

<Announcement>  
**12<sup>th</sup> International Conference on the Environmental Management of the Enclosed Coastal Seas (EMECS 12)**  
Theme: Cooperative stewardship for integrated management toward resilient coastal seas

Date : November 4 – 8, 2018  
Venue: Jomtien Palm Beach Hotel, Pattaya, Thailand  
Organizer : International EMECS Center  
Official website : <https://www.emecs12.com>



The 12th International Conference on the Environmental Management of Enclosed Coastal Seas (EMECS 12), organized by the International EMECS Center, will be held in Pattaya, Thailand from November 4 through November 8, 2018.

In recent years, global climate and human-induced environmental problems resulting from expansion of human activities due to population growth have had a tremendous impact on coastal zone environments including ecosystems, giving rise to various issues and risks.

The EMECS 12 will be held under the theme of “Cooperative stewardship for integrated management toward resilient coastal seas”, and it will be a valuable opportunity to share knowledge and efforts to conserve coastal zone environments around the world, and to find new and improved approaches to the management of coastal zone environments in the future.

We look forward to welcoming researchers, coastal zone administrators and planners, policy makers and people involved in resource development and environmental conservation activities from all corners of the world.

■ **Organizer**  
International EMECS Center



■ **Co-organizers (Thailand)**  
Chulalongkorn University, Royal Society of Thailand, King Mongkut’s Institute of Technology Ladkrabang, Rajamangala University of Technology Srivijaya, Rambhai Barni Rajabhat University

- **Topics**
1. Gulf of Thailand: history and current studies
  2. Ecosystems/communities based coastal management and Sato-umi
  3. Coastal and marine ecosystems: monitoring, modeling, restoration, and conservation

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4. Sustainable use and development of coastal resources: effective management and approaches
5. Recovery from tsunami and storm surge disaster
6. Climate change
7. Estuaries of the world: issues and perspectives
8. Cooperative management, restoration, and protection of coastal seas
9. Physical and bio-geochemical oceanography
10. Socio economy

**■ Conference official language**

English

**■ EMECS12 Conference tour**

A conference tour for researchers and stakeholders of environmental organizations and companies will be organized by International EMECS Center.

**< EMECS12 Conference tour schedule > (Tentative)**

	Date	City	Schedule
1	3 Nov (Sat) 2018	From Japan to Pattaya via Bangkok	Depart from Japan Arrive at Suvarnabhumi International Airport Go to Pattaya by tour bus  [Hotel]Jomtien Palm Beach Hotel
2	4 Nov (Sun)	Pattaya	Registration for participation Ice break, EMECS Night(Extra charge)
3	5 Nov (Mon)	Pattaya	EMECS12 Conference (1 <sup>st</sup> day) • Opening ceremony, Special session, parallel sessions
4	6 Nov (Tue)	Pattaya	EMECS12 Conference (2 <sup>nd</sup> day) • Sessions
5	7 Nov (Wed)	Pattaya	EMECS12 Conference (3 <sup>rd</sup> day) • Sessions, Closing ceremony
6	8 Nov (Thu)	Pattaya	EMECS12 Conference (5 <sup>th</sup> day) • Technical tour
7	9 Nov (Fri)	From Pattaya to Japan via Bangkok	Go to Suvarnabhumi International Airport

Operator: JTB Corp. (Japan)

**■ Venue**

Jomtien Palm Beach Hotel, Pattaya, Thailand offers a special rate to the conference participants. Please visit the conference website and check the rate.



**■ Program**

The conference consists of keynote speeches, theme sessions, special sessions (ICM & Satoumi session, etc.), a poster session, and a Students and Schools Partnership (SSP) session.

On the final day of the conference, a technical tour to environmental facilities in Sattahip will be held.

**■ Registration fee**

Participant	Regular registration fee (From July 1 to 31 August)	USD 325
Accompanying person		USD 125

※ For detailed information on registration (payment method, conference package etc.), please visit the conference website.

**■ Pattaya**

Pattaya is a city located on the eastern coast of the Gulf of Thailand which is an enclosed sea and is 160 km southeast of Bangkok. Although once being a small and quiet fishing village, Pattaya was promoted as a resort area in 1960s and it became a representative beach resort in Asia which attracts many tourists from over the world over 40 years.

**■ EMECS12 official website**

For further detailed information, please visit the conference website.

