began in 1899 that the number of births fell below 1 million. Japan's aging rate has progressed at an unprecedented speed compared to the rest the world. It is expected that populations will age rapidly throughout Asia in the future. Japan is the most advanced aging society in the world, therefore, Japanese strategies for population aging could become a model for resolution of the global population issue.

F1-Bkey

Natural Food Colorants: A Mini Review

• Eko Hari Purnomo[1*]

[1]Department of Food Science and Technology, Faculty of Agricultural Engineering and Technology, Bogor Agricultural University (IPB), Bogor 16680, Indonesia.
*e-mail: ekohari_p@yahoo.com

• **ABSTRACT**

Consumers are increasingly concerned about what is in their food which has led to a growing demand for food products made from natural sources and fewer additives. In addition, artificial colors are in a number of Asian markets being banned by local authorities. Synthetic food colorants were largely used, but have been progressively substituted by those obtained from natural origins. Numerous side effects and toxicity, at both medium and long-terms, allergic reactions, behavioral and neurocognitive effects have been related with their use. Otherwise, naturally-derived food colorants seem to provide high quality, efficiency and organoleptic properties, and also play a contributive role as health promoters. Natural food colorants revealed to be as much effective as those derived from chemical synthesis, with the subsequent benefits of: being more safe, providing health benefits besides conferring organoleptic features, exerting two or more benefits as food ingredients (in fact several food additives exerting colorant effects also act as antioxidants and even preservatives), and lastly contributing functional properties to food products. There are potential sources to provide natural food colorants. However, the recent developments still facing challenges and need technological improvements as well as market trends.

KEYWORDS: Natural food colorants, chemical stability, safety

Keynote Lecture

EG1-Ckey

Anaerobic Dry Fermentation for Solid Waste Management from Tourist Spots in Chiang Mai University

- Aunnop Wongrueng

Department of Faculty of Engineering, Chiang Mai University
239 Huay Kaew Road, Muang ,Chiang Mai 50200, THAILAND
E-mail: aunnop@eng.cmu.ac.th

- **ABSTRACT**

There are an increasing number of tourists visiting Chiang Mai University (CMU). It was found that the tourists were estimated to be around 700 person/day. This led to an increasing of solid waste in CMU. Objective of this study was to investigate the efficiency of anaerobic dry fermentation (ADF) on biogas production. Organic fraction of Solid waste from the tourist spots in CMU was used.

Two types of ADF reactors were built including a plug flow ADF and a percolation ADF. The obtained results of the plug flow ADF showed that the optimal organic loading rate was in a range of 1.5-2.5 kg VSS/m^3/d at a mixing rate of 10 rpm. In addition, the obtained results of the percolation ADF revealed that the optimal organic loading rate was 3.0 kg VSS/m^3/d.

EV1-Ckey

Education for Sustainable Development (ESD) and Regional Creation as the Most Environmentally Advanced Mie University

・Hye-Sook Park

Department of Faculty of Humanities, Law and Economics & Graduate School of Regional Innovation Studies, Mie University
*e-mail:park@human.mie-u.ac.jp

・ABSTRACT

Mie University has registered UNESCO ASPnet (UNESCO School) school for the first time as a university in Japan in August 2009. Collaboration with UNESCO promoting education for sustainable development (ESD), MEXT, Governments/Local Government, Universities around the world, mainly in the Asia - Pacific Region Mie University tries to promote global human resources who are rooted in Mie Community and pass through to the world. In Mie prefecture, Yokkaichi Air Pollution occurred in the 1960s due to air pollutants from the Yokkaichi Petrochemical Complex, which was responsible for the high economic growth of Japan, seriously damaged by human health damage, ecological destruction, etc..Mie University creates "Yokkaichi Studies" learned from the lessons from Yokkaichi Air Pollution making use of the pollution generation mechanism, impact analysis, environmental policy know-how, and takes advantage of it for promoting environmental human resources.

Mie University plays a role as a platform through collaboration with Enterprise- Citizens- Government- Academia, and has undertaken a partnership project of the United Nations Convention on Biological Diversity, Convention of Framework on the Climate Change, the UNESCO ESD World Conference, and the Kuwana Junior Summit. Mie University established “International Youth ESD Network (Secretariat; Mie University Regional ECO System Research Center, Executive Officer; Hye-Sook PARK).” as fulfilling he Social Responsibility of University (USR).

KEYWORDS: Education for Sustainable Development (ESD), Regional Creation, Most Environmentally Advanced Mie University, Yokkaichi Studies Learned from Yokkaichi Air Pollution, Environmental Consortium

Keynote Lecture

C1-Ekey

A Review on Children's Literature Translation in China in 21st Century: Status and Perspective

• FENG Ruizhen[1*],WANG Xinjuan[1]

[1*,2]School of Foreign Languages, Jiangsu University, Zhenjiang, 212013, China
*e-mail: zf825@163.com

• **ABSTRACT**

Chinese children's literature is a hybrid outcome between translated and indigenous literary works where translation has a vitally important role. However, there is a discrepancy between the ubiquity and perceived importance of translated children's literature, and scholarly research in the field. A search on HowNet, an online Chinese database from 2000 to 2016, reveals that research on the translation of children's literature in China remains ignored systematically by theorists, publishers and academic institutions involved in translation research and training. Recent studies available on translating for children focus more on general translation studies, individual translators, specific translation strategies and translation practice. Yet it is clear that some significant areas of research into the translation of children books still have to be investigated thoroughly.

KEYWORDS: children's literature translation, practice, studies, status and perspective

Abstract Theme: Population

P1-A1

The Fertility Desire and Its Influencing Factors of the Reproductive Family under the Two-child Policy

• Liu Qianqian[1*], Chen Haibo[2]

[1,2]School of Finance and Economics, Jiangsu University, No. 301 Xuefu Road, Zhenjiang, 212013, China

• **ABSTRACT**

The universal two-child policy is a latest adjustment of the family planning policy to solve the current problems about population. In order to figure out the willingness and the related factors that will influence the decisions of whether have a second child or not, this paper uses the method of network survey to investigate these families in the form of questionnaires. The results show that even under the new policy, the desire of raising another child is not as high as we expected. We score the factors that may affect such desire and calculate the average score of them. As a result, we find that main factors are not having enough time and energy, the lack of social security and welfare and stuff and recommend the government to provide convenient medical services and a compensatory fund in response

KEYWORDS: universal two-child policy, family planning policy, One-Way ANOVA

P1-A2

Terminahujan Community Development Corner (TCDC) for Improving The Productivity and Earnings of Women

• Laras Salsabila[1], Mahmudi Siwi[2]

[1,2]Dept. of Communication and Community Development Sciences, Bogor Agricultural University (IPB), IPB Darmaga Campus, Bogor, 16680, West Java, Indonesia

• **ABSTRACT**

Women generally have lower quality of life compared to men, particularly in developing countries such as Indonesia. Empowering women aimed to improve women's ability to make strategic life choices and thus improving their life quality. "Terminalhujan" is a non-profit organization initiated by a group of youth voluntary to increase the life quality of women through informal education and economic empowerment, particularly in Bogor area. Seminar or talk to show related to leadership, health issue, and family resource management was one of the main agenda of "Terminalhujan" to improve women's knowledge and awareness to those issues. Hands-on-training on developing economically valuable products was the other main agenda of "Terminalhujan" to improve women's skill and thus women can be more economic-independent. Ready to drink milk and handicrafts were examples of products produced by "Terminalhujan". "Teriminalhujan" has shown as a good initiative to improve women's life quality.

KEYWORDS:life quality, population, voluntary, women empowerment, youth

P1-A3

Exploration on Practice Mode of industrial Poverty Alleviation under the Background of Precise Poverty Alleviation － A Case Study of Zhanghu Town in Anhui Province

· Fengmei Qi[1*], Xiaoling Gao[1]

[1,2]Academic Affiliation, Shanghai Ocean University, Shanghai, 201306, China

· ABSTRACT

Based on the background of national precision poverty alleviation and supply side reform, this paper makes a field survey of seven administrative villages in Zhanghu Town,Wangjiang County, Anhui Province, and takes the local resource endowment as the basic material and takes the existing poverty alleviation model as the reference object Suitable for the region to implement the specific path of poverty alleviation: Firstly, tap the local development of aquaculture earthworm industry potential for the realization of precision poverty alleviation industry support; Secondly, use the model of "team and its research platform + cooperatives + farmers + companies or enterprises + 'chain threshold'" to integrate with the local livestock to achieve precise poverty depth, providing innovative drive; Thirdly, build a modern agricultural logistics and distribution system under the"Internet +" platform,for the realization of industrial poverty alleviation to provide intellectual protection. Finally, according to the conclusion, establish and promote the model of poverty alleviation suitable for local industries, further establish the mechanism of interest linking among universities, government, companies, cooperatives and poor farmers,Constructing the benign interaction between multiple subjects.

KEYWORDS: industry poverty alleviation; poverty alleviation model; benefit analysis; logistics and distribution

P1-A4

The Role of Retail in Formation and Maintenance of a Healthy Lifestyle

• Ivanova Elina[1*], Mazankova Tatiana[1]

[1]Khabarovsk State University of Economics and Law, 134, Tikhookeanskaya St., Khabarovsk, 680042, Russian Federation

• ABSTRACT

The article is about the definition of retail`s role as role which helps population to beginning and following the healthy lifestyle. Because of this we have studied level of population`s readiness to lead a healthy lifestyle. Also we have defined population`s knowledge about sports equipment and in the end of the article we have defined retail`s role as role which helps population to beginning and following the healthy lifestyle. Thus, we have found that the retail`s role is important in formation population`s healthy lifestyle.

KEYWORDS: Population, lifestyle, retail, sport, fitness

P2-A1

Antibiotic Overuse and Modern Diseases

· Wang Yongjie[1*], Xu Xiao[1]

[1]School of Medicine, Jiangsu University, 301, Xuefu road, Zhenjiang, 212013, China

· ABSTRACT

Since Penicillin G was firstly used for treating infections in 1940s, antibiotics have been taken to the stage that human struggled with bacteria-infectious diseases, and have reduced the mortality remarkably. However, in this fight between human and infections, the shadow under the victory banner also needs attention. After long-term and widespread use of antibiotics, new challenges turned out the friendly microbiota are killed beccause of the antibiotic overuse. It is reported that gut microbiota dysbiosis caused by antibiotic overuse has appeared as an emerging issue and associated with many modern diseases, such as obesity, which has become a major health issue that arouses people's concern in recent years, and a series of research often prove and try to explain this problem. Antibiotic overuses result from both medical industry and public. To check the public cognition, we conduct a 100-samples questionnaire survey in college students. The result reveals a deficiency of even most basic knowledge about antibiotics in even well-educated population, as well as a high percentage of over use history, which reminds us antibiotic overuse is a common widespread social issue that needs to arouse our concerns.

KEYWORDS: Antibiotic overuse, microbiota dysbiosis, obesity, modern diseases

P2-A2

China's Aging of Population

• Liu Bingxin

Guangxi University, No.100 Daxue dong Rd, Nanning, 530000, China

• ABSTRACT

Population aging is not only a major social problem in the world today, but also a strategic issue related to economy, politics, social development and population planning. Since 1972, Japan has taken positive measures to deal with he aging of the population, and it is meaningful for China and Thailand to solve this problem. Although China and Japan have similarities in many places as close neighbors, as Japan and Thailand are both in Asia, after all these three countries have great differences in social system, economic and social development and cultural customs. Therefore, in the study of the population aging situation, in addition to the analysis of the similarities, more important is to explore its differences, and in accordance with the national conditions in-depth reflection of the national population aging countermeasures.

KEYWORDS: China's aging of population, China's endowment pattern, China's social security, China's urban and rural area

P2-A3

Potential Factors In The Fight Against Alzheimer's Disease

• Maierhaba Maimaiti, Xueyong Qi

School of Pharmacology, Jiangsu University, No. 301, Xuefu Road, Zhenjiang, 212000, China

• ABSTRACT

The global aging represents a triumph of social and economic advances, however, it presents tremendous challenges for every country in the world. The population aging increases the risks of disability worldwide caused by age-related chronic diseases, especially Alzheimer's disease (AD). Associated with dementia, AD has dramatic effects on the older people and imposes the greatest burden on global health. Therefore, it's of emerging importance to thoroughly understand the mechanisms underlying AD and discover the effective treatment. Herein, based on investigations in hospital and literature review, the favorite clinical treatments of AD were summarized, followed by various potential applications of ethnodrugs in AD therapy. It's revealed that the occurrence of AD may contribute to a variety of factors, indicating a confused pathogenesis of AD. Besides, several habits and lifestyles have the ability to affect the incidence of AD. To address this issue, two drugs developed from Uygur medicine have shown potential therapeutic effects on AD therapy.

KEYWORDS: Population aging; Alzheimer's Disease (AD); Drug Treatment for AD; Uygur Medicine; Uygur's Lifestyle.

P2-A4

Look retrieving time reduction in a school library by motion and time study technique.

• Chalisa Paiyarom[1*], Wimalin Laosiritaworn [1]

[1]Department of Industrial Engineering, Faculty of Engineering ,Chiang Mai University, Chiang Mai 50200 ,Thailand

• ABSTRACT

Library is an important source of information and knowledge that are essential to the development of the quality of the population and to the development of the country. The aim of this research is to make the process of book retrieving in school library become easier so that more students will come and visit the library. Fish bone diagram was used to identify the cause of the problems. Motion and time techniques including flow process chart and time study were used to systematically record and analyze book retrieving procedure. Then the procedure is simplified by redesigning book classification number to be more systematic and detailed. Book retrieving times before and after improvement were compared. The results showed that the proposed method can decrease time to find books by 75.39%.

KEYWORDS: Motion and time study, fish bone diagram, school library, population

P3-A1

Education and the Sustainable Development Strategy

· Yu Xiaoyan[1*], Lv Yuyong[1]

[1]School of Foreign Language, Jiangsu University, Zhenjiang, 212013, China

· **ABSTRACT**

Nowadays, sustainable development has become a popular trend for the whole world and a successful economic development pattern which has been accepted by more and more countries around the world. Generally speaking, it calls for five kinds of development, the development of society, economy, population, resources and environment. In accordance with this idea, this current paper elaborates the important role of education in these five aspects respectively. Besides, considering the paramount significance of education in the process of sustainable development, the paper also illustrates the sustainable development of education itself. Only when the education career makes huge progress, can the sustainable development obtain the solid foundation, and then achieve its long-term development.

KEYWORDS: Sustainable development, education

P3-A2

Planning and Design of Facilities for All Generations of People to Become Healthier

・Kyohei Yamaguchi[1*], Akikazu Kato, Ph.D.[1]

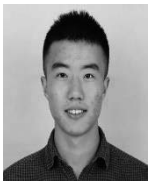
[1]Department of Architecture, School of Engineering, Mie University, Kurimamachiya-cho, Tsu city, Mie

・ABSTRACT

As the total population of Japan decreases, it is estimated that the percentage of the population that is elderly will be up to 40% by 2060. In the course of the development of this aged society, many people are increasingly interested to stay healthy through sports. Not only playing sports, but watching and supporting sports are recognized as important factors to staying healthy. Moreover, the act of watching sports is expected to enhance exercise capacity and cognition ability of the elderly. In this project it is intended that all generations become healthy.
A facility for watching sports and doing medical support is planned. Arenas in Japan are mainly used for playing sports. However, when used for watching so many dead spaces arise. In the project an environment to watch sports is realized by designing a cone shaped arena where it is easier to watch sport games. In addition, in modern sports medicine, the development of regenerative medicine has led to faster recovery and earlier return to practice for injured sport players. In the project, the environment that supports sports is provided by designing as such the medical facility for examination, treatment, care and rehabilitation. Altogether this project increases the interest of playing sports so that all generation, not only aged persons but also young people, will become healthy.

KEYWORDS: PBL facility design, healthy, arena, clinic

P3-A3



Correlation analysis of the population and energy——the coexistence of promotion and inhibition

• Lingxiao Wang[1*], Mo Zhang[1] and Yufang Chen[2]

[1]School of Energy and Power Engineering, Jiangsu University, No. 301 Xuefu Road, Zhenjiang City, 212000, China

• ABSTRACT

In ancient times people found fire and thus open an era which takes firewood as the main energy source, secondarily the coal was discovered and utilized at the first industrial revolution, after that the petroleum had a great development in the second industrial revolution. Until modern times the exploration of a variety of new types of environmental protection energy have been in progress such as gas and solar energy. The energy innovation has brought about an exponential increase of population each time, meanwhile, population growth brings greater energy demand. Hence how to maintain a balanced relation between energy production-consumption and population is of great importance. This paper highlights the relations between China's energy development and population growth, after investigating and analyzing the direct relation between energy development and population growth and the indirect effects of the economy on population and energy, concluding that both the relations of promotion and restriction exist between energy and population. And offer reasonable proposals from aspects of international energy cooperation, industrial structure optimization, exploitation and utilization of energy resource and population structure optimization.

KEYWORDS: Energy; population; economy

P3-A4

The Influence of the Russian Birth-rate on the Economic Development of the Country by 2035

• Aianitova Saiyyna[1*], Shatokhina Zoya[1]

[1]Khabarovsk State University of Economics and Law, 134, Tikhookeanskaya St., Khabarovsk, 680042, Russian Federation

• ABSTRACT

This article is devoted to the problem of demography in the Russian Federation and its effect on its economy and education. Here you can find a comparative analysis of the birth rate since 1950, the consequences of growth crises, population size and dependency ratio up to 2035. This research contains the data provided by the Federal state statistic service and findings of other Russian scientists.

KEYWORDS: Birth-rate, natural increase, natural decline, demographic crisis, migrant workers

Abstract Theme: Population

P3-A5

Proliferation Inhibition and Apoptosis Induction by 3,3′ -diindolylmethane through Ca2+-mediated p38 MAPK Activation in Hepatocellular Carcinoma Cells

· Yuanyue Jiang[1*], Rongzhu Lu[1]

[1]Department of Preventive Medicine and Public Health Laboratory Sciences, Jiangsu University School of Medicine, Zhenjiang, Jiangsu 212013, China,

· ABSTRACT

3,3′ -diindolylmethane (DIM), a polymerized compound from indole-3-carbinol (I3C) extracted Brassica species of cruciferous vegetables, has antitumor effects, but the exact underlying mechanisms remain unclear. Herein, we evaluate the potential mechanisms of proliferation inhibition and apoptosis induction of DIM in the SMMC-7721 and HepG2 liver cancer cell lines. Proliferation of hepatoma cells were measured with CCK-8 and clonogenic formation assay. DIM reduced the viability of hepatoma cells in a concentration- and time-dependent manner. Furthermore, this proliferation inhibition is paralleled to a sustained activation of phospho-p38 mitogen-activated protein kinase (MAPK) phosphorylation. Treatment with SB203580, a p38 MAPK inhibitor, attenuated the proliferation inhibition in hepatoma cells. Additionally, DIM triggered the occurrence of apoptosis by flow cytometric analysis and Hoechst 33342 dye, which is consistent with the up-regulation of cleaved-caspase3 activity. However, the pretreatment of SB203580 notably invert the apoptosis induced by DIM, indicating that DIM-induced apoptosis is dependent upon phospho-p38 activity. These findings demonstrate that DIM exerts proliferation inhibition and induction of apoptosis via activation of the p38 MAPK signaling pathway in liver cancer cells.

KEYWORDS:3,3′ -diindolylmethane(DIM); p38 mitogen-activated protein kinase(MAPK); Proliferation inhibition; Apoptosis induction; Hepatocellular carcinoma cells

Abstract Theme: Population

PC-A1

Fall detection system for elderly

・Natnicha Thonsungnoen[1*], Doldet Tantraviwat[1]

[1]Department of Electrical Engineering, Faculty of Engineering, Chiang Mai University,
Chiang Mai 50200, Thailand

・ABSTRACT

Fall is often regarded as one of the most common home accidents for elderly people and it can cause serious injuries, fear, hospitalization and even death. The bathroom is one area of concerns for elderly because of its slippery surface and privacy nature, which would increase the risk of falling without being noticed. This study therefore proposes fall detection system using Microsoft Kinect sensors and Microsoft SDK to construct skeleton diagram. The generated user skeleton movement is then tracked in order to determine whether or not fall accidents happen. In addition, we have developed an algorithm for fall detection based on the hip height, which is subtracted with adjustable threshold, and the floor. From the experimental results, the system accuracy, sensitivity and specificity are determined as 79.16%, 68.75% and 100%, respectively. These results demonstrated that our simple algorithm can detect most of fall. It is believed that by introducing an additional parameter, such as a velocity of joint movement, the system can be improved.

KEYWORDS:Fall detection, event classification, Kinect sensor

PC-A2

Suffering from Text Neck: A Growing Problem For Smartphone Users

· Keshav Khera Xiao Xu

School of Medicine, Jiangsu University, China

· **ABSTRACT**

With the increasing prevalence of smartphones, people now spend more and more time on their tiny screens. This new living habit enables humans to get information in real time, but also brings a lot of problems. A forward-head posture, also referred to as text-neck, is one of them. It is reported that text-neck causes both physical and psychological troubles. A research revealed the increasing stress on the neck when moving the head forward, the weight seen by the spine dramatically increases when flexing the head forward at varying degrees, going from ~5kg in a neutral position to 27kg at a 60-degree tilt - often seen when using smartphones for extended periods. Research findings reflected that people who spend long hours on their smartphones often slouch and tilt their neck forward for extended periods. “NSP” (neck and shoulder pain) and “LBP” (low back pain) happen frequently, and even especially serious in children and teenagers, text-neck can cause stiff and chronically painful neck, headaches, and long term damage to the musculoskeletal framework of the neck. There are also many psychological hazards of text-neck such as decreased energy, predisposition to depressive thoughts, decreased arousal and lowered self-esteem. A survey conducted to establish link between smartphone use and neck pain found interesting results. The findings suggested that people’s usage of their smartphones has increased year-on-year, with a majority of users checking their phones between 20-50 times daily, and more than two-thirds of users spending more than 3 hours/day on their phones. About 20% of users reported frequent neck pains when using their smartphones for an extended period, whereas 40% reported them to be occasional. The result of survey reminds us how deeply young

people depend on smartphone, and how cognizant we should be to promote people's concern about the potential harms caused by this new trend in our lives.

KEYWORDS: text neck, posture, cervical stress

Abstract Theme: Food

Abstract Theme: Food

F1-B1

Effect of barley flour on the physicochemical and sensory properties of yoghurt

• Xinjuan Sun[1*], Ying Dong[1]

[1]School of Food and Biological Engineering, Jiangsu University, Zhenjiang, 212013, China

• ABSTRACT

Thickener showed significant potential in improvement of texture and taste of yoghurt. Previous research has clarified that partial substitution of thickener with dietary fiber or β-glucan extracted from barley can improve the texture of yoghurt, but it has not demonstrated the effect of barley flour (BF) on the quality of yoghurt. The objective of this study was to evaluate the effect of BF on the chemical, microstructural, rheological and sensory properties of yoghurt. Five batches of yoghurt added with 10, 20, 30, 40 g L-1 BF and 20 g L-1 whey protein concentrate (WPC) were prepared, and the latter batch added with no BF or WPC served as a control. All the BF treatment increased viscosity, water holding capacity (WHC) and the amount of lactic acid bacteria in yoghurt during storage, among which 30 g L-1 and 40 g L-1 showed better effects. Barley starch grain and protein tended to cover the casein micelles reducing the free end, and exhibited the greatest effects in enhancing the strength of gel network in BF treatment. The findings demonstrate that BF significantly improves the chemical, microstructural, rheological and sensory properties of yoghurt.

KEYWORDS: Barley flour, yoghurt, physicochemical properties, rheology, microstructure

F1-B2

Application of Calcium and Boron Fertilizers to Reduce Yellow Sap in Mangosteen (*Garcinia mangostana* L.)

• Dhika Prita Hapsari[1*], Roedhy Poerwanto[1]

[1]Department of Agronomy and Horticulture, Faculty of Agriculture, Bogor Agricultural University (IPB), IPB Darmaga Campus, Bogor, 16680, West Java, Indonesia

• ABSTRACT

Known as the Queen of Tropical Fruit, mangosteen is one of the most important fruit in Indonesia. However, the yellow sap occurrence on mangosteen decreases the mangosteen quality. Leaking sap from the broken cell wall is the main cause of yellow sap occurrence in mangosteen. Calcium (Ca) and boron (B) are two plant nutrients controlling the cell wall integrity, and thus Ca and B fertilization is expected to reduce the yellow sap occurrence in mangosteen. In this study the effect of Ca and B fertilization on yellow sap occurrence was evaluated. Three independent experiments were conducted in three locations: Cigudeg, Citeureup, and Sukabumi from November 2014 to March 2015. Each experiment was arranged in a randomized complete block design with 4 replications. Fertilizer combinations used were (in kg Ca/ tree and g B/ tree): without fertilizer (P0), 1 Ca + 0.05 B (P1), 1 Ca + 1.55 B (P2), 1.5 Ca + 0.05 B (P3), and 1.5 Ca + 1.55 B (P4). Our results in the three locations showed that fertilization with the rate of 1.5 kg Ca / tree + 1.55 g B / tree significantly reduced the yellow sap occurrence in mangosteen without changing the physical and chemical quality of the fruit.

