

The Japan Ship Machinery and Equipment Association (JSMEA) was present at Sea Japan 2024, held at Tokyo Big Sight from April 10 to April 12, receiving financial support from The Nippon Foundation. This year's attendance made it JSMEA's 15th time at the biennial international maritime exhibition and conference since first making an appearance in 1994. At the recent event, JSMEA opened a Japan Pavilion to showcase to the rest of the world the highly sophisticated technologies developed by the Japanese maritime cluster, as well as new products and so on.

Under the main theme of "New Technologies Connecting to the Next Generation," Sea Japan 2024 set up exhibitions in its Theme Zone, which was classified into nine categories of up-to-date topics for the maritime industry, such as carbon neutrality, digital transformation (DX) and autonomous ship operations, making it JSMEA's most extensive Japan Pavilion created, which, in addition to the Theme Zone, showcased booths of 73 affiliated companies in the Member Zone.

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On top of the exhibitions at the Theme Zone, Sea Japan 2024 also hosted a variety of events, including seminars on international maritime affairs, ship and marine technologies and other subjects; events for students; the public unveiling of the Heiyo, a Japan Coast Guard (JCG) survey ship; and others.

The International Maritime Seminar kicked off Day 1 on April 10, following the opening ceremony of Sea Japan 2024. At the seminar, which was held for the first time in six years, lecturers from the Singapore Shipowners Association (SSA) and the China Association of the National Shipbuilding Industry (CANSI) gave presentations to an audience of 446 attendees.









SSA President Caroline Yang





CANSI Secretary-General Li Yanqing

Two events for students were organized at the same time at Sea Japan 2024 by JSMEA and The Shipbuilders' Association of Japan (SAJ). JSMEA invited 65 teachers and students from 10 universities and technical colleges across Japan to its event on April 11 and April 12, to encourage students to learn about the ship machinery and equipment business and other aspects of the maritime industry. Following presentations on ship technologies by specialists from Furuno Electric Co., Ltd. and Mitsui E&S Co., Ltd., they were treated to a stamp rally, in which the students collected stamps from the various booths at the venue that they visited; a field trip on board the survey ship; and a meet-and-greet with former event participants who now work at relevant enterprises.



Students interact with former event participates.

On the final day of Sea Japan 2024 on April 12, a Ships and Marine Technology Seminar was held for an audience of 893 people to discuss challenges to overcome to accomplish the green transformation (GX) and DX of ships. Presentations were given on efforts being made to achieve GX and DX.

In addition to these programs, the JCG unveiled its large survey ship Heiyo to the general public again, as it did at Sea Japan 2022, to provide a look on board the vessel built on Japan's latest technologies.



Large survey ship Heiyo

Sea Japan 2024, which welcomed a record 29,983 visitors, came to an end after successful three days.



#### About Sea Japan 2024

Time and Date: 10:00-17:00 on Wednesday to Friday, April 10 to April 12, 2024 Venue: East Halls 1 to 3, Tokyo Big Sight Number of Visitors: 29,983 (18,183 at Sea Japan 2022)

## About the Theme Zone (financially supported by The Nippon Foundation)

**Purpose:** To showcase the technologies of Japan's maritime cluster, the Sea Japan 2024 Japan Maritime Cluster Committee presented exhibitions on the products, technologies and other relevant interests that were researched and developed in Japan in the following categories. To this end, the committee—made up of the Ministry of Land, Infrastructure, Transport and Tourism (MLIT), relevant organizations, shipping and other companies, universities and colleges; and others—held meaningful and extensive discussions.

