

www.iso-pe.org; www.iso-pe2012.org

June 17–22, Rhodes (Rodos), Greece

The Twenty-second (2012) International
**Ocean and Polar
Engineering Conference**

Including additional Symposia:

- 1st Tsunami & Safety
- 3rd Arctic Science & Technology
- 2nd Arctic Materials
- 3rd Renewable Energy & Environment
- 4th Sloshing Dynamics & Design
- 4th Frontier & Clean Energy Tech
- 10th High-Performance Materials
- 1st Asset Integrity
- 6th Strain-Based Design

ISOPE-2012

Rhodes, Greece, June 17–22

Technical Program

Refereed papers from some **52** countries in some **150** sessions
and General and keynote sessions
General Information, Reservations, Publication and Program
Updates on www.iso-pe.org; www.iso-pe2012.org
Forms for Advance Registration and Venue Hotel:
Inside this program and on www.iso-pe.org

Organized by:

Technical Program Committee, ISOPE

Sponsored by:

International Society of Offshore and Polar Engineers (ISOPE)
with cooperating organizations (list inside)



ISOPE, P.O. Box 189
Cupertino, CA 95015-0189, USA

Fax: +1-650-254-2038

meetings@iso-pe.org; www.iso-pe.org

The Twenty-second (2012) International Ocean and Polar Engineering Conference

GENERAL INFORMATION

Further details are to be updated on www.isopec.org .



PLACE AND DATE: Rhodes (Rodos), Greece
June 17–22, 2012

All ISOPE-2012 Conference's technical events, reception, annual banquet, tea breaks and registration will take place at:

RODOS PALACE HOTEL
Trianton Ave. Ixia P.O.Box 121
85100 Rhodes, Greece
Tel:(+30) 22410 25222

HOTEL RESERVATIONS

Please make your reservation directly with the Hotel. Use the Hotel Reservation Form for online, email or fax reservation: ([Reservation Form in PDF](#))
You can also download this form in December from www.isopec.org or www.isopec2012.org .



LANGUAGE

The language for the conference is English. No translation services will be available.

AIR TRANSPORTATION

Diagoras Airport is located on the island of **Rhodes (Rodos)**. The airport is located 14km south west of the capital, the city of Rhodes, near the village of Paradisi.

Domestic Flights

Airlines serving Rhodes **from the Greek mainland are:** Olympic Airlines and Aegean Airlines.

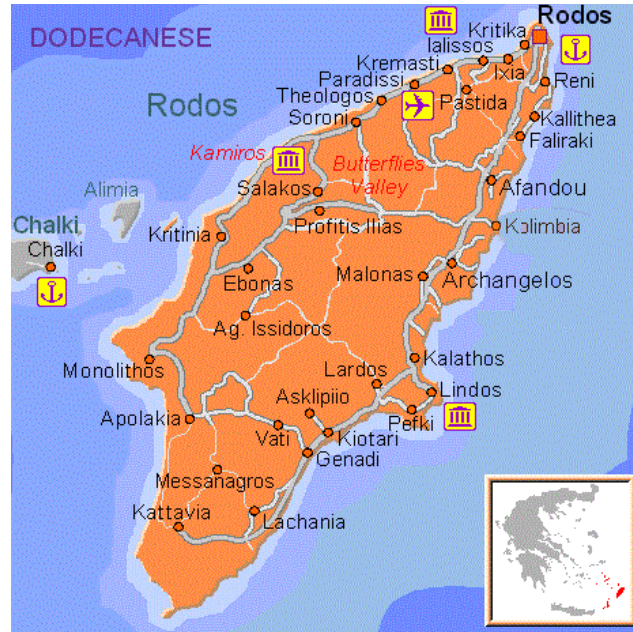
Diagoras connects Rhodes with **Athens (Eleftherios Venizelos International Airport)** on a daily basis (up to 8 flights/day), with Thessaloniki (**Makedonia International Airport**), Heraklio and Cyprus (3 to 5 times/week) and with the nearby islands of Kastelorizo, Karpathos, Kasos, Kos, Mytilini, Limnos, Chios and Samos.

International Flights

There are regular international flights to and from most European cities, mainly during the summer, as well as a large number of flights to and from the rest of the world. There are many international direct flights to **Athens**, including 10 daily flights between **Athens and Rhodes**.

Visitor information counters are located throughout Diagoras airport (Tel. +30-22410-83200). For the most current flight service contact your travel professional.

Istanbul—Dalaman (Marmaris)—Rodos (Rhodes) is another option: See below.



GROUND TRANSPORTATION

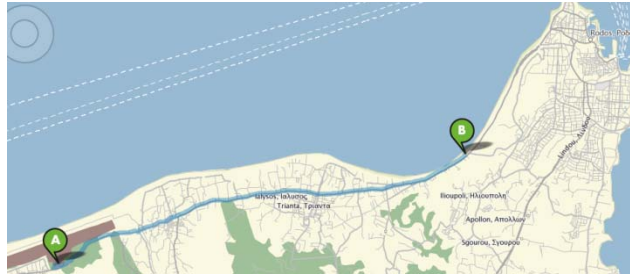
Ground transportation services from the Diagoras Airport to the venue hotel **RODOS PALACE HOTEL** (12 km distance or 15 minutes travel time) are provided by:

Taxi: Service is available in the exit of the airport.
Cost: Approximately less than €25.00 total (Maximum allowed up to four people with luggages per Taxi).














Bus: Service is available 300m from the exit of the airport.
Cost: Approximately €4.00 (Bus schedules not very reliable).

Rental Car: Avis, Hertz, Budget, Drive, Europe Car, Holiday Auto, National-Alamo and Sixt rental desks are adjacent to baggage claim.

Diagoras Airport to Rodos Palace Hotel by Rental Car
Distance is 12 km and driving time will be about 15 minutes.