KEYWORDS:cell wall, fertilization, fruit quality, mineral nutrient

Abstract Theme: Food

F1-B3

The Muscle Histology and Protein Separation Mechanism of Foot Muscle from Ruditapes philippinarum

• Long Zhang[1], JunrongLiu[2], Xichang Wang[1*]

[1]College of Food Science & Technology, Shanghai Ocean University, Shanghai 201306, China [2]College of Food Science and Engineering, Dalian Ocean University, Dalian 116023, China

• ABSTRACT

In this study, the foot muscle morphology, myofibrillar protein (Mf) distribution and the separation profiles of myosin and paramyosin were analyzed with emphasis on myosin and paramyosin on smooth muscle of *Ruditapes philippinarum.* Around the food material properties, regarding the muscle histology as the starting point, we conducted this in-depth investigation to provide a scientific reference for the further study on the protein properties of edible parts from economic shellfish. The results were indicated that (1) The muscle layers arranged in three dimensional network could be divided into transverse, longitudinal and circular fibers. The proportion of myosin and paramyosin in Mf is about 15% and 30%, respectively. (2) The solubility of Mf is depended on ionic strength and ATP. The higher values of Ca2+-ATPase activity are present in the low ionic strength then 0.1M is determined. The optimal conditions of dissociation and precipitation of myosin is 5-10mM ATP buffer solution to dissolve and 45-60% saturation A.S. to precipitate, as well as, paramyosin is 10-20mM ATP buffer solution to dissolve and 30-40% saturation A.S. to precipitate, respectively.

KEYWORDS: *Ruditapes philippinarum,* smooth muscle, myosin, paramyosin, separation mechanism

F1-B4

Preparetion of Hexagonal Mesoporous Silica (HMS) and Natural Rubber/ Hexagonal Mesoporous Silica (NR/HMS) for Adsorption Polyphenols from Green Tea

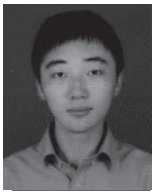
• Kamolwan Jermjun[1] and Sakdinun Nuntang[1*]

[1]Department of Industrial Chemistry and Textile Technology, Faculty of Science, Maejo University, Chiang Mai, 50290, Thailand

• ABSTRACT

The main objectives of this study are to prepare hexagonal mesoporous silica (HMS) and nanocomposite natural rubber/ hexagonal mesoporous silica (NR/HMS) as adsorbents, which have high porosity and hydrophobicity, via in situ sol-gel technique in the presence of tetraethylorthosilicate (TEOS) as a silica precursor and tetrahydrofuran (THF) as co-solvent. Effects of type of primary amine templates on mesostructure, pore size and hydrophobicity of the resulting materials are investigated. The selective adsorption of tea polyphenols and caffeine from aqueous solution onto the NR/HMS composites is studied under batch conditions. The NR/HMS nanocomposite exhibited a higher adsorption capacity of tea polyphenol than pure silica HMSs. In contrary, the HMSs revealed a higher adsorption capacity of caffeine than the nanocomposites.

KEYWORDS: Adsorption, tea polyphenols, caffeine, hexagonal mesoporous silica, natural rubber



F2-B1

The Impact of Outward FDI on Firm's Productivity over Food Industry: Evidences from China

• CHEN Ting-gui[1], Lin Gan[2*]

[1,2]College of economics and management, Shanghai Ocean University, Shanghai, 201306, China

• **ABSTRACT**

Using firm-level panel data from Chinese manufacturing firms over the period 2005-2013, this paper studies the impact of outward foreign direct investment (OFDI) on the productivity of parent firms over food industry. Conducting propensity score matching (PSM) and differences-in-differences (DID) analysis, the results show that: (1) The food firm's OFDI significantly improves parent firm's productivity (known as the OFDI productivity-enhancing effect), but this promotion only exists in the short term. (2) The OFDI Productivity-enhancing effect of food firms differs remarkably as the sub-sectors, regions and ownership of firms vary. (3) The food firm's OFDI in "non-tax havens" and high-income countries has significantly stronger impact on parent firm's productivity. (4) FDI, R&D and export can effectively strengthen the OFDI productivity-enhancing effect of food firms.

KEYWORDS: Chinese manufacturing, Food industry, Outward foreign direct investment, Productivity

F2-B2

Increasing Yield of Cauliflower through Fertilizer Application by Fertigation

• Majesta Esa Sofian[1*], Anas D. Susila[1]

[1]Dept. of Agronomy and Horticulture, Faculty of Agriculture, Bogor Agricultural University (IPB), IPB Darmaga Campus, Bogor, 16680, West Java, Indonesia

• ABSTRACT

Cauliflower is an important vegetable crop as it contains high fiber, potassium, carotene and vitamin C. However, the production and productivity of cauliflower in Indonesia could not meet the cauliflower demand, resulting in high import of cauliflower in the country. Bogor Agricultural University has developed potential lowland cauliflower genotypes, X(BOB017) and Y(BOB020) to increase the productivity of cauliflower. In this study, we evaluated three fertigation methods on the growth, yield and economic return of the two lowland cauliflower genotypes. The experiment was arranged in a split plot design with four replications. The main plot was two cauliflower genotypes, X(BOB017) and Y(BOB020). The subplot was three fertilizer application methods: drip irrigation, soil drench and drilled. The results showed that Y(BOB020) genotype had earlier harvest time (60 days) compared to X(BOB017) genotype (71 days). The soil drench fertigation method showed the highest curd weight (351.64 g), curd diameter (14.65 cm) and yield (12.39 t ha-1) compared to the other two fertigation methods. Planting X(BOB017) genotype and fertilized it with soil drench method resulted in the highest B/C ratio (3.32). The study inferred that growing cauliflower under soil drench leads to optimum growth of cauliflower, attainment of high yield and net income.

KEYWORDS:drip irrigation, fertigation, yield, economic return, lowland cauliflower

Abstract Theme: Food

F2-B3

Bioactive extraction from banana peel (Musa sapientum Linn.) for antioxidant agent

- Peewara Kanta[1], Jaray Tunkham[1], Rameshprabu Ramaraj[1] and Yuwalee Unpaprom[2*]

[1]Program in Biotechnology, Faculty of Science, Maejo University, Chiang Mai 50290, Thailand.
[2]School of Renewable Energy, Maejo University, Sansai, Chiang Mai 50290, Thailand.

• ABSTRACT

This study investigated the extraction of bioactive compounds from ripe and unripe banana peel (Musa sapientum Linn.). In this experiment, various solvents namely distilled water, 95% EtOH, 70% EtOH and 50% EtOH were used for extraction at 30°C and 50°C for 2 hours. This study aimed to determine the total phenolic compounds by Folin-Ciocalteu colorimetric method in which OD absorbance was measured at 765 nm. The results indicated that the stage of ripeness, temperature and solvents affected the amount of extracted phenolic compound. Ripe banana peel total phenolic content was found higher than unripe stage. Additionally, high total phenolic content was also obtained at high temperature indicating the significant effect of temperature on extraction. On the other hand, the best extraction solvent was 95% EtOH. The highest total phenolic content was 226.09 μg GAE/100g DW at 50°C in ripe peel extracted by 95% EtOH. These results conclude that banana peels contain essential bioactive ingredients that can be used as antioxidant.

KEYWORDS: Banana peel, Bioactive, Total phenolic compound, Antioxidants.

F2-B4

Effectiveness of Sargassum Meal in Diets on Growth Performance of Male and Female Nile Tilapia (*Oreochromis Niloticus*)

• Fittrie Meyllianawaty Pratiwy[1*], Jun Kohbara[1] and AB. Susanto[2]

[1]Laboratory of Fish Physiology, Faculty of Bioresources, Mie University, Tsu 514-8507, Japan [2]Faculty of Fisheries and Marine Science, Diponegoro University, Semarang, 50275, Indonesia

• ABSTRACT

The present work was carried out to assess the nutritional effects of Sargassum Meal (SM) on the growth performance of male and female Nile tilapia Oreochromis niloticus. Three different iso-proteinous diets were prepared and fed to replicate trials of individual males, individual females, and mixed sex tilapia. Fish were fed 32% protein diets with SM of 0% (Test 1), 4% (Test 2), and 8% (Test 3). The results showed that the highest values of feed efficiency (FE) and specific growth rate (SGR) in each treatment were observed in T3. There were significant differences ($p < 0.05$) of FE and SGR for the individual male and mixed sex experiment trials between T1 and T3, however, there were no significant differences ($p > 0.05$) for individual female experiment trials. The results of the length-weight relationship showed that there were significant differences ($P<0.05$) among treatments (individual males and individual females) according to condition factor. The experimental SM diets showed a positive allometric ($b>3$) exponential growth in individual male, while individual female trials showed a negative allometric ($b<3$) growth pattern at each level of SM inclusion. It is concluded that 8% SM produced the best results for growth performance in Nile tilapia.

KEYWORDS: Growth performance, body composition, Nile tilapia, *Sargassum*

Abstract Theme: Food

F3-BL

Development of Foxtail Millet as Functional Food for Abiotic Stresses-Affected Area in Indonesia

• Sintho Wahyuning Ardie[1*], Nurul Khumaida[1]

[1]Department of Agronomy and Horticulture, Faculty of Agriculture, Bogor Agricultural University (IPB), IPB Darmaga Campus, Bogor, 16680, West Java, Indonesia
*e-mail: sintho_wa@apps.ipb.ac.id

• ABSTRACT

Foxtail millet (Setaria italica (L.) Beauv) is one of neglected cereals grown for its nutritious grain and its relative tolerance to abiotic stresses. Foxtail millet bears promising role in enhancing nutritional and food security, particularly in the areas where abiotic stress such as drought and salinity limit the productivity of other cereal crops. This cereal is potentially developed as functional food since it has a low glycemic index, it is high in protein, dietary fiber and minerals, and it contains comparable antioxidants. Developing foxtail millet variety with better tolerance to abiotic stresses, particularly drought and salinity, and with superior nutritional value should be the target of foxtail millet breeding program. This review presents studies on foxtail millet in Bogor Agricultural University, focusing on germplasms exploration, characterization for agronomic traits, physiological studies on tolerance mechanisms to drought/ salinity and the initial stage of molecular marker development for drought/ salinity tolerance in foxtail millet. Challenges and strategies in achieving the breeding objective are discussed in this article.

KEYWORDS: Abiotic stresses, cereal, plant breeding, Setaria italica L. Beauv., underutilized crops

F3-B1

Coping with Impacts of Climate Change and Energy on Asian Food Security within the Sustainable Development Goals of UN

· Hu Yanglin[1*]

[1]Guangxi University, No.100 Daxue Road, Nanning, 530004, P.R. China

· ABSTRACT

In 2015, United Nations (UN) highlighted the 17 Sustainable Development Goals that aim to improve people's living conditions by the year of 2030. Goal 2 -- Zero Hunger -- pledges to end hunger, achieve food security, improve nutrition and promote sustainable agriculture. The subjects of this paper are discussing the efficient measures coping with impacts of climate change and energy on Asian food security, simultaneously, taking Zero Hunger as a cutting point and connecting it with other Sustainable Development Goals, to realize the linkage development on the road of sustainable development. The objectives of this paper are summarizing the views and experiences of the United Nations Food and Agriculture Organization (FAO), and putting forward proposals of how to promote Climate-Smart Agriculture (CSA), develop Energy-Smart Food (ESF) and strengthen South-South Cooperation and Triangular Cooperation. Eventually, drawing a conclusion that there needs to strengthen South-South Cooperation and Triangular Cooperation to create enabling conditions for the implementation of CSA and ESF.

KEYWORDS: Sustainable Development Goals, Sustainable Food and Agriculture, Climate-Smart Agriculture, Energy-Smart Food, South-South Cooperation

Abstract Theme: Food

F3-B2

Smart swine feeding system

• Ponwimon Kaewkun[*1] and Choncharoen Sawangrat [1]

[1]Department of Industrial Engineering, Faculty of Engineering, Chiang Mai University, Thailand 50200

• ABSTRACT

Recently, our world is going into the era of technology. Technology is everywhere in the world, like agriculture and various industries. But, researcher still sees that some area in Chiang Mai have not fully made use of technology such as swine farm. Some swine farms are still non-standard. The commonest problem most common problem of swine farms in Chiang Mai is method to feed swine. There is too much employment, and it must be spent excessively. Researcher has designed a way to make method to feed swine in the modern way and save a time and money. The scope of this project is research in medium and large farms in Chiang Mai because it requires a lot of investment.

KEYWORDS:Swine, Pig Tech, Swine Innovation

F3-B3

Product Development of Sweet Potato (*Ipomoea batatas* L.) Cookies, "Coobie", for Diabetes Mellitus Type 2

• Sentanah Limmase[1], Ignatia Herti1 and Aji Hermawan[1]

[1]Department of Food Science and Technology, Faculty of Agricultural Engineering and Technology, Bogor Agricultural University (IPB), Bogor 16680, West Java, Indonesia

• ABSTRACT

Nowadays, diabetes mellitus is a major cause of death in several countries. One way to prevent type 2 diabetes mellitus (DM) is by controlling the glycemic index (GI) of food. People with DM often having a hard time maintain a healthy lifestyle because of difficulty in finding proper food. Sweet potato is one of carbohydrate sources with low GI, high energy, and high fiber. This research aimed to develop a healthy snack from sweet potato, "Coobie", for people with DM. Our preliminary research showed that diabetic people need snacks between meals. Formulation of "Coobie" (sweet potato cookie) was made based on the preliminary research. Blanching steam method was used to prepare the sweet potato flour to obtain the desirable properties. Low temperature and longer time in the baking process is important to keep the GI low. The physicochemical analysis showed that "Coobie" contained 3.78% moisture, 0.13% ash, 3.47% protein, 60.56% fat, and 60.56% carbohydrates. "Coobie" contained 181.5 kcal/ 100 g, with 44% starch digestibility and GI of 35±12. Our results implies the potential of "Coobie" as healthy snacks for DM people considering the slow digestibility, high fiber and low GI characteristics.

KEYWORDS: Diabetes type 2, sweet potato, cookie, low GI

Abstract Theme: Food

F3-B4

The metabolomic and proteomic activity of *Shewanella putrefaciens* at different temperatures

- Cheng Ying, Xie Jing, Qian Yun-fang*

Shanghai Engineering Research Center of Aquatic Product Processing & Preservation, Shanghai 201306, PR China

- **ABSTRACT**

The metabolomic and proteomic activity of *Shewanella putrefaciens* mode strains and wild strains cultured at different temperatures (30 °C, 10 °C, and 4 °C) was studied. The strains displayed rapid growth in sub-optimal conditions (10 °C and 4 °C). The accumulation of total volatile basic nitrogen (TVB-N), putrescine, histamine and cadaverine illustrate that *S. putrefaciens* were able to increase the extracellular protease activity to decarboxylate all kinds of protein at 10 °C and 4 °C. We discovered that at 10 °C the extracellular protease activity was higher than under 4 and 30 °C.

KEYWORDS: *Shewanella putrefaciens,* extracellular protease, putrefaciens, histamine, cadaverine

F4-B1

Study on Organic Thermal Insulator available for Foods and Beverages

• Sittichai Wongpia[1*] and Choncharoen Sawangrat[1]

[1]Department of Industrial Engineering, Faculty of Engineering, Chiang Mai University, Thailand 50200

• ABSTRACT

In Thailand in summer season the weather is quite hot and has a higher temperature at noon. It can cause many problems in whole day. One of the most common problems is rotten foods, also beverages will become rapidly warm. The farmer and people normally work at outdoor carrying with their wrapped food. Most of them have a problem due to these rotten foods. Therefore, this paper shows one of the possibilities of utilizing the organic material how it can reduce rotten foods and keep the temperature of beverages cold. The objective of this study is to investigate organic materials how they can produce to heat insulator for reducing rotten foods and keeping temperature of cold beverages. The insulator will be made from rice husk. The method used in this study will be to observe and pursue result of changing temperature. For measuring temperature, the different water temperatures are used such as 5, 60 and 80 degree Celsius per one bottle, and measured by thermometer. The period of the study will be twelve hours and measure water every hour. The scope of this study is to examine the efficiency of rice husk to keep a temperature and to be insulator for reducing rotten foods, beverage can and bottles.

KEYWORDS: Rotten, Insulator, Foods, Beverages, Rice Husk

F4-B2

Formulation of High Protein Rice Analog Made of Cassava, Maize Starch, and Soybean

• Karimah Khairunnisa[1*], Slamet Budijanto[1] and Azis Boing Sitanggang[1]

[1]Department of Food Science and Technology, Bogor Agricultural University (IPB), IPB Darmaga Campus, Bogor, 16680, West Java, Indonesia

• ABSTRACT

High dependency on paddy-rice as staple food has continuously become a food security problem in Indonesia. IPB has innovated rice analog (RA), a non-paddy rice which is expected to reduce the paddy-rice dependency. However, low protein content is the main challenge of the existing commercial corn-based RA. Hence, soybean addition is expected to increase the protein content of RA. This research was aimed to obtain the best formula of high protein RA made of cassava, maize starch, and soybean. Completely randomized factorial design was used, and physicochemical analysis and hedonic test were performed. High protein RA was produced using cooking-twin screw extruder at 95o C. The most desirable formula consisted of 60% cassava, 20% maize starch, and 20% soybean with overall hedonic score of 5.1 and 4.4, for uncooked and cooked RA respectively. The selected formula contained 83.39% of carbohydrate, 4.36±0.09% of fat, 7.74±0.03% of protein, 1.40±0.03% of ash, and 3.11±0.02% of moisture in dry basis. The average mass of the RA was 0.0131 g/grain with bright color (lightness/L score of 67.22). The cooking time of the RA is only 2 minutes and 50 seconds, which is considered shorter than the average cooking time of polished rice (i.e.11 minutes).

KEYWORDS: rice analog, food diversification, formulation, high protein, soybean

F4-B3

Effect of Feeding Frequency and Period in Temporary Immersion System on Microtuberization of Potato

• Aekkapong Wongket and Paweena Pumisutapon*

Program in Biotechnology, Faculty of Science, Maejo University, Chiang Mai 50290, Thailand

• ABSTRACT

Potato (*Solanum tuberosum* L.) is one of the most economically important crop plants in Thailand. This research aimed to study the effect of feeding conditions of liquid medium in temporary immersion system (TIS) on potato microtuber formation in vitro. Initially, single-node explants of potato cv. 'Atlantic' plantlets were grown in the twin-flask TIS for 3 weeks to produce shoots. After that, they were fed with liquid MS medium containing 90 g L-1 sucrose using four different feeding conditions: feeding every 3 or 12 h for 2 or 20 min each. Control plants were shoots grown on solid medium. All plants were maintained under the dark for 3 weeks to investigate microtuber formation. Results showed that feeding liquid medium every 12 h for 2 min each was the best. This feeding condition gave the highest percentage of microtuberization and the highest number of microtubers per shoot at 90 % and 1.93, respectively. The highest percentages of microtubers weight between 0.2-0.49 and 0.5-0.99 g (43.72 and 28.31 %, respectively) were obtained by this feeding condition as well. Obviously, all shoots grown in TIS showed better results compared to control. The shoots grown on semi-solid medium showed rather low percentage of microtuber formation at 20 % and produced only 1 microtuber per shoot which was 100 % very small microtuber (< 0.2 g).

KEYWORDS: potato, in vitro tuberization, temporary immersion system, feeding conditions

Abstract Theme: Food

F4-B4

Impact on Income Distribution of the Food Supply and Demand Network Traceability System

- Liu Naimeng[1*], He Jing[2]

[1,2]Shanghai Ocean University, No.999, HuCheng Ring Road, Shanghai, 201306, China

• ABSTRACT

The paper mainly studies on the traceability system of food supply and demand network. Firstly, it discusses under what circumstances can supplier groups and retailer groups in the food supply and demand network both reach the satisfactory income status, eliciting the necessity of the incentive mechanism. Sequentially, it studies the effect of income distribution coefficient on the profit of supplier groups and retailer groups by using principal-agent theory. The result indicates that the smaller the coefficient of the revenue share of the seller is, the more beneficial to promoting profit, and also the more can enhance the passion to participate in the construction of traceability system, thereby diminishing the risk of food safety.

KEYWORDS: food supply and demand network traceability system; Incentive mechanism; distribution of income

F5-BL

Synergistic Effect of Functional Food Ingredients in Enriched Foods

• Zemliak Kirill[1*], Zhebo Anna[1] and Aleshkov Alexey[1]

[1]Khabarovsk State University of Economics and Law, 134, Tikhookeanskaya St., Khabarovsk, 680042, Russian Federation

• ABSTRACT

Today, a large list of food ingredients of various activity is used to create food products. This allows to give them original organoleptic properties, determined functional and technological characteristics and therapeutic-prophylactic effect. At the same time, the effect of the combined interaction of food ingredients with each other and with other components of the product is not taken into account at all, and their disorderly joint use can lead to deterioration of quality and nutritional value of the finished product.

The aim of the article was to investigate one of the types of interaction of food ingredients – synergistic (summation of effects or exceeding of simple addition of effects from the action of each of the components) – in enriched products. Meat, dairy and fat products included in the daily diet of man were chosen as the objects of research, and standardized and generally accepted methods for determination of organoleptic and physico-chemical quality indicators were used as methods.

The obtained data on the mechanism and results of the synergistic interaction of various functional food ingredients can be used in the development of enriched foods to improve their organoleptic, functional-technological and physiological properties, reduce the content of food additives, etc.

KEYWORDS: Synergistic effect, functional foods, functional food ingredients, enriched foods, lactulose

F5-B1

Analysis on the Effectiveness of the Combination of Food Supply and Demand Network and Traceability of aquatic products

· Weixiang Liu[1*], Jing He[1]

[1,2]Academic Affiliation, Shanghai Ocean University, Shanghai, 201306, China

· ABSTRACT

This paper analyzes the effectiveness of food supply and demand network(SDN) and aquatic product safety traceability in information disclosure, externalities, economic benefits. The study shows that SDN management model for aquatic product safety traceability makes enterprises to have more motivation to reveal information, consumers get more information so that the information asymmetry between producers and consumers can effectively alleviate , which is conducive to improve the safety of aquatic products. SDN management model for aquatic product safety traceability makes the implementation of corporate responsibility more clearly, so very useful to solve the external problems. The study further shows that the SDN management model for aquatic product safety traceability allows consumers to obtain more product information and consumers have a higher willingness to pay, aquatic producers get higher economic benefits.

KEYWORDS: supply and demand network (SDN), aquatic product safety traceability, information disclosure, externalities, economic benefits

F5-B2

The different social effects of the public coverage of genetically modified foods by China and foreign media

· Zhang Yuanyuan

Joumalism,GUANGXI UNIVERSITY,No.100 Daxuedong Road Guangxi University, Guangxi,,530004,China

· ABSTRACT

Gm is science, is technologys and progress, but everything has two sides, so at the same time it also has a lot of potential danger. The potential damage is avoided. There is a great deal of confusion about the fact that domestic news organizations and academics are not doing very well, leading to very chaotic public opinion. In this system, the scientific community, government and business organizations have more financial resources and knowledge resources, usually in the position of the communicators, and the public often in the position of the receiver. In China, the public has not been a good science popularization and propaganda, in the face of the tension of the public and science, now the spread of the media play a very important role .If the media can not play a good publicity and correct dissemination of guidance. It is expected that tensions between the public and science will persist and may be intensified in the future.