<https://www.emecs12.com>

## Report of the 18th EMECS International Seminar

On Wednesday, July 12, 2017, the International EMECS Center held the 18th EMECS International Seminar at the Lasse Hall in Kobe, Hyogo prefecture in order to share knowledge and experiences regarding efforts to determine the current status and conserve coastal zone environments in Japan, USA, Brazil and Thailand. The theme was “Enclosed Coastal Seas in the World : Present and future of coastal environment policy” and the seminar was attended by 70 participants.



In the seminar, there were four presentations about current status of environment and conservation management of the Chesapeake Bay (U.S.), Guanabara Bay (Brazil), the Gulf of Thailand (Thailand) including environment conservation of Japan Sea lectured by Prof. Jing Zhang (Toyama University, Japan), and information on the upcoming EMECS 12 conference to be held in Pattaya, Thailand in November, 2018 was also provided.



### ■ Abstracts

#### 1. The changing Japan Sea :

##### Toward the conservation of a healthy marine environment

Lecturer: **Jing Zhang** Professor, Toyama University (Japan)

As the effects of global climate change become more and more apparent, marine research has a major role to play in determining the current situation and resolving the problem. Large-scale circulation in the world's sort of global air conditioning system. Conversely, the ocean water in the deep layers of the Japan Sea takes only around 100 years to circulate. Ocean water in the shallow and middle layers is replaced in a short period of time and is characterized by its tendency to change to reflect subtle variations in the surrounding environment. In this way, it is a microcosm of the large-scale global ocean circulation. In the 20 or so years between 1977 and 2001, the dissolved oxygen in the deep layers of the Japan Sea decreased by roughly 10%. Moreover, the temperature of the ocean water in the deep layers has been increasing each year, while simultaneously the thickness of the deep layers has been decreasing. These developments are closely related to global climate change, and they are thought to indicate a slowing of the submergence of surface layer water off the coast of Russia and so on in winter. Moreover, the IPCC has stated that the increase in the temperature of the surface water in the Japan Sea during the past 100 years is 0.79 to 1.19 ° C higher than the average for



the northern hemisphere, and that the Japan Sea is one of the ocean regions in which the effects of global climate change can be seen most clearly. The Japan Sea is also greatly affected not only by warming from neighboring countries such as Russia, South Korea and China (which is adjacent to the East China Sea, which constitutes the upper regions of the Tsushima Current) but also by human factors.

Research that spans various academic domains is currently underway with the aim of gaining an accurate overall picture of the environmental trends in the Japan Sea, including ocean physics, chemistry, biology, fisheries, ecosystem models and so on. In order to help to achieve sustainable development in the changing Japan Sea to preserve its healthy ocean environment, debate is urgently needed to discover and raise wide-ranging scientific and environmental issues and find solutions to these issues.

This presentation will focus on the construction of a framework for joint international research on ocean biogeochemistry in marginal seas and the progress of the Far East and Asia GEOTRACES Project that involves primarily observations. The presentation will also cover Topic 3 of the Ministry of the Environment's Environment Research and Technology Development Fund S-13 “Development of Coastal Management Method to Realize the Sustainable Coastal Sea.” The goal of this project is to study management techniques for the Japan Sea (an international enclosed coastal sea), based on the effect that a potential rise in seawater temperature in the Japan Sea, together with changes in the load from the East China Sea, would have on material cycles and low-order and high-order ecosystems in the Japan Sea.

**2. Recognition on the new direction of the management of the Seto Inland Sea**

Lecturer: **Osamu Matsuda**

Vice-Chair, Board of Directors, EMECS

Professor Emeritus, Hiroshima University (Japan)

The system for environmental management of the Seto Inland Sea has a long history. It is now at a profoundly important turning point. At the end of February 2015, the Cabinet approved the plan to have the national government undertake a major revision of the “Basic Plan for Conservation of the Environment of the Seto Inland Sea.” To back up this effort, the Diet passed a revised “Act on Special Measures Concerning Conservation of the Environment of the Seto Inland Sea” at the end of September of the same year. Thus, major revisions of both the law and the Basic Plan were conducted for the first time. In response to the major systemic changes, in the fall of 2016, a new Prefectural Plan (Prefectural Plan for the Environmental Conservation of the Seto Inland Sea) was formulated by the 13 relevant prefectures that will put these changes into actual practice. Since the start of FY 2017, the new management policy has been gradually transitioning to actual on-site implementation.