Categories: 1) General Exhibition, 2) Ship Owner, 3) Shipbuilding/ Engineering, 4) Ship Classification, 5) Naval Vessels, 6) Coastal Ship/ Ferry; 7) Carbon Neutral, 8) DX/MASS and 9) Research and Development Main Theme: New Technologies Connecting to the Next Generation Total Floor Area: 921.3 square meters

Number of Exhibitors: 52 enterprises and organizations at 47 booths

1) General Exhibition		
MLIT		
2) Naval Vessels		
JCG; Ministry of Defense (MOD)' Marine Staff Office; and Acquisition,		
Technology and Logistics Agency (ATLA)		
3) Ship Owner		
Nippon Yusen Kaisha; Mitsui O.S.K. Lines, Ltd.; and Kawasaki Kisen		
Kaisha, Ltd.		
4) Shipbuilding/Engineering		
The Cooperative Association of Japan Shipbuilders (CAJS); Imabari		
Shipbuilding Co., Ltd.; Japan Marine United Corp.; Kawasaki Heavy		
Industries, Ltd.; Mitsui E&S Co., Ltd.; Mitsubishi Shipbuilding Co., Ltd.;		
Namura Shipbuilding Co., Ltd.; Nihon Shipyard Co, Ltd.; Shin Kurushima		
Sanoyasu Shipbuilding Co., Ltd.; and The Shipbuilders' Association of		
Japan (SAJ)		
5) Coastal Ship/Ferry		
Japan Railway Construction, Transport and Technology Agency (JRTT);		
Hankyu Ferry Co., Ltd.; Meimon Taiyo Ferry Co., Ltd.; Miyazaki Car		
Ferry Co., Ltd.; MOL Sunflower Ltd.; and Taiheiyo Ferry Co., Ltd.		
6) Ship Classification		
Nippon Kaiji Kyokai (ClassNK)		
7) Carbon Neutral		
Ammonia to Zero Consortium (a green innovation fund); Akasaka		
Diesels Ltd.; Daikin MR Engineering Co., Ltd.; Daihatsu Diesel Mfg. Co.,		
Ltd.; The Hanshin Diesel Works, Ltd.; Itochu Corp.; Japan Engine Corp.;		
Kamome Propeller Co., Ltd.; KHI; Manabe Zoki Co., Ltd.; Methane		
Slip Reduction Project (a green innovation fund); NYK Trading Corp.;		
Planning and Design Center for Greener Ships (GCS); Volcano Co., Ltd.;		
Yanmar Power Technology Co., Ltd.; and Yanmar Marine International		
Asia Co., Ltd.		
8) DX/MASS		
JSMEA; The Nippon Foundation; and Tokyo Keiki Inc.		
9) Research and Development		
Japan Agency for Marine-Earth Science and Technology (JAMSTEC);		
Japan Ship Technology Research Association (JSTRA); Kobe University;		
National Institute of Marine, Port and Aviation Technology (MPAT);		
National Institute of Technology (NIT); Shipbuilding Research Centre		
of Japan (SRC); The University of Tokyo; and Yokohama National		

University

### About the Member Zone

Total Floor Area: 1,875 square meters

Number of Exhibitors: 73 private enterprises and one general incorporated association at 69 booths