KEYWORDS: Genetically Modified Food (GMF), safe, media, public, spread

Abstract Theme: Food

F5-B3

Investigation of antioxidant capacity, carotenoids and proximate nutrition of edible flowers

• Sasicha Chensom[1*] and Takashi Mishima[1]

[1]Graduate School of Regional Innovation Studies, Mie University, 1577 Kurimamachiya-cho, Tsu City, Mie Prefecture, 514-8507, Japan

• ABSTRACT

Recently, functional foods are increasing in popularity since consumer understanding of the relationship between nutrition and health has also increased. Edible flowers, which have been eaten and used in traditional medicines in many countries for a long time, are supposed to possess biological activities. This study's purpose is to establish an antioxidant capacity database and to introduce edible flowers as a new healthy food. Beneficial properties, including antioxidant activity, carotenoids, and proximate nutrition, were studied. Antioxidant capacity of hydrophilic and lipophilic extracts was measured using an oxygen radical absorbance capacity (ORAC) assay. Antioxidant capacity varied by type of edible flower. The hydrophilic ORAC (HORAC) value of edible flowers plays a predominant role on overall antioxidant capacity. Carotenoids (β-carotene and β-cryptoxanthin) were determined by high-performance liquid chromatography (HPLC). β-carotene and β-cryptoxanthin are mostly found in edible flower with petals in the color range of yellow to orange. Proximate nutrition, including crude protein, crude fat, ash, and carbohydrate, were determined. The most abundant type of nutrition of edible flowers was moisture, followed by carbohydrates, while the remaining nutrients were found in trace amounts. This study suggests that edible flowers may be used as a healthy food because of their beneficial properties. Thus, eating edible flowers may be associated with a positive health outcome.

KEYWORDS: edible flower, antioxidant, ORAC, carotenoid, nutrition

Abstract Theme: Energy

Abstract Theme: Energy

EG1-C1

"Genre" Generator Braking System, for Energy Kinetic Loss During Braking

• Abdul Ghofur[1*], Slamet Widodo[1]

[1]Mechanical and Biosystem Engineering Department, Bogor Agricultural University (IPB), IPB Darmaga Campus, Bogor, 16680, West Java, Indonesia

• **ABSTRACT**

On conventional braking system, kinetic energy from vehicle is wasted as heat and friction. Therefore, an innovation in braking system that is not only can reduce vehicle velocity but also capable to regain the wasted energy is highly needed. Generator Braking System (GENRE) is a braking mechanism using generator that is able to reduce vehicle speed while also transforms the wasted kinetic energy into electrical energy. Based on theoretical calculation, a motorcycle with total mass of 194 kg, moving with a speed of 40 km/h, will have a kinetic energy of 11.97 kJ. GENRE performance test was conducted by measuring the electrical power that is generated using a motorcycle with the same mass and velocity. Average power generated from GENRE was 121.12 W for 23,27 s, which is equal to 2.83 kJ. Thus, the total efficiency of GENRE system is 23.6%. This test proved that GENRE is capable to perform its functional design, but still need further improvement for the energy conversion ability.

KEYWORDS: braking, electricity, generator

EG1-C2

Preparation of Rice Husk Ash Functionalized with Sulfonic Acid Group for Esterification of Palm Fatty Acid Distillate

• Tanaporn sadcharoenwatthana[1], Rattanaporn Changjeraja[1] and Sakdinun Nuntang[1*]

[1]Department of Industrial Chemistry and Textile Technology, Faculty of Science, Maejo University, Chiang Mai, 50290, Thailand

• ABSTRACT

The objectives of this study were the preparation of rice husk ash functionalized with sulfonic acid group in order to use as catalyst in esterification palm fatty acid distillate (PFAD) to produce methyl ester for biodiesel. The heterogeneous acid catalyst from rice husk ash were prepared by immersing in H2SO4 solution and calcined at 700°C, following functionalized with 3-mercaptopropyl trimetoxysilane (MPTMS) and oxidized with H2O2. The RHA-SO3H exhibited the amorphous silica structure, specific surface area 193 m^2/g, average pore volume 0.98 cm^3/g, average pore diameter 21.2 nm and acid amount 0.52 mmol/g. The esterification of palm fatty acid distillate with methanol was studied at 100 oC. The RHA-SO3H exhibited the conversion of palm fatty acid distillate as 27.0%.

KEYWORDS: Palm fatty acid distillate, rice husk ash, biodiesel, sulfonic acid group, esterification

Abstract Theme: Energy

EG1-C3

Fabrication of Hollow Carbon Spheres/NiCo2O4 Electrodes for High-Performance Supercapacitor

- Li Xie [1*], Wei Dong Shi [1]

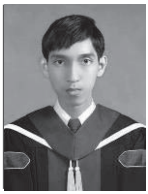
[1*]Jiangsu University, No.301 Xuefu Road, Zhenjiang, 212013, China
[1]Jiangsu University, No.301 Xuefu Road, Zhenjiang, 212013, China

- **ABSTRACT**

The hollow carbon spheres/NiCo2O4 electrodes have been successfully synthesized through a simple method, which involved hydrothermal and calcination procedures. The as-prepared hollow carbon spheres/NiCo2O4 structure was greatly beneficial for the facile electrolyte penetration and fast electron transport in this hybrid system. The specific capacitance of the obtained composite is 467.4 F g-1 at 1 A g-1, which is about 6 times higher than single hollow carbon spheres. Meanwhile, the composite sample also has remarkable cycling stability. 92.1% of the initial capacitance could be still remained after 5000 charge-discharge cycles at a current density of 10 A g-1.

KEYWORDS: hollow carbon spheres, NiCo2O4, supercapacitor

EG1-C4



Experimental Investigation of Photovoltaic/Thermal Hybrid System with Thermoelectric and Water Cooling Unit

• Taweepong Teptawee[1] and Sarawut Polvongsri[2*]

[1,2]School of Renewable Energy, Maejo University, Chiang Mai 50290, Thailand

• ABSTRACT

This research proposed to investigate the photovoltaic/thermal hybrid system (PVT) by using the 28 thermoelectrics received heat from the back of photovoltaic module that called a hot side and the other side called a cool side which installed an insulated cooling box. During the experiment, the testing was carried out at School of Renewable Energy, Maejo University, Thailand. The tilt of the 80 W solar panel was 18° facing to the south. The water was circulated by a pump at 1.2 liter/min-m2 from a cooling box to a 100 liter of hot water storage tank. The inlet temperature and outlet temperature of water from a cooling box, the hot water temperature in a storage tank, the ambient temperature, the power generation from the thermoelectric, and the solar radiation was collected since 9:00 am to 4:00 pm of local time in Thailand. The results were found that the cooling system by using thermoelectrics and water could be decreased the solar panel temperature and the power generation from the testing PVT was increased when comparing a non-cooling test. The solar panel efficiency was increased and the amount of hot water was enough for use in households.

KEYWORDS: Photovoltaic, Thermoelectric and Hot water

Abstract Theme: Energy

EG2-C1

Energy Consumption and Biomass Potential Analysis of Maize, Case Study at Flat Land Area of Chiang Mai

• Yinnittra khamnuengphon[1], Natthanicha Sukasem[2], Kittikorn Sasujit[2] and Tanate Chaichana[2*]

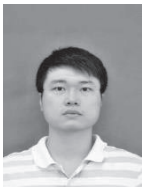
[1,2]School of Renewable Energy, Meajo University, 63 Sansai-Phrao Road, Nongharn, Sansai District, Chiang Mai, 50290 Thailand

• ABSTRACT

The objective of this paper was to analysis the energy consumption and biomass potential from maize. Case study area at flat land area of Chiang Mai. Production factors have been determined including engine type, fuel, labor, seed, fertilizer, chemical substance, working time and yield. The production factor was calculated to energy consumption by using energy equivalent. The production process consists of soil preparation, cultivation, maintenance, harvest and transportation. It was found that preparation process required working time of 4.928 h./man/Rai., diesel 7.187 litter/Rai., and the total energy consumption is 658.476 MJ/Rai. Cultivation process required working time of 0.567 h./man/Rai, diesel 1.744 litter/Rai., and labor force working time 0.442 h./man/Rai., and seed 3.217 kg/Rai., and the total energy consumption is 415.113 MJ/Rai.. For the maintenance, there are processes of applying fertilizer 6.677 kg/Rai., and chemical substance 0.407 kg/Rai., and the total energy consumption is 285.797 MJ/Rai. Harvest and transportation required working time 0.328 h./man/Rai., diesel 0.328 litter/Rai., and the total energy consumption is 453.744 MJ/Rai. The total energy consumption from energy factor was 1,813.129 MJ/Rai. The energy potential of agricultural waste from maize production process is 2,019.645 MJ/Rai. This average can be Energy Ratio 1.114. Energy Consumption and Biomass Potential of Chiang Mai are 371,178.437 GJ and 333,224.1 GJ respectively.

KEYWORDS: Maize, Energy Consumption and Potential Energy

EG2-C2



Application status of distributed generation technology research

• Yongqian Wu[1]

[1]Guangxi University, University Road 100, Nanning, 530004, China

• **ABSTRACT**

With the further development of science and technology and the improvement of people's material living standards, the world is facing an unprecedented energy challenge. Traditional sources of energy such as coal and petroleum are non-renewable. The nonrenewable energy has brought a great pressure on the environment and human society. In order to alleviate the energy crisis and rationally exploit the green clean energy, distributed generation technology came into being. As a supplement to centralized power generation, distributed generation provides a sustainable "green power" for the vast majority of users and represents the environment-friendly power system. Firstly,this paper introduces the development of distributed energy, and discusses the application of small distributed power system with new energy, such as solar energy and wind energy. Secondly, it analyzes the role of relationship between the micro-grid and the distributed power supply. Finally, it summarize the problem that may arise during microgrids and large grid paralleling operation, the current common solutions, and prospects for the construction of microgrid.

KEYWORDS: distributed generation(DG), distributed energy resources(DERs), renewable energy, microgrid

EG2-C3

Noble Catalyst Preparation for Biodiesel Upgrading by Strong Electrostatic Adsorption Technique

・B. Kreatananchai[1*] and K. Punyawudho[1]

[1]Department of Mechanical Engineering, Faculty of Engineering, Chiang Mai University, 50200, Thailand

・**ABSTRACT**

This research was to prepare the palladium catalysts on graphene for the deoxygenation process to convert the stearic acid to C18-C20 bio-diesel like. The Strong Electrostatic Adsorption (SEA) technique was applied for the adsorption of Pd precursor onto the support. The Point of Zero Charge (PZC) of the supporter had the pH of 4.6 for graphene. The Pd percentage loading was analyzed by using inductively coupled plasma spectroscopy (ICP). The adsorbed Pd precursor onto supporters were reduced in hydrogen environment in order to produce Pt crystalline particles. The Pd particles were analyzed by X-Ray Diffraction (XRD) to observe the crystalline structure and to identify Pd metal. Moreover, the average Pd particle size and size distribution were examined by using Transmission Electron Microscopy (TEM). For the further work, the Pd/supporters catalysts will be used to facilitate the deoxygenation reaction for changing stearic acid as the bio-diesel.

KEYWORDS:Catalysts, Deoxygenation process, Strong Electrostatic Adsorption, Heterogeneous catalysts, Palladium

EG2-C4

Detection of Birds on Solar Rooftop Using Image Processing

• Kunyanat Thongtep[1*], Damrongsak Arungool[2], Somthawin Khunkhet[3], Werapon Chiracharit[4], Thongchai Maneechukate[1] and Yingrak Auttawaitkul[1]

[1]School of Renewable Energy, Maejo University, Chiang Mai, 50290, Thailand [2]Thatphanom Collage, Nakhonphanom University, Nakhonphanom, 48000, Thailand [3]Faculty of Science, Ubon Ratchathani Rajabhat University, Ubon Ratchathani, 34000, Thailand
[4]Faculty of Engineering, King Mongkut's University of Technology Thonburi, Bangkok, 10140, Thailand

• ABSTRACT

Green energy refers to the energy which does not destroy the environment. It is natural energy in various forms which can be endlessly utilized without pollution i.e. solar energy, wind energy, hydro energy, etc. Solar cell is an equipment transforming solar energy to be electrical energy and it can be installed on the ground or on rooftop. In 2015, there was the installation of solar cell on rooftop in Japan (4.4 GW increase), China (1.4 GW increase), and Thailand (100 MW increase). One problem found in electricity generating by solar cell installed on rooftop is bird on the solar cell making a decrease in the efficiency in electricity generating. That is, the birds blocking the sunlight for a long time will have an effect on a decreased efficiency in electricity generating and can cause a short circuit. Consequently, it will have a long-term damage to the electricity generating. This study proposes detection of birds on solar PV rooftop by processing image overlaying comparing with the image prototype. The distance of object found is measured by comparing with the solar cell installed on the roof. The system can identify the birds on solar PV rooftop correctly for 77.89 percent and indicate the position correctly for 100 percent which frames laying in square form. In this respect, the solar cell frames are the reference point indicating position of the object

KEYWORDS: Solar PV rooftop, image processing, position finding, law of sine and cosine, bird

Abstract Theme: Energy

EG3-CL

Asymmetric Effects of Energy Prices' Shock on Thai Economy

・Monthien Satimanon* and Thasanee Satimanon+

*Faculty of Economics, Thammasat University, Bangkok, Thailand
+Faculty of Development Economics, National Institute for Development Administration, Bangkok, Thailand

・**ABSTRACT**

There is a strong presumption that oil prices affect stock market returns. However, the empirical evidences on the impact of the oil price shocks on stock has been asymmetric and mixed. Most empirical papers use the change in the price of oil that is driven by either demand or supply shocks to explain such phenomenon. However, the roles of government intervention in the domestic oil market has rarely been incorporated. This paper evaluates the effects of oil price shocks on Thai stock market using Mixed Data Sampling (MIDAS) regression models. The models of aggregate and sectoral stock markets are estimated to study the effects of oil price shocks on Thai stock markets. MIDAS model has been adopted since it can involve different frequency in both dependent and independent variables; that is, independent variables (daily) can have higher frequency than dependent variable (monthly). Thus, MIDAS model is suitable for the case of Thailand given that the intervention on oil price has been implemented on a frequent but irregular basis. Estimated results show that the responses of Thai stock market return to oil price shocks differ greatly, depending not only bust or boom state of stock and whether the shock is driven by demand or supply but also the government intervention in the oil market. With government intervention, the oil price shocks asymmetrically affect aggregate stock market returns.

KEYWORDS: Oil price, Stock market, Disaggregation.
JEL classification: E23, E31, Q43

EG3-C1

Energy, Efficiency of public transportation system in Chiang Mai

• Siraprapa Kawilamoon[1*] and Songyot Kitthamkesorn[1]

[1]Department of Civil Engineering, Faculty of Engineering, Chiang Mai University, Chiang Mai 50200, Thailand

• **ABSTRACT**

The transportation system is important for everyday life in modern economy. The public transportation is a fundamental
core system for improving health and a quality of life through better environment, social equity, and efficient energy consumption.
This study presents an approach to evaluate the efficiency of public transportation system in Chiang Mai. The Data Envelopment
Analysis (DEA) is employed to determine the most efficiency public transportation system(s). Specifically, the DEA will be adopted
to measure the efficiency from various aspects, including energy consumption, service characteristic, fare structure, and user
preference on the service level, with unit conversion unnecessary. The result shows that the public bus systems are among the most
efficiency.

KEYWORDS: Public transport, efficiency, data envelopment analysis

EG3-C2

Biotechnological Application of Sustainable Bio-ethanol Production From Aquatic Biomass, Gooseweed

• Vu Thi Phuong[1], Sawitree Tipnee[2], Yuwalee Unpaprom[2], and Rameshprabu Ramaraj[1,*]

[1]School of Renewable Energy, Maejo University, Sansai, Chiang Mai 50290, Thailand. [2]Program in Biotechnology, Faculty of Science, Maejo University, Chiang Mai 50290, Thailand.

• **ABSTRACT**

Bioethanol is one of the most promising and clean-burning fuel with high octane number and energy content compared to gasoline. This eco-flammable liquid is often blended with gasoline for transportation purposes in order to reduce emission of harmful gases. The main route to produce bioethanol is through bioconversion of biomass which includes edible sources such as sugar/starch-based foods, and non-edible sources like cellulose biomass, algae, and modified energy crops, etc. The second generation of bioethanol called lignocellulosic feedstock has drawn much attention due to the availability of the material all over the world. Among a various material, gooseweed (*Sphenoclea zeylanica* Gaertner) is recognized not only as one of major weed but also considered one of the most invasive weed in Thailand. This species interferes with rice crops by taking nutrients, space, and sunlight. Total sugar and reducing sugar after pretreatment was 12.82 g/L and 4.46 g/L, respectively. Moreover, the amount of reducing sugar increased 64% after enzymatic hydrolysis. Finally, was reached 10.02 g/L after three days with *Saccharomyces cerevisiae* TISTR 5020. In conclusion, gooseweed is a promising feedstock for bioethanol production.

KEYWORDS: *Sphenoclea zeylanica* Gaertner, bioethanol, lignocellulosic biomass, *Saccharomyces cerevisiae*.

EG3-C3

Comparative study on energy balance and greenhouse gas emission of sugar cane industry and napier grass pakchong 1 for electricity production

• Tanyaluk Chidkokruad[1*], Sirinuch Chindaruksa[1] and Prapita Thanarak[2]

[1]Faculty of Science Naresuan University, Phitsanulok 65000
[2]School of Renewable Energy Technology Naresuan University, Phitsanulok 65000

• ABSTRACT

This study analyzes the energy balance and greenhouse gas emissions of sugar cane industry for electricity generation using a life cycle assessment to compared with napier grass pakchong 1. The results show that the sugar industry has the highest energy consumption at 2.104 MJ in comparison with napier grass pakchong 1. It is seen that during peak power consumption, up to 9.512 MJ due to different fuel use. In the sugarcane process, the remaining sugar cane is used as a fuel for electricity generation, but napier grass pakchong 1 uses methane to produce electricity instead. In terms of carbon dioxide emissions, the sugar production process has the highest carbon dioxide emissions of 19.511 kgCO2eq / kWh. Because of the sugar production process, the resin is used as the gummy gum of the tree. By reducing or replacing resins that are close to the resin, lower energy costs will reduce carbon dioxide emissions. Compared to napier grass pakchong 1, stage of electricity generates the most carbon dioxide emissions of 6.4851 kgCO2eq / kWh, because methane is used in the power generation process, where methane has the potential to generate 25 times of global warming.

KEYWORDS: Sugar cane, Napier grass pakchong 1, Energy balance, Greenhouse gas emission

Abstract Theme: Energy

EG3-C4

Feasibility of Biodiesel Production from Freshwater Macroalgae

• Boonyawee Saengsawang[1], Nilubon Khoenkam[1], Yuwalee Unpaprom[2], and Rameshprabu Ramaraj[1, *]

[1]School of Renewable Energy, Maejo University, Sansai, Chiang Mai 50290, Thailand.
[2]Program in Biotechnology, Faculty of Science, Maejo University, Chiang Mai 50290, Thailand.

• **ABSTRACT**

Photosynthesis aquatic plants have become the promising alternative biomass for biofuel production with several advantages, including fast growth rate, high oil content, CO2 fixation potential. Therefore, this study conducted batch experiments to evaluate the potential of biodiesel production from freshwater macroalgae, *Rhizoclonium* sp. The algae were harvested from freshwater irrigation cannel. After that, 20 g algae tried biomass was used for oil extraction by solvent extraction methods. triacylglycerols. Two-step catalytic conversion of pre-esterification and transesterification was adopted to convert the crude algal oil to biodiesel. From the biomass, 1.841 g of oil were obtained. Subsequently, the biodiesel production process was carried. From the experimental results, crude macroalgae oil from *Rhizoclonium* sp was successfully converted to biodiesel using sodium hydroxide as catalyst.

KEYWORDS: *Rhizoclonium* sp., Freshwater system, Biomass, Oil, Biodiesel.

EG4-C1

Biogas production from Para grass (*Brachiaria mutica*): Co-digestion with Buffalo dung

• Ajcharapa Chuanchai[1], Yuwalee Unpaprom[2] and Rameshprabu Ramaraj[1*]

[1]School of Renewable Energy, Maejo University, Chiang Mai 50290, Thailand [2]Program in Biotechnology, Faculty of Science, Maejo University, Chiang Mai 50290, Thailand

• ABSTRACT

Biogas production through anaerobic digestion (AD) has emerged as one of the renewable energy production technology. At the present, biogas production from agricultural waste or wetlands plants as alternative energy source was interesting raw materials. This experiment was focused on possibility of para grass (*Brachiaria mutica*) as a waste material co-digestion with buffalo dung, para grass is the weed of no value and pervasive around wetland areas. Grass was collected from wetlands at Learning Center for Agriculture Maejo University, Chiang Mai, Thailand and was then cut into small particle by cutting machine. Fermentation process was done in a 7 L plastic container digester for 35 days. Total solids (TS), volatile solids (VS) and chemical oxygen demand (COD) were determined at start and end of fermentation. Pretreatment by alkaline pretreatment affected on TS, VS and COD as well as biogas and methane production. The higher generation of methane from anaerobic co-digestion of para grass and buffalo dung was achieved by taking the ratio of para grass and buffalo dung as 2:1 on the basis of 10% total solids. Para grass co-digestion with buffalo dung presented highest biogas yield (1,032 ml/day) and the concentration of carbon dioxide (20%), methane (75%) and 2 ppm of H2S was estimated from the biogas. Therefore, para grass co-digestion with buffalo dung was high potential material for biogas production. In addition, alkaline pretreatment method by adding 2%NaOH for 72 hours was found to increase the efficiency of biogas production.

KEYWORDS: Biogas, Anaerobic digestion, Pretreatment, Co-digestion, Ratio

Abstract Theme: Energy

EG4-C2

Towards a new paradigm in biodiesel production: challenges and future perspectives

- Murillo M. Gabriel[1], Sun Jianzhong[1*]

[1] School of the Environment and Safety Engineering, Jiangsu University. Zhenjiang, 212013, P. R. China

- **ABSTRACT**

Biodiesel as a source of bio-energy and one of the candidates to partially substitute the transportation fossil fuels has been the subject of many studies in the past decades. Its massive world production has been limited by several influential factors, such as the availability of raw materials, energy policies as well as world petroleum prices. Additionally, the actual situation of cheap petroleum compels to find ways to assure the economical, technical and environmental feasibility of this type of biofuels. Due to the current and future challenges, we propose a new paradigm view for biodiesel production and use, to be seen as a strategic and decentralized source of transportation energy autonomy. This new concept focuses on strengthening favorable energy policies in a short-term, substituting the first-generation by a more efficient and feasible second-generation biodiesel production in a middle term, as well as developing a long-term third-generation biofuel which could be a potential chemical platform for other promising fuels and chemicals.

KEYWORDS: biodiesel, challenges, feasibility, sustainability, new paradigm.

EG4-C3

A Personal Cost Nutrition Optimization Model for Thai Foods

• Suchada Yodyudee[1*], Paskorn Champrasert[1] and Navadon Khunlertgit[1,2]

[1]Department of Computer Engineering, Faculty of Engineering, Chiang Mai University, Thailand
[2]Biomedical Engineering Center, Chiang Mai University, Thailand

• **ABSTRACT**

Nowadays, Thailand is still facing with imbalanced-nutrition since Thai people lack concern about the necessity of nutrition. Moreover, Thailand has a vary of Thai foods with a different cost that difficult to buy it with the optimal cost. Thai students of Chiang Mai University is one of these people. Although, the students have the same age they are still individual difference such as sex, the composition of body and activities. Therefore, the personal nutrition with the minimum cost of Thai foods optimization model is needed. The optimization model can reduce the cost of the meal per day and provide adequate nutrition for each the students.

KEYWORDS: imbalanced-nutrition, Thai foods, optimization model, personal, minimum cost

EG4-C4

The Potential Evaluation of Bioethanol Production from Macroalgae

• Phitchaphorn Khammee[1], Wachira Warasri[1], Yuwalee Unpaprom[2], and Rameshprabu Ramaraj[1*]

[1]School of Renewable Energy, Maejo University, Sansai, Chiang Mai 50290, Thailand.
[2]Program in Biotechnology, Faculty of Science, Maejo University, Chiang Mai 50290, Thailand.

• **ABSTRACT**

Plant biomass is the main source of renewable materials on Earth and represents a potential source of renewable energy and biobased products. Aquatic biomass has attached more attention on biofuels production in current years due to its renewable, abundant and environmental friendly properties. Macroalgae are photosynthetic organisms that are found in both marine and freshwater environments. These are considered as a third generation feedstock for production of biofuels since they have ability to synthesize high amount of lipids, proteins and carbohydrates. In this study, we evaluated the potential of bioethanol production from macroalgae (*Rhizoclonium* sp.) biomass. The fermentation process was applied in the research is separate hydrolysis and fermentation. Algae biomass undergo pretreatment process to release necessary sugars for yeasts digestion. The fermenters were carried at 30 °C to 35 °C in the incubator. Finally, the percentage of ethanol was estimated by ebulliometer. And this study results confirmed that freshwater macroalgae biomass is suitable raw material for bioethanol production.

