



# NEWSLETTER

No.79

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**JAPAN SOCIETY OF MATERIAL CYCLES AND WASTE MANAGEMENT**

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## **A Cooperation Agreement Between the Japan Society of Material Cycles and Waste Management and the Society for Solid Waste of Chinese Society for Environmental Sciences: Background and Future Perspectives**

### **1. The Japan Society of Material Cycles and Waste Management (JSMCWM) and the Society for Solid Waste of Chinese Society for Environmental Sciences (SSW-CSES)**

With the aim of promoting academic interchange to develop and propagate relevant knowledge and foster mutual understanding, JSMCWM and SSW-CSES concluded an agreement on November 4, 2011. This was during the 22nd Annual Conference of JSMCWM at Toyo University, and Dr. Quan Hao, president of SSW-CSES, attended the workshop and the agreement-signing ceremony.

JSMCWM was established in 1990 under the name “Japan Society of Waste Management Experts (JSWME)”, and the name was changed to JSMCWM when it was incorporated in 2009. We are now trying to organize and build systematic processes for tackling material-cycle and waste-management issues. Our main activities are as follows: 1) organizing conferences and

workshops, 2) publishing our academic journal and books, 3) carrying out research and field work, 4) encouraging research activities and commending outstanding research performance, 5) cooperating with other related bodies, and 6) promoting international research collaboration. At the start, in 1990, there were about 1,200 individual members and 200 related bodies. These have increased, and in 2009 reached around 3,000 individual members and 220 related bodies. We also publish an English version of our journal, the “Journal of Material Cycles and Waste Management (JMCWM)”, in addition to the Japanese version. The English journal has been published since 1999, and in 2009 its publication frequency changed from biannual to quarterly. In 2010, we first received an impact factor.

One of JSMCWM’s recent main activities has been to tackle disaster waste problems generated by the Great East Japan Earthquake in 2011. On March 18, 2011, a week after the earthquake, we launched the “Taskforce on Disaster Waste Management and Reconstruction” project. One of its major purposes is to survey the characteristics of the disaster-related waste and to provide support for making manuals for the recycling, treatment and disposal of the waste.

The Society for Solid Waste of Chinese Society for Environmental Sciences (SSW-CSES) was founded in 1996 aiming at the following activities: 1) holding workshops and lectures, 2) publishing its academic journal and books, 3) encouraging research activities and commending outstanding research, and 4) promoting international research collaboration. SSW-CSES has around 1,500 members.

### **2. Current status of municipal solid waste (MSW) in China**

The amount of MSW in China was around 5 million tons in 1984, and this increased to 100 million tons in 2000 and 160 million tons in 2007<sup>1)</sup>. Most of it has been

merely dumped, and in the year 2000 over 20,000 dumping sites were identified across China, including over 200 in the Shanghai Municipality alone. According to a report by Professor Jinhui Li of Tsinghua University, the annual amount of industrial waste produced is around 1.9 billion tons<sup>2)</sup>. Although this figure exceeds the annual amount of 400 million tons produced in Japan, China, with a population ten times that of Japan, produces three to four times as much waste in both municipal and industrial sectors. To enable comparative discussion, it is desirable to build a base platform which includes information like that outlined above.

When we think of China's future economic growth, there is no doubt that the amount of waste will increase enormously. Furthermore, the interdependence of production and consumption in the whole Asian region will surely increase in the future. Our responsibility is to tackle waste issues from both technical and policy points of view. Not only for China and Japan but also for all the countries in the world, it is a challenge to realize sustainable societies that aspire to economic growth while at the same time considering ways of avoiding waste generation.