Description

-  You start at **Leoforos Eleftherias**.
-  Turn left onto **Leoforos Eleftherias**.
-  You are entering **Petaloudes**.
-  Follow the **Leoforos Eleftherias**.
-  Change from **Leoforos Eleftherias**, in direction **Rodos**.
-  You just left **Petaloudes**.
-  Follow the **Leoforos Eleftherias**.
-  Leave **Leoforos Eleftherias**, and head straightforward onto **Leoforos Irakleidon**.
-  You are entering **Ialysos**.
-  Follow the **Leoforos Irakleidon**.
-  You just left **Ialysos**.
-  Follow the **Leoforos Irakleidon**.
-  You have arrived at your destination.

HOTEL PARKING

The Rodos Palace Hotel offers self-parking (300 spaces) at no cost to registered guests.

MARINE TRANSPORTATION

The Commercial Port (Mandraki Location) is located in the City of Rhodes

Sea Connections

There are daily sailings from Piraeus all year round, more frequent in the summer months. All international and domestic ferries and cruise liners dock at the commercial port of Rhodes. There are regular ferry lines connecting Rhodes to Athens (Piraeus), Thessaloniki, Heraklion, Cyprus and Dalaman (Marmaris)– [Turkey](#). Rhodes is also connected with all neighboring islands through extensive boat and hydrofoil services. Most of them dock at the commercial port and some at the Mandraki harbor.

Istanbul → Rodos (Rhodes) Option:

One-hour flight from **Istanbul to** resort town **Dalaman** International Airport.

One-hour shuttle-bus transfer **to Marmaris port**.

One-hour catamaran ferry ride **from Marmaris port to Rodos (Rhodes)** port.

Istanbul → Dalaman. Several airlines operate one-hour flight from **Istanbul to Dalaman** airport. There are several (domestic) flights from early morning to late night during the day, Shuttle bus runs between Dalaman airport and Marmaris, one of the most popular Turkish resort city with many five-star hotels.

Dalaman/Marmaris — Rodos (Rhodes). Ferry by *Greek and Turkish companies* operates every day except Sunday departure at only 09:00 and 09:30 in the morning and return at only 16:00 in the afternoon. Round trip ticket is about 40-50 euro for catamaran ferries.

There are several ferry agents in Marmaris Port. Ferry **online booking** can be made by visiting following websites:

http://www.marmarisferry.com/index_en.php

<http://www.seaservice.gr/v2/en/index.php?itemID=15>

During the peak summer tourist season, very early booking is advised.

Fethiye — Rodos (Rhodes). A Turkish company operates ferry service from Fethiye (2-3 times weekly).

Please fill in specific ferry reservation for website and ferry frequency, and entry visa office location and phone number or website. But best way for making reservation is to ask from your travel agency. You can also contact Prof. Dr. Sedat KABDASLI at kabdastlis@itu.edu.tr, if necessary for finding local travel agency.



Transportations from the Commercial Port to the Hotel (12km-10minutes):
 Taxis
 Regular public bus service

SHOPPING

In Ixia Area just around the hotel.
In the City Of Rhodes and Medieval Town (5 minutes by car or 4 km)

CURRENCY EXCHANGE

Cash dispensers (ATMs) that accept all major credit/debit cards can be found at several locations in the airport, and at banks and retail areas throughout the city. Currency exchange services will charge either a flat fee for small denominations or a percentage of the amount exchanged: usually the exchange rate is more favorable at the banks. There is an ATM machine very close to the Rodos Palace Hotel.

TAX

Purchases in are subject to a sales tax of 23% (as of August of 2011) of the purchase price **included in sales price** with no tax rebate.

CITY TRANSPORTATION

Coach or Boat Sightseeing (Tours organized by Local Travel Agents)
Rental Car/Motorbike
Taxi
Regular public bus service.

ELECTRICITY AND ADAPTER

Appliances operate on **220 volts**.

TIMEZONE

Central European Time
GMT +2 hours

CURRENCY

Euro

LANGUAGES SPOKEN

Greek, English, German, Italian, French

TIPPING

At the restaurants, most of the time service charge is included in the price of the food. It is customary but not obligatory to give a tip of 5% to the waiter at the restaurant. In the Taxis it is not necessary to tip the driver. In the hotel, it is customary to tip the bellman with 2 to 5 € for handling the luggage upon checking in and checking out from the hotel.

HOURS OF OFFICE AND BUSINESS OPERATION

- Shopping hours In the City of Rhodes: Monday to Friday from 9:00 to 13:00 and from 17:00 to 21:00, Saturday from 9:00 am to 14:00 pm. In the Medieval Town & tourist areas Monday-Sunday all day long
- Banks are generally open 8:00 am to 2:00 pm Monday to Friday.
- There is a pharmacy very close to the Rodos Palace Hotel At the Rodos Palace, there is no medical doctor, however a doctor can come to the hotel upon request and at the expense of the hotel guest.

INTERNET ACCESS

- Wireless Internet Access in all the public areas with Wi-Fi at 6 euro for 1 hour and 19.5 euro for 24 hours. Access cards can be purchased from the Hotel Reception Desk.
- In-Room Internet connection at the same rates as Wi-Fi.

IN HOTEL BUSINESS SERVICES (with charge)

- Business Services (Mail, Fax, Email, Photocopying etc.)
- Audiovisual Equipment
- PC's & Printers available
- Private Transfers & Car Hire
- Laundry & Dry Cleaning

DINING & ENTERTAINMENT

At Rodos Palace, Greek traditional or international, formal or casual, but always delectable cuisine is served in 10 different restaurants (Gallery Cafe, La Terasse Restaurant, Pool Restaurant, Ambrosia Restaurant, Castellania Restaurant, Superfamily Restaurant, La Rotisserie Gourmet Piano Restaurant, 12 Nissia Gourmet Restaurant, La Terasse Bar, Amphitriton Piano Bar).