KEYWORDS: *Rhizoclonium* sp., freshwater system, *Saccharomyces cerevisiae*, bioethanol

EG5-AL

Cavitation in Hydraulic Machinery: Introduction, Overview and Some Advances

• Binjuan Zhao*, Qi Liu, Chenghu Zhang and Yanxia Fu

[1]School of Energy and Power Engineering, Jiangsu University, 301 Xuefu Road, Zhenjiang, 212013, China
*e-mail: zhaobinjuan@ujs.edu.cn

• **ABSTRACT**

Cavitation is a unique phenomenon occurring in the hydraulic machinery due to the pressure reduction, accompanying complex water bubble generation, development and collapse, which cause great pressure fluctuation, vibration and noise, erosion of the surface of the hydraulic parts, deterioration of the hydraulic performance, and additional energy consumption. This article firstly introduced what was cavitation, cavitation number, four different cavitation stages, and cavitation occasions; then introduced the four cavitation types in the hydraulic machinery, as well as the harmful influence of cavitation erosion on the hydraulic machinery; later summarized the progress of researches on cavitation, including theoretical analysis, numerical simulation and experimental research; finally listed several new applications of cavitation in different areas.

KEYWORDS: Cavitation; Erosion; Hydraulic Machinery; Supercavitation

Abstract Theme: Energy

EG5-A1

Design and Performance Test of Drum Kiln with Vertical Partition for Coconut Shell Carbonization

• Mu'minah Mustaqimah[1]*, Lilis Sucahyo[1]

[1]Mechanical and Biosystem Engineering Department, Bogor Agricultural University (IPB), IPB Darmaga Campus, Bogor, 16680, West Java, Indonesia

• **ABSTRACT**

On conventional braking system, kinetic energy from vehicle is wasted as heat and friction. Therefore, an innovation in braking system that is not only can reduce vehicle velocity but also capable to regain the wasted energy is highly needed. Generator Braking System (GENRE) is a braking mechanism using generator that is able to reduce vehicle speed while also transforms the wasted kinetic energy into electrical energy. Based on theoretical calculation, a motorcycle with total mass of 194 kg, moving with a speed of 40 km/h, will have a kinetic energy of 11.97 kJ. GENRE performance test was conducted by measuring the electrical power that is generated using a motorcycle with the same mass and velocity. Average power generated from GENRE was 121.12 W for 23,27 s, which is equal to 2.83 kJ. Thus, the total efficiency of GENRE system is 23.6%. This test proved that GENRE is capable to perform its functional design, but still need further improvement for the energy conversion ability.

KEYWORDS: braking, electricity, generator

EG5-A2

Thermal Efficiency of biomass stoves under continuous fuel feeding Using corncob as Fuel

• Wilawan Khumhem, Natthawud Dussadee*, Churat Thararux, Nigran Homdoung and Rameshprabu Ramaraj

[1]School of renewable energy, Maejo University, Sansai Chiang Mai 50290, Thailand

• ABSTRACT

This study was focused on continuity test of biomass stove at household level. The designed biomass stove has 3 parts are consisting of a fuel system, followed by combustion and the ash storage system and the furnace used in the experiment is a cylindrical furnace 80 centimeters height and Diameter 40 centimeters. There is corn cob biomass used in the test. In the fuel continuous and consistent fuel injection by using conveyor screws with, controlled by an inverter to control the fuel feeding as a result high system performance. Use a blower to fill the air in the combustion chamber. Testing biomass stoves are a direct combustion of biomass. by determining the fuel feeding rate of corn cob at 8 kg/h The moisture content of corn cob is between 10-15% and Biomass stove tests were carried out varying air/fuel ratio range (A/F) of 1.99, 3.31, 4.63, 5.95 and 7.28. The size of the corn cob is 1 inch and 2 inches. From the study results, Thermal efficiency via Water Boiling Testing (WBT) is used for testing biomass stove. the adjusting of air fuel ratio was effected on energy and fuel consumption rate, hot water temperature, internal stove temperature, duration of heat input and thermal efficiency. which fuel feeding rate of corn cob at 8 kg/h. found that at 1 inch corn cob, the A/F 3.31 is highest thermal efficiency 15.54%. And 2 inch corn cob, the A/F 4.63 is highest thermal efficiency 15.50%. The minimum cost heat production of biomass stove was about 0.81 Baht/kWh. Consider continuous fuel feeding using conveyor screws. It has the effect of controlling the internal combustion temperature a relatively stable. Therefore, it was suitable to use for cooking in households or in small restaurants.

KEYWORDS: biomass stove, Thermal efficiency, Water boiling test, corncob

EG5-A3

Concentration of Spatially Coherent Wind Power Using Grover Algorithm

• Takuya HIOKI[1*], Hidenori UCHIDA[1] and Shigeo KOTAKE[1]

[1*]Department of Mechanical Engineering, Mie University,
1577 Kurimamachiya-cho, Tsu-shi, Mie, 514-8507 Japan

• **ABSTRACT**

Wind power generation is one of the harmless methods of supplying energy. A conventional method to increase its power generation efficiency is to enlarge wind turbines. However, this method requires a rigid structure and high materials cost. In order to solve this problem, in this study, we used the Grover algorithm (1996), which can accumulate energy from coherent waves. Since natural wind has a spatially coherent nature, Grover algorithm can be applied to natural wind. Numerical simulations proved that spatially coherent wave power energy from widely distributed multiple oscillators can be accumulated in a special oscillator when the system implements the Grover algorithm. By concentrating energy in one special oscillator, it is possible to acquire a widely spread wind energy from one power generation unit. Numerical simulations in this study showed that a highly efficient power concentration can be achieved under temporarily random but simultaneously spatially coherent external forces. However, in the case of spatially random external forces, no power concentrations were observed in the calculations. By using this system, we can remove the structural problems of wind turbines and reduce their construction costs. This work shows a possibility of a new wind power generation system.

KEYWORDS: Wind energy, wave energy, flow induced vibration, forced vibration

EG5-A4

Bioethanol from lignocellulosic biomass: a comparison between sunflower stalk and sorghum stalk

• Numchok Manmai[1], Thidarat Siriboon[2], Yuwalee Unpaprom[3] and Rameshprabu Ramaraj[1*]

[1]School of Renewable Energy, Maejo University, Chiang Mai 50290, Thailand. [2]Program in Agronomy, Faculty of Agricultural Production, Maejo University, Chiang Mai 50290, Thailand. [3]Program in Biotechnology, Faculty of Science, Maejo University, Chiang Mai 50290, Thailand.

• ABSTRACT

Bioethanol is one of renewable energy with its major environmental advantages, represents an encouraging biofuel in present which is mostly used in combination with gasoline. It can be produced from different types of renewable feedstocks. Especially, one of the most abundant renewable resources for bioethanol production is lignocellulosic biomass. The production of the bioethanol from lignocellulosic biomass has attracted worldwide interest. Result in the objective of this research was compared the bioethanol production between sunflower stalks and sorghum stalks by *Saccharomyces cerevisiae* TISTR 5020. The plants were pretreated with chemical, biological and H2O to enzymatic hydrolysis by a cellulase enzyme. All of samples were accomplished at 30ºC for 3 days. The samples resulted in improving the following enzymatic hydrolysis to 2% of the theoretical yield overnight. The best hydrolysis performance was obtained after pretreatment by 2% NaOH. The yeast showed promising results in fermentation for 3 days from 5 days. In the best case, the hydrolysate of 2% NaOH pretreated. Furthermore, the highest volumetric ethanol productivity was observed in the hydrolysates of 2% NaOH pretreated the biomass and the bioethanol concentration from sunflower stalk more than sorghum stalks.

KEYWORDS: Paper length, paper style, headings, equations, figures and tables

Abstract Theme: Energy

EG6-CL

Feasibility Study of Macroalgae Growing Naturally in Slow Running Freshwater Stream Into Bioethanol Production

• Yuwalee Unpaprom[1] and Rameshprabu Ramaraj[2,*]

[1*]Program in Biotechnology, Faculty of Science, Maejo University, Chiang Mai 50290, Thailand.
[2]School of Renewable Energy, Maejo University, Sansai, Chiang Mai 50290, Thailand.
*e-mail: rrameshprabu@gmail.com ; rameshprabu@mju.ac.th

• ABSTRACT

The freshwater macroalga *Spirogyra ellipsospora* was investigated as feedstock for bioethanol fermentation under batch conditions. *S. ellipsospora* biomass harvested from a slow running water of natural spring creek at Tumbon Pang Yang, Mae Taeng district, Chiang Mai, Thailand. The macroalgae was naturally growing in slow running freshwater stream (19°18'42.41"N; 98°48'44.11" E) into bioethanol. The biochemical and nutritional composition of *S. ellipsospora* reveals that this macroalgae has an appreciable amount of pigments, dietary protein, carbohydrate and minerals content. The fermentation process was carried out in anaerobic conditions without agitation by using a modified fermenter. *S. ellipsospora* biomass used as a monosubstrate for the bioethanol production, highest ethanol yield. Therefore, fast growing, capacity of higher biomass yield, rich nutritious compounds and organic matter of *S. ellipsospora* was illustrates potential energy crops for bioethanol production.

KEYWORDS: *Spirogyra ellipsospora*, Freshwater Stream, Biomass pretreatment, bioethanol,

EG6-C1

The analysis of technological innovation of Japanese tuna purse Seine fishery to elevate the Chinese tuna purse Seine fishery fishing efficiency

• Liu Mengying

Shanghai ocean university, No.999, Huchenghuan Road, Nanhui New City, Shanghai, 201306, China

• ABSTRACT

The tuna are so warmly welcome by the international market due to its large individuals, delicious and nutritious meat and highly valuable of production and utilization. At early 1950s, some of major fisheries countries such as America, Japan were developed tuna purse seine fishery. However, the tuna purse seine fishery in China began to start from the 1970 s, at present is still in the exploratory stage. In this paper, through collecting the logbook of tuna purse seine fleet of China in Western Central Pacific Ocean (WCPO) at 2012-2016, respectively analyzed fishing efficiency of different designed tuna purse seine. The results showed as follow: 1) Relative to big tuna purse seine fishery countries such as America, the structure of Japanese tuna seiner tend to miniaturization development, but from the perspective of the Japan ship parameters of 1983-2014, both shape and engine power of seiner has a tendency to increase. 2) From start of the tuna purse Seine fishery in China to 2003, the tuna seiner of China are using second-hand ships, until 2012 began to product tuna purse seine ships by ourselves. 3) From logbook data of tuna purse seine fleet of China fishing at WCPO during 2012-2016, the efficiency of JIN HUI No.1 during 2012-2016 was the lowest. The parameters of JIN HUI No.1 is length as 61.85m, engine power as 2574kw, tonnage as 1152t and fish-hold capacity as 1528CuM. Therefore, in the future of tuna purse seine of China, the manufacture of ship can consider maximization in appearance and increasing fish-hold capacity, it will contribute to increase the endurance of seiner at sea, at the same time, increasing engine power can effectively reduce the rate of empty net.

KEYWORDS: Tuna; Purse seine; Vessels; fishing efficiency

Abstract Theme: Energy

EG6-C2

Efficiency of Anaerobic Dry Fermentation on Biogas Production from Organic Fraction of Canteen Wastes

• Phattarapong Suwatee[1] and Aunnop Wongrueng[1*]

[1]Department of Environmental Engineering, Faculty of Engineering, Chiang Mai University, 239 Huay Kaew Rd., Tambon Suthep, Muang, Chiang Mai, 50200, Thailand

• ABSTRACT

The objective of this research was to study the efficiency of anaerobic dry fermentation on biogas production from organic fraction of canteen wastes at organic loading rate of 2.5 kg-volatile solids/m3·day. Influent and effluent from anaerobic dry fermentation reactor were collected and analyzed 1 time per week. Analyzed parameters included alkalinity, volatile fatty acid, total solids, volatile solids, ammonia nitrogen, pH, temperature, and oxidation reduction potential. Biogas was collected and measured 3 times per week. The results showed that the average biogas production was 311.9 liters/day. The average methane content was 54.0% and the average methane yield was 335.9 liters CH4/kg. Total solid and volatile solids removal efficiencies were 75.7% and 91.9 %, respectively.

KEYWORDS:Anaerobic dry fermentation, biogas, canteen wastes and methane yield

EG6-C3

Feasibility Study of Bioethanol Production from Sweet Corn Stem Juice

• Sasithon Bunchuai[1], Siriporn Wangngae[1], Yuwalee Unpaprom[2] and Rameshprabu Ramaraj[1], *

[1]School of Renewable Energy, Maejo University, Sansai, Chiang Mai 50290, Thailand.
[2]Program in Biotechnology, Faculty of Science, Maejo University, Chiang Mai 50290, Thailand.

• **ABSTRACT**

Sweet corn, with sugar-rich stalks and water-use efficiency, has a very good potential as an alternative feedstock for ethanol and also non-competing with human feed on land. In this study was aim to understand the feasibility of using bagasse and sweet corn stem juice to produce ethanol and increase the value to agricultural waste. In addition, two types of sweet corn cultivars namely HI brix-53 × Sugar star and HI brix-53 were studied. The sweet corn come from KC farm, Mae Wang district, Chiang Mai, Thailand. Fermentation of ethanol from sweet corn stem juice was carried with yeast *Saccharomyces cerevisiae* TISTR 5020. The study results confirmed that sweet corn stem juice containing highest sugar content and provide high yield of bioethanol. Therefore, Sweet corn juice has been successfully fermented into ethanol, which indicates this crop may be able to play a transitory role in the emerging biofuel market.

KEYWORDS: Sweet corn, HI brix-53 × Sugar star, HI brix-53, Juice, Fermentationl

Abstract Theme: Energy

EG6-C4

The study on mechanism of the "21st century maritime silk road" integration between marine energy and finance under the thinking of constructivism and community of common destiny

- Wang Jiayi

China-Asean Research Institute, Guangxi University No.100 Daxue Road Nanning, Guangxi, 530004 P.R.China

- **ABSTRACT**

Since the beginning of the new century, maritime cooperation, especially the demand for cooperation in marine energy continuously extend. Maritime cooperation is not only an important support to build the Maritime Silk Road in twenty-first century, it is also the key to further enriching the global economic network and safeguarding national strategic security. With the expansion of the global demand for marine energy resources and the more serious issue of financial bottlenecks in the development and cooperation of marine energy, how to achieve the interaction between the development of marine energy and the using of finance, and how to establish a sound financial market for marine energy, these two problems have been becoming an important part of future development in integration between marine energy and finance. Building "21st Century Maritime Silk Road" integration between marine energy and finance is an efficient approach for promoting financial deepening and the internationalization of RMB. By discussing the background and significance, the mind and the focus, and the obstacles we've faced on integration between marine energy and finance, this paper puts forward the construction mechanism and the method of integration between marine energy and finance.

KEYWORDS: marine energy, finance, integration between marine energy and finance

EG7-A1

Wind Effect Analysis on the Solar Panel Temperature from the Installation Area Shape of Solar Power Plant in Thailand

• Wasun Junnoi[1*], Jutaporn Chanathaworn[1], Somthawin Khunkhet[2], Uthen Khamnan[3], Sermsuk Buochareon[1] and Yingrak Auttawaitkul[1]

[1]School of Renewable Energy, Maejo University, Chiang Mai, 50290, Thailand [2]Faculty of Science, Ubon Ratchathani Rajabhat University, Ubon Ratchathani, 34000, Thailand [3]Department of Electrical Engineering, Rajamangala University of Technology Lanna Chiangmai Campus, Chiang Mai, 50300, Thailand

• ABSTRACT

The latest targets for solar PV in Thailand are outlined in the Alternative Energy Development Plan, 2015-2036 (AEDP, 2015). There is a policy on the promotion of electricity generating from the renewable energy in which the solar energy is a policy as set to be in 2036. Presently, the installation of the solar cell system on the ground accounts for 2,753 MW and the rest (3,247 MW) will be installed later. There are 2 concerned factors for effective electrical energy generating: control factor – design and material choosing and uncontrol factor – heat, light intensity, wind speed, etc. Heat due to sunlight or temperature around the installation has an effect on increased temperature of the solar cell. An increase in the temperature of the solar cell has an effect on decreased efficiency in electricity generating. This study aims to analyze wind speed and direction having an effect on the temperature of the solar cells in a big area, Nakhon Pathom province, Thailand. The solar cells are placed on the ground covering an area of 125 rai with the electricity generating capacity of 12 MW. The wind speed factor at 2-5 m/s which it has an effect on the temperature of the solar cells is investigated (blowing from south-west and northeast). The study which divided based on cell lining up, north to south with a number of 28 arrays which was equivalent to 3,292.8 kW. Also lining up from east to west with the same number. Regarding data collection on electricity generating during 10.00 a.m.-2.00 p.m. for 1 year, it was found that cell lining up from east to west resulted in higher efficiency in electricity generating than that of north to south for 0.395 percent.

KEYWORDS: Light intensity, wind speed, wind direction, temperature, solar cell panel

Abstract Theme: Energy

EG7-A2

An Analysis on Farmers' Satisfaction For Confirmation of Land Right and Influence Factors : Based on an Investigation into Six Villages of Lvhua Town, Shanghai

• FENG Xiao-xiao[1], LIU Zeng-jin[2*], GAO Xiao-ling[1], Ma Jia[2]

[1]College of economics and management, Shanghai Ocean University, Shanghai 201306, China;
[2]Information Research Institute of Science and Technology, Shanghai Academy of Agricultural Sciences, Shanghai 201403, China

• ABSTRACT

This paper uses a questionnaire survey of 565 farmers in 6 administrative villages of Lvhua Town, Chongming district, Shanghai, chooses an orderly logistic model to make an empirical analysis of the influence factors of the farmers' satisfaction for the confirmation of land right. The research finds that farmers' overall satisfaction for ' one village one plan' in the confirmation of land right and the work of township cadres and village cadres is higher, and 60.53% of the farmers fell ' satisfied' and ' very satisfied' for 'one village one plan' in the confirmation of land right, and 63.54% of the farmers feel 'relatively satisfied' and 'very satisfied' for the work of township cadres and village cadres. Variables of age, education, political status of family members, cultivated land quantity, understanding of land ownership, farmers support attitude, area change, dispute settlement, administrative villages are significantly affect farmers' satisfaction for 'one village one plan' in the confirmation of land right. Finally, based on the conclusions, it puts forward related countermeasures and suggestions, such as strengthening the publicity of confirmation plan, building working mechanism, determining certification standards, dissolving certification risks and so on.

KEYWORDS: farmers, confirmation of land right, satisfaction, influence factors, orderly logistic model

EG7-A3

Effect of Wick Thickness on Thermal Performance of Grooved-Sintered Wick Heat Pipes

• Thanwit Naemsai[1*], Phrut Sakulchangsatjatai[1], Niti Kammuang-lue and Pradit Terdtoon[1]

Department of Mechanical Engineering, Faculty of Engineering, Chiang Mai University, Chiang Mai, Thailand.

• **ABSTRACT**

The increasing heat flux of electronic components within laptop demands high heat transfer devices in order to prevent thermal damage due to high temperature. A Grooved-Sintered wick Heat Pipe (GSHP) is one of the solutions to solve this problem. In the GSHP design, the wick thickness is important factor affecting the thermal performance because it is proportional to the volume of workings fluid and heat transfer rate of the heat pipe. Therefore, this research is to experimentally investigate effect of wick thickness on thermal performance of GSHPs. A copper tube with an outer diameter of 6 mm was used as sealed container and each copper tube was filled by de-ionized water. The effect of thickness was examined with three thicknesses of 0.44, 0.59 and 0.74 mm with the length of 200 mm. In the experiment, the maximum heat input was set as the indicator of thermal performance. The results showed that by increasing the wick thickness, the maximum heat input significantly increased from 32 W of 0.44 mm thickness to 45 W of 0.59 mm thickness. Afterward, it hardly increased from 45 W of 0.59 mm thickness to 47 W of 0.74 mm thickness.

KEYWORDS:Wick thickness, Thermal performance, Heat pipes, Grooved-sintered wick

Abstract Theme: Energy

EG7-A4

Increasing Wind Power Generation Efficiency By Using Wind Signal Processing From Weather Stations Around Wind Turbine For Controlling Electricity Generation

• Jumlong Malaket[1*], Siriwan Thamnu[1], Werapon Chiracharit[2], Jompob Waewsak[3], Tanate Chaichana[1] and Yingrak Auttawaitkul[1]

[1]School of Renewable Energy, Maejo University, Chiang Mai, 50290, Thailand [2]Faculty of Engineering, King Mongkut's University of Technology Thonburi, Bangkok, 10140, Thailand [3]Specialized Research Center for Energy and Environment, Thaksin University, Songkhla, 90000, Thailand

• ABSTRACT

Wind energy is a type of clean energy which Thailand generates it for 299.17 MW. However, its problems found in Thailand are inconstant wind blowing and not high wind blowing speed. In Chaiyaphum province, an average wind blowing speed is 5.77 m/s throughout the year. Regarding the electricity generating of the wind turbine operation, there is a slow direction finding of the wind turbine due to its big size. (2.5 MW electricity generating per wind turbine). This has effect on ineffective operation in electricity generating. This study present increased efficiency in electricity generating by the processing of signals from the weather forecast stations around the wind turbine. It aims to control the electricity generating and make the weather forecast station ahead of the wind turbine to send the signal to the wind turbine control system. There is the computation of time span and wind direction blowing to the wind turbine to check if it can generate the electricity. This is on the basic of adequate wind potential and readiness of the wind turbine to generate the electricity. This will have an effect on the efficiency in electricity generating. At one time of startup can increase power 47.33 kW

KEYWORDS: Wind turbine, wind direction, the weather forecast station

EG7-A5

Effect of torrefaction time on agricultural waste chemical properties

• Sakonrat Jindarak, Nigran Homdoung*, Natthawud Dussadee, Churat Thararux and Rameshprabu Ramaraj

School of Renewable Energy, Maejo University, Chiang Mai 50290, Thailand.

• **ABSTRACT**

Biomass is an important energy source and has a high potential for Thailand, ASEAN countries and as well as worldwide. The objective of this study was to study the chemical property of agricultural waste on adjust torrefaction time. The biomass in experiment use corn stalk and longan wood residue which adjust torrefaction time in a range of 20, 40 and 60 minutes on 300□C of torrefaction temperature were adjusted with nitrogen. The experiment data was analyze moisture, volatile, fixed carbon, ash and the heating value. It was found that, the adjust torrefaction time of corn stalk and longan wood residue show better chemical properties. The overall color of both torrefied sample that tested in high torrefaction time was dark black that similar to coal. The use of torrefaction time at 60 min was received optimal time and the high heating value of both torrefied was increased of 14-15.5% at higher torrefaction time. Therefore, this study illustrated that the energy potential of corn stalk and wood residue could be improved through torrefaction process.

KEYWORDS: biomass, agricultural waste, torrefaction time, torrefied fuel

EG8-CL

Evaluation of Bioethanol Production from Weed Mimosa Seeds

• Kodchapan Intarod[1], Rameshprabu Ramaraj[1] and Yuwalee Unpaprom[2, *]

[1]School of Renewable Energy, Maejo University, Sansai, Chiang Mai 50290, Thailand.
[2]Program in Biotechnology, Faculty of Science, Maejo University, Chiang Mai 50290, Thailand.
*e-mail: yuwaleeun@gmail.com ; yuwalee@mju.ac.th

• **ABSTRACT**

Mimosa is the one of the weed that has grown and spread quickly. It is produce lot of seeds. These seed containing high nutritious substance. In Renewable Energy sector, mimosa seeds possible to produce ethanol for fuel, because the seeds are containing high in protein and carbohydrates; these carbons can digest sugars and ferment them into ethanol. The present study evaluates the exploitation of mimosa seeds for bioethanol production which can further improve the energy yield of the crop. The bioethanol production process was carried from the germinated mimosa seeds by using *Saccharomyces cerevisiae*. Results revealed that seeding with root showed the maximum of total sugar content and reducing sugar as 6.8 and 0.5 g/L, respectively. In addition, there are two types fermentations was applied through free cell yeast and immobilized yeast. This study results confirmed immobilized yeast was reasonable to use in bioethanol fermentation and it is highly achievable for sustainable bioethanol production in the future.

KEYWORDS: Mimosa, Weed biomass, *Saccharomyces cerevisiae,* bioethanol.