Exhibitors: BEMAC Corp.; Bosch Corp.; The China and Japan Marine Industries Ltd.; Chugoku Electric Service Co., Ltd.; Chugoku Marine Paints, Ltd.; Daihatsu Diesel Mfg. Co., Ltd.; Daikin MR Engineering, Ltd.; Dixie Japan Ltd.; Eizo Corp.; Fuji Electric Co., Ltd.; Fuji Trading Co., Ltd.; Geislinger K.K.; Hisaka Works, Ltd.; Hitachi Nico Transmission Co., Ltd.; Ibuki Kogyo Co., Ltd.; IHI Power Systems Co., Ltd.; Iknow Machinery Co., Ltd.; Japan Engine Corp.; Japan Radio Co., Ltd.; Japan Weather Association (JWA); JFE Engineering Corp.; JRCS Co., Ltd.; Kamome Propeller Co., Ltd.; Kanagawa Kiki Kogyo Co., Ltd.; Kashiwa Tech Co., Ltd.; Kawasaki Heavy Industries, Ltd.; KEI System Co., Ltd.: Kobe Kizai Co., Ltd.; Kokosha Co., Ltd.; Kosaka Laboratory Ltd.; Kyokuyo Electric Co., Ltd.; Manabe Zoki Co., Ltd.; Maritime Reporter and Engineering News; Mitsui E&S Co., Ltd.; Mizuno Marine Co., Ltd.; Mitsubishi Heavy Industries Marine Machinery and Equipment Co., Ltd.; Mitsubishi Kakoki Kaisha, Ltd.; Murayama Denki Ltd.; Musashino Co., Ltd.; Myoyo Electric Co., Ltd.; Nabtesco Corp.; Nakashima Propeller Co., Ltd.; Naniwa Pump Mfg. Co., Ltd.; Nippon Hakuyo Electronics, Ltd.; Nishishiba Electric Co., Ltd.; N.Y. Co., Ltd.; NYK Trading Corp.; Okumura Engineering Corp.; Sasakura Engineering Co., Ltd.; Satake Corp.; Sekigahara Seisakusho Ltd.; Semco Ltd.; Shimada & Co., Ltd.; Shinko Ind. Ltd.; Shonan Co., Ltd.; Shoyo Engineering Co., Ltd.; Suction Gas Engine Mfg. Co., Ltd.; Sunflame Co., Ltd.; Taiko Kikai Industries Co., Ltd.; Taiyo Electric Co., Ltd.; Teikoku Machinery Works, Ltd.; Terasaki Electric Co., Ltd.; Tokyo Keiki Inc.; Tokyo Nisshin Jabara Co. Ltd.; Ushio Reinetsu Co., Ltd.; Utsuki Keiki Co., Ltd.; Volcano Co., Ltd.; Wakefield Corp.; Woods Corp.; Yamashina Seiki Co., Ltd.; Yamato Metal Co., Ltd.; Yanmar Power Technology Co., Ltd.; YDK Technologies Co., Ltd.; and Yokogawa Electric Corp.

#### About Sea Japan 2024 Events

1) International Maritime Seminar

Time and Date: 10:15 to 12:25, Wednesday, April 10, 2024 Subject: Carbon Neutral Number of Attendees: 446

Program

10:15-10:45	Opening ceremony
10:45-11:35	Maritime Singapore decarbonization—shipowners
	perspective
	Caroline Yang, president, SSA
11:35-12:25	China shipbuilding industries current new fuel
	development situation, record and forecast
	Li Yanqing, secretary-general, CANSI

#### 2) Ship Machinery and Equipment Industry Event for Students Dates: Thursday and Friday, April 11 and April 12, 2024

Institutes Involved: Kobe University; Nagasaki University; Nagasaki Institute of Applied Science; National Institute of Technology, Hiroshima College: Osaka Metropolitan University; Shibaura Institute of Technology; Tokai University; Tokyo University of Marine Science and Technology; Tottori University; and University of Hyogo Number of Participants: 65 3) Ships and Marine Technology Seminar Time and Date: 10:30 to 15:15, Friday, April 12, 2024 Subject: Challenge to GX and DX of Ships Number of Attendees: 893

Program

riogram	
10:35-10:50	Japan's initiatives toward Green
	Transformation of Ships
	MLIT
10:50-11:05	The Nippon Foundation Zero Emission Ship
	Project
11.05 11.00	The Nippon Foundation
11:05-11:20	Development of marine hydrogen-fueled
	engines and supply system (Green
	Innovation Fund Projects)
	Japan Engine Corp. Kawasaki Heavy Industries, Ltd.
11:20-11:35	Yanmar Power Technology Co., Ltd. Development of vessels equipped with
11.20-11.00	domestically produced ammonia-fueled
	engine (Green Innovation Fund Projects)
	Nippon Yusen Kaisha
11:35-11:50	Ammonia fuel ship "Integrated Project" with
	fuel supply chain (Green Innovation Fund
	Projects)
	Itochu Corp.
11:50-12:05	Development of methane slip reduction
(15 minutes)	technology from LNG fueled vessels by
	improving catalysts and engines (Green
	Innovation Fund Projects)
	Yanmar Power Technology Co., Ltd.
	Hitachi Zosen Corp.
12:05-12:20	ClassNK's initiatives in safety assessment
	and standards development for social
	implementation of next-generation ships ClassNK
	Classivity
13:30-13:55	Together pioneering the future of shipping
	: introduction of Smart Ship Application
	Platform
	Mitsui E&S Shipbuilding Co., Ltd.
13:55-14:10	Installation of safe and secure
	communication network : Introduction of ISO
	16425
	BEMAC Corp.
14:10-14:25	Data standard for onboard IoT data
	utilization: Introduction of ISO 19848
14:25-14:40	Terasaki Electric Co., Ltd. Shipboard data servers for sharing field data
14.20 14.40	at sea: Introduction of ISO 19847
	Benic Solution Corp.
14:40-14:55	General requirements for the asynchronous
	time- insensitive ship-shore data
	transmission
	Monohakobi Technology Institute
14:55-15:15	ISO usage example at ShipDC
	Ship Data Center Co., Ltd.