### **3. Expected developments from the Cooperation Agreement between JSMCWM and SSW-CSES**

What can we expect from our agreement? First, we will be able to cooperate in the engineering technologies and social system technologies needed for waste management. It is said that a lot of municipal solid waste in China is separated and recycled by scavengers, but incineration and sanitary landfills will be the main treatment approaches in many cities. We have seen that Japan can support and cooperate with China in control technologies for incineration and emission gases control, semi-aerobic landfill technology, etc. Cooperation in waste management systems is possible in view of the similar administrative organization of both countries. Other Asian countries are also moving to promote municipal solid waste management projects. We can expect further developments in this field, and there is also the possibility of the remediation of open dumping sites used in the past.

There is a powerful trend toward managing resources by focusing on the 3R (Reduce, Reuse and Recycle) concept

together with existing methods of waste management. We can see signs of the emergence of various approaches for reducing greenhouse gases by material recycling. And we can expect recycling businesses based on the idea of resource management to flourish not only in the public sector but also in the private sector.

Japan has already been spreading the idea of the 3R initiative in the international community, and has contributed to promoting it by holding various forums and workshops. I believe that academic experts in this field will play a key role in continuing this trend. We have had in-depth discussions at the Meeting of Solid Waste Management Experts in Asia & Pacific Islands (SWAPI) in response to the direction of policy development in Asia. And at this crucial time, we have decided to conclude the agreement with China to strengthen academic cooperation.

### **4. Development of our academic cooperation**

The agreement concluded between the two societies has the following four provisions: 1) encouraging members of each society to attend general meetings of the other society, 2) facilitating information exchange, 3) sharing scholarly publications and cooperating in the editing of the English-version journal, and 4) promoting cooperative projects. We are thinking of inviting members of each society to attend special sessions of the other society so that we can encourage members of both societies to attend general meetings and conferences held by both societies. As for information exchange, we will facilitate the provision of research information while protecting the rights of authors, and share academic publications of common interest. I believe that working together on the editing of the Journal of Material Cycles and Waste Management will be an especially important task for both societies.

Furthermore, various joint projects can be envisaged to resolve issues common to both countries. I do hope that such cooperation will lead to the realization of material-cycle societies in both China and Japan and, ultimately, in the whole Asian region. Japan, a country that established its technologies and systems for waste management mainly in the latter half of the 20th century, is now facing a very difficult challenge of radioactive contamination that humans have hardly experienced

before. I expect that once we Japanese have overcome this crisis by sincerely responding to and addressing this tremendous issue, we will recommit ourselves with renewed zeal to our goal of establishing systems of waste management, promoting recycling, and creating industries and lifestyles that avoid waste generation in the whole Asian region. And I recognize that we need to have a progressive approach and cooperation among all Asian countries. In this respect, it will be critical to create common standards and share technical knowledge with China and other Asian countries for realizing sustainable societies around the world.

**References**

1) Chai X, Zhao Y (2010) Municipal solid waste management in China. In: Agamuthu P and Tanaka M (eds) Municipal solid waste management in Asia and the Pacific Islands, Penerbit ITB, Bandung  
 2) Li J, Yu K (2011) A study on legislative and policy tools for promoting the circular economic model for waste management in China. J Mater Cycles Waste Manag 13:103–112

(Shin-ichi Sakai)

**Agreement of Cooperation between the Japan Society of Material Cycles and Waste Management and the Society for Solid Waste of Chinese Society for Environmental Sciences**

At the 22<sup>nd</sup> conference of the Japan Society of Material Cycles and Waste Management on 4<sup>th</sup> of November, 2011, at Toyo University 2<sup>nd</sup> campus in Hakusan, Japan, president Shin-ichi Sakai of the Japan Society of Material Cycles and Waste Management (JSMCWM) and president Quan Hao of the Society for Solid Waste of Chinese Society for Environmental Sciences (SSW-CSES) signed the agreement to continue the cooperation program with a view to promoting academic interchange and contributing to the development and propagation of knowledge and mutual understanding between the two Societies in accordance with the following specific terms:

The two Societies shall promote the following activities at the institutional level:

(1) **Attendance at Meetings:** Members of one Society shall promote mutual understanding of the academic activities by attending general meetings and conferences of both Societies. Both societies shall coordinate to invite their members mutually to their special sessions. The main conferences shall be International Conference of Waste Management and Technology (ICWMT) by SSW-CSES and the special session of the annual

JSMCWM Conference.