EG8-C1

Pgrading Energy of Agricultural Waste with Torrefaction Process

Praphatsorn Rattanaphaiboon, Nigran Homdoung*, Natthawud Dussadee, Churat Thararux and Rameshprabu Ramaraj

School of Renewable Energy, Maejo University, Chiang Mai 50290, Thailand,

• **ABSTRACT**

Biomass is a unique fuel. It has the prospective to play a major role in the future energy in the ASEAN countries as well as worldwide. The objective of this study was to find out the properties, temperature effects on torrefaction process in Thailand agricultural wastes including rice husk and corn cob. Temperature in the reactor of 200-400°C and 60 minutes were adjusted with nitrogen. It was found that, the torrefied rice husk and corn cob show better physical and chemical properties. The overall color of both torrefied fuels that tested in high temperature was dark black that similar to coal. Then, high temperature of torrefied fuel was increased high heating value (HHV). Therefore, this study illustrated that the energy potential of rice husk and corn could be improved through torrefaction process.

KEYWORDS: torrefaction, rice husk, corn cob, HHV

Abstract Theme: Energy

EG8-C2

The pellet production from Water Hyacinth mix bamboo sawdust

- Natjiira Inmon[1*], Sirinuch Chindaruksa[1] and Borisut Chantrawongphaisal[2]

[1]Naresuan University,Faculty of science, Phitanuloks,65000, Thailand
[2]Thalland Instltute of Scientlflc and Technologlcal Research (TISTR), Pathum Thani , 12120, Thailand

- **ABSTRACT**

Pelleting is one of techniques for producing fuel from agricultural waste. Pellets which are used as biofuel are small particles typically created by compressing biomass. Therefore their properties such as heating value, moisture content, and bulk density depends on properties of biomass. Water hyacinth has low bulk density and low heating value so another material such as bamboo sawdust is required for improving pellet's properties. Water hyacinth and bamboo sawdust were made into pellet and then studied an effect of the mixture's moisture on pellets' moisture content, particle density and bulk density was conducted. The ratios of water hyacinth to bamboo sawdust which were 9:1, 8:2, 7:3 ,6:4 and 5:5 were used in this study. The result of the study shows that pellets' properties – 34.08 mm length, 698.98 kg/m3 bulk density and 9.29% moisture- can be obtained according to ENplus standard (40 mm length maximum, 641-737 kg/m3 density and 10% moisture maximum) if mixture's moisture content is at 25% while properties of pellets' made from mixture which has moisture content is at 30% are below standard for all 3 grades of ENplus.

KEYWORDS: Water Hyacinth, bamboo sawdust, pellet

EG8-C3

Analysis of Physicochemical Properties and Aging Process of Bio-oil

・Xiaoyin Zhang*,Weidong Zhao*, Jianquan Huang, Kang Ni

School of Automotive and Traffic Engineering, Jiangsu University, Zhenjiang 212013, China

・**ABSTRACT**

Biomass is a kind of rich and clean energy which can be recycled in a very short time. Bio-oil has the potential to replace fossil fuels for it does not produce harmful substances such as lead and sulfur in the combustion process. The physicochemical properties of bio-oil obtained from pyrolysis were studied. Main components of bio-oil were qualitatively analyzed by gas chromatography mass spectrometry (GC-MS) and fourier transform infrared spectroscopy (FT-IR). It was found that the main components of bio-oil were water, alkanes, alcohols, aldehydes, phenols, esters, ketones, furans, acids, and aromatic species material. The storage and aging process of bio-oil was observed, and the changes of the kinematic viscosity and pH value of bio-oil were recorded.

KEYWORDS: Bio-oil; Fast pyrolysis; Physicochemical properties; Aging process

EG8-C4

Performance Evaluation of Solar Dryer for Fish Product

・ Jiraporn kaewdiew, Natthawud Dussadee, Churat Thararux, Nigran Homdoung and Rameshprabu Ramaraj

School of renewable energy, Maejo University, Sansai Chiang Mai 50290, Thailand

・ **ABSTRACT**

The objectives of this research were to developed fish product dryer by using solar energy combined with electrical energy. The experiment was to study about the drying kinetic of the fish product. The drying chamber can dry fish product about 20 to 30 kg or 8 trays. The main energy consumed will be supplied from the 2.69 m2 of collector area, which is located on the top of the drying chamber. The air inside the drying chamber has a forced flow pattern using motor 760 W. control the blower functions to circulate the air through the modular dryer and 70 to 80% of air recycled. Performance evaluation of fish product dryer has three different drying conditions all drying conditions was run under the conditions of drying temperature between 50 to 70 °C. The initial and final moisture content of fish product is about 340.35 %db. and 20 to 30 %db., respectively. The result revealed the performance values of solar dryer is can reduce moisture content of fish product, final moisture content of fish product as your needed. The study showed that the drying process, which used the temperature of 70 °C was 42.60 MJ/kgH2Oevap of specific energy consumption and 14 hours of drying time. However, quality analysis of fish product using the solar energy was similar to the normal process of dried threadfin bought in the market and community acceptance.

KEYWORDS: Fish product, Solar energy, Drying kinetic, Specific energy consumption

Abstract Theme: Environment

Abstract Theme: Environment

EV1-D1

Acceleration-dependent velocity-change perception with proprioceptor in upper limb movement

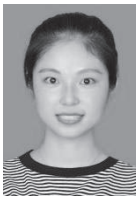
• Takaaki Yasui[1*], Yoshihiko Nomura, Dr.Eng[1], Tokuhiro Sugiura[2] and Fumihiro Akatsuka[1]

[1]Department of Mechanical Engineering, Graduate School of Engineering, Mie University, Kurimamachiya-cho, Tsu city, Mie, 514-8507, Japan [2]Center for Information Technologies and Networks, Mie University, Kurimamachiya-cho, Tsu city, Mie, 514-8507, Japan

• ABSTRACT

When humans try to learn unexperienced motor skills such as in sports and machine operations, they ordinarily perceive and recognize movements by having their limbs moved by experts through their proprioceptors, which are sensational receptors that perceive physical quantities such as limbs' movements. Haptic devices, which afford the proprioceptive sensations to humans, have been studied. Then, it is necessary to understand the human perceptual characteristics by using proprioceptors so that we design control systems of the haptic devices to afford appropriate proprioceptive sensation to users. This study measured JNDs (Just Noticeable Differences) in velocity-change perception. We especially focused on the influence of fast / slow acceleration to the velocity-change perception. In an experiment, subjects' hands were passively rotated by the device in a horizontal plane: the movements started with a uniform velocity, then, accelerated to predetermined comparative velocities with 1, 8, 16, 32 deg/s2 of acceleration. Subjects were asked to respond whether the velocity changed within the movement or not. As a result, it was found that the velocity-change JNDs show small in the high acceleration conditions. It suggests humans notice the temporal local velocity differences.

KEYWORDS: Velocity-change perception, Passive movement, JND, Haptic device, Acceleration



EV1-D2

Impact of catch error on the stock assessment of Indian Ocean bigeye tuna (*Thunnus obesus*)

• Yanan Li[1*], Jiangfeng Zhu[1,2] , Xiaojie Dai[1,2], Libin Dai[1]

[1]Master, College of Marine Sciences of Shanghai Ocean University, Shanghai, 201306, China [2]Professor, The Key Laboratory of Sustainable Exploitation of Oceanic Fisheries Resources, Shanghai Ocean University, Ministry of Education, Shanghai 201306, China

• ABSTRACT

Bigeye tuna (BET), *Thunnus obesus* is an important commercial species distributed in tropical and subtropical waters of Indian Ocean. Its stock status has been the focus of regional tuna fisheries management organizations. Because of a variety of fishing gears and fishing fleet structures, there have some statistical biases in the historical nominal catches of the Indian Ocean BET, and they are often neglected in recent stock assessment. This study used a simulation approach to explore the impact of catch error on stock assessment of BET. The operating model was developed using POPSIM software and conditioned based on the recent stock assessment with ASAP model. We used ASAP model as estimation model to evaluate the reliability of stock estimates when catch error was mis-specified. The preliminary results from 36 scenarios showed that the observation error of catch had obvious influence on the reliability of stock assessment.

KEYWORDS: Indian Ocean ; Bigeye tuna ; Stock assessment ; Catch ; Uncertainty

Abstract Theme: Environment

EV1-D3

Study on Forming Process and Properties of Wood-Plastic Composites

- Hu Fan[1*], Zhao Guoping[1]

[1.2]School of Material Science and Engineering, No.301 Xuefu Road, Zhenjiang, Jiangsu, 212000, China

ABSTRACT

Compared to developed countries, comprehensive utilization of timber is relatively lagging behind in China. Scraps such as sawdust and Wood shavings account for 25%~30% produced during wood processing, and only the weight of sawdust produced annually is about 2 million tons, of which only very few was used [1-2]. At the same time, the "white pollution" is so serious that our society needs efficient recycling technology urgently. Preparation of wood-plastics composites (WPC) which fills wood powder into plastic can not only utilize the waste plastics effectively and prevent environmental pollution, but can also alleviate the shortage of timber resources [3-4]. In this paper, the effect of forming conditions on the properties of WPC was investigated and processing parameters were optimized.

KEYWORDS: wood-plastic composites (WPC); recycling plastic; wood powder

EV1-D4

Diversified Applicability of Modern Environmental Ethics in Developing and Developed Nations

• Chen Liyuan*

College of Resources,Environment and Materials,Guangxi University, No.100 Daxuedong Road, Xixiangtang
District, Nanning, 530004, Peoples R China

• **ABSTRACT**

Environment & development is one of the major issues which are focused by the contemporary international society. To solve the conflicts between environment and development, the right environmental ethics is real necessary as ideological guidance. Modern environmental ethics is understood to contain two issues: the moral relation between human beings and nature, the moral relation within human beings. This paper firstly presented a comment on the validity of ecocentrism and anthropocentrism and expounded the theoretical significance of ecocentrism and its practical significance to developed countries. Secondly, discussion about the diversified applicability of modern environmental ethics among different kinds of nations. At last, the choice of developing countries should be based on the following three points: accelerate the process of modernization and improve living standards but avoiding side-effect of modernization; safeguard development sovereignty and take advantage of opportunities within keeping safety responsibility for global environment; participate with the global economy and take precautions against the damage from some unequal international orders.

KEYWORDS: Ecocentrism, anthropocentrism, developing and developed nations, modern environmental ethics

Abstract Theme: Environment

EV2-D1

Analysis of the Temporal and Spatial Distribution of $PM_{2.5}$ Concentration in Zhenjiang

- Chen Yinqi1*, Zheng Minxue1

[1]School of Science and Engineering, No. 301 Xuefu Road, Zhenjiang, Jiangsu, 212000, China

- **ABSTRACT**

As a developing city in Yangtze River Delta, Zhenjiang has been suffering from serious air pollution. And the important form of contamination is fine particle which is less than 2.5 microns in size, known as $PM_{2.5}$. This study collected the $PM_{2.5}$ average concentration of 8 monitoring points in Zhenjiang city from January 1, 2016 to May 27, 2016 and $PM_{2.5}$ daily concentration of 4 monitoring points from April 2015 to April 2016. With the use of geographic information system (GIS) technology, the authors have analyzed the regularity of pollution changes of atmospheric $PM_{2.5}$ concentration and explored the temporal and spatial distribution characteristics and the influencing factors.

KEYWORDS: $PM_{2.5}$; GIS; temporal distribution; spatial distribution; weekend effect

EV2-D2

Production of Molded Pulp Tray (MPT) from Pineapple Leaf Fiber Blended with Chitosan as Potential Food Packaging Materials

• Muhammad Arfanul Aziz[1*], Tien R. Muchtadi[1] and Wirongrong Tongdeesoontorn[2]

[1]Food Science and Technology, Faculty of Agricultural Engineering and Technology, Bogor Agricultural University (IPB), Bogor 16680, West Java, Indonesia.
[2]Technology of Management of Agricultural Produces and Packaging, School of Agro-Industry, Mae Fah Luang University (MFU), Chiang Rai 57100, Thailand

• **ABSTRACT**

Pineapple leaves contain high fiber which is potential source for developing superior eco-friendly food packaging material. However the utilization of pineapple leaves are still limited and many of them were only wasted. In this study we developed molded pulp tray (MPT) from pineapple leaf fiber (PALF) blended with chitosan. From the pulping process, anthraquinone treatment increased the pulp yield of pineapple leaf and unbleached-PALF sheet showed the best mechanical properties. Hence, unbleached-PALF sheet was further used for blending with chitosan. Various analyses were done to investigate the effects of chitosan concentrations (2, 4 and 6%, w/v) on the properties of PALF-MPT compared to the commercial MPT. Color measurement showed an increasing brightness (L*) and yellowish color (b*) with the higher chitosan concentrations. Water wetting time, moisture absorption, tensile and flexure properties of PALF-MPT were improved by the addition of chitosan. The FTIR-ATR spectrum showed that the interaction between hydroxyl-group of the PALF with the amino-group of chitosan was the reason of the improved characteristics of PALF-MPT. The SEM analysis showed that the chitosan layer increased the hydrophobicity of the PALF-MPT. Overall, the PALF-MPT containing 4% of chitosan showed better physical and mechanical properties compared to the commercial MPT. Our results imply a great potential of chitosan-PALF MPT as superior eco-friendly food packaging.

KEYWORDS: Pineapple leaf fiber (PALF), eco-friendly, anthraquinone, food packaging

Abstract Theme: Environment

EV2-D3

Electronic Money in Japan and China –A Study on Its Existing Development State and Outlook–

・Rui Zhao [1*]

[1]Faculty of Humanities, Law and Economics, Mie University, Kurimamachiya-cho, Tsu city, Mie 514-8507, Japan

・ABSTRACT

In recent years, electronic money is developing and becoming the engine of the cashless society for the spread of the Internet and rapid development of financial technology. This report explains the current development of electronic money based on the following analysis. Firstly, the definition, types, advantages, and weaknesses of electronic money are discussed. Secondly, based on analyzing the development differences of electronic money in Japan and China, some pieces of advice are given to the future development direction of the electronic money. The analysis results indicate that the tendency for electronic money and cash will coexist with a long time, and the development of mobile payment is worth expecting. In addition, Japan and China should build on their own countries' current state to learn from each other's experience in order to promote future economic development.

KEYWORDS: electronic money, electronic payment, corporate points, mobile payment

EV2-D4

The paris climate agreement ---- American make global people reconsider the development of global environment in the future

• Ning Jiahong

GuangXi Univercity, GuangXi, NanNing, 530022, China

• **ABSTRACT**

Since 2015 the signing of Paris climate agreement, there are always many supporters or objectors. And new American president Trump claim that American will exit the Paris climate agreement. But other countries still support this agreement can keep the global environment balance. For the developing of global environment, all over the world's people need to reconsider what the Paris climate can really help the environment and how to cooperate with other countries in the future. This page analyze and understand the essence of the Paris climate agreement from original intention and double opinions. More over, make a reasonable analysis and prediction for the Paris climate agreement's future through the date and information from 2015-2017 years.

KEYWORDS: Paris climate agreement, trump, carbon dioxide

Abstract Theme: Environment

EV3-DL

Features Formation of Natural-Technical Systems During in the Development of Riverine Areas

- Lebukhov Vladimir[1*]

[1]Khabarovsk State University of Economics and Law, 134, Tikhookeanskaya St., Khabarovsk, 680042, Russian Federation

- **ABSTRACT**

The article deals with the complex environmental problems that arise in the process of formation of natural-technical systems in the development of new and the development oldest historical territories of river valleys, and gives you the option of solving them.

KEYWORDS: Natural-technical systems, riverine areas, superfine particles

EV3-D1

Analysis on Students' Learning Behaviors and Information Resources in PBL Classes

・Yoshiyuki Fujita[1*] and Akikazu Kato[1]

[1]Department of Architecture, School of Engineering, Mie University, Kurimamachiya-cho, Tsu city, Mie, 514-8507, Japan

・ABSTRACT

The student-based pedagogy called Problem Based Learning (PBL) has brought about a major change in the learning environment of Japanese universities. In PBL style learning, providing various learning spaces corresponding to students' learning behaviors and providing various information resources are important issues to support students' learning. The objective of this study is to clarify students' learning behaviors and information resources used in PBL and to suggest a necessary design criteria for PBL classrooms. We conducted an observation of students' activities in a PBL class and portfolio surveys at Mie University. The results revealed are as follows; 1) group work consisted of many repetitive activities including: talking among group, observation, PC use, writing and reading, 2) A student with high engagement in active learning showed a highly repetitive pattern of learning activities, 3) IT tools encouraged group work and increased group members' engagement levels in active learning, 4) many students relied on Internet Web information, and the reliance becomes heavier as school year is higher. Based on the results, we suggest that a classroom needs to provide enough space, wide movement spines, appropriate table configurations, IT tools, and easy access to internet information as well as documental information.

KEYWORDS: PBL class, learning-behavior, information resource, learning environment

Abstract Theme: Environment

EV3-D2

Estimation of the Exhaust Gases Reduction Chiang Mai University's Electric Shuttles

• Jatuporn Sukoum[1*] and Thongchai Fongsamootr[1]

[1]Department of Mechanical Engineering, Faculty of Chiang Mai University, Thailand 50200

• **ABSTRACT**

This paper is about the problems of transportation in Chiang Mai University. Most people (including students) in the university drive cars and motorcycles (approximately 30,000) which causes scarce and limited parking spaces plus excessive exhaust gas emissions. Meanwhile, the university does provide electric shuttles in order to lessen these aforementioned problems. The purposes of this project are to study the estimation of gas reduction when using Chiang Mai University's electric shuttles compared to motorcycles, and to encourage campaigns for energy-saving and environment-friendly transportation. This project exhibits calculated exhaust gas emission reduction while using the electric shuttles instead of using motorcycles. The data was estimated via the relation of the number of people who use the shuttles and the distances which it goes comparing with ones with motorcycles.

KEYWORDS:Exhaust gases, Electric car

EV3-D3

An Experimental Study on the Steel Sheet Reiforced Synthetic Wood Beam

・ Yoko Aoyama[1*], Chikako Tabata[1] and Yoshito Tomioka[1]

[1]Graduate School of Engineering, Faculty of Architecture, Mie University, Kurimamachiya-cho, Tsu city, Mie 514-8507, Japan

・ **ABSTRACT**

This paper evaluates the feasibility of the steel sheet reinforced synthetic wood beam (RWB), which we invented. The RWB is the hybrid timber reinforced by a steel-sheet, which has holes and dowels in it. All elements are jointed together by dowels and adhesive. The feasibility of the RWB can be evaluated by its total bending rigidity as well as its shearing resistance, transverse buckling resistance, and the mass density. This paper focused on the total bending rigidity of the RWB. The total bending rigidity is constituted by the sectional integrity of layers or plies. The experiment conducted was a three-point bending test using handy models. Six patterns of specimens of the RWB of the same section size were prepared, divided into two categories: LVL and GLULAM. The results show that the LVL-series was more feasible than the GLULAM-series in terms of bending rigidity. The ratios of experimental bending rigidity of simple timber vs. the LVL-series were consistent with the theoretical ratios, while that of the GLULAM ones was inferior to the theoretical ratios. However, a closer observation found that when assuming that the wood between steel-sheets did not work, the experimental ratios of the GLULAM-series were approximately matched to the theoretical ratios.

KEYWORDS: Hybrid steel wood beam, Bending rigidity, Adhesive strength, Sectional integrity

Abstract Theme: Environment

EV3-D4

Growth and mortality of Bombay duck (*Harpadon nehereus*) and dynamic pool models in Wen-Tai fishing ground, East China Sea

· Xiaoxue Du[1*], Chunxia Gao[2], Siquan Tian[3]

[1]Master, College of Marine Sciences of Shanghai Ocean University, Shanghai, 201306, China [2]Doctor, College of Marine Sciences of Shanghai Ocean University, Shanghai, 201306, China [3]Professor, The Key Laboratory of Sustainable Exploitation of Oceanic Fisheries Resources, Shanghai Ocean University, Ministry of Education, Shanghai 201306, China

· ABSTRACT

With the decline of traditional fishery resources, the subordinate economic species, such as *Harpadon nehereus*, have gradually become a dominant species in the East China Sea, which has important economic value and plays a key role in the ecological status. From November 2015 to August 2016, a total of 2637 samples of *H. nehereus* were collected from Wen-Tai fishing ground. Based on length data of these samples, ELEFAN I module was used to estimate growth and mortality parameters, and the catch equation including incomplete β function dynamic pool model was adopted to analyze the catchable size and evaluate the utilization of population resources for *H. nehereus*. The results show that: on the basis of hypothetical cube law W=aLb, the length-weight relationships of *H. nehereus* from Wen-Tai fishing ground was W=0.0005L3.87 (R2=0.9067), and this relationship was insignificantly different between females and males ($P > 0.05$). By the Von Bertalanffy's method, the parameters of *H. nehereus*'s growth equation were L_∞=32.13cm, K=0.39 and t_0=-0.69a, the turning point for body weight growth curve of the stock was situated at t=2.78a. The total mortality coefficient calculated with linear catch curve of body length was 2.55; the natural mortality coefficient estimated by Pauly's

empirical equation was 0.70; the fishing mortality coefficient was found to be 1.85 and the exploitation rate was equal to 0.73. The dynamic pool model shows that, the age of capture and the first catchable size should be increased, the first catchable age is 1.8a, and the corresponding capture length is 19.9cm.

KEYWORDS: *Harpadon nehereus* ; growth parameters ; catchable size ; dynamic pool model ; Wen-Tai fishing ground

EV4-D1

A Study on Hydrophobic Sand Based on Waste Expanded Polystyrene

• Yang Zhe[1*], Yan Yongdong[2]

[1]Faculty of Civil Engineering and Mechanics, Jiangsu University, 301 Xuefu Road, Zhenjiang, Jiangsu, 212013, China

• **ABSTRACT**

Nowadays, with the rapid development of society, our life has become more and more convenient. However, we also encounter a lot of environmental problems. Among them, white pollution and desertification are two serious problems. This essay introduces a method to ease both of them, by making a new kind of sand——EPS hydrophobic sand. This kind of sand is made by waste EPS, toluene and common sand, and has high hydrophobicity, which means that it could avoid water in the soil to evaporate, saving more water and preventing desertification.

KEYWORDS: waste EPS, hydrophobic sand, desertification, energy conservation

EV4-D2

Consideration on Educational Environment of BIM in the Department of Architecture at Mie University

• Takahiro Takeuchi[1*] and Akikazu Kato[1]

[1]Graduate School of Engineering, Mie University, Mie, 514-8507, Japan

• ABSTRACT

The study aims to exemplify and evaluate the educational environment for the Building Information Modeling (BIM) software in the Department of Architecture at Mie University. BIM is a digital representation of physical and functional characteristics of a facility and is becoming a new trend in planning and design methodologies in architecture. A questionnaire survey targeting the undergraduate students in the Department of Architecture at Mie University was conducted. In addition, this study included interviews with students who use BIM applications. With the survey and interviews, the present study examined 1) recognition and utilization of BIM by undergraduate students and 2) the present condition of the educational environment that promotes the utilization of BIM at Mie University. The results of the survey and interviews indicated the following; 1) between each school grade, degrees of recognition of BIM differ, 2) three Problem-Based Learning (PBL) classes to learn BIM and a design studio class that assign students to use BIM take place, and 3) the problems concerning the introduction of BIM are that a) the method of BIM use is different from the Computer Aided Design (CAD) and b) it requires a personal computer with high throughput.

KEYWORDS: BIM, CAD, education, PBL

EV4-D3

Bioinspired Polydopamine from Local Green Mussel Foot Protein (Perna viridis) as Eco-friendly Coating Material

• Fitria Irsbawati[1*], Bambang Riyanto[1] and Akhiruddin Maddu[2]

[1]Department of Aquatic Products Technology, Bogor Agricultural University (IPB), IPB Darmaga Campus, Bogor, 16680, West Java, Indonesia
[2]Department of Physics, Bogor Agricultural University (IPB), IPB Darmaga Campus, Bogor, 16680, West Java, Indonesia

• ABSTRACT

Corrosion has become a serious problem leading to great economic losses worldwide. Coating is the most common way to prevent corrosion. However, most of the inorganic coating materials are not eco-friendly as they are toxic to living organism and can be accumulated in the environment due to their non-degradable feature. Developing eco-friendly coating material is therefore of great importance. Polydopamine (PDA) is a component of coating material that can be formed through polymerization of dopamine (DA). The byssus structure of green mussel (Perna viridis) contains DA which can be developed as eco-friendly coating material. The objective of this study was to study the coating ability of PDA-containing coating material as eco-friendly anti-corrosion agent. The Fourier Transform Infrared spectroscopy has shown that PDA can be formed successfully from DA through polymerization reaction. Coating materials were prepared by mixing polyacrylic acid (PAA) with three concentrations of PDA (mg.mL-1): 1, 2, and 3. The coating materials were then tested on iron specimens. Coating material containing 1 mg.mL-1 PDA showed the best anti-corrosion ability, as it has the lowest corrosion rate (0.56±0.09 mpy) with 81.46±10.53 μm coating thickness. Coating material containing 3 mg.L-1 PDA showed a potential as self-cleaning coating as it has optimum hydrophobic activity (water contact angel of 113.5°). Our study has successfully indicated that PDA not only has an anti-corrosion ability but also has the self-cleaning feature which will be very valuable for further eco-friendly coating material development.