WEATHER

| June | Av Temp. °C | | | Hum. | Rainf. | Winds |
|--------|-------------|------|------|------|--------|-------|
| | Avg | Max. | Min. | % | mm | Knot |
| Rhodes | 24.7 | 28.4 | 19.9 | 58.5 | 2.3 | 10.2 |

FOR YOUNGER GUESTS

The Kids Funland area features facilities and services such as: A Family Lagoon type Pool, curvaceously designed with a shallow children's end, set attractively in sun terraces backed with long mature trees. Playground and Playcenter units for kids 4-12 years old, with cyclone, wave, hurricane slides and curved, loop and bumper ladders. A soft-play room for babies and under 4, and a Playroom with games and toys for 4-7 years of age along with a whole range of baby equipment.

ACTIVITIES AND ATTRACTIONS

When the gods divided the world between themselves, so an ancient legend goes, Helios (the sun god) noticed an island emerging from the sea. He was so fascinated by its beauty that he immediately asked Zeus whether he might have this island as his share. Rhodes was that island. An island that glided and glides still, like a dolphin, over the waves in the transparent seas of the south-eastern Aegean, where West meets East. Wreathed in golden beaches, with bright green hills and valleys, and bathed in the light of the god Helios (her ancient patron), it is a place favored by nature, made on a human scale.

The island of Rhodes is situated between the Aegean and the Mediterranean seas about 11 km from the coast of Asia Minor (Turkey). It has a population of about 100.000 inhabitants. It is by far the largest island in the Dodecanese with an area of about 1400 sq. km. Rhodes is diamond-shaped, 77 km long with a maximum width of about 36km. There is a range of hills rising in the center with mount Ataviros the highest at about 1200m. Finally much of the island is fertile with a variety of fauna and flora.

Rhodes offers a full range of activities and attractions to enjoy such as swimming, sailing, medieval, antiquities, and numerous sightseeing opportunities. The following websites provide useful information you should find helpful in planning your Rhodes visit.

Related web links: <http://www.rhodes.gr/en/>,
<http://www.gotorhodes.com/> and
<http://www.rodosislandinfo.gr/>

Guide Book

A guide book describing the many fun activities and attractions available on Rhodes can be found at <http://www.travel-Rhodes.com>, and <http://www.rodosnet.gr>.

Local Sites of Interest

Medieval City (The Street of the Knights “Ippoton Street”, The Palace of the Grand Master, Hippocrate’s Square, The Panagia (Virgin Mary) of the Burgh), The Municipal Park of Rhodes, Rodini Park, Filerimos, The Valley of the Butterflies, The Seven Springs (Epta Piges), Prophetes Elias, The biotope of Apolakia Dam, The Archaeological Museum of Rhodes, The Hospice of St. Catherine, Rhodes Aquarium, Decorative Arts Museum of Rhodes, Museum of Modern Greek Art of Rhodes, The Folklore Museum in Apollonas, The Acropolis of Rhodes, Tombs of St. John, The Ancient City of Kamiros, Lindos, The Kallithea Baths, Castles.



SIGHT SEEING AND TOUR PROGRAM

There are several travel agents in the island of Rhodes that can organize for the ISOPE participants customized visits to several places of interest in the island.

Visit *Concierge Desk* at Rodos Palace Hotel or Visit *Tour Desk* near *Conference Registration area*.



ADVANCE CONFERENCE REGISTRATION

Registration fee starts at **\$670** and lower for the students. Click [here](#) for advance registration form.

Mail your registration form together with your payment to:

ISOPE Accounting (ISOPE-2012)
495 North Whisman Road, Suite 300
Mountain View, California 94043-5711
USA

Email: isope-2@isope.org
Fax: +1-650-254-2038; Phone: +1-650-254-1871

Advance Registration Deadline:

Presenting Authors: March 24, 2012.
Non-authors and non-presenting authors: May **18**, 2012

REGISTRATION BADGE

Conference registration badges are required for admittance to all the conference activities, including the reception and banquet.

ON-SITE CONFERENCE REGISTRATION:

Grand Promenade

Participants who miss the advance registration (before **May 18**) may register on site at the Conference Registration Desk, but there is US\$100 surcharge. The registration desk will be open during the following hours:

| | | | |
|------------------|---------------------|--------------------|-------------|
| Sunday, June 17 | 15:00-18:00 | Wednesday, June 20 | 08:00-15:00 |
| Monday, June 18 | 07:30 -16:00 | Thursday, June 21 | 08:00-13:00 |
| Tuesday, June 19 | 08:00 -16:00 | | |

ISOPE-2012 CONFERENCE PROCEEDINGS

A 4-volume ISOPE-2011 conference proceedings on CD-ROM (**ISBN 978-1-880653-94-4; ISSN 1098-6189**) is included in all conference registration fees. For additional or separate orders, download the **publications order form** from www.isope.org for post-conference order:

A **4-volume Conference Proceedings** CD-ROM (4,200 pp. est.)
Mail, E-mail or Fax order \$290 (ISOPE Member \$240)

E-mail or Fax Order from ISOPE, 495 North Whisman Road, Suite 300, Mountain View, California 94043-5711, USA: Fax **1-650-254-2038**; orders@isope.org.

Advance payment is required. MasterCard, VISA, or AMEX; international money order or U.S. bank checks in US Dollars *payable to ISOPE* will be accepted. Shipping and handling charges will be added (Download the Publication Order Information from www.isope.org).

CONFERENCE RECEPTION

Sunday, 17:00 Outdoor Pool Area

ANNUAL CONFERENCE BANQUET

Wednesday

Super Dome Pool

AUTHOR USB TEST

Individual session rooms
Power-point or LCD projector and screen are available
during 08:00-17:00 (Monday - Thursday).

CHAIR/CO-CHAIR BRIEFING

The **session chairs and co-chairs** will be briefed at 07:30
each morning near the registration desk Grand Promenade
and will pick up session jacket for author briefings on the
day of presentation.

Chairs and co-chairs will also be emailed brief instructions
in advance, including the manner of each session conduct
and information on authors and presentation.

