

**October 29 (Mon.)**

**09:30~10:00** **Workshop Registration**

**10:00~10:30** **OPENING SESSION**

**10:30~12:30** **SESSION 1 -- Reviewing the current status and availability of chemical reference materials in ocean science**

**Co-chair: David J. Hydes & Jae Ryoung Oh**

10:30~10:50 **Patrick Roose**

The QUASIMEME proficiency testing scheme: history, results and future trends of the nutrient programme

10:50~11:10 **Dan Wruck**

Interlaboratory Comparison for the Yellow Sea Large Marine Ecosystem

11:10~11:30 **Anne Daniel**

Experience on reference material from ICES intercomparison exercises

11:30~11:50 **Hidekazu Ota**

The Development of Reference Material for Nutrients in Seawater in a Seawater Matrix

11:50~12:00 **Akira Hioki**

NMIJ's plan of developing seawater CRMs on nutrients

12:00~12:30 DISCUSSION

12:30~14:00 LUNCH

**October 29 (Mon.)**

**14:00~15:30**    **SESSION 1 -- Reviewing the current status and availability of chemical reference materials in ocean science (Continued)**  
Co-chair: Jae Ryoung Oh & Akihiko Murata

14:00~14:30    Takashi Arai

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14:30~14:50    Susan Beckere

SIO/STS Nutrient Standardization and Quality Controls

14:50~15:10    Kenichiro Sato

Establishment of comparability of nutrients data obtained in R/V Mirai cruises based on Reference Material for Nutrients in Seawater (RMNS)

15:10~15:30    DISCUSSION

15:30~15:50    COFFEE

**15:50~17:20**    **SESSION 3 -- Comparability and traceability of ocean CO<sub>2</sub> measurements**  
Co-chair: Andrew Dickson & Hisayuki Inoue-Yoshikawa

15:50~16:20    Andrew Dickson

Oceanic CO<sub>2</sub> reference materials: assigning uncertainty

16:20~16:50    Akihiko Murata

Development of nontoxic RM for dissolved inorganic carbon

16:50~17:20    DISCUSSION

19:00~21:00    (BERM11 reception, optional)

**October 30 (Tue.)**

**11th International symposium on Biological and Environmental Reference  
Materials (BERM11) SESSION**

The program is available at  
<http://www.nmij.jp/berm11/Oct30-e.html>

19:15~21:40 Workshop Banquet (JPY5000)

**October 31 (Wed.)**

**Workshop sub group meeting (Nutrients, INSS, carbonate system)**

## November 1 (Thu.)

**09:30~10:20** **SESSION 2 -- Towards establishing international collaborations in the use and development of chemical reference materials in ocean science**  
**Co-chair: Patrick Roose & Katsumi Hirose**

09:00~09:20 Jia-Zhong Zhang  
An urgent need for nutrient standards in seawater

09:20~09:40 Hajime Obata  
Intercalibration on GEOTRACES

09:40~10:00 Jae Ryoung Oh  
History of IAEA-IOC-UNEP

10:00~10:20 Malcolm Woodward  
Calibration of open ocean nanomolar nutrients

10:20~10:40 COFFEE

**10:40~12:10** **SESSION 4 -- Results of 2006 RMNS intercomparison**  
**&**  
**SESSION 5 -- "International Nutrients Scale System" to establish comparability of nutrients data in the world ocean**  
**Co-chair: Akihiko Murata & David J. Hydes**

10:40~11:00 Michio Aoyama  
Recent Comparability of the Nutrients Data in the World Ocean: Results of 2003 and 2006 RMNS Intercomparisons and an "International Nutrients Scale System (INSS) in Sea Water"

11:00~11:30 David J. Hydes  
User Requirements For Improved Determination Of Nutrients In Seawater: A Suggested Methodology For Improving The Traceability And Relative Accuracy Of Determination Of Concentrations Of Nutrients In Seawater

11:30~12:10 DISCUSSION

12:10~14:00 LUNCH

**November 1 (Thu.)**

**14:00~15:30** **SESSION 5 -- "International Nutrients Scale System" to establish comparability of nutrients data in the world ocean**  
**&**  
**SESSION 6 -- Discuss the future tasks on the use/development of chemical reference materials in ocean science**  
Co-chair: Patrick Roose & Andrew Dickson

15:30~15:50 COFFEE

**15:50~17:20** **SESSION 6 -- Discuss the future tasks on the use/development of chemical reference materials in ocean science**  
**&**  
**SESSION 7 : General discussion**  
Co-chair: Michio Aoyama & David J. Hydes

November 2 (Fri.)

06:45~21:45 KANSO RMs producing Lab. tour

We visit KANSO's RM producing facility.



Producing facility

This tour will take 13H30M.

Michio AOYAMA will go with you through out this tour.

Hidekazu OTA, a director of the laboratory, will be a host at the Laboratory.

MRI will provide refreshments and lunch.

You will be asked to pay about JPY35000 for train tickets including Shinkansen.

If you want to stay Kyoto or Nara after this laboratory visit, it is OK but it should be on your own risk and your payment.

## Schedule

<b>06:45</b>	meeting place: Tsukuba station
<b>06:56</b>	Dep. Tsukuba
<b>07:40</b>	Arri. Akihabara
<b>08:13</b>	Dep. Tokyo
	Shinkansen_Nozomi 11
	Refreshment (coffee & sandwich)
<b>10:33</b>	Arri. Kyoto
<b>10:50</b>	Dep. Kyoto
	Kintetsu_railway
<b>11:20</b>	Arri. Shin-tanabe
	Taxi
<b>11:40</b>	KANSO
	Lunch and Lab tour
<b>15:40</b>	
	Taxi
<b>16:08</b>	Shin-tanabe
<b>16:43</b>	Dep. Kyoto
	Shinkansen_Nozomi 254
<b>19:00</b>	Arri. Tokyo
<b>19:30</b>	Dep. Akihabara
<b>20:15</b>	Arri. Tsukuba

