The 25th ISOPE Conference Anniversary
June 21–27, Kona, Hawaii Big Island, USA

at Hilton Waikoloa Village: www.isope.org

The Twenty-fifth (2015) International
Ocean and Polar
Engineering Conference

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6th Arctic Science & Technology
5th Arctic Materials
6th Renewable Energy & Environment
7th Sloshing Dynamics & Design
7th Frontier Energy Tech
9th Strain-Based Design
11th Ocean Mining & Gas Hydrates
13th High-Performance Materials

ISOPE-2015
Kona, Big Island, Hawaii, June 21–26

Technical Program
(Updated February 25, 2015)
Refereed papers from 53 countries in 188 technical sessions
9 plenary and keynote presentations

Full Program with Paper List, General Information, Reservations, Publications and Updates on
http://www.isope.org/publications/publications.htm
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TECHNICAL PROGRAM

Hilton Waikoloa, Hawaii, June 21–26, 2015

The number at the end of the session title indicates the tentative number of the proceedings volume. Only the changes in titles or authors the ISOPE-2015 Technical Program Committee (TPC) received in writing before February 25, 2015 are reflected in this program. Final corrections will be updated in the Conference Proceedings of peer-reviewed papers and the Final Program. Conference proceedings (ISBN 978-1-880653-89-0; ISSN 1098-6189) will be available as a set of 4 volumes (6,100 pp. est.) from ISOPE during and after the Conference.


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http://www.isope.org/conferences/conferences.htm
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SUNDAY, June 21
17:00 Welcome Reception
Kona Pool

MONDAY 08:30

1. OPENING GENERAL SESSION:
OCEAN AND ARCTIC REVIEW (V. 1)
Monday July 16 08:30 Monarchy Ballroom

Chair: H W Jin, ExxonMobil Research & Engineering, USA
Co-Chair: F. Vorpahl, Fraunhofer-IWES, Germany

Introduction
Jin S Chung, ISOPE-2015 Conference Co-chair, USA

Conference Opening Address
Nol Gresnigt, ISOPE President, Technical University of Delft, Netherlands

Plenary Speakers
Materials and Corrosion Technology Challenges in Upstream Projects
Eric Wright, ExxonMobil Development, USA

Safe Conduct of Arctic Offshore Pioneering Operations
Arno Keinonen, AKAC Inc, Canada

WEDNESDAY 19:00

Annual ISOPE Conference Banquet
at Grand Ballroom

THURSDAY 13:15

KEYNOTE III
Thursday June 25 13:15 Room 8

Introduction: Jin S Chun, ISOPE, USA

Recent Status of Methane Hydrate R&D Program and Research Activities of Methane Hydrate Research Center, AIST, Japan [Oral presentation]
Norio Tenma, National Inst of AIST, Japan

THURSDAY 14:00

139. OMGH I:
Gas Hydrates 1 (OMS-2015)
Thursday June 25 14:00 Room 8

Chair: T. Komai, Tohoku Univ, Japan

Revision of P-wave Velocity and Thickness of Hydrate Layer in Shenhu Area, South China Sea
Jianming Gong, Xunhua Zhang, Qingdao Inst of Marine Geology; Changchun Zou, China Univ of Geosciences; Qiang Chen, Qingguo Meng, Qingdao Inst of Marine Geology; Chunfang Yuan, China Univ of Mining & Tech; Gaowei Hu, Qingdao Inst of Marine Geology, China

Takeshi Komai, Tohoku Univ; Yasuhide Sakamoto, AIST; Atsushi Kihita, Tohoku Univ; Norio Tenma, AIST, Japan

Using of Adiabatic Conversion of Dispersed Thermodynamic System in the Development of the Marine Gas Hydrate Deposits
Alexander N Gulkov, Victor D Lapshin, Vacheslav V Slesarenko, Alexey A Morozov, Sergey F Solomennik, Far Eastern Federal Univ, Russia
P-wave Velocity Monitoring during the Dissociation of Methane Hydrate Bearing Sand by Using Giant Pressure Cell
Tatsuya Yokoyama, Eiki Nakayama, Hideki Saito, OYO Corp, Japan

Depressurization and Electrical Heating of Hydrate Sediment for Gas Production
Hideki Minagawa, Sho Kimura, Hiroaki Kaneko, National Inst of AIST; Takuma Ito, Research Inst of Innovative Tech for Earth; Shohei Noda, Hideo Narita, National Inst of AIST, Japan