4) Public Unveiling of the Survey Ship Heiyo

Time and Date: 10:00 to 16:00, Friday, April 12, 2024 Location: Ariake Passenger Ship Terminal, Port of Tokyo Number of Participants: 1,321

# **JSMEA Participates in OTC 2024**

The Japan Ship Machinery and Equipment Association (JSMEA) traveled to the United States to participate in the fourday Offshore Technology Conference 2024 (OTC 2024), held from May 6 to May 9 in Houston, Texas, with financial support from The Nippon Foundation. JSMEA set up a Japan Pavilion together with Nippon Kaiji Kyokai (ClassNK) and 12 of the association's member companies.

The OTC is one of the largest exhibition and conference events in the world in the offshore natural energy resource development sector. This recent participation was JSMEA's 11th time at the event since its first attendance in 2013. The OTC organizers, having highly rated the ship machinery and equipment association's achievements and contributions in the past, provided the JSMEA delegation a prime location to set up its pavilion near the forum area at the center of the venue.



The OTC 2024 welcomed some 30,000 visitors, according to the organizers. The attendance number indicates that topics such as the development of new energy to achieve decarbonization and digital technology are still attracting a great deal of attention, having unchanged from the approximately 31,000 people who attended in 2023. At the OTC 2024, in addition to exhibitions on oil and gas development, there were over 50 seminars, panel discussions and other programs organized on many other subjects as well. Focus was on such programs as technologies to develop and ways to use new energy for decarbonization; carbon capture and storage (CCS); offshore wind power generation and vessels to support it.

During the keynote session on Day 1, Mitsui O.S.K. Lines, Ltd. (MOL), a member of the Japan Pavilion, gave a presentation entitled "Unleash the Power of Green Hydrogen: Shaping the Future of Sustainable Energy". MOL spoke to a 100-strong audience about its Wind Hunter project that is aiming at zero emissions by making use of wind power and hydrogen.



MOL gives a presentation during the keynote session.

The Japan Pavilion included a section to introduce the projects that JSMEA is advancing jointly with DeepStar, a consortium of enterprises to develop offshore technologies with help from The Nippon Foundation. It attracted many visitors from oil and other companies, promoting interactions between them and Japan Pavilion members, while showcasing Japanese ship machinery and equipment products and technologies. Daido Steel Co., Ltd.; JFE Steel Corp.; Hakusan Corp.; Hibot Corp.; INPEX Corp.; and Omega Simulation Co., Ltd.; all of whom were Japan Pavilion members participating at the event, are also affiliated with DeepStar. Daido Steel, JFE Steel, Hakusan, Hibot and Omega Simulation are all developing products, having adopted the Nippon Foundation-DeepStar Joint R&D Program.







The Japan Pavilion had a networking reception at The Jackie Robinson 42 Club in Minute Maid Park on May 5. About 140 heavyweights from major U.S. and European oil, engineering and other companies that belong to DeepStar were present at the reception to exchange information with attendees from Japan.