PRESENTING AUTHORS should go directly to their
session room 30 minutes before the session and check out
the USB presentation file.

INFORMATION - MESSAGE CENTER.

The information and message center is located in the
registration area. One may contact ISOPE Conference
Registration Desk at Rodos Palace Hotel.

INTERNATIONAL PARTICIPANTS AND VISA APPLICATION

International authors, participants or attendees who need help (except
financial) can contact: ISOPE-2012 Secretariat, 495 North Whisman
Road, Suite 300, Mountain View, California 94043-5711 USA. Fax: +1-
650-254-2038; email: meetings@isope.org.

Entry Visa. Some authors, spouses and participants may be required to
apply for an entry visa.

Visa application form. Get it from the Consulate Office of Greece in
your country. For visa application information, on www.mfa.gr > **visa**.

If the Consulate requires you to submit an official letter of invitation, please
contact ISOPE, USA (email: meetings@isope.org; Fax: +1-650-254-2038).

TAX DEDUCTIBILITY

Expenses of attending professional meetings such as the
registration fee and cost of technical publications may be
tax-deductible as ordinary expenses for citizens of U.S.
and some other countries.

CLIMATE

The climate in Rhodes in the month of June will be sunny
and pleasantly warm (low humidity), with the West winds
to keep you cool and comfortable. Swimming and other
water activities will be very pleasant.



PUBLICATION ORDER INFORMATION

To order, download the publication order form from www.isopec.org > orders, www.isopec.org > publications, www.isopec2012.org or e-mail to orders@isopec.org asking for the order form, and enclose the correct amount of payment or purchase order, and mail to:

ISOPE Order Department
495 North Whisman Road, Suite 300
Mountain View, California 94043-5711 USA
Fax 1-650-254-2038: orders@isopec.org.

AUTHOR INDEX AND SUBJECT INDEX

With the advancement of Find or Search function in PDF file, one can use Find or Search in the PDF file of the conference programs posted on www.isopec.org. For ISOPE CD-ROM, Click **Ctrl F** will display **FIND**.

ISOPE conference and symposium proceedings are indexed by Engineering Index and EI Compendex and others.

International Journal of Offshore and Polar Engineers

- Quarterly (March, June, September, December) (ISSN 1053-5381): *Indexed by SCI-E and Engineering Index and EI Compendex and others.*

Editors: Jin S. Chung, R.M.W. Frederking, W. Koterayama, I. Langen. **Topics:** *ocean and marine engineering, offshore engineering, environment, offshore mechanics, Arctic and Antarctic engineering, structures and materials, energy/Resources, and emerging topics:*

Yearly subscription rates: US\$160. (Member; complimentary) and US\$100 per a set of annual back issues. US\$60 per issue.

Proceedings of the 1st (1990) Pacific/Asia Offshore Mechanics Symposium (PACOMS '90), Seoul, Korea, 24-28 June 1990. For a set of 3 volumes, (ISBN 0-9626104-0-2; LCCN 90-082039): approx. 1260 pp., US\$150 per set.

Proceedings of Special Offshore Symposium China (SOSC-94) /the 3rd (1994) Pacific/Asia Offshore Mechanics Symposium (PACOMS-94), Beijing, China,

16-18 April 1994. A single volume (ISBN 1-880653-15-X); 797 pp., US\$100.

Proceedings of the 4th (1996) ISOPE Pacific/Asia Offshore Mechanics Symposium (PACOMS-96), Pusan, Korea, October 31-November 2, 1996. A single volume (ISBN 978-1-880653-27-2; ISSN 1946-0031); 325 pp., US\$80 (ISOPE Member; \$60).

Proceedings of the 5th (2002) ISOPE Pacific/Asia Offshore Mechanics Symposium (PACOMS-2002), Daejeon, Korea, November 17–20, 2002. A single volume (hard copy and CD-Rom) (ISBN 978-1-880653-59-3; ISSN 1946-0031); 252 pp., US\$120 (ISOPE Member; \$80).

Proceedings of the 6th (2004) ISOPE Pacific/Asia Offshore Mechanics Symposium (PACOMS-2004), Vladivostok, Russia, September 12–16, 2004. A single volume (hard copy and CD-Rom) (ISBN 978-1-880653-63-0; ISSN 1946-004X); 299 pp., US\$100 (ISOPE Member; \$80).

Proceedings of the 7th (2006) Pacific/Asia Offshore Mechanics Symposium (ISOPE PACOMS-2006), Dalian, China, September 17–21, 2006. A single volume (CD-ROM) (ISBN 978-1-880653-67-8; ISSN 1946-004X); 357 pp., US\$100 (ISOPE Member; \$80).

Proceedings of the 8th (2008) Pacific/Asia Offshore Mechanics Symposium (PACOMS-2008), Bangkok, Thailand, November 17–21, 2006. A single volume (CD-ROM) (ISBN 978-1-880653-52-4; ISSN 1946-004X); 334 pp., US\$100 (ISOPE Member; \$80).

Proceedings of the 9th (2010) Pacific/Asia Offshore Mechanics Symposium (PACOMS-2010), Busan, Korea, November 14–17, 2010. A single volume (CD-ROM, ISBN 1-880653-79-1, ISSN 1946-004X); 362 pp., US\$100 (ISOPE Member; \$80).

Proceedings of the 10th (2012) Pacific/Asia Offshore Mechanics Symposium (PACOMS-2012), Vladivostok, Russia, September 30–October 3, 2012. A single volume (CD-ROM, ISBN 1-880653-93-7, ISSN 1946-004X); 330 pp. est, US\$100 (ISOPE Member; \$80).

Proceedings of the 1st (1990) European Offshore Mechanics Symposium (EUROMS-90), Trondheim, Norway, 20-22 August 1990. A single volume: (ISBN

0-9626104-4-5; LCCN 90-084691); approx. 590 pp., US\$80. (Member; US\$60.)