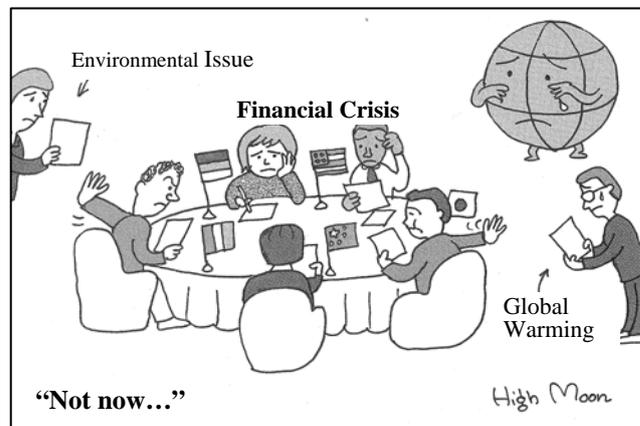
(2) **Communication:** Each Society shall provide the other Society announcements of conference programs, future meeting dates and locations, and news of mutual interest which may be publicized in appropriate publications such as journals, newsletters and conference programs. Each Society may republish in its general publications single articles appearing in the publications of the other, provided that prior written permission is obtained and appropriate credits are given to the authors and are sourced, and further, provided that the rights of authors are protected.

(3) **Publications:** Each Society shall promote academic exchange by sharing each other's publications. Both societies shall cooperate for editing the English version of the Journal of Material Cycles and Waste Management.

(4) **Promoting Cooperative Projects:** Both societies shall join and promote cooperative projects for solving common issues with financial and technical bases.

This agreement will be in force for a period of five years from the date of signing. After expiring, the agreement will automatically prolong itself by another five years if not terminated by either society with a written notice six months prior to the date of expiration. Amendments to the agreement may be made at any time, but need to be mutually confirmed in writing by the two Societies.

The entire text of this Agreement shall be written in Japanese, Chinese and English. All texts shall be equally valid and authoritative. In case of discontent, the English Agreement shall take precedence in matters of interpretation.



Summit meetings always put off environmental issues until later.

## Report of the International Session of the 22<sup>nd</sup> conference of JSMCWM

The conference, consisting of a Japan-Korea international symposium and an International Hybrid Session, was held on November 3, 2011 at Toyo University in Tokyo.

### International Symposium

Mercury Management in Solid Waste Sector was the theme of the symposium, an issue common to both countries. Management of mercury contaminated wastes such as dry cells and fluorescent lamps have been a problem. Recently, there was a case of waste containing large amounts of mercury causing the stoppage of an incinerator. International transport of contaminated waste is also an issue. In addition to the Basel Convention that regulates transboundary movement of hazardous waste, efforts are underway to establish an international convention on mercury. This symposium is held with this background in mind. Chairmen of the symposium were Prof. Masaki Takaoka (Kyoto Univ.) and Prof. Weon-Joon Lee (Chonnam National Univ./International committee chairman of Korean Society of Waste Management).

**Lecture 1:** “Current international discussion on mercury and mercury waste management in Japan” Mr. Fumiyoshi Kai (Environmental Health and Safety Division, Ministry of Environment), presented the latest trends regarding agreements for mercury risk reduction and management.

To reduce the mercury risk at a global level, negotiations are underway to establish a mercury convention of UNEP, with an agreement expected by 2013. Issues of the negotiations are; reduction of mercury supply, trade, use and emissions, environmental safety and appropriate storage and waste management. Diplomatic conference for adoption and signing of the convention will be held in Japan, 2013. Japanese government is working proactively on this and will name it the Minamata Convention. As for mercury waste management in Japan, demand of mercury has dropped to 12 ton/year from a peak of 2,500 ton/year in 1964. Mr. Kai introduced several countermeasures of mercury waste management such as voluntary collection of used button batteries, treatment of mercury waste, lessons from Minamata disease, and Japan’s mercury countermeasures.