While the OTC 2024 was in session, JSMEA Chairman Kinoshita Shigeki and Vice-Chairman Oda Shigeharu took delegation members from affiliated companies to the Houston offices of JERA Co., Inc. and Tokyo Gas Co., Ltd. The JSMEA mission was presented with lectures on their business activities in the United States and both sides exchanged views on the efforts they are making toward decarbonization and how they see future energy business developments. At the OTC 2024, meanwhile, members of the Japan Pavilion gathered information and established relations with other participants. As part of such efforts, they were present at a networking session held by Astilleros Canarios S.A. (Astican), a Spanish shipyard specializing in repairing offshore rigs, to exchange information and strengthen relations.



On May 10, the day following the OTC 2024, the JSMEA delegation attended the DeepStar Technology Symposium 2024, organized by the DeepStar consortium.

JSMEA will share the information gathered from its trip to the OTC 2024 with its Offshore Development Review Board, Global Strategic Plan Review Board and other in-house units to discuss its significance on future projects and elsewhere.



JSMEA attends the DeepStar Technology Symposium 2024

## About the Offshore Technology Conference 2024

Dates: Monday through Thursday, May 6 to May 9, 2024 Venue: NRG Park

Japan Pavilion: Booth Nos. 1947 and 2047 in the main hall (total area: some 186 square meters)

Pavilion members: Daihatsu Diesel Mfg. Co., Ltd.; Daido Steel Co., Ltd.; Fuji Trading Co., Ltd.; Hakusan Co., Ltd.; Hibot Corp.; INPEX Corp.; JFE Steel Corp.; Mitsui O.S.K. Lines, Ltd. (MOL); Nippon Kaiji Kyokai (ClassNK); Nippon Steel Corp.; Omega Simulation Co., Ltd.; Shinko Ind. Ltd.; and Ushio Reinetsu Co., Ltd.

**Countries having national pavilions:** Argentina, Brazil, France, Italy, Japan, Mauritania, the Netherlands, Nigeria, Norway, South Korea, Trinidad and Tobago and the United Kingdom

## About the Japan Pavilion' Networking Reception

Time and date: Noon on Sunday, May 5, 2024Japan Pavilion: Booth Nos. 1947 and 2047 in the main hall (total area: some 186 square meters) Venue:The Jackie Robinson 42 Club, Minute Maid Park



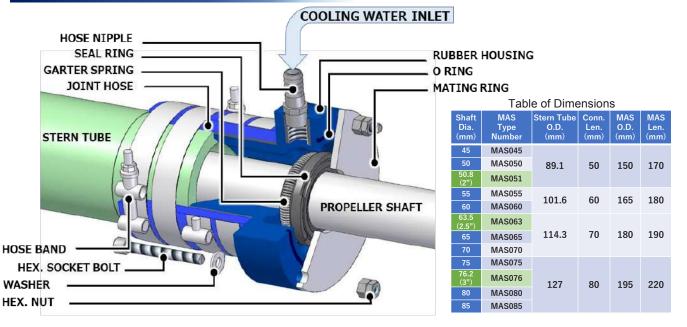
# Marine Ace Seal

## What is Marine Ace Seal?

We are the leading manufacturer of stern tube shaft sealing devices worldwide with our products installed on over 30,000 ships of 100 gross tonnages or more. The Marine Ace Seal (MAS) is our newly developed water-lubricated stern seal for small vessels with direct drive systems.



## Construction



## Features and Design Outline

- Simple and robust rubber housing design
- Excellent resistance to vibration and sealing performance
- Excellent axial followability
- Excellent slurry resistance
- Propeller shaft diameter φ45~φ85(5mm incréments), 2"~3"(0.5" incréments)
- Allowable PV value : 0.3 MPa-m/sec
  P (pressure in sealing device) : Max. 0.1 MPa
  V (shaft rotation speed)
- Cooling water temperature : 0~40°C









EKK EAGLE INDUSTRY CO., LTD.



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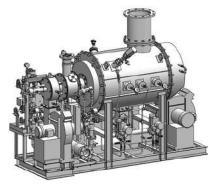
## Volcano Develops Gas Combustion Units for Ammonia and Hydrogen Fueled Vessels

Safe and proper combustion of ammonia gas from ammonia-fueled vessels and hydrogen fuel use contribute to reducing the environmental impact.