As a result of the recent changes, there has been a major change in the direction of Seto Inland Sea policy, from working to achieve “a clean sea” to striving for “an abundant sea.” Following the original enactment of the Seto Inland Sea Act in the age of pollution and eutrophication, intensive efforts over many years to clean up the sea by means of total pollution load control policies and the like were able to achieve a “clean sea” to a significant degree in terms of water quality. In recent years, the rate of achievement of environmental standards for total nitrogen (TN) and total phosphorus (TP) concentrations has been close to 100% for the areas of the Seto Inland Sea with the exception of Osaka Bay. At the same time, however, the natural coastlines, seaweed beds and tidal flats have been reduced, and the fishing catch has also declined. The result of the loss of the original abundance of the Seto Inland Sea has been the creation of new problems due to so-called “oligotrophication” — reduction of the concentration level of nutrients in the sea. The recent systemic revision represents a major shift in direction away from the previous regulatory water quality conservation and toward a more proactive effort to conserve marine resources and achieve environmental conservation and restoration and so on. The basic principles of the revised law clearly state the goal of making the Seto Inland Sea “an abundant sea with multifunctional value, one that fulfills its capabilities to the maximum degree possible.” To a substantial degree, the revised version incorporates the *Satoumi* approach that emphasizes ecosystems and material circulation.

The major revisions to the Basic Plan by the national government can be summed up as a shift from a two-pronged

approach to a four-pronged approach. Prior to revision, the two main goals of the plan were (1) conservation of water quality and (2) conservation of natural landscapes. In contrast, the revised plan has four main goals: (1) conservation and appropriate management of water quality (2) conservation of natural landscapes and cultural landscapes (3) conservation, restoration and creation of coastal zone environments and (4) ensuring sustainable use of marine living resources. Under the new system, the “area of the field to be managed” in the Seto Inland Sea has been greatly expanded, with a dramatically increased recognition of the importance of cross-sectoral efforts across different fields and government agencies. Moreover, overall the revised system emphasizes policies that are tailored to the circumstances of specific bays and sea areas and specific seasons, and it introduces new policies that include the mechanism of a Bay and Sea Council, efforts to create “an abundant *Satoumi*” in regional areas, the accumulation of scientific data, adaptive management and so on.

What we must recognize anew is that, as a result of this change in direction, efforts in the Seto Inland Sea have moved ahead of Tokyo Bay, Ise Bay and other areas in the world in beginning to adopt a “post-total pollution load control policy” for the “age of oligotrophication.” Yet although this new approach has been established, its aims are very high. The new objective of “an abundant *Satoumi*” is not a simple return to the past. The goal will be to achieve diverse participation and thereby maximize in the aggregate the multifaceted “bounties of the sea” (ecosystem services) to a level never before achieved.

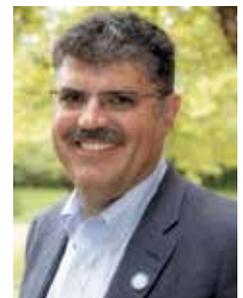
**3. Integrated monitoring data into environmental health report cards in the U.S. and Brazil**

Lecturer: **David Nemazie**

Chief of Staff, University of Maryland Center for Environmental Science (USA)

**Introduction**

Based upon monitoring data, environmental report cards are an emerging technique used to assess and report on the ecosystem health of a region. Providing rigorous, quantitative assessments provides an accountability that supports environmental protection and restoration efforts by engaging funders, government and non-government organizations, and the public. They also provide a level of transparency for the public through the use of color-coded metrics, maps, graphs and diagrams.



Chesapeake Bay is the largest estuary in North America with an extensive watershed that includes a population of 16 million people who live in a portion of five States. The Chesapeake Bay report card has been done annually for the last 10 years and scores were calculated back to when the Chesapeake Bay Program monitoring system was established in the mid1980’s.

Guanabara Bay has a watershed population of six million people, all within the State of Rio de Janeiro.

## Methods

The following multi-step process for developing report cards was used to meet objectives:

*Conceptualization:* Some early crucial decisions need to be made at the outset of a report card program, including the geographic size and scope of the reporting regions, the reporting time intervals and integration periods for reporting and the types of indicators. Conceptual diagrams can be used to communicate this framework. The Chesapeake Bay report card uses 15 reporting regions including several tributaries while the Guanabara Bay has six watershed and five Bay reporting regions. The geographic data density is a consideration in creating reporting regions.

*Choosing indicators:* Selecting indicators that convey meaningful information and be measured reliably typically involves an iterative process. Streamlining the data collection and analyses to make them timely and useful requires a concerted effort. The Chesapeake Bay report card uses data from 180 monitoring stations and has 11 indicators. The initial Guanabara Bay report card has 8 indicators.