Proceedings of the 2nd (1999) ISOPE European Offshore Mechanics Symposium (EUROMS-99): (of Synopsis in Russian and English), Moscow, Russia, 7-9 June 1999. A single volume: (ISBN 1-880653-44-3); approx. 126 pp., US\$50. (Member; US\$40.)

Proceedings of the 1st (1995) ISOPE Ocean Mining Symposium, Tsukuba, Japan, November 21-22, 1995. A single volume (ISBN 1-880653-21-4, LCCN 95-77708): 238 pp., US\$100 (Member; US\$80.)

Proceedings of the 2nd (1997) ISOPE Ocean Mining Symposium, Seoul, Korea, November 24-26, 1997. A single volume (ISBN 1-880653-33-8, LCCN 97-74490): 201 pp., US\$100 (Member; US\$80.)

Proceedings of the 3rd (1999) ISOPE Ocean Mining Symposium, Goa, India, November 8-10, 1999. A single volume (ISBN 978-1-880653-45-6; ISSN 1946-0074):298 pp., US\$100 (Member; US\$80.)

Proceedings of the 4th (2001) ISOPE Ocean Mining Symposium, Szczecin, Poland, September 23-27, 2002. A single volume (ISBN 978-1-880653-56-2; ISSN 1946-0074): 208 pp., US\$100 (Member; US\$80.)

Proceedings of the 5th (2003) ISOPE Ocean Mining Symposium, Tsukuba, Japan, September 15–19, 2003. A single volume (hard copy and CD-Rom) (ISBN 978-1-880653-61-6; ISSN 1946-0074):256 pp., US\$120 (Member; US\$80.)

Proceedings of the 6th (2005) ISOPE Ocean Mining Symposium, Changsha, Hunan, China, October 9–13, 2005. A single volume (CD-Rom) (ISBN 978-1-880653-65-4; ISSN 1946-0066):276 pp., US\$100 (Member; US\$80.)

Proceedings of the 7th (2007) ISOPE Ocean Mining Symposium, Lisbon, Portugal, July 1–6, 2007. A single volume (CD-Rom) (ISBN 978-1-880653-69-2; ISSN 1946-0066):219 pp., US\$100 (Member; US\$80.)

Proceedings of the 8th (2009) ISOPE Ocean Mining Symposium (OMS-2009), Chennai, India, September 20–24, 2009. A single volume (CD-Rom) (ISBN 978-1-880653-75-3; ISSN 1946-0066): 308 pp., US\$100 (Member; US\$80.)

Proceedings of the 9th (2011) ISOPE Ocean Mining Symposium (OMS-2011), Maui, Hawaii, USA, June 19-24, 2011. A single volume (CD-Rom) (ISBN 978-1-880653-95-1; ISSN 1946-0066): 308 pp., US\$100 (Member; US\$80.)

First (2003) ISOPE Symposium on High-Performance Materials in Offshore Industry (HMOI), ISOPE HPM-2003, Honolulu, Hawaii, US, May 25-30, 2003: Published in Proceedings of the 13th (2003) International Offshore and Polar Engineering Conference (ISOPE 2003), Honolulu, Hawaii, USA, May 25-30, 2003. For 4-volumes set CD-Rom (ISBN 978-1-880653-60-9; ISSN 1098-6189 (Set):2,912 pp., \$220 (ISOPE Member; \$180).

Second (2004) ISOPE High-Performance Materials Symposium: Friction Stir Welding, ISOPE HPM-2004, Toulon, France, May 23-28, 2004: Published in CD-Rom (ISBN 978-1-880653-62-3; ISSN 1098-6189 (Set): 3,160 pp., \$220 (ISOPE Member; \$180).

Third (2005) ISOPE High-Performance Materials Symposium: Advanced Welding, ISOPE HPM-2005, Seoul, Korea, June 19-24, 2005: Published in CD-Rom, (ISBN 978-1-880653-64-7; ISSN 1098-6189: 3,110 pp., \$220 (ISOPE Member; \$180).

Fourth (2006) ISOPE High-Performance Materials Symposium, ISOPE HPM-2006, San Francisco, California, USA, May 28–June 2, 2006: Published in *CD-Rom*, (ISBN 978-1-880653-66-1; ISSN 1098-6189: 2,704 pp., \$220 (ISOPE Member; \$180).

Fifth (2007) ISOPE High-Performance Materials Symposium, ISOPE HPM-2007, Lisbon, Portugal, July 1–6, 2007: Published in *CD-Rom*, (ISBN 978-1-880653-68-5; ISSN 1098-6189: 3,904 pp., \$270 (ISOPE Member; \$230).

Sixth (2008) ISOPE High-Performance Materials Symposium, ISOPE HPM-2008, Vancouver, Canada: Published in *CD-Rom*, (ISBN 978-1-880653-70-8; ISSN 1098-6189): 3,036 pp., \$270 (ISOPE Member; \$230).

Seventh (2009) ISOPE High-Performance Materials Symposium, ISOPE HPM-2009, Osaka, Japan: Published in *CD-Rom*, (ISBN 978-1-880653-53-1; ISSN 1098-6189: 3,690 pp.), \$270 (ISOPE Member; \$230).

Eighth (2010) ISOPE High-Performance Materials Symposium, ISOPE HPM-2010, Beijing, China:

Published in *CD-Rom*, (ISBN 978-1-880653-77-7; ISSN 1098-6189): 4,176 pp., \$290 (ISOPE Member; \$240).

Ninth (2011) ISOPE High-Performance Materials Symposium, ISOPE HPM-2011, Maui, Hawaii, USA: Published in *CD-Rom*, (ISBN 978-1-880653-96-8; ISSN 1098-6189): approx. 4,065 pp., \$290 (ISOPE Member; \$240).