Gas combustion units for ammonia-fueled vessels developed by Volcano is one of the answers to the safety issue, and it is also expected to expand the use of hydrogen fuel on board vessels.

VOLCANO CO., LTD. (head office in Osaka), a marine equipment manufacturer that contributes to environmental impact reduction, on May 25, 2023, launched the MECS-N25 gas combustion unit for ammonia-fueled vessels. The product is currently being provided as a carbon-neutral measure for oceangoing vessels. Ammonia has attracted attention as a nextgeneration fuel, and MECS-N25 has the advantage of safely and appropriately burning the ammonia gas generated from ammonia-fueled vessels. In addition, Volcano's new MECS-H25 gas combustion unit for hydrogen-fueled vessels would make a significant contribution to keeping safe environment.

Toxicity has been an issue in the use of ammonia, but MECS-N25 safely burns ammonia to make it nontoxic. thereby ensuring its safe and reliable use. The ammonia gas treatment and combustion capacity of the unit is typically 70 kg/h. Ammonia gas mixed with an inert gas (N<sub>2</sub>: nitrogen gas), which is emitted when scavenging or loading/unloading fuel into/from tanks, can be used as fuel to reduce ammonia emissions onboard and off-board vessels. The company has already commercialized MECS-G for LNG fueled-vessels as one of MECS-GCU, which has been used in LNG-fueled tugboats and



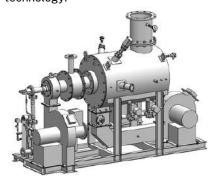
Ammonia gas combustion unit "MECS-N25" ©Volcano Co.,Ltd.

LNG bunkering (fuel supply) vessels and has now commercialised MECS-N25 as an ammonia fuel-compatible version. MECS-N25 has been installed on the world's first commercialized ammonia-fueled vessel.

The company intends to add other products to its product line-up to accommodate other processing and combustion volumes after monitoring the trend of ammonia-fueled vessels, which are expected to become more popular in the future. Volcano's new MECS-H25 gas combustion unit for hydrogen-fueled vessels makes a significant contribution to keeping safe.

Following to adjust the hydrogenfueled vessels projects, the new MECS-H25 will be more potential as one of the MECS-GCU gas combustion units. The MECS-H25 can safely burn the hydrogen gas generated by hydrogen-fueled vessels with a hydrogen gas treatment and combustion capacity of 10 kg/h.

These products were created as a new product development grant project by the Japan Marine Equipment Association, with support from the Nippon Foundation. Volcano has commercialized this hydrogen gas combustion unit owing to its own research into the safe combustion processing of hydrogen, which has flammable characteristics, and the establishment of the basic technology.



Hydrogen gas combustion unit "MECS-H25" ©Volcano Co.,Ltd.

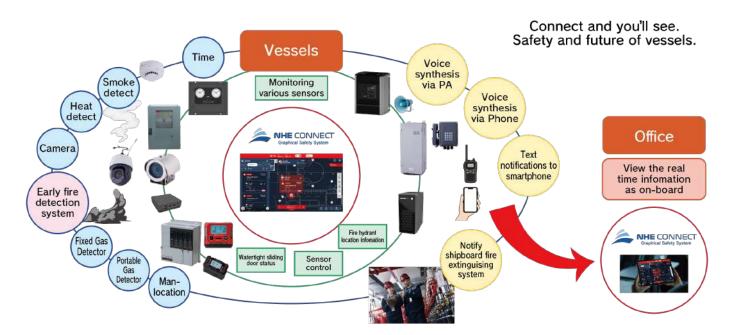
These products are minimum size, Volcano will continuously correspond to larger scale projects.