*Defining thresholds:* After selecting indicators, several decisions are required for developing a report card. Pass/fail thresholds require large data sets and multiple thresholds appear to work better where using limited data sets. There are ecological thresholds that can be determined through scientific studies, but also there are various management thresholds that can be used based on goals and objectives created by the regulatory agencies or by conservation targets.

*Calculating scores:* Indicator scores can be calculated by comparing the indicator metrics to the various thresholds established. The percent attainment of indicators provides a common reporting framework that allows various water quality, living resources or habitat indicators to be compared with one another. These individual scores then need to be rolled up into an overall index. The method of aggregating data needs to be clearly defined, and often in developing report cards, back-calculating scores using historical data helps test and refine the indices.

*Communicating results:* Communication of report card results provides a regular opportunity to engage with a wide public audience on the status of a region. This communication can be effective using mass media outlets and events, elected officials and designated science communicators.

## Results and Conclusions

*Chesapeake Bay, USA:* This report cards has tracked 15 reporting regions since 2006, with interactive trend graphics for indicators and reporting regions - previous years have been back calculated. It takes several months after the monitoring year is completed to calculate scores and finalize the report card.

*Guanabara Bay, Rio de Janeiro, Brazil:* This inaugural report card is currently in development with eight indicators and 11 reporting regions. A series of workshops were conducted

with key stakeholders including resource managers, scientists, and NGOs.

Report card credibility relies on independent rigorous assessments by environmental scientists. UMCES has been collaborating with a wide variety of partners on developing various report cards. Environmental report cards can be an important tool for effective management of natural resources. Report cards utilize environmental monitoring data and can guide the prioritization of ongoing monitoring efforts. The goal of environmental reporting is to provide effective feedback as to the efficacy of management actions so that the often considerable resources devoted to environmental protection and restoration are used efficiently. The annual release of the Chesapeake Bay report card has been an important tool that helps resources managers and the public calibrate their restoration planning and communication efforts.

## 4. The Gulf of Thailand and the environmental issues

Lecturer: Piamsak Menasveta

Professor Emeritus, Fellow of the Royal Society of Thailand (Thailand)

The Gulf of Thailand is one of the 21 enclosed coastal seas as identified by the International EMECS Center. The gulf locates in Southeast Asia, immediately to the west of South China Sea. Its bordering nations, Thailand, Cambodia, Malaysia, and Vietnam. The gulf is roughly triangular and may be divided into two sections,



i.e. the “inner gulf” and the “Gulf”. The inner gulf is a small apex of the Gulf of Thailand. The average depth of the inner gulf and the Gulf is 20 m and 45 m, respectively. The water circulation of the Gulf is influenced by the flux from South China Sea and the monsoon winds. The Gulf of Thailand is one of the most productive areas of the world.

During the past four decades, there have been a number of environmental issues mostly occurred in the inner gulf. These issues are, for instance eutrophication, mangrove conversion and destruction, coastal erosion, contamination of toxic wastes, overfishing and marine litter. Eutrophication used to be a problem during 1978 – 1983. At present the problem was alleviated. Mangrove forest area decreased sharply during 1961 – 1986. Since then the rate start to slow down. The reversal started after 1996 due to a big restoration campaign. At present, the percent increase from 1996 is 47%. The problem of coastal erosion is still growing. One important factor to this problem is the rising sea level, the global issue. Contamination of toxic wastes especially lead (Pb) and mercury (Hg) used to be a problem; but now it is under controlled. Overfishing is still an issue in the Gulf. We are preparing several control measures, with a hope to reverse the situation. Marine litter has received a lot of attention recently, especially the plastic debris. Several campaigns have been exercised for the clean-up.

# JICA Training Report

The International EMECS Center was asked by the International Lake Environment Committee Foundation (ILEC) to conduct training relating to coastal zones, as part of the FY 2017 JICA training course entitled, 'Integrated basin management for sustainable use and preservation of water resources (lakes, rivers and coastal waters)' that ILEC had been commissioned by JICA to conduct.

This training course follows the 'Integrated basin management for lake environment' course that ILEC had conducted for 11 years from FY 2005 through FY 2015. It is designed for technical administrators and researchers and other personnel from developing countries who are involved in basin management.

In basin management for rivers, lakes, coastal zones and other environments in which many stakeholders are involved, it is important to pursue sustainable use and preservation of water resources in an integrated manner, integrating the six key issue areas of organizational structure, policy, involvement, technological capability, information and financial resources.