Geological Constraint on Gas Hydrate Accumulation in Qilian Mountain Permafrost – A Case in DK-9 Hole
Zhengquan Lu, Gangyi Zhai, China Geological Survey; Yongqing Zhang, Inst of Exploration Techniques, CAS; Shiqi Tang, China Geological Survey; Panpan Tan, Inst of Mineral Resources, CAS; Ting Wang, Hui Liu, Youhai Zhu, China Geological Survey, China

Effect of Fines on Shear Strength of Methane Hydrate Bearing Sand
Masayuki Hyodo, Akira Nishimura, Shintaro Kajiyama, Yamaguchi Univ, Japan

Experimental Study of Mud Erosion Phenomena at Sand Mud Alternate Layer
Hiroyuki Oyama, Shungo Abe, Toru Sato, Univ of Tokyo, Japan

Phase Equilibrium of Methane Hydrate in the Presence of TBAB and Salt
Jitendra S Sangwai, Gaurav Pandey, Deepjyoti Mech, IIT Madras, India

149. OMGH II: Gas Hydrates 2 (OMS-2015)
Thursday June 25 16:20 Room 8

Chair: Taewoong Ahn, Korea Inst of Geoscience & Mineral Resources, Korea

Experimental Investigation on Tuning Patterns of Methane Inclusion in Isoxazole Clathrate Hydrates
Jae W Lee, KAIST; Minjun Cha, Kangwon National Univ; Seungjun Baek, Wonhee Lee, KAIST; Kyushul Shin, Kyungpook National Univ, Korea

Displacement of Solution and Hydrates Formation in Cooled Glass Beads
Mingjun Yang, Yongchen Song, Oanoan Jiang, Dalian Univ of Tech, China

Analysis of Gas Hydrate Formation in Subsea External Sleeve Choke
Biao Hu, Hongwu Zhu, Xianwen Duan, Fangling Xu, Youjiang Zhang, China Univ of Petroleum-Beijing, China

Pore-Scale Simulation of Methane Hydrate Formation and Permeability in Sand Layers
Kentaro Kamada, Toru Sato, Hiroyuki Oyama, Takero Yoshida, Univ of Tokyo, Japan

Numerical Studies on Geomechanical Response of UBGH-2 Hydrate Bearing Sediments during Gas Production in the Ulleung Basin, Korea
Yung-Mok Kim, Sejong Univ, Korea; Jonny Rutqvist, Lawrence Berkeley National Lab, USA
The Reverse Circulation (RC) Drilling Techniques for the Mineral Resources Exploration and Production in Ocean
Yongqin Zhang, Chinese Geological Survey, China

X-Ray Computed Tomography Observations of Hydrate-Bearing Porous Media under Hydrate Formation and Dissociation Process
Taewoong Ahn, Jaehyoung Lee, JooYong Lee, SeJoon Kim, Korea Inst of Geoscience & Mineral Resources; Changhyup Park, Kangwon National Univ, Korea

Numerical Simulation on the Deformation of Stratum Due to Gas Hydrate Dissociation
L Lu, X B Lu, X H Zhang, S Y Wang, Inst of Mechanics, CAS, China

Mesoscale Modeling of Methane Hydrate Dissociation in Homogeneous Porous Media
Wu-Yang Sean, Chung-Yuan Christian Univ; Pei-I Yu, Ray-Quan Hsu, Chiao-Tung Univ, Taiwan, China

Shear Behaviour and Localized Deformation of Methane Hydrate-bearing Sand by High Pressure Plane Strain Shear Tests
Shintaro Kajiyama, Masayuki Hyodo, Yamaguchi Univ, Japan

Experiments for Warming Sediments under the Seabed by Exothermic Heat of CO2 Hydrate through Injecting CO2/Water Emulsion for Enhanced Methane Hydrate Recovery
Yojiro Ikegawa, Hiroshi Suenaga, Shiro Tanaka, Kenji Kubota, Nohara, Shintaro Nohara, Central Research Inst of Electric Power Industry, Japan

Numerical Simulation of Mud Erosion by Water Flow in Porous Media Using Lattice Boltzmann Method
Takero Yoshida, Tosu Sato, Hiroyuki Oyama, Univ of Tokyo, Japan

Experimental Investigation on Production Characteristics of Hydrate-Bearing Alternate Layers of Sand and Mud under Depressurization Process
Jaehyoung Lee, Taewoong Ahn, JooYong Lee, SeJoon Kim, YoungJu Seo, Korea Inst of Geoscience & Mineral Resources, Korea

Friction Strength between Well and Sediment under Confining Pressure for Methane Hydrate Production Well Integrity
Masayo Kakimoto, Jun Yoneda, Norio Tenma, Kuyuki Miyazaki, Kazuo Aoki, National Inst of AIST; Ryuichi Itoi, Kyushu Univ, Japan