## VOLCANO CO.,LTD.

Nonakakita 1-3-38, Yodogawa-ku, OSAKA 5320034, JAPAN TEL: +81 6 6392 5541 E-mail:info-m@volcano.co.jp





What NHEE aims - Safety and security of vessels and connect for smooth communication

NIPPON HAKUYO electronics is a company that supports the safety, security, monitoring and communication of vessels. Our vision is to contribute to the support of safe navigation of vessels by visualizing information on board using our seven main products, including automatic telephone exchanges and telephones, fire detection equipment, surveillance camera systems, marine clocks, onboard command equipment, and loading computer systems, centered on the graphical safety system NHE CONNECT. We realize the early occurrence of incidents in the event of a fire, identifying the location of the incident and grasping the situation by linking with cameras. In addition, we are developing linkages with gas detectors, crew location information (man location system) and fire extinguishing equipment in collaboration with co-creation partners, and are developing an integrated system that can capture various values sensor devices and event data. We will also proceed with linkages that utilize communication equipment such as telephone exchanges, telephones, and onboard command equipment to notify crew members without returning them, such as voice synthesis notifications, voice synthesis broadcasts, and text notifications. We will continue to develop and provide the vision we aim for in order to realize our catchphrase, "Connect and you'll see. Safety and future of vessels."

## **NHE NIPPON HAKUYO** electronics, ltd.

40-7, Higashikanagawa 2-chome, Kanagawa-ku, Yokohama 221-0044, Japan TEL : +81 45-453-6911 FAX : +81 45-453-6910 e-mail : nippaku@nhe.co.jp URL : https://www.nhe.co.jp/

## **JSMEA takes Part in Posidonia 2024**

The Japan Ship Machinery and Equipment Association (JSMEA) participated in Posidonia 2024, an international maritime affairs exhibition held in Athens, Greece from June 3 to June 7, with financial assistance from The Nippon Foundation. JSMEA got together with the Japan Ship Exporters' Association (JSEA) and classification society Nippon Kaiji Kyokai (ClassNK) in setting up a Japan Pavilion, where they were joined by 18 JSMEA members.

At Posidonia 2024, the Japan Pavilion featured new areas of interest, such as new fuels, the Internet of Things (IoT) and environmentally friendly equipment. At a section opened in the pavilion to exhibit solutions, 19 JSMEA members showcased their products, technologies and services in videos and catalogs.

Posidonia 2024 welcomed a total of 32,527 visitors, according to the event organizers. Located near the entrance to Hall 4, the Japan Pavilion attracted local ship owners and other parties from the maritime industry worldwide.





On Day 1, the opening ceremony was held for the Japan Pavilion, at which ribbon cutting was performed by JSMEA Chairman Kinoshita Kazuhiko, JSEA Chairman Miyanaga Shunichi and ClassNK President and CEO Sakashita Hiroaki, who were helped by State Minister of Land, Infrastructure, Transport and Tourism Kokuba Konosuke and Japanese Ambassador to Greece Koichi Ito. State Minister Kokuba and Ambassador Ito visited members' exhibitions at the pavilion and were enlightened with lectures on their business operations.



Prime Minister of the Hellenic Republic Kyriakos Mitsotakis, who was present at the opening ceremony for Posidonia 2024, stopped by the Japan Pavilion.



Greek Prime Minister Kyriakos Mitsotakis (third from right)



UGS President Melina Travlos (center)

On the same day, JSMEA attended a seminar held by the JSEA at a seminar room in the Posidonia 2024 venue. At the seminar, entitled "Japan Seminar-Challenges by Japan", JSEA Chairman Miyanaga gave the opening address, which was followed by a keynote speech by the UGS. Presentations were delivered by four members from the JSMEA delegation; three from the JSEA delegation; ClassNK; and Mitsui O.S.K. Lines, Ltd. (MOL). The seminar came to an end with the closing remarks by JSMEA Chairman Kinoshita.

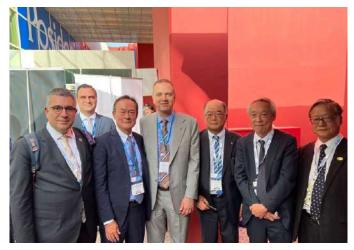
On Day 3, presentations were given again on a dedicated stage in the Japan Pavilion. This time, eight JSMEA members, two JSEA members and ClassNK held discussions.