The training course begins with Integrated Lake Basin Management (ILBM) and is designed to deepen understanding of the approach to appropriate management of lakes, rivers, coastal zones and other standing water and flowing water systems, in order to contribute to improved governance for basin management in developing countries.

## 1. Overview of FY 2017

Training period: Monday, August 28 - Saturday, October 28, 2017 (2 months)

Trainees: 10 trainees from 10 countries (1 each from Albania, Egypt, Ethiopia, India, Iraq, Mali, Mexico, Myanmar, Sudan, Uganda)

Training institutions: ILEC, Shiga Prefecture, Lake Biwa Environmental Research Institute, Lake Biwa Museum, Yodogawa River Office, International EMECS Center etc.

## 2. Training overseen by the International EMECS Center



(Lecture)

With regard to coastal seas management techniques whose goal is the achievement of sustainable coastal seas, the International EMECS Center held lectures on the current status of coastal seas in the Seto Inland Sea and other areas and measures that should be taken for these areas, as well as visits to and explanation of relevant sites.

Training dates: Thursday, September 28 - Friday, September 29 (2 days)

Content of training:

September 28, 2017

Morning: Lecture 'Concept and Practices of Satoumi in Japan and Lessons Learned'

Afternoon: Lecture 'Environmental Management of Enclosed Coastal Seas in the World' Lecture 'Environmental Management of the Seto Inland Sea'

September 29, 2017

1. Visit to Amagasaki Port Administration Office, Amagasaki Lock (explanation and tour of facility)



(Tour of Amagasaki Lock)

2. Visit to Hyogo Prefectural Government Hanshin-minami Center and Amagasaki Canal biological purification facility (explanation of the Amagasaki 21<sup>st</sup> Century Forest Project and explanation and tour of biological purification facility)



(Tour of Amagasaki Canal)

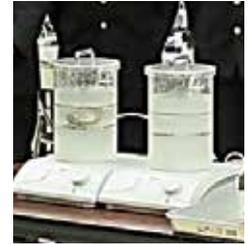
# Hands-on Seminar for Tohoku Gakuin High School Students

In the Port of Amagasaki located in inner Osaka Bay, the International EMECS Center established the “Tidal Flats, Rocky Seashore and Lagoon,” a demonstration experiment facility developed as part of a project aimed at creating a rich natural environment in the area. This project was promoted from FY 2001 to FY 2003, using a subsidy provided by the Ministry of the Environment. Making use of the facility, the Center has been providing environmental education programs and human resource development activities for elementary and junior high school students and the general public. In these programs, the participants can learn about many issues, such as the functions of seas, the functions and role of the shallows, the current state of Osaka Bay and Amagasaki coastal zone, and various sea creatures. These hands-on educational activities provide opportunities for people to learn, come into direct contact with, and think carefully about seas.

On December 8, 2017, during their school trip 14 students of Tohoku Gakuin High School, located in Sendai City, Miyagi Prefecture, visited the environmental education facility of the International EMECS Center in Amagasaki City, Hyogo Prefecture. During their visit, they learned about environmental conservation in enclosed coastal seas and creating a rich natural environment using living organisms.

The students of Tohoku Gakuin High School first listened to a lecture on the latest issues concerning enclosed coastal seas. They also learned about air pollution and water contamination generated by the rapid economic growth in the 60s in Japan, and the subsequent environmental improvements realized by newly introduced laws and regulations. Furthermore, they acquired knowledge about the efforts in Amagasaki to create a rich natural environment using living organisms, the unique world of rich seas, and a harmonious coexistence between humans and nature based on the concept of “Sato-Umi” for managing the ecosystem.

After the lecture, they had a tour in the demonstration experiment facility and participated in the following activities: (1) an experiment to clean water using clams, (2) observing planktons with a microscope, and (3) an experiment to measure water quality using a Pack Test kit.



(Left: tank with clams; right: tank with no objects)

## (1) Experiment to clean water using clams

Asari clams were placed into artificially muddied seawater. Observing that the clams had removed turbidity from water within less than 30 minutes, the students let out an exclamation of admiration.

## (2) Observing planktons with a microscope

The students observed the planktons collected with a net from seawater in the Port of Amagasaki. While observing many different phytoplanktons and zooplanktons, they watched intently the unique shape of planktons, the movement of zooplanktons, and how zooplanktons eat phytoplanktons.



## (3) Measuring water quality using a Pack Test kit

The students conducted a simple analysis using a Pack Test kit on COD, nitrogen, and phosphorus in seawater in the Port of Amagasaki to determine the density of each component.