**Lecture 2:** “Current status and future perspectives of mercury containing waste management in Korea “ Mr. David Chung (National Institute of Environmental Research, Korea) presented two projects about mercury in Korea.

Project I was conducted from 2006 to 2010 to research large mercury emission area, source of emissions and products containing mercury and mercury waste. Project II (2011-2015) has just started to prepare the negotiation of international mercury convention, integrated mercury lifecycle management (materials, products and waste), monitoring and reduction of mercury emissions, strengthening risk assessment and revision of mercury related regulations and making a mercury database.

**Lecture 3:** “Present status of mercury issues related to solid waste sector in Japan” by Prof. Masaki Takaoka (Kyoto Univ.)

Mercury emissions in Japan are 22 to 31 ton per year. Of this, 70% is from manufacturing. Domestic demand for mercury is 12.6 ton per year, however, there is no trend to use it for industrial use or products. 90 ton/year is collected for recycling, while there is a 70-80 ton/year surplus of mercury that is exported. It is becoming ever more difficult to use it after collection in current trend policies for reduction of mercury use by UNEP, the US and EU. If exporting mercury is prohibited in Japan, surplus mercury will need long-term storage. It will reach 3,500 ton in 40 years, and will require storage space. Thus, long term and safe management of mercury is a challenging issue for Japan.

**Lecture 4:** “Mercury emission inventory in Korea and estimating trans-boundary movement from China” by Prof. Yong-Chil Seo (Yonsei Univ. New president of Korean Society of Waste Management).

Yearly mercury emissions in the air from major sources are 6.5 to 20.2 ton (ave. 12.8) from the research results in 2010. Those major sources are thermal power plants, oil refinery plants, cement kilns and waste incinerators, they account 92%. Emissions have been drastically reduced by installing equipments to stop public nuisances in Korea, such as Selective Catalytic Reduction) for NO<sub>x</sub>, electrostatic precipitator for PM (Particulate Matter) and desulfurization equipments for SO<sub>x</sub>. On the other hand, mercury contaminated waste, waste products and waste

streams need to be reduced from now until 2015. Prof. Seo also presented an example of trans boundary of mercury by using a model, and insisted the necessity of hotspot monitoring system as the model showed the contamination is affected by season and direction of the wind. It's recommended to do further research by collaborating in East Asia, and make political decision and execution on a scientific basis.

**[International Hybrid Session]**

All the presenters of International Hybrid Session presented in English and gave poster presentations. 14 Japanese presenters and 13 Korean presenters joined this session. By theme, 10 were about 3R/waste management (of them 3 were Korean), 7 Recycling (6 Korean), 5 thermal treatment (1), 2 land filling (0) and 3 hazardous waste (0). Korean presenters presented more on recycling and thermal treatment.

At the 3R/waste management session, foreign students in Japan presented their studies as Japanese side, cost analysis of waste in major cities (Indonesia). Related factors of household waste generation, door to door collection system using GPS and a basic survey of waste generation in residential area (Vietnam). Evaluation of waste composition for recycling (Palau) and the scenarios of utilizing 3R for low carbon society (Malaysia). From Korean side, evaluation of waste resource recovery systems in a Korean municipality.

At the recycling and thermal treatment session, 10 presentations were made from Korean side. They were, evaluation of making concrete from dredge soil, energy characteristics of carbonized swine manure and wood combination, energy conversion of livestock waste water, utilization of mine residue, thermal characteristics of gasification of coal, reusing of waste mortar and plaster, and characteristics of HCL and SOx from incinerated RDF (municipal waste, plastic, wood waste and tires). A Cambodian student in Japan presented Phnom Penh's 2020 scenario for organic waste composting.