JSMEA Chairman Kinoshita and Vice-Chairman Kuzu attended a reception held by the Turkish Chamber of Shipping (TCS), where they also met with heavyweights from the Turkish Shipowners' Association (TSA) and the Turkish Shipbuilders' Association (GISBIR) to deepen interchange.

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Venue: Metropolitan Expo, Athens, GreeceVenue: NRG Park Number of exhibitors: 2,038 (from 81 countries and regions) Number of visitors: 32,527

#### Members of the Japan Pavilion

JSMEA members running booths: Chugoku Marine Paints, Ltd.; Daihatsu Diesel Mfg. Co., Ltd.; Fuji Trading Co., Ltd.; Fujikura Composite Inc.; HSN-Kikai Kogyo Co., Ltd.; Japan Engine Corp.; Manabe Zoki Co., Ltd.; Mikasa Corp.; Mitsubishi Heavy Industries Marine Machinery and Equipment Co., Ltd.; Mitsui E&S Machinery Co., Ltd.; Miura Co., Ltd.; MOL Techno-Trade, Ltd.; Semco, Ltd.; Shinko Ind. Ltd.; Tobu Jukogyo Co., Ltd.; Ushio Reinetsu Co., Ltd.; Yanmar Power Technology Co., Ltd.; and YDK Technologies Co., Ltd.

JSMEA members exhibiting solutions: BEMAC Corp.; Chugoku Marine Paints, Ltd.; Daihatsu Diesel Mfg. Co., Ltd.; Fuji Trading Co., Ltd.; Fujikura Composite Inc.; HSN-Kikai Kogyo Co., Ltd.; Japan Engine Corp.; Kawasaki Heavy Industries, Ltd.; Mikasa Corp.; Mitsubishi Heavy Industries Marine Machinery and Equipment Co., Ltd.; Mitsubi E&S Machinery Co., Ltd.; Miura Co., Ltd.; MOL Techno-Trade, Ltd.; Nakashima Propeller Co., Ltd.; Semco, Ltd.; Tokyo Keiki Inc.; Ushio Reinetsu Co., Ltd.; Yanmar Power Technology Co., Ltd.; and YDK Technologies Co., Ltd.

JSEA members: Imabari Shipbuilding Co., Ltd.; Japan Marine United Corp.; Kawasaki Heavy Industries, Ltd.; Mitsubishi Shipbuilding Co., Ltd.; Namura Shipbuilding Co., Ltd.; Nihon Shipyard Co., Ltd.; Oshima Shipbuilding Co., Ltd.; Shin Kurushima Dockyard Co., Ltd.; and Shin Kurushima Sanoyas Shipbuilding Co., Ltd. Techno-Trade, Ltd.; Nakashima Propeller Co., Ltd.; Semco, Ltd.; Tokyo Keiki Inc.; Ushio Reinetsu Co., Ltd.; Yanmar Power Technology Co., Ltd.; and YDK Technologies Co., Ltd.



Japan Ship Machinery and Equipment Association



Head Office:

Toranomon Toyo Kyodo Building, 13-3, Toranomon 1-chome, Minato-ku, Tokyo 105-0001, Japan Tel: +81-3-3502-2041 Fax: +81-3-3591-2206 URL: http://www.jsmea.or.jp **Overseas Offices:** 

JETRO Hongkong, Ship Machinery Department

Room 4001, 40/F., Hopewell Centre, 183 Queen's Road East, Wan Chai, Hong Kong, China Tel: +852-2501-7291 Fax: +852-2868-1455

**JETRO Houston, Offshore and Maritime Department** 

1221 Mckinney, LyondellBasell Tower, Suite 4141, Houston, Texas 77010, U.S.A. Tel: +1-713-759-9595 Fax: 1-713-759-9210

#### JETRO Singapore, Ship Machinery Division

Hong Leong Building, #38-01 to 05 #37-02A 16 Eaffles Quay, Singapore 048581 Tel: +65-6429-9522 Fax: +65-6224-1169

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