KEYWORDS: Anti-corrosion, byssus, coating material, self-cleaning

EV4-D4

Research on the Legislation of Local Laws and Regulations of the Chinese Sturgeon Reserve in the Yangtze River Estuary

• Yuan Chai[1], Shuolin Huang[2], Yuru He[3]

[1]Economic and management college of Shanghai Ocean University, Huchenghuan Road NO.999,Pudong New District in Shanghai, 210306, China, chaixianrun@163.com
[2]Shanghai Ocean University, Huchenghuan Road NO.999,Pudong New District in Shanghai, 210306, China, slhuang@shou.edu.cn
[3]Foreign Language college of Shanghai Ocean University, Huchenghuan Road NO.999,Pudong New District in Shanghai, 210306

• ABSTRACT

Since the implementation of “The Yangtze River Estuary Chinese sturgeon nature reserve management approach in Shanghai” on the April 15, 2005, it provides a strong regulatory system for the scientific and effective protection of Chinese sturgeon and its habitat. As the time was tight, as well as the Chinese sturgeon and its habitat ecological environment protection is still in the exploratory stage, in the content and provisions on the use of the principle should not be appropriate, for some issues using a general form of treatment. With the change of time and space and the protection of Chinese sturgeon deepening, the existing provisions and provisions of the provisions of the work of protected areas cannot meet the actual needs. In 2016, the local laws and regulations of the Chinese sturgeon nature reserve in the Yangtze River Estuary in Shanghai have been included in the legislative planning by the Municipal People's Congress. In this context, this paper analyzes the problems and causes of the legal construction of the Chinese sturgeon natural reserve in the Yangtze River estuary in Shanghai, and expounds the feasibility of the legislation of the Chinese sturgeon nature reserve in the Yangtze River estuary in Shanghai. 1)

There is a solid legal basis; 2) the introduction of local laws and regulations is to solve the "approach" in the implementation of the problems, 3) the introduction of local laws and regulations is the only way to solve the problems in the implementation of the "approach". Finally, the corresponding countermeasures and the establishment of the legislation of the Chinese sturgeon nature reserve in the Yangtze River estuary of Shanghai. First, we should establish the four objectives of the legislation of the protected area. Secondly, we should adhere to the two principles of legislation, namely, the basic principles, including the principles of sustainable development, the principle of prevention, the principle of ecological priority, the principle of systematic protection; Finally, six basic systems should be established, including open management system, biological resource characteristic system, land tenure system, ecological compensation mechanism, public participation system, and special ambulance system, including the principle of openness, management, And domesticated breeding system.

KEYWORDS: Chinese sturgeon; nature reserve; Yangtze River estuary; local legislation

EV5-DL

Cultural Landscape Management: Ban Wor-Kaew Hang-chat District Lampang Province

- Asst. Prof. Dr. Khomsi Meepukdee

College of Interdisciplinary Studies, Thammasat University Lampang Campus 248 Lampang-Chiangmai Rd., Hangchat, Lampang Province, 52190 Thailand
E-Mail: khomsee@hotmail.com

- **ABSTRACT**

Cultural Landscape means recognising the physical or geographical conditions of the areas which contain natural and cultural resources. They relate to historical and aesthetic value. The importance of the cultural landscape refers to the origin and the development of the society through physical conditions and usability of the space.

The objective of this article is to study the characteristics of the cultural landscape in Ban Wor-Kaew, Hang-chat District, Lampang Province in order to examine interesting and important issues such as the general history of the community, environment, cultural landscape, the architecture and agricultural areas. Also, to study the guidelines of the ways to manage the cultural landscape including Maintenance and Preservation, Restoration-Reconstruction and Development and Creation.

The study found that Ban Wor-Kaew is a community with a plentiful of forest resources, wildlife and seasonal food. It is a model community which received numerous awards such as the Village of Sufficiency Economy Learning Center in 2013 and Master Fund Mother Earth in 2015 due to its sustainability. This community is located in the foothill flatland. It has an obvious management for the cultural landscape such as locating the temple in the centre of the village as the heart of the community. For the architectural style, houses have two stories raised on stilts or wooden bunk with a wooden mortar. Each area inside is allocated clearly for each daily basis. Outside the houses have

home-grown vegetables and fence made from weaving-bamboo. The farming areas, which covers a large space, are in the outer areas, apart from the community. These illustrate the clear approach of the cultural landscape management. Therefore, with this approach, the settlement formed by cultural and natural environments has created a cultural landscape and community of Ban Wor-Kaew.

KEYWORDS: Cultural Landscape, Cultural Landscape Management, and Cultural Landscape in Rural Context

EV5-D1

Trend of Healing Space Setting in Acute Care Unit of Hospitals in Japan: a Positive Work Environment for Healthcare Providers

・ Adriana Anastasia Jenahat[1*], Akikazu Kato, Ph.D.[1]

[1*]Graduate School of Engineering, Mie University, Mie, 514-0001, Japan

・ABSTRACT

The healthcare setting of acute care wards is regarded as stress inducing environments that will affect healthcare providers. The need for healing space to eliminate environmental stressors becomes important especially in terms of staff efficiency. In Japan, a number of planning and design schematics of acute care wards have been proposed in response to the issue of staff efficiency. In decentralized nursing stations, nurses and caregivers no longer need to access a central station for patient information which can reduce time wasted by providing direct patient care. On the other hand, centralized nursing stations provide more effective communication. Having all private rooms also has a great impact. Therefore, this paper aims to clarify and to assess the state of unit configuration of acute care facility planning in Japan as a healing environment facility for healthcare providers and that can support staff efficiency by reducing time wasted and reducing stress factors. The assessment was performed by floor area analysis and facility interviews of acute care units from two hospitals in Japan. The resulting information can be used to understand and to improve future staff effectiveness.

KEYWORDS: ward, acute care unit, healing environment, healthcare provider, unit configuration.

Abstract Theme: Environment

EV5-D2

Non-market Value of China's Shared Bicycle Market Externality

- Pan Zhao

China-ASEAN Research Institute, Guangxi University, 530000, China

- **ABSTRACT**

With the booming of bicycle-sharing, more and more people tend to use shared bikes rather than vehicles. This type of transportation can not only provide convenience for people, but also protect environment and save resources. Nowadays there are 27 brands of bicycle-sharing in the market. This paper is going to do data analysis about Non-market Value of China's Shared Bicycle Market Externality according to Contingent Valuation Method(CVM). The usage of bicycle-sharing was analyzed empirically according to the theory of sampling test. People will be asked how much they were willing to pay for the effect of non-market value of shared bicycle market. Finally, the average count could be the value.

KEYWORDS: Bicycle-sharing, CVM, personal correlation, questionnaire

EV5-D3

Discussion on Air Pollution caused by Vehicles

• Zhu Zhaowei[1], Zuo Yanyan[2]

[1]School of Automotive and traffic engineering, No.301 Xuefu Road, Zhenjiang, 212013, China

• **ABSTRACT**

Nowadays, even the worldwide automobile industry is developing at high speed, the air pollution it brings can not be simply neglected. This thesis mainly explains what the air pollution is, how the automotive industry and vehicle itself arouse air pollution and its perniciousness as well as potential effects that will exert on human beings. The purpose of the article is to call on people to give more emphasis on air pollution and positively cooperate to improve the air quality.

KEYWORDS: Air pollution; automobile industry; vehicles; measures of protection

Abstract Theme: Environment

EV5-D4

A Study on the Structural Characteristics of Glued-Laminated-Beams of Sectional Variants through Scale-Model Experiments

・ Kenta SUGIURA[1*], Yoshito TOMIOKA[1] and Chikako TABATA[1]

[1]Graduate School of Engineering, Faculty of architecture, Mie University, Kurimamachiya-cho, Tsu city, Mie 514-8507, Japan

・ **ABSTRACT**

This purpose of this study is to obtain the general bending characteristics of a wide variety of sections of Glued-Laminated-Beams through 1/20 scale model experiments. These beams are intended to bridge over 9m spans at a 900mm pitch. The relationship of load vs deflection-amount for the beams was obtained through the four point bending test. These results show that the bending performance of beams of symmetric sections was consistent with the target values, and the asymmetric ones significantly inferior to the target values. The authors recommend that 1) symmetric beams are should be consistent to the target values, 2) asymmetric ones should be significantly inferior to the target values without considering the influence of either transverse buckling or a weak axis of the bending stiffness other than in the vertical orientation.

KEYWORDS: wood, asymmetrical cross section, weak axis, bending test,

EV6-E1

Proposal of Quality Evaluation Method of Porous Concrete Using Void Ratio Estimation by Ultrasonic Wave

• E RIDENGAOQIER[1*], Shigemitsu Hatanaka[1] and Naoki Mishima[2]

[1]Porf, Div. of Arch, Graduate School of Engineering, Tsu, 514-8507, Japan [2]Assoc. Porf, Div. of Arch, Graduate School of Engineering, Tsu, 514-8507, Japan

• **ABSTRACT**

Porous Concrete (no-fines concrete or pervious concrete) is an environmentally friendly concrete consisting of a cementing matrix (paste or mortar), a coarse aggregate, little or no fine aggregates, an admixture, water, and continuous voids which are intentionally incorporated to produce various kinds of special characteristics. Properties of voids create various performance effects, such as permeability, sound absorption, water purification, and greening. In addition, properties of voids are changed easily when constructed on site because of the variation of the degree of compaction. Therefore, quality evaluation of porous concrete at post - construction is extremely important. Generally, the quality evaluation of porous concrete at post - construction is done through core specimens, which are obtained from constructed structures. However, core specimens are difficult to be drilled out and defects are easily induced in structures after coring. Therefore, an easier and accurate method for quality evaluation is necessary. In the present research, relationships between void ratio and ultrasonic wave velocity of porous concrete were examined. According to test results, it was confirmed that the relationship between void ratio and ultrasonic wave velocity can be fitted by a quadratic function.

KEYWORDS: Porous concrete, Quality evaluation, Ultrasonic wave, Void ratio, Pavement

EV6-E2

Transferring fishermen in the Yangtze river basin—Based on The Yangtze Integrated Protection Program

• Xiong Zexiu

Shanghai ocean university, No.999, Huchenghuan Road, Nanhui New City, Shanghai, 201306, China

• **ABSTRACT**

The Yangtze River Basin is rich in living aquatic resources and contains huge ecosystem services value. But due to overfishing, deterioration of water environment, hydraulic engineering, navigation and sand-excavating and so on, the Yangtze living aquatic resources exhausted seriously. Although relevant departments have taken a series of actions, like as setting forbidden fishing zone, establishing nature reserve, enhancement and releasing, did not change the tendency of Yangtze aquatic resources' s drying up, especially rare and endangered aquatic animals. Based on The Yangtze Integrated Protection Program, this article found that complete measures framework has been built relatively, and noticed that the fishermen is directly related to the fishery resources and water environment and is one of an important factor. Under the background of the Yangtze Integrated Protection Program and a complete ban on fishing in the Yangtze river basin, that the government how to guide and promote transferring fishermen has an important impact on the Yangtze river' aquatic organism resources conservation. This article is based on a new footing that draw on the experience of forest conservation and restoration in China — turning the loggers into rangers, and advocating fishermen to protect fish, combining aquatic environment protection and controlling the fishing effort. It responds to the policy that encourages transferring fishermen, and conform to the trend of the times.

KEYWORDS: The Yangtze Integrated Protection Program, fishermen, transfer

EV6-E3

Research on the Impact of Green Credit Policy on Chinese Industrial Structure

• Wang Feifan[1*], Wu Mengyun[1]

[1] School of Finance and Economics, Jiangsu University, 301 Xuefu Road ,Zhenjiang, 212013, China

• ABSTRACT

With the intensive outbreak of pollution, green credit policy plays a significant role in curbing the development of high energy consumption and high pollution industries. Green credit policy can improve the transformation and upgrading of Chinese industrial structure and reduce environmental risk. Thus, it is one of the most vital tasks for the banks to handle the relationship between green credit policy and the transformation of industrial structure

KEYWORDS: green credit policy, industrial structure, commercial banks

EV6-E4

Development and Application of Acoustic Doppler Current Profiler (ADCP) for Continuous Monitoring of Suspended Sediment Concentration as Pollution Indicator in the Ocean

・Angga Dwinovantyo[1*], Henry M. Manik[2], Tri Prartono[2] and Susilohadi[3]

[1]Graduate School of Marine Technology, PMDSU Batch II, Bogor Agricultural University (IPB), IPB Darmaga Campus, Bogor, 16680, West Java, Indonesia
[2]Department of Marine Science and Technology, Faculty of Fisheries and Marine Sciences, Bogor Agricultural University (IPB), IPB Darmaga Campus, Bogor, 16680, West Java, Indonesia
[3]Marine Geological Institute, Ministry of Energy and Mineral Resources Republic of Indonesia, Jl. Dr. Djunjunan No.236, Bandung 40174, Indonesia

・ABSTRACT

Suspended sediment has long been recognized as an important sea contaminant and must be considered as one of the great killers of coral reefs. However, the measurement of suspended sediment concentration (SSC) using direct measurement method has some limitations, such as lack of spatial and temporal resolution, point-to-point analysis, and takes time. In this study, we developed an advance method in observing SSC using static and mobile Acoustic Doppler Current Profiler (ADCP). The linear regression analysis between echo intensity measured by ADCP and by direct measurement methods showed that ADCP is a reliable method to measure SSC ($r = 0.80$). The echo intensity data recorded by static and mobile ADCP in Lembeh Strait revealed that the SSC was affected by tidal. Higher SSC was observed in low water compared to in high water. Mobile ADCP has an additional advantage for being able to record data in several points. Highest SSC was observed in near port area compared to dive site. SSC measurement by ADCP could be potentially used to continuous monitoring pollution in the ocean.

KEYWORDS:Echo intensity, mobile ADCP, ocean pollutant, static ADCP, suspended sediment concentration

EV6-E5

Large Scale Preparation and Structural Analysis of LPS of Host Bacteria of Bacteriophage *Φ*X174

・ Chinami Shinoda[1*] and Minoru Inagaki[2]

[1and2]Department of Life Science, Faculty of Bioresources, Mie University, Kurimamachiya-cho, Tsu city, Mie

・ **ABSTRACT**

Elucidating the mechanism of virus infection can improve medical environments. Bacteriophage *Φ*X174, one of the smallest and simplest viruses, infects host bacteria by recognizing lipopolysaccharide (LPS) on the surface of bacterial cell membranes. LPS is made of specific kinds of sugar chains as well as of lipids. Large scale preparation of LPS was conducted in this study. Three species of bacteria (Salmonella) were grown in 6 L culture media using a jar fermenter. As results, 15-57 g of dried bacterial cell was obtained and each LPS was then extracted with the PCP method. LPS was degraded by 1 % acetic acid in order to obtain the sugar chain only. The purity and mass of the sugar chains were analyzed by LC-ESI-IT-MAS. In the future, structural change of the LPS binding to *Φ*X174's proteins will be analyzed.

KEYWORDS: Bacteriophage *Φ*X174, LPS, NMR

EV7-B1

Distribution of nutrients and chlorophyll a and its relationship with red tide

• Song Yating

Shanghai ocean university, No.999, Huchenghuan Road, Nanhui New City, Shanghai, 201306, China

• **ABSTRACT**

China has become one of the most frequent red tide in the world because of the aggravation of marine pollution caused by the intensification of human activities. The mechanism of red tide is the result of the comprehensive effect of various environmental factors. However, it is generally believed that the Nutrients is the material basis of the red tide happened in the offshore water. The eutrophication of water is always accompanied with the occurrence of red tide. And the essence of the red tide is a harmful water discoloration ecological phenomenon caused by phytoplankton, protozoa and bacteria explosive proliferation or high aggregation. The phytoplankton is an important carrier of marine chlorophyll a. So the concentration of nutrient and chlorophyll a in water is an important index of the prevention and control of red tide, and the research also play a vital role in the study of nutrient and chlorophyll.

KEYWORDS: Nutrients, chlorophyll a, chlorophyll fluorescence, red tide

EV7-B2

Mechanical Properties of *Dippterocarpus tuberculatus* for Fabricating Leaf Bags, the Alternative Package for the Green World

• Phatthakon Taotiang[1*] and Wetchayan Rangsri[1]

[1]Department of Mechanical Engineering, Faculty of Engineering, Chiang Mai University, Thailand

• **ABSTRACT**

Plastic bags effect many environmental problems, and many solutions have been proposed. This paper explores leaves – a natural material which is widely available, is environmentally friendly, and does not necessarily require high-waste generating manufacturing processes – as an alternative material. From an engineering point of view, however, the properties of leaves are important factors in determining the suitability of the material. The aim of this research is to determine mechanical properties of *Dipterocarpus tuberculatus* leaves – those of a species of deciduous tree commonly found in the north and north-east regions of Thailand. The local mechanical properties of leaves, determined experimentally, were tensile strength, shear strength, and impact resistance. The results show that the mechanical properties has a similar force and work to fracture on each leaves. On the other hand, the leaf's structure with vein area has higher strength than lamina area obviously. In future studies, these results could be used to simulate suitable leaf bag design features, for instance shape and orientation of fibers.

KEYWORDS: Mechanical properties, *Dipterocarpus tuberculatus*, Natural material, Leaves, Bags

Abstract Theme: Environment

EV7-B3

A Modified Brain Storm Optimization Algorithm for Applications of Wiener Model Identification

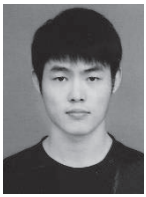
Ying Song[1*], Tianhong Pan [2]

[1] School of Electrical and Information Engineering, Jiangsu University, Zhenjiang 212013, China
[2] School of Electrical and Information Engineering, Jiangsu University, Zhenjiang 212013, China

• ABSTRACT

Wiener model is widely used in the industrial process, which is composed of a linear dynamic block and a nonlinear static block. Owing to the nonlinear characteristics, the optimization algorithms are often used to estimate the parameters. However, the traditional iterated optimization algorithms cannot meet the requirement of estimate accuracy and efficiency. In this paper, the modified Brain Storm Optimization (mBSO) algorithm is proposed to avoid premature convergence and local optimization in parameter estimation. Changing the probability parameters in the algorithm shows better performance in the identification accuracy. Idea Difference Strategy is also applied to effectively ensure the diversity of individuals. The comparative experiments are presented to demonstrate the effectiveness of the proposed method.

KEYWORDS: Wiener model, parameter identification, modified BSO (mBSO) algorithm, convergence



EV7- B4

Stability Analysis of Hybrid Offerings Strategy Based on Environmental Benefits

• Zhang Qin-hong[1*], Luo Jian-qiang[2]

[1,2]School of Management, Jiangsu University, Zhenjiang, 212000, China

• **ABSTRACT**

It is one of the effective ways to implement the hybrid offerings strategy for solving the environmental problems and industrial dilemmas faced by Chinese manufacturers. Based on the framework of Extended Producer Responsibility(EPR) system, this paper constructed the tripartite asymmetric evolutionary game model of manufacturers, governments and customers, discussing the evolution paths with each participant's different behavior strategies, analyzing the influences of each parameter changing on the hybrid offerings strategy, and using MATLAB for numerical simulation. The result shows that achieving long-term stability of hybrid offerings strategy is closely related to the behavior strategies of every parties; under the support of the government, the decreases of hybrid offerings strategy cost and product-using cost, the increases of the direct benefit, the indirect benefit, the potential loss and the customer value created by governments, as well as the customer's environmental awareness is the key to the successful implementation of the hybrid offerings strategy. Finally, based on the theoretical analysis, this parper gave some suggestions for every parties.

KEYWORDS: hybrid offerings; environmental benefits; evolutionary game; Extended Producer Responsibility(EPR)

EV7-B5

Effects of Heat Stress on Photosynthesis in Green Peppers and Cucumbers

・ Misa Horii[1*], Mizuki Saijo[2] and Kazuyoshi Nada[1]

[1]Graduate School of Bioresources, Faculty of Sustainable Resource Science, Mie University [2]Department of Planning and Administration, Team of Human Resources Labor, Mie University

・ABSTRACT

Photosynthesis is an important process for energy production, but which is particularly sensitive to heat stress. Recently, the global temperature has been rising consistently. Heat stress induced by high temperatures has a negative influence on crop cultivation and productivity. Accordingly, there is an urgent necessity to collect data of breeding crops' heat tolerance. In this study, we investigated the influence of heat stress on photosynthesis, specifically on green pepper and cucumber leaves. Our data shows that the photosynthetic rate (Pg) in both species decreased above 42.5 ℃. When photosynthesis is inhibited by heat stress, the energy for photosynthesis is left over. In general, the excess energy has a negative influence on plants. However, plants have functions to dissipate the excess energy to avoid negative effects. The xanthophyll cycle is one of the functions. We found that the function of the xanthophyll cycle was higher in peppers than in cucumbers at 42.5 ℃. Also, the maximum quantum yield of PSⅡ(Fv/Fm), which is an indicator of the damage caused by excess energy, decreased in cucumbers under high temperatures, but did not decrease in green peppers. These results indicate that the functional enhancement of xanthophyll cycle may induce increased heat tolerance of photosynthesis.

KEYWORDS: Photosynthesis, xanthophyll cycle, heat stress, climate change

EV8-D1

Clean Water Alternative from Rainwater Using Rain Bank Filtration to Support Water Requirement in Indonesia

• Eric Faustine[1], Dimas Ardi Prasetya[1]

[1]Environmental Engineering and Management, Bogor Agricultural University (IPB), Cilibende Campus, Bogor, West Java, 16151, Indonesia

• **ABSTRACT**

The needs of water are increasing along with the rapid growth of human population. The overusing of underground water may lead to environmental problems. According to the Indonesia Climate Change Sectoral Roadmap document prepared by National Development Planning Agency (2010), there will be a very high risk of decrease in water availability on the period of 2020-2025 in the Java-Bali region. This may threaten urban and agricultural activities that require water supply. Human has done several attempts to collect water. One of them is the rainwater harvesting. Rainwater can be an alternative of water resources. On the other hand, the current condition of rainwater is mainly polluted by acid gas from smokestacks, gas from outside incineration, and emission gas from gasoline-fueled vehicle. This paper reviewed the potential effective and efficient system for rainwater harvesting in Indonesia. One of the system which is most effective and efficient to harvest rainwater is the Rain Bank Filtration System. It used multiple filters to produce clean water more optimal with lower concentration in some parameters. Some studies have proven that this system might be able to support water supply in most part of Indonesia.

KEYWORDS: Rain bank filtration, rainwater harvesting, clean water alternative

EV8-D2

Analysis of Soil Pollution Impact on the Quality of Agricultural Products & Suggestions -- from the Perspective of Environment and Economics

· Li Caixia

Shanghai Ocean University, No.999, HuCheng Ring Road, Shanghai, 201306, China

· **ABSTRACT**

In this era of rapid economic development, people tend to focus only on the income of economic interests, but despise the economic development and environmental harmony of the main theme of this social development. Soil is the foundation of the survival of plants, it is the foundation of agricultural development, the soil environment has a direct impact on crops, so the quality of agricultural products have a direct impact, thus affecting the quality of life and health of people. However, there is a series of contradictions between China's sustained and rapid economic development and rapid population growth and soil environment, economic development and population growth lead to soil environmental pollution, and soil pollution in turn inhibit the healthy development of the economy and people's health. This paper will analyze the ways and characteristics of soil environmental pollution, the status of soil pollution in China and its impact on agricultural product quality, and put forward the policy recommendations to improve the status of soil pollution in China, improve the quality of agricultural product, to provide policy recommendations to achieve sustainable development of agriculture.