There were three presentations in the hazardous waste session. One was a mercury diffusion model simulated in Japan.

It was impressive that Asian researchers were proactively

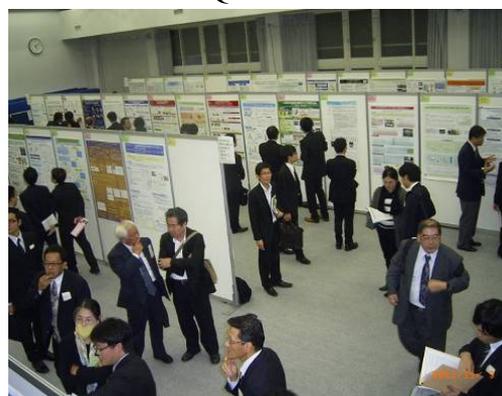
conducting the waste generation or cost analysis of their own countries. We expect this research to bear fruit in future.



Lecture by Prof. Yong-Chil Seo



Question and answer session



Poster session

(Mamoru Inoue)

**Report of the Special Program**

In the wake of the Great East Japan Earthquake of March 11, 2011, disaster waste of collapsed buildings and that resulting from the tsunami posed an immediate and enormous issue. Appropriate and prompt handling of disaster waste is definitely essential in the region for its recovery and reconstruction. Moreover, in the near future, there is concern of a huge earthquake in Tokai, Tonankai

and Nankai areas, and a huge amount of disaster waste will be generated at that time.

The JSMCWM quickly established the “Task Force on Disaster Waste Management and Reconstruction” following the earthquake and tsunami, and has since been conducting field research and working with local people. The task force has collaborated with the Science Council of Japan for urgent recommendations, making and distributing a manual “Strategy for disaster waste separation and treatment”, and supporting guideline development for managing tsunami sediment and sludge.

At the special program of the society's annual conference on November 4, 2011, the task force's activities and findings were presented and discussed during the first session, and issues about the waste containing radioactive substances was also discussed in the second session. Total number of the participants was about 550, and the venue was packed. The society made an advance press release for the first time. Consequently, several reporters attended and it was reported newspapers and TV news.

### **The first session: Task force activities and issues related to disaster waste of Great East Japan Earthquake**

Prof. Shinichi Sakai (Kyoto Univ.), the president of the society as well as the representative of the task force, presented the task force's objectives and achievements, also issues to be solved. Objectives of the task force are: 1. To formulate a platform for disaster waste related information; 2. To formulate a network and on-site support for disaster waste management; and 3. To make academic records and guidelines about disaster waste. The task force is composed of both members and non-members of the society and the Korean Society of Waste Management. So far, the achievements are: estimation of the amount of disaster waste generation; collaboration with Science Council of Japan for the urgent recommendation; making the manual of disaster waste separation and treatment and its revision and distribution; supporting making the guidelines of analysis of tsunami sediment and sludge and their treatment; and combustion testing of disaster waste. The issues specific to Great East Japan Earthquake are: 1. Many people missing; 2. Countermeasures for lost private property; 3. Waste affected by seawater; 4.

Tsunami sediment and sludge; and 5. Waste containing radioactive substances.

Prof. Toshiaki Yoshioka (Tohoku Univ.) presented on the task force's activities in the affected areas. The task force sent a supporting team to Sendai City. This prompt action was possible as a result of good relationships that had been built up within the society over time. There was good cooperation between the task force and the supporting team in the field. The task force provided the team in the field with relevant expertise, with both sides working to compile this data to provide it those in most need in affected areas. Moreover, the task force's principle was to treat even disaster waste as a resource.

Dr. Misuzu Asari (Kyoto Univ.) presented the manual “Strategy for disaster waste separation and treatment” made by the society. Background of making the manual is that it was thought effective to record the activities in Sendai where the most advanced action had been taken and to share its information for this enormous amount of disaster waste to be treated. The task force tried to make a practical manual that can actually be utilized in the affected areas. This knowledge and information will be distributed overseas as well as utilized for proactive measures for Japanese municipalities.