First (2007) ISOPE HPM Nanomaterials for Structural Applications Symposium, ISOPE NANOS-2007, Lisbon, Portugal, July 1–6, 2007: Published in Proceedings of the 17th (2007) International Offshore and Polar Engineering Conference (ISOPE-2007), Lisbon, Portugal, July 1–6, 2007. For 4-volume set *CD-Rom*, (ISBN 978-1-880653-68-5; ISSN 1098-6189): 3,904 pp., \$270 (ISOPE Member; \$230).

First (2005) ISOPE Advanced Natural Gas Transport (ANGT) Symposium, ISOPE ANGT-2005, held during the 15th International Offshore and Polar Engineering Conference & Exhibition, ISOPE-2005, Seoul, Korea, June 19-24, 2005; Published in Proceedings of the 15th (2005) International Offshore and Polar Engineering Conference (ISOPE 2005), Seoul, Korea, June 19-24, 2005. For 4-volume set *CD-Rom*, (ISBN 1 880653 64-8; ISSN 1098-6189): 3,110 pp., \$220 (ISOPE Member; \$180).

Reprints of the 1st (1996) International Deep-Ocean Technology Symposium and Workshop, Los Angeles, May 22 - June 1, 1996: December 1996 issue, Vol. 6, No. 4, *International Journal of Offshore and Polar Engineering* (ISSN 1053-5381). Reprint volume (\$60) is available from ISOPE.

Reprints of the 1st (1996) International Deep-Ocean Technology Symposium and Workshop, Los Angeles, May 22 - June 1, 1996: December 1996 issue, Vol. 6, No. 4, *International Journal of Offshore and Polar Engineering* (ISSN 1053-5381). Reprint volume (\$60) is available from ISOPE.

Proceedings of the 3rd (2009) International Deep-Ocean Technology Symposium, Beijing, China, June 28–July 1, 2009. A single volume (CD-ROM) (ISBN 978-1-880653-73-9.) 110 pp. est., US\$100 (Member; US\$80.)

First (2007) ISOPE Strain-Based Design Symposium, ISOPE SBD-2007, Lisbon, Portugal, July 1–6, 2007: Published in Proceedings of the 17th (2007) International Offshore and Polar Engineering Conference (ISOPE-2007),

Lisbon, Portugal, July 1–6, 2007. For 4-volume set *CD-Rom*, (ISBN 978-1-880653-68-5; ISBN 1-880653-68-5; ISSN 1098-6189: 3,904 pp., \$270 (ISOPE Member; \$230).

Second (2008) ISOPE Strain-Based Design Symposium, ISOPE SBD-2008, Vancouver, Canada, July 6–11, 2008: Published *CD-Rom*, (ISBN 978-1-880653-70-8; ISSN 1098-6189: 3,904 pp., \$270 (ISOPE Member; \$230).

Third (2009) ISOPE Strain-Based Design Symposium, ISOPE SBD-2009, Osaka, Japan, June 20–25, 2009: Published in *CD-Rom* (ISBN 978-1-880653-53-1; ISSN 1098-6189: 3,690 pp., \$270 (ISOPE Member; \$230).

Fourth (2010) ISOPE Strain-Based Design Symposium, ISOPE SBD-2010, Beijing, China, June 20–26, 2010: Published in *CD-Rom* (ISBN 978-1-880653-77-7; ISSN 1098-6189): 4,176 pp., \$290 (ISOPE Member; \$240).

Fifth (2011) ISOPE Strain-Based Design Symposium, ISOPE SBD-2011, Maui, Hawaii, USA, June 20–26, 2010: Published in **Proceedings of the 21st (2011) International Offshore and Polar Engineering Conference (ISOPE-2011)**, Maui, Hawaii, USA, June 19-24. For 4-volume set *CD-Rom*, (ISBN 978-1-880653-96-8; ISSN 1098-6189): approx. 4,065 pp., \$290 (ISOPE Member; \$240).

First (2009) ISOPE Sloshing Dynamics and Design Symposium, ISOPE SDD-2009, Osaka, Japan, June 20–25, 2009: Published in **Proceedings of the 19th (2009) International Offshore and Polar Engineering Conference (ISOPE-2009)**, Osaka, Japan, June 21-26, 2009. For 4-volume set *CD-Rom*, (ISBN 978-1-880653-53-1; ISSN 1098-6189: 3,690 pp., \$270 (ISOPE Member; \$230).

Second (2010) ISOPE Sloshing Dynamics and Design Symposium, ISOPE SDD-2010, Beijing, China, June 20–26, 2010: Published in *CD-Rom*, (ISBN 978-1-880653-77-7; ISSN 1098-6189): 4,176 pp., \$290 (ISOPE Member; \$240).

Third (2011) ISOPE Sloshing Dynamics and Design Symposium, ISOPE SDD-2011, Maui, Hawaii, USA, June 20–26, 2010: Published in *CD-Rom*, (ISBN 978-1-880653-96-8; ISSN 1098-6189): approx. 4,065 pp., \$290 (ISOPE Member; \$240).

Proceedings of the 1st (1991) International Offshore and Polar Engineering Conference (ISOPE-91), Edinburgh, U.K., 11-16 August 1991. For a set of 4 volumes, (ISBN 0-9626104-5-3; LCCN 91-071635): approx. 2190 pp., \$320 (US\$240; member).

Proceedings of the 2nd (1992) International Offshore and Polar Engineering Conference (ISOPE-92), San Francisco, USA, June 14-19, 1992. For a set of 4 volumes, (ISBN 1-880653-00-1; LCCN 91-78280): 2,899 pp., \$340 (Member; \$260).

The Proceedings of the 3rd (1993) International Offshore and Polar Engineering Conference (ISOPE-93), Singapore, 6-11 June 1993. For a set of 4 volumes, (ISBN 1-880653-05-2; LCCN 92-76219): 2,965 pp., \$340 (ISOPE Member; \$260).

Proceedings of the 4th (1994) International Offshore and Polar Engineering Conference (ISOPE-94), Osaka, Japan, April 10-15, 1994. For a set of 4 volumes, (ISBN 1-880653-10-9; LCCN 93-80555): 2,589 pp., \$340 (ISOPE Member; \$260).