KEYWORDS: Soil Pollution, Agriculture Product Quality, Economic Analysis, Policy Suggestion Introduction

EV8-D3

Removal Acid Dye from Aqueous Media by Adsorption onto Organic Amine-Functionalized Rice Husk Ash

• Kodchakorn Palaphan[1], Supornthip Tapanya[1] and Sakdinun Nuntang[1*]

[1]Department of Industrial Chemistry and Textile Technology, Faculty of Science, Maejo University, Chiang Mai, 50290, Thailand

• **ABSTRACT**

The objectives of this study were to prepare the organic amine functionalized rice husk ash (RHA-NH2) as adsorbent to remove acid dye in aqueous media. The synthesized adsorbents were characterized by using X-ray Powder Diffraction (XRD), Fourier Transform Infrared Spectroscopy (FTIR) and Scanning Electron Microscopy (SEM). The RHA-NH2 exhibited amorphous silica structure and possessed organic amine group functionalized on silica surface. The adsorption was studied by using Acid Blue 225 as acid dye. The amount of acid dye remaining in aqueous solution was measured by ultraviolet-visible spectrophotometer (UV-Vis). The RHA-NH2 revealed higher adsorption capacity than RHA because amine group enhanced the chemisorption energy.

KEYWORDS: Adsorption, adsorbent, rice husk ash, acid dye, organic amine groups

Abstract Theme: Environment

EV8-D4

A Quantitative Study on Ecological Environment and Tourist Economy—Based on Guangxi Autonomous Region

• Song Jianlin[1*]

[1]China-ASEAN Research Institute, Guangxi University, Nanning , 530000, China

• ABSTRACT

The healthy environment is necessary for our survival and development. The protection of ecological environment becomes more and more important in recent years. And tourism is one of the human activities and is also one of the largest industries in the world. With the development of economy, the outbound tourism becomes more and more popular. The coordinated development between ecological environment and tourism economy has already caused the extensive concerns from more and more people. So, based on the coordinated development theory and the data of Guangxi Autonomous Region, this article set up its calculating model to making a quantitative assessment for coordinated development on the ecological environment and tourist economy. Through the calculating we can find that the benefits of tourism economy and ecological environment increased stably in the past six years, and the index of coordinated development is also higher than before.

KEYWORDS: Ecological environment, tourism economy, coordinated development theory

EV8-D5

Spatio- temporal variation of the fruit fly, *Bactrocera scutellata* (Hendel) in Central Japan

• Megumi Murakami[1*] and Morio Tsukada[1]

[1]Insect Ecology Laboratory, Graduate School of Bioresources, Mie University, Tsu, Mie 514-8507, Japan,

• **ABSTRACT**

The fruit fly (Diptera: Tephraidae) is one of the serious pests for horticultural plants. Among these fruit flies, *Bactrocera scutellata* (Hendel) is distributed in Japan and in neighboring countries. In the southwestern part of Japan, it utilizes male flowers of four wild gourd species, *Trichosanthes laceribracteata* Hayata, *T. miyagii* Hayata, *T. multiloba* Miq and *T. ovigera* Blume as host plants (Ohno et al., 2006). *B. scutellatais* is also found to use the fruit of cucumbers in Okinawa. Therefore, even though cucumbers have not been attacked by this fruit fly on the Japanese main islands, this insect has a potential to become a pest of cucumbers there as well. However, the seasonal fluctuation as well as year-to-year dynamics of *B. scutellata* has not been studied in these areas. Therefore, we tried to analyze the fruit fly population dynamics for eight years at six study sites in Mie Prefecture, by using cure-lure traps. The result showed that the seasonal occurrence of this species has two peaks, in spring and autumn. Large year-to-year fluctuation was also found.

KEYWORDS: Fruit fly, Cucurbitaceae, Pest, Population dynamics

Abstract Theme: Environment

EV9-E1

LST Diesel Engine Cylinder-holes for Environmental Performance Promotion:A Theoretical and Experimental Investigation

・Xingtao Zhong [1*], Yonghong Fu [1], Zhengyang Kang [2]

[1,2] School of Mechanical Engineering, Jiangsu University, No.301 Xuefu Road, Zhenjiang, 212013, China

・ABSTRACT

Cylinder-piston ring friction pairs are directly related to the comprehensive performance of internal-combustion engine. To improve its lubrication, three texturing schemes were designed according to the wear characteristics on different areas of cylinder holes. Firstly, laser processing parameters were fixed by process experiments. And then some cylinder holes were processed using laser surface texturing technology (LST). Lastly, these cylinder liners were assembled in engine for bench test. Test results show that specific fuel consumption of diesel engines equipped with three micro-textured cylinder liners have reduced in different degrees compared with the non-textured one, and engine oil consumption is decreased by45.5% at most. Research shows that comprehensive performance of a diesel engine fitted with the cylinder hole textured in the top dead center and skirt area has been improved significantly.

KEYWORDS: LST, Cylinder-holes, Partition design, Test bench

EV9-E2

Diversity of Lepidoptera in Ujung Kulon National Park

Ken Rizkyna[1*], M. Deo Bramanthio[2], Jawardi Budi Hernowo[2], Raffy Ryan Akbar[3], and Regita Melba[4]

[1]Department of Fisheries Resources Utilization,Fisheries and Marine Science Faculty, Bogor Agricultural University (IPB), IPB Darmaga Campus, Bogor, 16680, West Java, Indonesia ,[2]Departement of Forest Resources Conservation and Ecotourism, Forestry Faculty, Bogor Agricultural University (IPB), IPB Darmaga Campus, Bogor, 16680, West Java, Indonesia

[3]Departement of Biology, Mathematics and Natural Sciences Faculty, Bogor Agricultural University (IPB), IPB Darmaga Campus, Bogor, 16680, West Java, Indonesia

[4]Departement of Plant Protection, Agriculture Faculty, Bogor Agricultural University (IPB), IPB Darmaga Campus, Bogor, 16680, West Java, Indonesia

ABSTRACT

Taman Nasional Ujung Kulon (TNUK) or Ujung Kulon National Park is a conservation area which has the largest lowland tropical forest ecosystem in Java and it is the habitat for the endangered Javan Rhino. The preserved natural conditions have made TNUK as good place for many flora and fauna, thus it has great biodiversity. One of fauna found in TNUK is the order Lepidoptera which consists of butterflies, moths, and skippers. This research was aimed to develop the Lepidoptera inventory in TNUK. The study was conducted at three locations: Karangranjang section, Cibunar section and Cidaon section using line transect method and time search method. We found 50 species of Lepidoptera, with the Mycalesis perseus cepheus as the species with highest abundance. We also found Troides helena in Karangranjang section which became one of the endangered species. The diversity index in Karangranjang section was H'=3,047, in Cibunar section was H'=2,524 and H'=2,265 in Cidaon section. Lepidoptera plays a pivotal role as pollinators in the forest, ranging from trees to shrubs. Our study served an important information about the diversity and population of Lepidoptera in TNUK which can be used as environmental quality indicator.

KEYWORDS: Biodiversity, butterfly, environment, moths, skippers

Abstract Theme: Environment

EV9-E3

China's Regional Environmental Protection Measures Based on Its Economic and Environmental Background

- Ouyang Xiafei

Guangxi University, No.100 Daxue Road, Nanning, Guangxi, 530004, P.R. CHINA

• ABSTRACT

In recent years, China's economy has maintained a high growth rate. Since 2010, China's economy has surpassed Japan as the world's second largest economy. With the rapid growth of economy, China's environmental situation has aroused wide attention from all walks of life. Therefore, it is worthy for us to think about the relationship between environment and rapid economic progress. The thesis selects four major environmental problems of China including reduction of forest coverage, deteriorative water resource conditions, severe air pollution and sharp increase of solid waste. Then the thesis analyzes the relationship between economic development and environmental protection and concludes that both of them are complementary with each other. Finally the thesis puts forward three measures: enhance the Northwest regions' environmental protection technology as soon as possible, promote the coordinated development of economy and environment in the central China, and implement the path of sustainable development around China.

KEYWORDS: China, environmental protection, economic development, relationship, measures

EV9-E4

Activity of the Environmental ISO Student Committee in Mie University

・Mio Yoshida[1*], Nene Tei[1]

[1]Environmental ISO Student Committee, Mie University, Tsu, Mie 514-8507, Japan

・**ABSTRACT**

We introduce our organization, Mie University Environmental ISO Student Committee. We have 5 groups and do varieties of environmental activities from 5 different aspects. Those performances which we have done for a long time are admired, we got the award from Ministry of the Environment Government of Japan on 14th June 2017. Furthermore, we will present the SciLets program (Scientific, Local and Environmental "Talented Staff"). This program contains the activities "on the Job Training".

KEYWORDS: Environment, 3R activities, Greening, Regional Cooperation

Abstract Theme: Children

Abstract Theme: Children

C1-E1

Effects and Perspective of Summer Camp for Childhood Cancer Survivors Operated by Medical Students

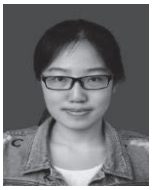
・Haruna Yoshida[1*], Dr. Hori Hiroki[2]

[1]Faculty of medicine, Mie University, Edobashi, Tsu-cityi, 2-174, Mie-Prefecture, 514-8507, Japan
[2]Department of Medical Education/Pediatrics, Graduate School of Medicine, Mie University, Edibashi, Tsu-city, 2-174, Mie-Prefecture, 514-8507, Japan

・ABSTRACT

At Mie University, student volunteers have conducted the summer camp for childhood cancer survivors for the last 10 years. The camp aimed to offer an opportunity to share and solve problems related to their diseases. It is also an event to recover their active life. Additionally, it functions as a hidden curriculum for students to learn physical and psychological issues in cancer patients and develop sympathy for cancer children and their family. In this study, we performed a qualitative study to survey effects, problems and future perspectives of the camp. Childhood cancer survivors, family members and medical staff participating in the camp were engaged in focus group discussions on two themes, significance of the camp and expectation for the camp. The volunteer students were involved in a questionnaire survey on educational effects of the camp before and after the camp. The camp was highly valued as a chance to exchange information and share feelings specific to their respective positions. The sustainability, expansion and active participation of the survivors were strongly anticipated. Medical students increased their sympathies, professionalism and medical knowledge through their participation in the camp.

KEYWORDS: childhood cancer survivor, camp activity, student volunteer, hidden curriculum



C1-E2

The Problems of Education Effectiveness of After-class Childcare Agencies in China

・Chen Bocong1*, Wang Jiajia 2

[1]School of Liberal Arts, No.301, Xuefu Road, Zhenjiang, 212013,China,
[2]School of Teacher Education, No.301, Xuefu Road, Zhenjiang, 212013,China,

・ABSTRACT

This study explores the problems of education effectiveness of after-class childcare agencies in China. Study data were collected from published articles and the study's findings indicate that there are two main problems with educational effectiveness in after-class childcare: (a) the negative effects of childcare agencies' homework guidance. (b) the lack of creative contents in educational programs. These problems stem from the absence of a cohesive platform for the sharing of information about students' academic performance, as well as a lack of teachers with effective teaching methodologies. In addition, there is a lack of oversight from the government, which fails to provide orientation or enforce regulations on after school programs. In order to be useful and effective for children's development, a platform could be established for sharing the information and governments could develop an educational orientation towards after-class childcare agencies. Besides, extracurricular activities could be extended and a supervisory mechanism for improving education could be established.

KEYWORDS: after-class childcare agencies, children, effectiveness problems of education

Abstract Theme: Children

C1-E3

The Current Education Situation of the Left-Behind Children in China--Take the Situ village of Laishui County, Baoding City, Hebei Province, China as an Example

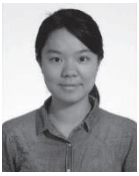
- Sun Wanyu

Guangxi University, Daxuedonglu 100th , Nanning, 530004, China

ABSTRACT

At present, with the rapid process of urbanization in China, millions of rural workers emigrated from the rural areas to cities. Because they live for a long time in their working city, they have little time to go back home, visit their parents and take care of their children. In most cases, looked after by the seniors, their children stay in their hometowns. These children are called left-behind children. China's left-behind children face various problems including wide distribution, poor living conditions, lack of teaching resources, out-of-date education methods and etc.. Using her own voluntary teaching experience in Situ village of Laishui County, Baoding City, Hebei Province as an example, the author analyzes the current situation of the education of left-behind children in the county and in China, analyzes the reasons for the lack of education of the left-behind children in rural areas, puts forward her measures and solutions, and tries to appeal to the community in all sectors to pay attention to the current situation of education of left-behind children in rural areas of China.

KEYWORDS: Left-behind children, lack of education



C1-E4

NO MORE CHILD LABOUR! SUGGESTIONS ON ELIMINATING CHILD LABOUR AROUND THE WORLD

• Xiao Xi Wang

Guangxi University, 100, Daxue Road, Nanning Guangxi 530004, P.R. CHINA

• **ABSTRACT**

Child labor has become a global problem. Especially in developing countries, children are reported to be in even worse condition. Almost 95 per cent of child labor is employed there. It's normal to say that child labor is associated with poverty. However, causes of that issue also conclude the culture of state and policy of government as well as the profit to those companies. Thus, to mostly eliminate child labor around the world, the endeavor from countries and international organizations is literally needed. And working closely together with comprehensive measures could be better for this issue, like complete the strict standard of child labor by legislation, set up a system of compulsory education, and enforce multinational corporations to abide by their rules of conduct so that no more employ child labors.

KEYWORDS: Child labor, developing countries, compulsory education, measures

Abstract Theme: Children

C2-E1

Cilukba Smart Library, Optimizing Elementary School's Library for Character Building Education

• Dairul Fuhron[1*], Nindyantoro[2], Asep Saepulloh Sajali[2,] Dinda Ratnasari[2], Hasna Ariqoh[3], and Zainul Muzaki[2]

[1]Dept. of Statistics, Bogor Agricultural University (IPB), IPB Darmaga Campus, Bogor, 16680, West Java, Indonesia
[2]Dept. Resources and Environmental Economics, Bogor Agricultural University (IPB), IPB Darmaga Campus, Bogor, 16680, West Java, Indonesia
[3]Dept. of Nutrition and Feed Technology, Bogor Agricultural University (IPB), IPB Darmaga Campus, Bogor, 16680, West Java, Indonesia

• ABSTRACT

As a part of the developing world, Indonesian society still suffer from the lack of reading habits, unhealthy routines, and less environment-friendly practices. However improvement over aforementioned attributes is important to achieve ideal society. Reading habit is a gateway to a well-educated society. Healthy routine is a strong component of keeping society healthy instead of rely on expensive healthcare system. While environment-friendly practices must be performed to preserve the ageing environment. "Cilukba" smart library is a new approach to conduct character building education targeting students of elementary schools. It simultaneously pursue the increase of knowledge, practice, and awareness of the students over reading habits, healthy routines, and preserving environment. Aside of improving library's hard infrastructure, "Cilukba" smart library integrates library lesson plans into school's curriculum as a soft infrastructure of the library. This integration will give the students a gradual but strong character building experience along their elementary years. This program has been implemented in SDN 03 Cihideung Udik, Bogor-West Java for a five months trial period and involves 262 students. Pre- and post-test evaluation lead to a conclusion that the program creates noticeable improvement of the students' knowledge, practices, and awareness over the three targeted characters.

KEYWORDS: Character building, children, reading habit, voluntary

C2-E2

The Significance of A Good Education to Rural Girls

• Yueqi WANG

Guangxi university, Nanning,530000,China

• **ABSTRACT**

Education is the foundation of a nation and a symbol of national prosperity. Girls living in rural areas of our country, not only they live in rural areas where educational resources are scarce, but also they are harmed by the gender discrimination in education, the traditional concept and the family's low education expectations,. Therefore, they can not receive a sound education. The German educator Frobel also recognized, and encouraged, “women in their role as first educators. The destiny of nations lies far more in the hands of women — the mothers — than in the possessors of power”. Girls will become mothers eventually and have their own children, and they will take the significant responsibility for parenting. And the educational level of mothers will have a profound impact on the expectations, investment, and ideas of the next generation, which will have an important impact on improving the quality of our population. Girls 'education is of great importance to the development and progress of girls' personal, family, ethnic and social development. Therefore, we must fully understand the importance and urgency of rural girls to receive good education, and the government department should put more attention on rural girls’ education.

KEYWORDS: rural girls, urban and rural education, education concept, mother’s role,

Abstract Theme: Children

C2-E3

Children's Ecological Education

- Pan Shiyu

GuangXi University, Da Xue Dong Road 100, NanNing, 530000, China

- **ABSTRACT**

Nowadays, with the rapid development of economy, a growing number of people pay more attention to ecological problems. The main ecological problems are: water loss and soil erosiond, global warming, forest resources reduced, species extinction and so on. In order to protect environment and promote ecological environment construction, I think countries can set up children's ecological education. From the kindergarten, Schools can offer ecological environment course. Since 2009 China had set up this item and Japan also had natural school. However it didn't have significant effect. The ecological environment not only can set up environment protection mind and tell children how serious of the environment problem but also can promote them to devote themselves to ecological environment construction. The Children's ecological education includs the ecological consciousness, basic ecological knowledge, the emotion bewteen human and environment and so on.

KEYWORDS: ecological, children education, goverment

C2-E4

Poverty and education for children in developing countries

・ Ayaka Yamasaki

[1] Department of Humanities, Faculty of Law and Economics, Mie University, Kurimamachiya-cho, Tsu city, Mie, 514-0102, Japan

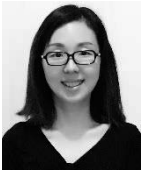
・**ABSTRACT**

There are a lot of children suffering from poverty in the world. When we consider the cause of poverty, we think about the economy such as income. Education for children is indispensable to improve the economic growth. In education, primary education is important in order to acquire basic ability. Therefore, I think about the importance of education from the viewpoint of economics, and discuss educational reform using ICT.

KEYWORDS: child, poverty, education, ICT, Africa

Abstract Theme: Children

C3-EL



Lift the mysterious veil of Procrastination of Young People

- Yun FENG1*, Shengjun Wang1 and Jing Gao2

[1]Medical School of Jiangsu University, 301 Xuefu Road, Zhenjiang, 212000, China
[1]Oversea School of Jiangsu University, 301 Xuefu Road, Zhenjiang, 212000, China

- **ABSTRACT**

Procrastination is the behavior of avoidance of carrying out a work that needs to be accomplished. It is the behavior of doing more pleasurable things instead of less pleasurable ones, or carrying out less urgent tasks in place of more urgent ones, thus postponing impending tasks to a later time. Sometimes, procrastination always takes place until the "last second" before a due date or a deadline. Procrastination may lead to feelings of guilt, inadequacy, depression and self-doubt. It is estimated that 80%–95% of college students have procrastination, and approximately 75% consider themselves procrastinators. According to the present research on procrastination, it becomes an important significant factor against the mental health of college students. In this article we focus on resent research on procrastination of college students and try to understand the behavior, reason, mechanism and management of procrastination.

KEYWORDS: Procrastination, Procrastinator, College Students, Psychological Perspective, Academic Procrastination

C3-E1

Children' Sexual Security Issues Under Multi-Media Environment In China

• Rong Pan

Guangxi University, 100, Daxue road, Nanning Guangxi 530004, P.R .CHINA

• **ABSTRACT**

The health growth of children relates to the future of mankind and society, and the children's sexual security issue has attracted attention from home and abroad. In recent years, with the diversified development of traditional media and network media, more and more children sexual abuse cases were to the public in China, such as the Taiwan female writer committed suicide for seduction in childhood, and the child molestation occurred at NanJing South Railway Station.Through analysing the cases and data, this paper holds that, media is an part of reason for Chinese children sexual security issues, because it can be used to commit sexual abuse and sperad unhealthy sexual culture. Secondly, under the multi-media enviorment, children's sexual security issues have new manifestations on quantity, channels, effects and problems of communication. Finally, this paper proposes three strategies, including taking advantages of media to change sexual concept and conduct sexual education, and improving information review standards.

KEYWORDS: Sexual security, children, multi-media environment

C3-E2

Facility Planning and Design of Children's Hospitals

・Ayato Oyama[1*] and Akikazu Kato, Ph.D.[1]

[1]Department of Architecture, School of Engineering, Mie University, Kurimamachiya-cho, Tsu city, Mie 514-8507, Japan

・ABSTRACT

Due to the appearance of a declining birthrate society, the number of children is decreasing, and closures and contractions of pediatric departments are increasing. However, the number of parents, who desire for advanced medical technology and children's mental care, has actually not decreased. As a result, although municipal hospitals are considered responsible for providing adequate services, they cannot satisfy the needs of pediatrics departments in the current situation. Therefore, existing hospitals are expanding and renovating their pediatric wards. When designing new pediatric departments, they have to efficiently contribute to children's physical and mental health. This study aims to suggest an appropriate design of hospitals or pediatric departments based on the analyses of the plans of existing children's hospitals. The suggested design provides children with an environment that efficiently contributes to their healthy development and growth. For example, children may feel more comfortable in a hospital where there is a garden and natural lighting. In addition, in order to relieve their fear in examination rooms and treatment rooms, interior decoration and furniture should be colorful and drawn with animals.

KEYWORDS: healing garden, healing art, pediatric department

C3-E3

An Analysis of the Effects of Television Advertising on Children's daily behaviors

• Yin Ying

School of Journalism and Communication, Guangxi University, Nanning,530004, China

• **ABSTRACT**

TV becomes a part of modern life, children are TV's faithful audience, television advertising is a part of their media contact. Because children are lack of judgement ability and fond of imitation, television advertising has a huge effect on their unformed value and behaviors, including positive guidance and negative one. This paper analyses different effects of different advertisements, then tries to explore some methods to reduce or avoid the harmful effects on children.

KEYWORDS: children; Television Advertising; daily behaviors; effects; coping strategy

C3-E4

"Saung Gizi" as A Program for Monitoring the Nutritional Status of Children in Kutagandok Village, Karawang, Indonesia

• Aviani Harfika[1*], Rimbawan Rimbawan[1]

[1]Department of Community Nutrition, Bogor Agricultural University (IPB), IPB Darmaga Campus, Bogor, 16680, West Java, Indonesia

• **ABSTRACT**

Malnutrition, particularly undernutrition, is a serious problem in many countries. In Indonesia, 19.6% of children have been categorized as undernourished. "Posyandu" is a community based center that provide basic health services in Indonesia. Although "Posyandu" has been developed for long time, it has several limitations such as short daily service time, limited service space, and inadequate health-knowledge of its member. A students' voluntary program called "Saung Gizi" was initiated to monitor and evaluate the nutritional status of children in collaboration with "Posyandu" in Kutagandok Village, Karawang, West Java, Indonesia. The program lasts for 4 weeks, and data was collected before-and after-the program. Children under 5-years-old, mothers, and Posyandu's members were the subject of the study. Our analyses showed that mother's knowledge on balance nutrition increased significantly after the program ($p<0.05$). Percentage of children with better and healthier lifestyle was also significantly increase from 84% (before the program) to 93% (after the program). "Saung Gizi" has shown as a good initiative to monitor the nutritional status of Indonesian children together with Posyandu.

KEYWORDS:Children, malnutrition, nutritional balance, nutritional status, voluntary

C4-E1

Research on the Development of Intelligence in Chinese Children

• QinWen Luo

Guangxi University, 100, Daxue Road, Nanning Guangxi 530004, P.R. CHINA

• **ABSTRACT**

"Can I make my children smarter? ", it is a common question for those new parents whose children are growing up. As it developed, intelligence development is becoming influential topic increasingly in most Chinese children life. As a group that present the future of mankind and an important resource for sustainable development of society, children play an important role for the development of a country and a family. Parents try their best to figure out how to make their children into "intellectual prodigies", give them a edge at the starting line. Therefore, on this demand, there is a potential market of intelligence-boosting products and organizations, some institutions for early education which makes studies of develop children intelligence and seeks out some traditional and useful methods that have been experienced, which have a certain effect around the world.

KEYWORDS: intelligence development; Chinese children; early education institution

C4-E2

Dental implant and mini dental implant in children

・Pattarapon Saigersri[1*], Chaiy Rungsiyakull [2]

[1]Faculty of Engineering Chiang Mai univesity,239 Huay kaew Tambon Su Thep, Amphoe Mueang
Chiang Mai Chang Wat Chiang Mai 50200, Thailand
[2]Faculty of Engineering Chiang Mai univesity,239 Huay kaew Tambon Su Thep, Amphoe Mueang
Chiang Mai Chang Wat Chiang Mai 50200, Thailand

・ABSTRACT

The problem of nature tooth loss is caused by many factors. Which has the potential occur for both of children and adults, degrading pronunciation, it might affect confidence. Base on technologies for support and insure the clinical. The loss of natural teeth has several forms to treatment. however popular and effective, dentists give the implants an alternative. It can treat patients by specific clinical such as single tooth, partial, and full edentulism. From literature review, implantation in adult has a single, partial or dental implant overdenture for stability and retention. However, implantation in children is not widespread. There is lack of reports. For children problems from birth Inherited. Due to limitations. An important factor for treatment are the facial growth as well as the implant may interfere with the growth of the jaw and permanent teeth. In this study, if we were used a mini dental implant (MDI) as an alternative treatment. By using FEA program to compare a conventional and MDI in adult and children. Due to the smaller size, surgery is easy and the wound heals fast. it should be a suitable choice children.