Dr. Masahiro Osako (National Institute for Environmental Studies) presented on policy development and support for implementation. His institute has been aiding the recovery by supporting the policy development of Ministry of Environment. His group compiled the expertise from a network of experts into a report to solve technical issues in the field in collaboration with the task force of the society, and submitted it to the ministry. The contents of the report were also reflected in the manual.

Mr. Moriya Endo (Sendai City) presented the countermeasures on disaster waste in Sendai City. The amount of waste generated by the disaster is equivalent to four regular years of waste in the city. The city planned to complete removal of the debris in a year and treat it within three years. The waste was strictly separated at temporary dump sites. He pointed out, as an issue for the future, that accumulation of scientific knowledge is essential to deal with unexpected situations.

During the question and answer session there were several related to the waste containing radioactive substances, such as “The governments decision to incinerate waste containing radioactive substances is a serious problem” and “The fact that these discussions and decisions were made behind closed doors is also a problem”. Dr. Osako replied, “The Ministry of Environment confirmed the safety of incineration, even though it has no experience with such an issue” and “Information must be disclosed”; while Prof. Sakai responded, “Considering the amount of waste, incineration was a necessary for intermediate treatment. However, this must be done taking every precaution to avoid secondary diffusion” and “To proceed with the countermeasures was of higher priority than information disclosure at the time.”

Prof. Sakai posed three issues below for discussion.

#### 1. Future challenges of society:

Dr. Yamada (National Institute for Environmental Studies) commented, “We should always go into the field and work with the locals to come up with solutions together.” Also, with regard to fire prevention in the temporary dump sites we should “keep the size of waste piles down and conduct monitoring.”

#### 2. Preparation planning for municipalities

Mr. Endo commented, “Earthquake waste estimates for Sendai City were based on the assumption that waste would be generated evenly throughout the city, however, waste generation was mostly concentrated in coastal areas.” Also, “Problems were compounded by salt damage and radioactive contamination.” Prof. Yoshioka said, “Although estimations of waste volumes were fairly accurate, the types of waste were different than those expected.” Dr. Asari said, “The municipalities had difficulty securing temporary dump sites, therefore there is a need to plan these in advance” and “Supporting efforts need to be more coordinated.”

#### 3. Discussion about disaster waste in other countries

Dr. Asari said, “This [disaster waste] is an important topic for discussion, particularly with regard to developing countries.”

### **Second session: Issues and countermeasures of waste containing radioactive substances**

Prof. Yuichi Moriguchi (Tokyo Univ.) summarized the issues covered by the second session. The characteristics



of the issues were: 1. Gaps in the current legal system; 2. Concentration of radioactive substances in sewage sludge and incinerated ash; 3. Treatment of disaster waste in other areas hindered by the lack of information on the actual situation of radioactive contamination in each area; 4. Safety of incineration and landfilling of disaster waste; 5. Closed door discussions by the Ministry of Environment; and 6. Location of facilities for storage, treatment, and disposal of contaminated waste and soil. In addition, the following discussion points were presented: 1. Technical issues of treatment and disposal (incineration and landfilling); 2. Issues in each area, such as treating disaster waste from Iwate and Miyagi prefectures in other areas, treating waste containing radioactive substances in the Tokyo metropolitan area, and intermediate storage and final disposal of the radioactively contaminated waste and soil in Fukushima; and 3. Information disclosure and risk-communication.

Prof. Masaki Takaoka (Kyoto Univ.) pointed out the necessity of separating and concentrating the radioactive substances that unintentionally enter the waste management or sewage system, and of disposing those concentrated waste with monitoring. He also presented the latest research on behavior of cesium upon incineration, saying most of the radioactive cesium was caught by bug-filter. The incineration system after dioxin countermeasures have been taken can be considered safe, however, further data and research is still necessary.