Proceedings of the 5th (1995) International Offshore and Polar Engineering Conference (ISOPE-95), The Hague, June 11-16, 1995. For a set of 4 volumes, (ISBN 1-880653-16-8; LCCN 94-73796): 2,543 pp., \$340 (ISOPE Member; \$260). 2,543 pp., \$340 (ISOPE Member; \$260).

Proceedings of the 6th (1996) International Offshore and Polar Engineering Conference (ISOPE-96), Los Angeles, May 26-31, 1996. For a set of 4 volumes, (ISBN 1-880653-22-2): 2,326 pp., \$360 (ISOPE Member; \$280).

Proceedings of the 7th (1997) International Offshore and Polar Engineering Conference (ISOPE-97), Honolulu, May 25-30, 1997. For a set of 4 volumes, (ISBN 1-880653-28-1): 3,556 pp., CD-ROM only at \$300 (ISOPE Member; \$240).

Proceedings of the 8th (1998) International Offshore and Polar Engineering Conference (ISOPE-98), Montréal, May 24-29, 1998. For a set of 4 volumes, (ISBN 978-1-880653-34-0; ISSN 1098-6189): 2,577 pp., \$380 (ISOPE Member; \$300).

Proceedings of the 9th (1999) International Offshore and Polar Engineering Conference (ISOPE-99), Brest, May 30-June 4, 1999. For a set of 4 volumes, (ISBN 978-1-

880653-39-5; ISSN 1098-6189): 3,061 pp., CD-ROM only at \$300 (ISOPE Member; \$240).

Proceedings of the 10th (2000) International Offshore and Polar Engineering Conference (ISOPE-2000), Seattle, WA, USA, May 28–June 2, 2000. For a set of 4 volumes (*hard copy and CD*), (ISBN 978-1-880653-46-3; ISSN 1098-6189): 2,689 pp., \$420 (ISOPE Member; \$340). (*CD-ROM only available at \$200 (ISOPE Member; \$160); hard copy out of stock.*)

Proceedings of the 11th (2001) International Offshore and Polar Engineering Conference (ISOPE-2001), Stavanger, Norway, June 17–22, 2001. For a set of 4 volumes (*hard copy and CD-Rom*), (ISBN 978-1-880653-51-7; ISSN 1098-6189): 3,039 pp., \$430 (ISOPE Member; \$350).

Proceedings of the 12th (2002) International Offshore and Polar Engineering Conference (ISOPE-2002), Kitakyushu, Japan, May 26-31, 2002. For 4-volumes set *CD-Rom*, (ISBN 978-1-880653-58-6; ISSN 1098-6189 (Set): 3,304 pp., \$220 (ISOPE Member; \$180).

Proceedings of the 13th (2003) International Offshore and Polar Engineering Conference (ISOPE-2003), Honolulu, Hawaii, USA, May 25-30, 2003. For 4-volumes set *CD-Rom*, (ISBN 978-1-880653-60-9; ISSN 1098-6189 (Set): 2,912 pp., \$220 (ISOPE Member; \$180).

Proceedings of the 14th (2004) International Offshore and Polar Engineering Conference (ISOPE-2004), Toulon, France, May 23–28, 2004. For 4-volumes set *CD-Rom*, (ISBN 978-1-880653-62-3; ISSN 1098-6189 (Set): 3,167 pp., \$220 (ISOPE Member; \$180).

Proceedings of the 15th (2005) International Offshore and Polar Engineering Conference (ISOPE-2005), Seoul, Korea, June 19–24, 2005. For 4-volume set *CD-Rom*, (ISBN 978-1-880653-64-7; ISSN 1098-6189: 3,116 pp., \$220 (ISOPE Member; \$180).

Proceedings of the 16th (2006) International Offshore and Polar Engineering Conference (ISOPE-2006), San Francisco, California, USA, May 28–June 2, 2006. For 4-volume set *CD-Rom*, (ISBN 978-1-880653-66-1; ISSN 1098-6189): 2,704 pp., \$220 (ISOPE Member; \$180).

Proceedings of the 17th (2007) International Offshore and Polar Engineering Conference (ISOPE-2007), Lisbon, Portugal, July 1–6, 2007. For 4-volume set *CD-*

Rom, (ISBN 978-1-880653-68-5; ISSN 1098-6189): 3,904 pp., \$270 (ISOPE Member; \$230).

Proceedings of the 18th (2008) International Offshore and Polar Engineering Conference (ISOPE-2008), Vancouver, BC, Canada, July 6–11, 2008. For 4-volume set *CD-Rom*, (ISBN 978-1-880653-70-8; ISSN 1098-6189): 3,036 pp., \$270 (ISOPE Member; \$230).

Proceedings of the 19th (2009) International Offshore and Polar Engineering Conference (ISOPE-2009), Osaka, Japan, June 21-26, 2009. For 4-volume set *CD-Rom*, (ISBN 978-1-880653-53-1; ISSN 1098-6189: 3,690 pp.), \$270 (ISOPE Member; \$230).

Proceedings of the 20th (2010) International Offshore and Polar Engineering Conference (ISOPE-2010), Beijing, China, June 20-25. For 4-volume set *CD-Rom*, (ISBN 978-1-880653-77-7; ISSN 1098-6189): 4,176 pp., \$290 (ISOPE Member; \$240).

Proceedings of the 21st (2011) International Offshore and Polar Engineering Conference (ISOPE-2011), Maui, Hawaii, USA, June 19-24. For 4-volume set *CD-Rom*, (ISBN 978-1-880653-96-8; ISSN 1098-6189): approx. 4,065 pp., \$290 (ISOPE Member; \$240).

Proceedings of the 22nd (2012) International Offshore and Polar Engineering Conference (ISOPE-2012), Rhodes, Greece, June 17-22. For 4-volume set *CD-Rom*, (ISBN 978-1-880653-94-4; ISSN 1098-6189): approx. 4,200 pp. est., \$290 (ISOPE Member; \$240).



