

Keynote Speech

Takao TODA (Ph.D.)

Director General,
Human Development Department,
Japan International Cooperation Agency (JICA)



■Biography

As the Director General of Human Development Department, Dr. Toda oversees and takes the leadership on establishing JICA's operational strategies and implementing activities on education, health, and social welfare.

For more than 30 years, he has been playing various important roles such as Executive Advisor to the Director General of Human Development Department, Chief Representative of JICA's Office in Bangladesh, Senior Fellow in JICA Research Institute, Group Director (Higher Education / Social Security) of Human Development Department, Group Director on Human Security, Group Director on Peace Building and Senior Representative of JICA USA Office.

In parallel with his pursuit of professional career, Dr. Toda received Ph.D at the Graduate School of International Development, Nagoya University in 2009, master's degree at the Graduate School of Frontier Sciences, University of Tokyo in 2001, and LL.B at the Faculty of Law, Kyoto University in 1984. He has a wide range of knowledge and insight especially on the operationalization process of Human Security, which has been the core concept of Japan's diplomatic policy of international cooperation.

He is taking care of two daughters, good at cooking and enjoys playing saxophone.

Special Session

SS01

Kan AKATSU

Professor

Department of Electrical Engineering/Electrical Engineering and Computer Science
Shibaura Institute of Technology



High power long distance Wireless Power Transfer system for EV dynamic charging - as a demonstrator of Center for Power Electronics in SIT-

<ABSTRACT>

Recent required technologies for industries to develop in universities become wider, deeper and complicated. Concurrent engineering must be considered even in universities, students who have not only wide basic knowledge but also deep knowledge in their major are required. In SIT research lab., the center for power electronics has been established from 2013 to overcome this subject. In this presentation, an introduction regarding the center is introduced. Also an interesting and challenging demonstrator, 10kW 1m Wireless Power Transfer system, has been developed in the center, the system which needs concurrent engineering of electronics, electrics, telecommunication and power system. Some interesting results regarding the system will be presented.

SS02

Ho Chin Siong

Professor, Faculty Built Environment / Director of International Relation
International office, Universiti Teknologi Malaysia



Project for Development of Low Carbon Society (LCS) Scenarios for Asia Regions

<ABSTRACT>

Malaysia recognises that climate change and the adverse impact. Positive policy actions have been taken to address climate change. In line with the Malaysian Government's effort and pledge in COP15 to achieve a 40% voluntary reduction of CO2 emission intensity by 2020, the implementation of the blueprint will facilitate the low carbon development of metropolitan areas. The case study Iskandar Malaysia (IM) being one of the fastest growing regions in Malaysia, this demonstrates the realisation of how a low carbon society can be achieved by decoupling CO2 emissions and economic growth. The research project showcase best practice in LCS for Asian Regions and will therefore benefit not only IM and Malaysia, but also the Asian Regions on the whole. It is a hands-on project where researchers and government officials of

Asian countries work together in implementing research outputs within the cities or regions involved, leading to the eventual establishment of an Asian Low Carbon Society network. The long term objective of this research project is to develop suitable policies and guidelines for the nation in environmental conservation and energy consumption needs. The Project is expected to produce following four outcomes for the year from 2011 to 2016:

1. Methodology to create LCS scenarios which is appropriate for Malaysia is developed.
2. LCS scenarios are created and utilized for policy development in Iskandar Malaysia.
3. Co-benefit of LCS policies on air pollution and on recycling-based society is quantified in IM.
4. Organizational arrangement of UTM to conduct trainings on LCS scenarios for Malaysia and Asian countries is prepared, and a network for LCS in Asia is established

This presentation describes the 12 proposed actions in LCS blueprints which are based on the active participation and consensus building through focus group discussion with major stakeholders in Iskandar Malaysia. In addition, it also highlights how the projects identified in the LCS blueprints are translated into Roadmap and also detailed Low Carbon Action plans to be implemented aligned to the local community needs at the five respective local planning authorities.

SS03

Anak Khantachawana

Assistant to the President for Internationalization

Department of Mechanical Engineering and Biological Engineering Program

King Mongkut's University of Technology Thonburi



Recent Development of Smart Materials and Biomedical Engineering Research in Thailand

<ABSTRACT>

Shape memory alloy is well-known among smart materials applied for sensors and actuators. Recently, biomedical research becomes one of high potential researches in Thailand since Thailand aims to be “Hub of Medical in ASEAN” under aging society. Smart materials for biomedical applications are developed and introduced at this conference. Development of shape memory alloys for Orthodontics application together with orthodontists was carried out during past 10 years. Process of development and commercialization will be discussed. Moreover, a novel non-toxic Ti alloys with very low modulus was also developed while the strength of alloy was enhanced by unique surface modification. With above techniques, Orthopedics screws were made and evaluated. The results show dramatically increase of pull-out strength when implanted to the bone. Some other applications such as light therapy for Alzheimer disease, bone density measurement device, etc. will be introduced.

SS04

Bui Chuong

Professor, Senior Lecture

Polymer Center, Hanoi University of Science and Technology



**PREPARATION AND APPLICATION OF MICROFIBRILLATED
CELLULOSE (MFC) FROM BAMBOO FOR COMPOSITE
MATERIALS**

<ABSTRACT>

Microfibrillated cellulose (MFC) from Vietnamese bamboo (*Dendrocalamus Membranaceus* Munro) were prepared by chemical-mechanical methods and by paper pulp technology as well. The SEM images show all of received MFC have the diameter of about 100 – 300 nm. Chemical compositions of these MFC were defined. Their temperature of thermal degradation are also almost the same. However, the crystallinity of paper pulp MFC is higher than that of MFC prepared by chemical-mechanical methods.

MFC was incorporated with thermosetting resins (epoxy, unsaturated polyester) as the matrix for composite materials. Due to presence of MFC some characters of the matrix, such as plane-strain fracture toughness (KIC), adhesion of matrix to glass fibers remarkably enhanced. As the result, composites materials with MFC/resin matrix and fiber reinforcement have much better fatigue resistance than that of one without MFC.