Mr. Hisaki Mori (Radioactive Waste Management and Nuclear Facility Decommissioning Technology Center), an expert of radioactive waste, presented laws and regulations of clearance standards for deciding whether

radioactive waste or not, and method of final disposal of radioactive waste. Most of the radioactive wastes generated from this disaster were categorized as low level. The combined expertise of nuclear energy and environmental fields would be required to create new solutions for final disposal, due to the need for prompt countermeasures for dealing with enormous amount of wastes.

Mr. Masahiro Yamamoto (Ministry of Environment) presented on the issues from the point of view of national government. Contamination of radioactive substances has been widespread as almost all the incinerators in 16 prefectures in east Japan have detected radioactive substances from their incinerated ash. Therefore, appropriate collection and management of them is important. Management of the organic waste which is collected and stored after decontamination activities and mostly non-contaminated disaster waste management over a wide area are important issues for rehabilitation for the affected area.

Ms. Yuko Sakita (Journalist, Environmental counselor, NPO GENKI Net for Creating a Sustainable Society) presented her NPO's activities associated with waste (environmental burden) from our daily life, in particular "waste of electricity," and study sessions on environmental rehabilitation after the earthquake. She also introduced the voices of people on disaster waste management, and insisted on the importance of risk communication to alleviate their anxiety and involve them in the resolution process.

In the question and answer session, most of the questions were about technical issues of waste treatment and disposal, such as: "Can you say it's safe with a few data and single researcher's data?" "Is it appropriate to treat 8000Bq/kg waste which was over the clearance standard of 100Bq/kg as "normal" waste?" "Isn't there any other option beside incineration?" "Contaminated pruned branches should not be incinerated but treated separately." "8000Bq/kg waste should not be landfilled but temporarily stored." "Is it safe to landfill water-soluble cesium?" "Construction materials utilizing disaster waste are being developed; standards on its radioactivity are needed."

As for incineration, Prof. Moriguchi commented, "It's

important to accumulate data and proof because it is easy to measure radioactivity." Prof. Takaoka replied, "Even though this is one case, it's still important to accumulate data." Mr. Yamamoto said, "Temporary storage of contaminated branches might cause fires. It's safer to incinerate them and manage the ash."

As for final disposal, Prof. Moriguchi said, "Cesium can easily elute from incinerated ash of municipal waste, while this is not necessarily the case for incinerated ash of sewage sludge." Mr. Yamamoto commented, "Bottom ash and fry ash also show different characteristics, currently we're working how to manage them to avoid elution when final disposal. At this moment, leachate control-type landfilling is appropriate for low-level contaminated waste."

As for the clearance standard 100Bq/kg, Mr. Mori commented, following the clarification of how to set the standard, "A rational decision should be made based on the present situation of Fukushima," and "It's important how standards should be set under controlled conditions." Prof. Moriguchi said, "Radiation exposure varies depending on the situation, even though the radioactivity, Bq/kg, is the same. Therefore, explanations should be easily understandable."

As for the closed door discussion of Ministry of Environment, Mr. Yamamoto commented, "It was required to solve the problems as soon as possible in un-experienced situation rather than making decision by open discussion. And we tried to disclose the data, it was delayed though." And "We're also thinking to disclose the data which we're currently monitoring as soon as possible." While Ms. Sakita said, "I gave voices from the people of Fukushima here. It's essential to communicate and think together with people there."



It would be our pleasure if this special program can aid in this communication.

(Seiji Hashimoto)

**The 10th Expert Meeting on Solid Waste  
Management in Asia and Pacific Islands  
(10th SWAPI)**

Both the rapidly increasing amount of waste and resource circulation have become serious concerns in the Asia-Pacific region. It is imperative that there is a high level of waste management and that it is done properly. Expert meeting on Solid Waste Management in Asia and Pacific Island has been held every year since 2005 for formation of networks between experts to facilitate proper waste management and the 3Rs in Asia and the Pacific Islands.