Membership Application

Download the application form from www.isope.org > *membership*.

Please email to: ISOPE Membership;
meetings@isope.org

Prospective authors are invited to submit abstract to:

PACOMS-2012 Vladivostok

The 10th (2012) ISOPE
Pacific-Asia Offshore Mechanics Symposium
Vladivostok, Russia, September 30–October 3, 2012

Call For Papers

Abstract Deadline February 1, 2012
Manuscript Deadline (for review) April 15, 2012

Three-day symposium is being organized: For detail, visit www.isopec.org.

E-mail your abstract in 300-400 words to: (1) One of the PACOMS IOC members (session organizers); (2) **PACOMS-2012 IOC**, 495 North Whisman Road, Suite 300, Mountain View, California 94043-5711 USA: Fax: +1-650-254-2038); E-mail to meetings@isopec.org.

Subscribe Now

International Journal of Offshore and Polar Engineering

Published by:
International Society of Offshore and Polar Engineers

Quarterly: March, June, September, December

Indexed by Science Citation Index-Expanded, Engineering Index, EI Compendex and others.

Engineering, Energy/Resources, Ocean, Offshore, Arctic, Antarctic, Marine and Environment, Mechanics, Materials, Emerging Topics

Editors: Jin S Chung (ISOPE); R M W Frederking (Nat. Research Council, Canada); W. Koterayama (Kyushu Univ., Japan); I Langen (Stavanger Univ, Norway). **Associate Editors:** H.C. Chen (Texas A&M Univ); J. Pierre Ferrant (Ecole Centrale de Nantes, France); M. Fujikubo (Osaka Univ., Japan); R E Hobbs (Imperial College of Science and Technology, UK); S Y Hong (Maritime & Ocean Eng Research Inst, Korea), H.W. Jin (ExxonMobil R & E, USA); M Kashiwagi (Osaka Univ, Japan); T. Matsui (Ritsumeikan Univ, Japan), B D Newbury (ExxonMobil Dev Co, USA), AJNA Sarmiento (Instituto Superior Technico, Portugal); V. Squire (Univ of Otago, New Zealand); M S Triantafyllou (M.I.T., USA).

1. Abstracts of papers, all peer-reviewed are available at www.isopec.org > Publications
2. Back issues (March 1991-) are available at \$100 (Members, \$50) per annual set of 4 issues.
3. Annual subscription rate for 2012: \$160.
4. Individual ISOPE members are entitled to complimentary copies.
5. E-mail manuscripts for peer review in WORD or PDF file if smaller than 5 MB (editor@isopec.org.)
6. Download the Journal template from www.isopec.org.

Write or fax for sample copies or order to:

ISOPE ISOPE
P.O. Box 189
Cupertino, California 95015-0189, USA
E-mail: editor@isopec.org; www.isopec.org
Tel: +1-650-254-1871; Fax: +1-650-254-2038)

Prospective authors are invited to submit abstract to:

ISOPE–2013 Anchorage, Alaska, USA

The 23rd (2013) International
Ocean (Offshore) and Polar Engineering Conference
Anchorage, Alaska, USA, June 30–July 5, 2013

First **Call For Papers**

Abstract Deadline **October 20, 2012**
Manuscript (for review) Deadline **January 15, 2013**

The **International Society of Offshore and Polar Engineers (ISOPE)** is organizing about 100 sessions of refereed papers including special sessions of timely topics in cooperation with international technical program committee (TPC) members and cooperating organizations. Delegates from more than 50 countries are expected. All manuscripts will be peer-reviewed prior to the final acceptance. The conference proceedings will be available at the conference. Papers of archival value may be further reviewed for possible publication in the *International Journal of Offshore and Polar Engineering*.

Main fields of interest are:

| | | |
|---------------------------------|------------------------------|-----------------------------------|
| Frontier/Clean Energy | Hydrodynamics | High Perform. Mats |
| LNG, FLNG | Sloshing Dynamics | Strain-Based Design |
| Ocean Technology | CFD, NWT & Code | Asset Integrity |
| Offshore Mechanics | MetOcean , | Materials & Welding |
| Ocean Engineering | FPSO, TLP, SPAR | Risers, Pipelines, Cables |
| Arctic Scient & Tech | Advanced Ship Tech | Subsea & Umbilicals |
| Arctic Materilas | Arctic Passage | VIV and Design |
| Underwater Systems | Nonlinear Waves | Safety, Risk , Reliability |
| Renewable Energy, | Coastal Engineering | Tubular & Linepipe |
| Environ & Modeling | Control, Simulation | Composites |
| Gas Hydrates & Ocean | Geotech&Envir Eng | Earthquake Engineering |
| Resources | | Emerging Topics |

The abstract should stress the originality and the significance of the results, and include the complete names, postal and e-mail addresses and fax numbers of all authors.

Send (E-mail, online) your abstract in 300-400 words to: (1) Submit **online** on www.isopec.org or www.isopec2012.org; (2) One of the TPC members (session organizers); or (3) **ISOPE-2013 TPC**, ISOPE, 495 North Whisman Road, Suite 300, Mountain View, California 94043-5711, USA: Fax: +1-650-254-2038; meetings@isopec.org.

Sponsors: *ISOPE*. **Cooperating Organizations and Societies:** *ASCE (USA), CAPP (Canada), RAS (Russia), INAE (India), CSCE (Canada), CSOE (China), CSNAME (China), CSTAM (China), DKMM (Germany), EIT (Thailand), GMT (Germany), IE Australia, IEA-OES, IRO (The Netherlands), JSMS (Japan), KSOE (Korea), KSCE (Korea); JASNAOE (Japan), NPF (Norway), PII (Indonesia), SPRI (U.K.), SOBENA (Brazil), SSSS (Singapore), TOC (Turkey), TCG (Greece), TSOE, VTT (Finland), OES (United Kingdom), TSOE, USME (Ukraine).*