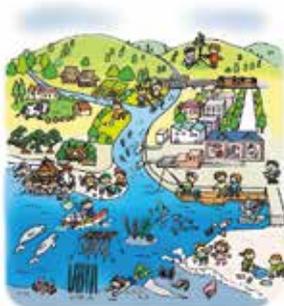


At the closing of the hands-on seminar, the students exchanged opinions with the International EMECS Center’s staff members who were responsible for the program.

After the seminar, the students returned the program survey to the Center. According to the survey, many students have become to feel positively about seas. Some of the students answered that they did not have much interest in seas before, but they became interested in them after participating in the seminar. Others said that they thought that they had nothing to do with seas before, but they understood that their lives were also closely related to seas.

The International EMECS Center will continue to promote environmental education programs and human development activities such as this seminar.

We hope that many people will participate in our programs and feel more interested in seas.



# Outcomes of EMECS Overseas Activities

## The Fourth International Workshop on Sato-Umi (Jakarta, Indonesia)

The Fourth International Sato-Umi Workshop, which was hosted by Agency for the Assessment and Application of Technology (BPPT) in Indonesia, and co-hosted by the International EMECS Center and other organizations, was held on October 5 and 6, 2017 in Jakarta, Indonesia. The workshop was attended by Prof. Tetsuo Yanagi (Professor Emeritus, Kyushu University), Principal Researcher of the International EMECS Center, and members of the Secretariat of the Center. The workshop was planned to promote a new campaign combining the concept of “Sato-Umi” with ecotourism in the Sabang Islands in the Aceh Province of Sumatra. Approximately 300 people participated in the workshop.

In the keynote lecture given on the first day of the workshop, our Principal Researcher, Prof. Yanagi introduced an example of promoting ecotourism in Sato-Umi, the challenges promoted in Shima City, Mie Prefecture, Japan on the basis of its Sato-Umi Creation Basic Plan. In the afternoon, the ecotourism session and the Sato-Umi session were held, and the five

leaders of the research project: “Development of Coastal Management Method to Realize the Sustainable Coastal Sea,” presented an interim report on the project, which is supported by the Environment Research and Technology Development Fund of Japan’s Ministry of the Environment (project number: S-13). Meanwhile, participants from Indonesia reported the current status of the Sato-Umi creation movement in Indonesia.

On the second day, a field trip to the Karawang coast was conducted. The participants visited the multi-trophic level aquaculture farm established in a brackish water pond on the coast, and mangrove forests.



Keynote lecture by Prof. Yanagi

## MEDCOAST 17 Conference (Mellieha, Malta)

The Vice Chair of the EMECS Center, Prof. Osamu Matsuda (Professor Emeritus, Hiroshima University) attended the MEDCOAST 17 Conference held October 31 to November 4, 2017 in Mellieha, Malta. Hosted by the MEDCOAST Foundation led by Prof. Erdal Özhan, a member of EMECS Scientific & Policy Committee, this conference is held once in two years in a country in the Mediterranean and Black Sea coastal region.

The latest conference was attended by 161 participants including many young researchers from 27 countries, such as Turkey, Malta, Japan, Korea, Vietnam, Egypt, and Russia.

In the session “Coastal Management Practices,” conducted on the first day of the Conference, Vice Chair Matsuda gave a presentation titled, “New Direction Environmental Management of the Seto Inland Sea, Japan.” In addition, he was the chair of the session “Blue Economy, MSP & Coastal Governance.”

At the closing ceremony, prizes were given to three excellent poster presentations, and Prof. Özhan provided information about the 12th EMECS Conference to be held in November

2018 in Pattaya, Thailand.

During the Conference, we participated in social programs, including a cultural tour to the City of Valetta, a world heritage site, and a field trip on a cruise ship traveling along the coast of Malta Island. On the ship, an expert gave us explanations on how the island was created, as well as its nature, landscape, and geological conditions. These programs provided us good opportunities to deepen exchanges with other participants from countries around the world.



On the ship  
(Prof. Matsuda, the second from the left)

### Call for Articles

Contributions from readers (reports of research on enclosed coastal seas, conference information, etc) would be greatly appreciated.

#### International EMECS Center

DRI East Bldg. 5F 1-5-2, Wakinohama-kaigandori, Chuo-ku, Kobe 651-0073, JAPAN

TEL: +81-78-252-0234 FAX: +81-78-252-0404

URL: <http://www.emecs.or.jp/en/> E-mail: [secret@emecs.or.jp](mailto:secret@emecs.or.jp)