The first meeting was held in Tokyo in 2005 with participants from ten countries. Here, a *Mottainai*<sup>1</sup> Declaration was made to establish a network of experts in the Asia-pacific region. Since then the meetings have been held in Kitakyushu, Okayama, Yokohama, Incheon (Korea), Nagoya, Taipei (Taiwan), Tokyo, and Taipei cities respectively<sup>2</sup> The 10<sup>th</sup> will be held in Tottori City on February 20-22, 2012.

This meeting is for experts in the Asia-pacific region, especially those who are in East Asia and Southeast Asian countries. Experts from research institutes of universities or government agencies are participating. Since the 8<sup>th</sup> meeting, public applications for research presentations have been accepted. Many research papers were presented at the 8<sup>th</sup> meeting and there are already applications for the 10<sup>th</sup> meeting. We are expecting your proactive participation.

#### References

<sup>1</sup> Mottainai is a Japanese word meaning "don't be wasteful" or "what a waste", and is a catch-phrase of the environmental and 3R movements in Japan and beyond.

<sup>2</sup> Cities are in Japan unless otherwise specified.

(Takashi Miyagawa)

### Conference Information

#### 10<sup>th</sup> SWAPI meeting

**Date** : Feb. 20 (Mon)-Feb. 22(Wed), 2012

**Venue** : Tottori City (Tottori University of Environmental Studies and others)

**Organizer** : Society of Solid Waste Management Experts in Asia and Pacific Islands (SWAPI), Japan Society of Material Cycles and Waste Management (JSMCWM), Tottori University of Environmental Studies (TUES)

**Supported-by** : Ministry of the Environment, Japan and others

**Details**: <http://jsmcwm.or.jp/international/>

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#### Symposium Paper for 2011

#### *Overview*

***Waste Disposal Plan with the Revision of Waste Disposal Law and Basic Guidelines***

Masahiro Ido

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Symposium Report

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Conference Report

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***Starting of the Kanto Regional Chapter***

**Journal of the Japan Society of  
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Paper

***Questionnaire Survey on Collection and Disposal of Household Hazardous Waste***

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***Influencing Factors on Household Waste Generation in Local Towns***

Tomoo Sekito, Yutaka Dote and Tetesunobu Yoshitake

***Treatment of Household Food Waste at High Temperature and High Pressure, and Utilization of the Resulting Material as Pig and Chicken Feeds***

Takateru Ishimori, Ayyakkannu Saravanan, Toshiyuki Sanada, Tohio Jho, Shinobu Fujimura, Tadayuki Nishiumi, Akio Imai, Tomoyuki Fujii, Hideyuki Sato, Hiroaki Kojima and Hidetaka Hori

***Effectiveness of Resistivity Monitoring for Estimating Properties of Landfills Filled with Combustion Residues: Comparison of a Scale Experiment and Field Data***

Masaki Sugisaki, Kazuo Kamura, Kento Higuchi and Yosuke Kawamura

***Optimization of Heat Treatment Condition for Oyster Shells to Increase their Ability to Remove Ions with Negative Environmental Impacts***

Hiroshi Nishioka, Takuya Uchida, Yasuji Muramatsu, Tetsuo Yazawa and Tatsuya Amako

Current Members of JSMCWM as of December 31, 2011	
Regular Members	2,590
Fellow	27
Senior	7
Honorary member	7
Students	307
Public Institutions	92
Supporting companies	127
NPOs	6
Individual	5
Total	3,168 (6)

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Edited and design by: Tsunako Matsumoto, Yuko Aoki

Translation & proofreading:

James McLean

Buzen-ya Bldg. Shiba 5-1-9, Minato-Ku,  
Tokyo 108-0014, Japan

Phone: (+81) 3-3769-5099

Fax: (+81) 3-3769-1492

<http://jsmcwm.or.jp/international/>

e-mail: [international@jsmcwm.or.jp](mailto:international@jsmcwm.or.jp)

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