Electric-Submersible-Pump Performance under Methane/Water/Methane-Hydrate Pipe Flows
Tsutomu Shimizu, Yoshitaka Yamamoto, Norio Tenma, Hideo Narita, AIST, Japan

Experimental Study on Gas Hydrate Inhibitors for Hydrate Control during Deep-Sea Drilling
Xin Zhao, Zhengsong Qiu, Guowei Zhou, Weian Huang, Ganghua Chen, China Univ of Petroleum, China

FRIDAY 10:30

KEYNOTE IV
Friday June 26 10:30 Room 8

Deep Ocean Mining Systems and Technology, Past and Present
[Oral presentation] Jin S Chung, ISOPE, USA

KEYNOTE V
Friday June 26 10:50 Room 8

Introduction:: Jin S Chung, ISOPE, USA

The Summary of Environmental Baseline Survey for Mining the Cobalt-Rich Ferromanganese Crust on Deep Seamount in Japan Fs License Area
Teruyoshi Narita, Junya Oshika, Nobuyuki Okamoto, Japan Oil, Gas and Metals National Corporation (JOGMEC), Japan

169. OMGH IV: Deep Ocean Mining 1: (OMS-2015) Recent Programs, Technology Assessment, Exploration, Environment
Friday June 26 10:30 Room 8

Chair: Jin S Chung, ISOPE, USA

The Solwara 1 Deepwater Mining Project [Oral presentation] Roland Berndt, Nautilus Minerals, Australia


EU Blue Mining Project - An Overview [Oral presentation] Frank Lim, 2H Offshore, UK

Ocean Mining Lunch
Hosted by ISOPE
Following session 169.

All OMS-2015 participants are invited, and reservation is required by June 14: Janice at isope-2@isope.org
Environmental Management in Seafloor Mining [Oral presentation]
Renee Grogan, Nautilus Minerals, Australia

Reconsideration of Polymetallic Nodule Processing Methods -- Further Improvement of Existing Methods
Kenji Haiki, Masatsugu Okazaki, Tadayuki Ishiyama, Deep Ocean Resource Development, Japan

Effect of Size Distribution of Deep-Sea Polymetallic Nodule on Estimation of the Abundance from Seafloor Photograph Based on the Classic Formulae
Akira Tsune, Deep Ocean Resources Development, Japan

Research on Variably Accelerated Sedimentation of Coarse Mineral Particles in Still Water
Dasheng Tang, Yuxiang Chen, Dehuai Xu, Hong Xiao, Changsha Research Inst of Mining & Metallurgy, China

Change of Biogenic Ba Content in Pacific Ferromanganese Crusts since Cenozoic -- A Signal of Paleoproductivity Pulses?
Guoqing You, Jiahua Pan, Wenhong Sun, Shuqin Liu, Chinese Academy of Geological Sciences, China

Comparison of the Lifecycle Impacts of Seafloor Mining with Onshore Equivalents
Benjamin C McLellan, Ran Motoori, Tetsuo Tezuka, Kyoto Univ, Japan

Investigation into Rheological Behavior of Bentonite Paste to Study Mechanical Behavior of Deep Sea Soil
Shankar Krishnapillai, Sangam L Kute, Krishna Kannan, IIT Madras, India

Investigation of Rheological Behavior of Bentonite Paste to Study Mechanical Behavior of Deep Sea Soil
Sangam L Kute, Shangkar Krishnapillai, Krishna Kanna, IIT Madras, India

Economic Feasibility Impacts of Waste and Waste Water Treatment Regulations for Deep Ocean Hydrothermal Ore Mining in Japan
Ran Motoori, Benjamin C McLellan, Tetsuo Tezuka, Kyoto Univ, Japan

Study on Mining Posture of Deep-sea Mining Arm
Jinzi Zhou, Guizhou Inst of Tech; Zhi Yang, Xiangtan Electric Manufacturing Group; Pinghong Tang, Changsha Research Inst of Mining & Metallurgy, China
Spatial Configurations and Particle Transportation Parameters of Flexible Hose in Deep-sea Mining System
Yun Peng, Jianxin Xia, Huatang Ren, Minzu Univ of China, China

Water-hammer Pressure in the Hydraulic Lifting Pipeline of Deep-sea Mining System
Yi Zou, Cao Bin, Jianxin Xia, Minzu Univ of China, China

Hyperbaric Excavation: From Fundamental Research to Applied Development [Oral presentation]
Wiebe Boomsma, IHC Mining, Netherland