KEYWORDS:children, dental implant, mini dental implant, finite element analysis

C4-E3

Animation Therapy Helps Children with Autism

• Mu Ang

Guang Xi University, No. 100 National Road, Nan Ning, 530000, China

• **ABSTRACT**

In the beginning of 1943,the first child, Donald Triplett, was diagnosed with autism, and then the world has suffered from a spurt of autism over the next 74 years.On April 2, 2017, the world autism day, there are 67 million people struggling with autism,including 35 million children.Every 20 minutes a child is identified as autism worldwide.Currently, the scientific community has not concluded the etiology of autism, and the treatment method mainly focuses on behavioral intervention and adjuvant therapy with drug.As the treatment is costly and the effect is not significant, the problem of treatment has always been plaguing mankind and there are no complete cured cases in the world.Nonetheless,a new type of forefront animation therapy is being used in clinical trials.Meanwhile,scientists make the exaggerated human's face inlaid into the vehicle through the special technique , creating all sorts of vehicles personified to form stories, which can help the children identify the adult's expression under different situation and learn social skills.This thesis aims to introduce the status quo of children's autism treatment and make recommendations for the latest animation therapy.

KEYWORDS: child autism; animation treatment;prospects and suggestions

Abstract Theme: Children

C4-E4

Exploring the Current Situation and Developmental Significance of Chinese Children 's Drama

- Yiming Zhong

China-Asean Research Institute, Guangxi University No.100 Daxue Road Nanning, Guangxi, 530004 P.R.China

- **ABSTRACT**

Since the beginning of the new century, China has gradually paid attention to and carried out the education work for children's drama, but the content of the study is more limited. In this paper, the study of Chinese children's drama as a starting point, analysis of its development status and significance. Children are the hope and future of the country, the healthy growth and development of children in addition to the necessary book education work. On the one hand, they can better help them understand society, enjoy the body and mind, improve children's language skills and aesthetic ability; the other hand, can also promote the children's self-thinking habits, shaping the world's citizens.

KEYWORDS: Children's drama; Healthy development; Comprehensive quality

PC-A3

Improvement of Child Economic Awareness by Introducing an Economic Education Plan

• Naoko Ishida[1*], Norihiro Nishimura[2] and Hye-Sook Park[3]

[1,2,3]Graduate School of Regional Innovation Studies, Mie University, 1577 Kurimamachiya-cho, Tsu, 514-8507, Japan

• **ABSTRACT**

As a counter policy to the recent decline in the labor force, the Japanese government encourages women to participate more in the labor market. However, women's participation has not increased drastically. We suggest that the Japanese traditional gender-role distinction in which women stay at home to manage housework lowers women's motivation to work outside the home, and that this gender-role distinction originates from their childhood family environment. We argue that, in order to motivate Japanese women as well as men to actively work, it is necessary to educate children regarding labor and family economics. Specifically, this study proposes a "Child Visit Program" in which children observe their parents as work in society. This experience would allow children to be aware of the relationship between labor and family finance, which may increase their motivation to work and further increase the labor population.

KEYWORDS: Labor market, family economy, gender-role distinction, economic education for children

Abstract Theme: Children

PC-A4

An Analysis of the Phenomenon of Pupil 's Use of Network Media in Cities

- Chao Zhang

Guangxi University,University East Street,Nanning,530000,China

- **ABSTRACT**

With the rapid development of socialist market economy, per capita income of our country and quality of life have been significantly improved, children who live in modern urban can not only enjoy more high-quality educational resources, but also benefit greatly from advanced communication technologies and social media in various forms. "An investigation report on children's media literacy in 2013 China's Youth Palace " that was released in 2014 by People's networld shows, Participating in various social platforms(QQ, micro-blogs,WeChat,etc),online gaming,and searching Internet for information are increasingly prevalent among kids at the age of 6-12. The network media is a double-edged sword.While it allows more children to be in touch with the outside world without being physically outside,the temptation of almost limitless yet extremely complex Internet may poison not only their health,also their mind. In this paper, the pupil from 6 to 12 years old in cities were taken as the research object, and the influence of the use of Internet media on pupils was analyzed by means of literature search and investigation, and some suggestions were put forward to solve the problem.

KEYWORDS: Children, Internet, media, use

List of Participant

List of participants

Student

University	Name
Mie University	Ayaka Yamasaki
Mie University	Rui Zhao
Mie University	Haruna Yoshida
Mie University	Ayato Oyama
Mie University	Yoshiyuki Fujita
Mie University	Kyohei Yamaguchi
Mie University	Takaaki Yasui
Mie University	Yoko Aoyama
Mie University	Takahiro Takeuchi
Mie University	Adriana Anastasia Jenahat
Mie University	Takuya Hioki
Mie University	Kenta Sugiura
Mie University	E Ridengaoqier
Mie University	Chinami Shinoda
Mie University	Misa Horii
Mie University	Megumi Murakami
Mie University	Fittrie Meyllianawaty Pratiwy
Mie University	Sasicha Chensom
Mie University	Naoko Ishida
Mie University	Mio Yoshida
Jiangsu University	Qianqian Liu
Jiangsu University	Fan Hu
Jiangsu University	Yongjie Wang
Jiangsu University	Yinqi Chen
Jiangsu University	Zhe Yang
Jiangsu University	Bocong Chen
Jiangsu University	Maierhaba Maimaiti
Jiangsu University	Xiaoyan Yu
Jiangsu University	Zhaowei Zhu
Jiangsu University	Lingxiao Wang

Jiangsu University	Feifan Wang
Jiangsu University	Ying Song
Jiangsu University	Xinjuan Sun
Jiangsu University	Li Xie
Jiangsu University	Xiaoyin Zhang
Jiangsu University	Qinhong Zhang
Jiangsu University	Xingtao Zhong
Jiangsu University	Yuanyue Jiang
Jiangsu University	Keshav Khera
Jiangsu University	Gabriel Murillo Morales
Chiang Mai University	Jatuporn Sukoum
Chiang Mai University	Ponwimon Kaewkun
Chiang Mai University	Phatthakon Taotiang
Chiang Mai University	Sittichai Wongpia
Chiang Mai University	Chalisa Paiyarom
Chiang Mai University	Siraprapa Kawialmoon
Chiang Mai University	Natnicha Thonsungnoen
Chiang Mai University	Suchada Yodyudee
Chiang Mai University	Phattarapong Suwatee
Chiang Mai University	Pattarapon Saigerdsri
Chiang Mai University	Thanwit Naemsai
Chiang Mai University	Benjaporn Kreatananchai
Bogor Agricultural University	Muhammad Arfanul Aziz
Bogor Agricultural University	Fitria Irsbawati
Bogor Agricultural University	Abdul Ghofur
Bogor Agricultural University	Aviani Harfika
Bogor Agricultural University	Dhika Prita Hapsari
Bogor Agricultural University	Dairul Fuhron
Bogor Agricultural University	Majesta Esa Sofian
Bogor Agricultural University	Sentanah Limmase
Bogor Agricultural University	Laras Salsabila
Bogor Agricultural University	Angga Dwinovantyo

List of participants

Bogor Agricultural University	Mu'minah Mustaqimah
Bogor Agricultural University	Eric Faustine
Bogor Agricultural University	Ken Rizkyna
Guangxi University	Wanyu Sun
Guangxi University	Liyuan Chen
Guangxi University	Yueqi Wang
Guangxi University	Zhao Pan
Guangxi University	Xiafei Ouyang
Guangxi University	Chao Zhang
Guangxi University	Rong Pan
Guangxi University	Bingxin Liu
Guangxi University	Jiahong Ning
Guangxi University	Ying Yin
Guangxi University	Xiaoxi Wang
Guangxi University	Jianlin Song
Guangxi University	Qinwen Luo
Guangxi University	Ang Mu
Guangxi University	Yanglin Hu
Guangxi University	Yongqian Wu
Guangxi University	Yuanyuan Zhang
Guangxi University	Jiayi Wang
Guangxi University	Yiming Zhong
Guangxi University	Shiyu Pan
Shaghai Ocean University	Xiaoxue Du
Shaghai Ocean University	Yanan Li
Shaghai Ocean University	Mengying Liu
Shaghai Ocean University	Long Zhang
Shaghai Ocean University	Gan Lin
Shaghai Ocean University	Ying Cheng
Shaghai Ocean University	Naimeng Liu
Shaghai Ocean University	Xiaoxiao Feng
Shaghai Ocean University	Zexiu Xiong

Shaghai Ocean University	Yating Song
Shaghai Ocean University	Weixiang Liu
Shaghai Ocean University	Caixia Li
Shaghai Ocean University	Yuan Chai
Shaghai Ocean University	Fengmei Qi
Maejo University	Tanaporn Sadcharoenwatthana
Maejo University	Kamolwan Jermjun
Maejo University	Kodchakorn Palaphan
Maejo University	Peewara Kanta
Maejo University	Aekkapong Wongket
Maejo University	Taweepong Teptawee
Maejo University	Yinnittra Khamnuengphon
Maejo University	Kunyanat Thongtep
Maejo University	Phuong Thi Vu
Maejo University	Boonyawee Saengsawang
Maejo University	Ajcharapa Chuanchai
Maejo University	Phitchaphorn Khammee
Maejo University	Wilawan Khumhem
Maejo University	Numchok Manmai
Maejo University	Jiraporn Kaewdew
Maejo University	Sasithon Bunchuai
Maejo University	Wasun Junnoi
Maejo University	Jumlong Malaket
Maejo University	Sakonrat Jindarak
Maejo University	Praphatsorn Rattanaphaiboon
Khabarovsk State University of Economics and Law	Elina Ivanova
Khabarovsk State University of Economics and Law	Saiyyna Aianitova
Naresuan University	Tanyaluk Chidkokruad
Naresuan University	Natjira Inmon

List of participants

Lecturer

Mie University	Yoshihiro Komada	President
Mie University	Hiroki Hori	Vice President for International Affairs
Mie University	Takao Yoshimatsu	Assistant to the President for International Affairs
Mie University	Hye-Sook Park	Professor, Faculty of Humanities Law and Economics
Mie University	Hiroko Arao	Professor, Faculty of Education
Mie University	Yuichi Kasai	Professor, Graduate School of Medicine
Mie University	Akikazu Kato	Professor, Graduate School of Engineering
Mie University	Xiu Lun Wang	Professor, Graduate School of Bioresources
Mie University	Satoko Kurita	Associate Professor for International Promotion
Mie University	Shinichi Shoji	Assistant professor, Division of Global Human Resources Education and Development
Mie University	Akemi Morita	Associate Professor, Graduate School of Medicine
Jiangsu University	Hongbo Li	Vice President
Jiangsu University	Daojian Yang	Director of Department of Students' Affairs
Jiangsu University	Yun Feng	Section Chief of International Office
Jiangsu University	Jianzhong Sun	Professor, School of Environment and Safety Engineering

List of participants

Jiangsu University	Ruizhen Feng	Associate professor, School of Foreign Languages
Jiangsu University	Binjuan Zhao	Professor, School of Energy and Power Engineering
Jiangsu University	Yun Feng	Professor of Medical School
Chiang Mai University	Rome Chiranukrom	Vice President for International Relations and Alumni Affairs
Chiang Mai University	Nat Vorayos	Dean, Faculty of Engineering
Chiang Mai University	Phrut Sakulchangsatjatai	Assistant Dean for Research and Graduate Program
Chiang Mai University	Aunnop Wongrueng	Assistant Dean for Engineering Education Management and Quality
Bogor Agricultural University	Herry Suhardiyanto	Rector
Bogor Agricultural University	Yonny Koesmaryono	Vice Rector for Academic and Student Affairs
Bogor Agricultural University	Sugeng Santoso	Director for Student Affairs
Bogor Agricultural University	Edy Hartulistiyoso	Director for International Collaboration Office
Bogor Agricultural University	Yonvitner Yonvitner	Rector Secretary
Bogor Agricultural University	Eko Hari Purnomo	Deputy Director for International Program, Directorate of Collaboration and International Program
Bogor Agricultural University	Sintho Wahyuning Ardie	Deputy Director for Character Building and Mobility, Directorate of Student Affairs
Guangxi University	Guannan Guo	Lecturer, Vice Section Chief of International Exchange Department

List of participants

Guangxi University	Liya Zhou	Professor , Deputy Director of Dean's Office
Shaghai Ocean University	Tinggui Chen	Vice-Dean of College of Economics and Management
Maejo University	Rameshprabu Ramaraj	Dr. Lecturer, School of Renewable Energy
Maejo University	Yuwalee Unpaprom	Dr. Lecturer, Program in Biotechnology, Faculty of Science
Thammasat University	Khomsi Meepukdee	Assistant Professor Dr. College of Interdisciplinary Studies
Thammasat University	Monthien Satimanon	Dr. (Lecturer) Faculty of Economics
Thammasat University	Thasanee Satimanon	Dr. (Lecturer) Faculty of Development Economics, National Institute for Development Administration
Khabarovsk State University of Economics and Law	Vladimir Lebukhov	Ph.D., Associate Professor, Department of Commodity Research
Khabarovsk State University of Economics and Law	Anna Zhebo	Ph.D., Associate Professor, Department of Commodity Research.
Khabarovsk State University of Economics and Law	Kirill Zemliak	Ph.D., Associate Professor, Department of Commodity Research
Khabarovsk State University of Economics and Law	Aleksandr Diachkov	Lecturer, Department of Commodity Research

Committee

Committee

Committee

Takao Yoshimatsu	Chair of the Steering Committee Assistant to the President for International Affairs
Hye-Sook Park	Professor, Faculty of Humanities Law and Economics
Hiroko Arao	Professor, Faculty of Education
Yuichi Kasai	Professor, Graduate School of Medicine
Akikazu Kato	Professor, Graduate School of Engineering
Xiu Lun Wang	Professor, Graduate School of Bioresources
Satoko Kurita	Associate Professor for International Promotion
Shinichi Shoji	Assistant professor, Division of Global Human Resources Education and Development
Satoshi Akiho	Head, International Relations Office

Volunteers

Volunteers

Guide

Name
Kana Wakabayashi
Mariko Takashima
Yosuke Inagaki
Riho Tsujimura
Xu Dongqing
Shakerullah Hashimi
Pan Guangzhen
Dai Juan
Heng Thorranin
Fan Mengshu
Nozomi Takemori
Ayumi Takemori
Kotomi Kobayashi
Sana Ohashi
Saki Morioka
Ryosuke Kurosawa
Kosuke Nakamura
Shin Kinoshita

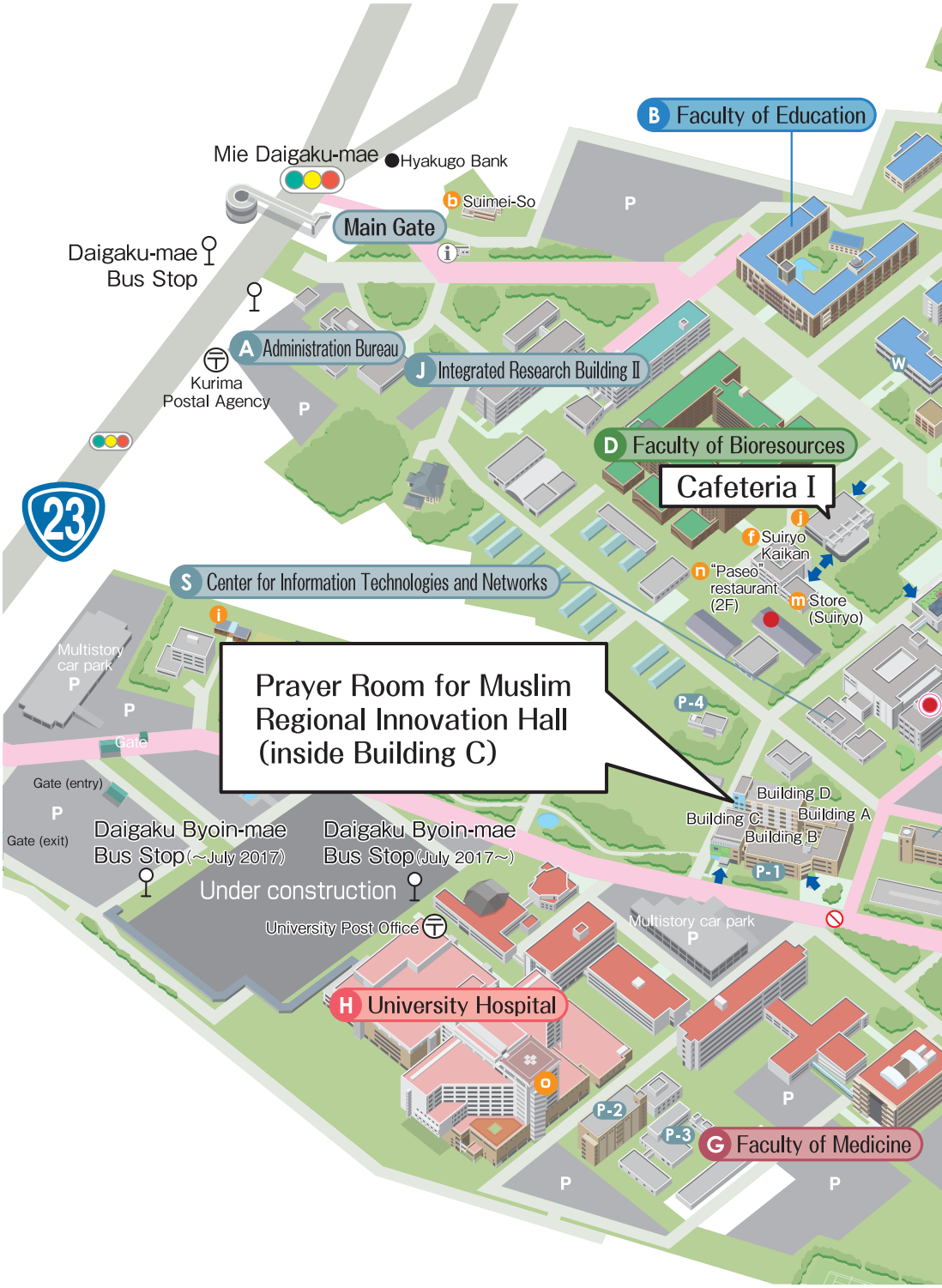
Public Relations

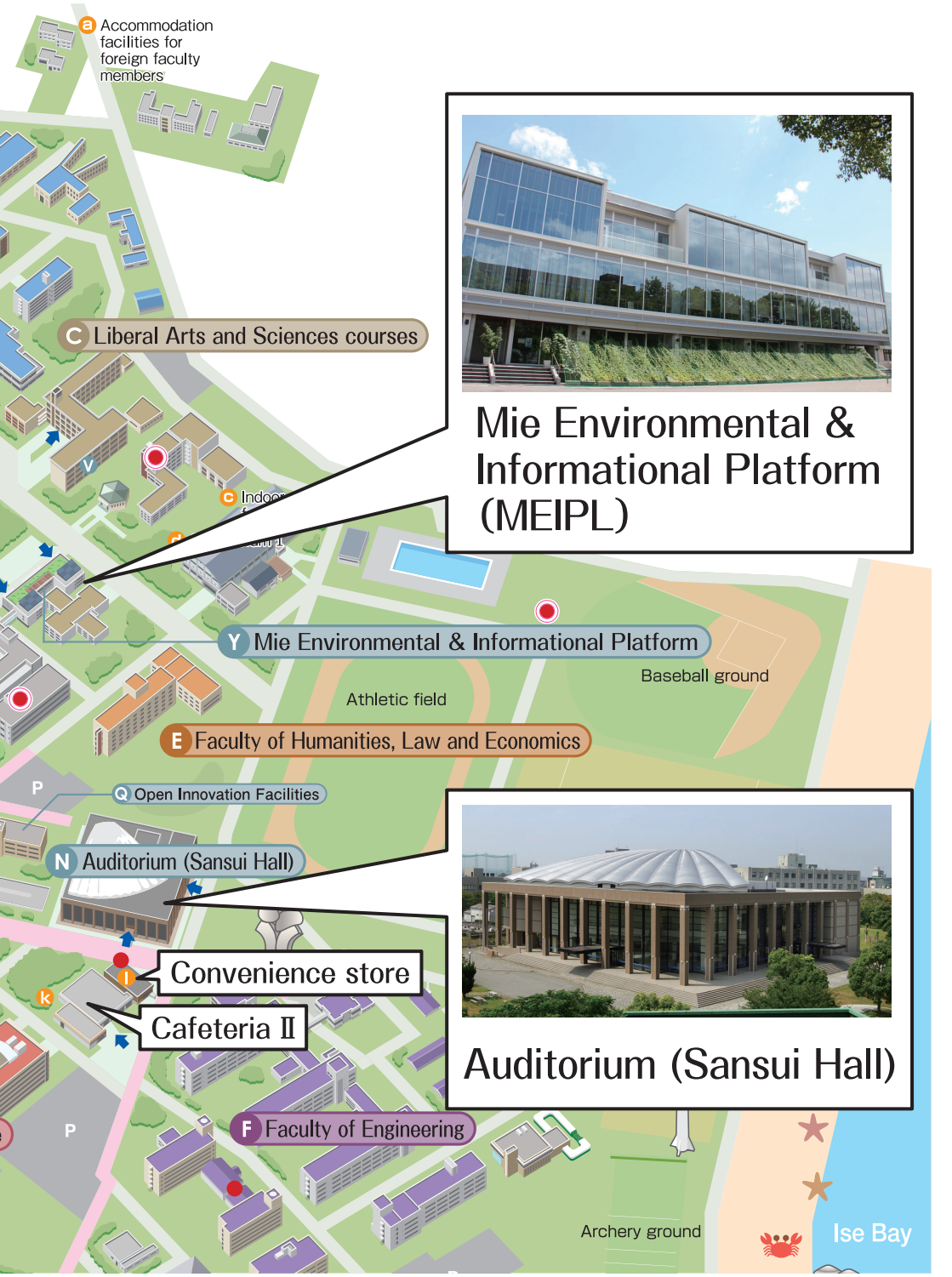
Name
Kenji Hotta
Fumihiro Akatsuka
Miki Takahashi
Koharu Takayanagi
Wan Hua
Zhao Yan
Akari Kikumoto
Natsumi Muto
Takuya Matsubara

Venue Preparation

Name
Ryosuke Nagaya
Yoshinari Kinosita
Haruka Aoki
Azusa Ito
Hikari Chujyo
Mayu Furukawa
Miyu Ogawa
Moeko Ozawa
Akane Kato
Sakura Tateishi
Mayu Hayashi
Yurina Hiraga
Shodai Hirobe
Akina Motoyoshi
Anna Yamashita
Minami Kuribayashi
Yuto Ito
Yuka Mizuguchi
Saho Fukui
Yuki Kamiya
Nao Yoshida
Reina Ota
Anna Fukushima

Map


B Faculty of Education
Mie Daigaku-mae
Hyakugo Bank
b Suimei-So
Main Gate
Daigaku-mae Bus Stop
A Administration Bureau
J Integrated Research Building II
Kurima Postal Agency
D Faculty of Bioresources
Cafeteria I
23
f Suiryo Kaikan
n "Paseo" restaurant (2F)
m Store (Suiryo)
S Center for Information Technologies and Networks
Multistory car park
Prayer Room for Muslim
Regional Innovation Hall
(inside Building C)
P-4
Gate
Gate (entry)
Gate (exit)
Building D
Building C
Building A
Building B
P-1
Daigaku Byoin-mae Bus Stop (~July 2017)
Daigaku Byoin-mae Bus Stop (July 2017~)
Under construction
University Post Office
Multistory car park
H University Hospital
P-2
P-3
G Faculty of Medicine


a Accommodation facilities for foreign faculty members
C Liberal Arts and Sciences courses
V
c Indoor
Y Mie Environmental & Informational Platform
Baseball ground
Athletic field
E Faculty of Humanities, Law and Economics
P
Q Open Innovation Facilities
N Auditorium (Sansui Hall)
I
Convenience store
k
Cafeteria Ⅱ
P
F Faculty of Engineering
Archery ground
Ise Bay
Mie Environmental & Informational Platform (MEIPL)
Auditorium (Sansui Hall)

Memo

Memo

Memo

Memo