TECHNICAL PRESENTATIONS

48TH UNDERWATER MINING CONFERENCE
WWW.UNDERWATERMINING.ORG

JW MARRIOTT DADONGHAI BAY
BALLROOM

TECHNICAL SESSIONS I, II AND III
MONDAY 23 SEPT THRU WEDNESDAY 25 SEPT

ORAL PRESENTATIONS
(LISTED BY AUTHOR'S SURNAME)

ENVIRONMENTAL ASPECTS OF SEAFLOOR MINERALS

Investigating Midwater Discharge Sediment Plumes Associated with Deep-Sea Nodule Mining
Carlos Munoz-Royo, Massachusetts Institute of Technology, USA

Deep-sea mining sediment plumes: what we know and what we don't
Thomas Peacock, Massachusetts Institute of Technology, USA

Establishing a methodology to define criteria for a risk based impact assessment for offshore sea-floor massive sulphide extraction
Marcel Rozemeijer, Wageningen Marine Research, The Netherlands

Promoting Cost-Effective Capture of Quality Environmental Data from the Outset through Integration: A Focus on the CCZ
Scott Breschkin, ERIAS Group, Australia

FERROMANGANESE CRUSTS

Geochemical and microbial characteristics of ferro-manganese crusts at depths ranging from 1100m to 5500m on the seamount in the northwestern Pacific
Katsuhiko Suzuki, Japan Agency for Marine-Earth Science and Technology, Japan

Geological characterization of cobalt-rich ferromanganese crusts using deep-sea drill cores in the NW Pacific seamounts
Akira Usui, Kochi University, Japan

Field Planning & Seafloor Production Tool Concept Review
Wilson Zheng, Shanghai Jiao Tong University, China

SEAFLOOR MINERAL DEVELOPMENT: MULTIDISCIPLINARY PERSPECTIVES

Sustainable development of Mineral Resources in the Area
Pratima Jauhari, International Seabed Authority, Jamaica

Can Patents be considered Part of the Common Heritage of Mankind?
Andreas Kaede, Kanzlei Kaede, Germany

Cook Islands New Seabed Minerals Act
Paul Lynch, Cook Islands Government

An Unfinished Work: The Emerging Chinese Legal Regime and Management System of International Deep Seabed Mining
Zhang Guobin, Shanghai Jiao Tong University, China

MOVING TOWARDS PRODUCTION

State Practices of China in the Area
Liu Feng, China Ocean Mineral Recourses R & D Association, China

Designing Logistic System for Deep Sea Mining
Govinder Chopra, SeaTech Solutions, Singapore

Development and Testing of a Hydraulic Nodule Collector while minimizing its Environmental Impact, Preliminary Results of Discharge Experiments (Blue Harvesting project)
Rudy Helmons, TU Delft / 3mE /ODE, The Netherlands

Hazards and Risks in Deep-Seabed Mining
Sup Hong, Korea Research Institute of Ships and Ocean Engineering, Korea

An economically and environmentally viable underwater mining solution
Stef Kapusniak, Soil Machine Dynamics, United Kingdom

Progress of Chinese 1000m Deep Seabed Nodule Mining Test Project
Li Xiangyang, China Ocean Mineral Resources R&D Association, China

Field Testing: improving environmental performance of polymetallic nodule harvesting
Shi Wei, Royal IHC - IHC Mining, The Netherlands

Overview of a Pilot Study for Seabed Cobalt Mining
Xu Lixin, China Merchant Offshore Technology Research Center, China

The sea trials of the second generation of the cobalt mining device
Yang Ning, Institute of Deep-sea Science and Engineering, China

Surface Support System Selection for Deepsea
Joe Zhou, China Merchant Offshore Technology Research Center, China

POLYMETALLIC NODULES

Polymetallic Nodule Abundance Estimations based on High-Resolution AUV Data and
Seabed Samples for DeepGreen's NORI Area D, Clarion Clipperton Zone
Christine Devine, Fugro, Australia

Advances in investigation and study on the rare earth resources in deep-sea sediments in
the Pacific Ocean
Zhu Kechao, Guangzhou Marine Geological Survey, China

SEAFLOOR MASSIVE SULPHIDES

Morphology and formation of SMS deposits in different geological settings
Georgy Cherkashov, VNIIOkeangeologia, Russia

APEIs: Some thoughts about designation for crusts and sulphides
Livia Ermakova, VNIIOkeangeologia, Russia

HOMESIDE – An Advanced Tool for Hydrothermal Plume Hunting and Polymetallic
Sulphide Exploration in the Indian Ocean
Ralf Freitag, Federal Institute for Geosciences and Natural Resources (BGR), Germany

Seafloor sulfide mineral deposition and remobilization
Amy Gartman, US Geological Survey, USA

Assessing Hydrothermally Extinct Seafloor Massive Sulphide Deposits (eSMS): Lessons
from the Blue Mining Project, Mid-Atlantic Ridge
Bramley Murton, National Oceanography Centre, UK

TECHNOLOGICAL DEVELOPMENT

Underwater acoustic positioning and navigation system
Lv Chengcai, Institute of Deep-sea Science and Engineering, China

Design Challenges of Riser & Lifting System
Andrew Lipman, American Bureau of Shipping, USA

Research on Nodules Collecting in Deep-sea Mining: An Efficient and Environmentally
Friendly Technology in Hydraulic Collecting
Zhao Guocheng, Shanghai Jiao Tong University, China

TECHNICAL PRESENTATIONS

48TH UNDERWATER MINING CONFERENCE

JW MARRIOTT DADONGHAI BAY
BALLROOM

POSTERS
ON DISPLAY – BALLROOM FOYER
MONDAY 23 SEPT THRU THURSDAY 26 SEPT

POSTER PRESENTATION SESSION
AUTHORS/SPEAKERS MEET WITH PARTICIPANTS - BALLROOM FOYER
TUESDAY, 24 SEPT, 13:30 – 14:15
(LISTED BY AUTHOR'S SURNAME)

Non-supervised classification of benthic habitats based on seafloor geomorphology in the French Exploration Contract for Polymetallic Nodules – Clarion-Clipperton Zone
Florian Besson, Ifremer, France

Acquiring exploration data from polymetallic sulphides on the Mohns Ridge on the Norwegian continental shelf
Harald Brekke (Presenter), Norwegian Petroleum Directorate, Norway

Chatham Rock Phosphate – an example of a sustainable development of seabed mineral resources while minimising the environmental impact and using ground breaking technology
Chris Castle, Chatham Rock Phosphate, New Zealand

Preparation of Bonded Super-hydrophobic Thin Film
Chen Ming and Ma Haoxiang, Institute of Deep-sea Science and Engineering, China

Numerical Study on Settling and Floating Movements of a Sphere Particle Flowing in a Vertical Pipe
Chen Yuxiang and Hong Xiong (*Presenter*), Institute of Deep-sea Science and Engineering, China

Shipboard magnetic and rock-magnetic characterization of hydrothermal activities in the North Fiji basin
Sang-Bum Chi (Presenter), Korea Institute of Ocean Science & Technology (KIOST), Republic of Korea

The estimation study about the amount of collection in the pick-up device for the deep-sea mining system
Su-gil Cho, Korea Research Institute of Ships and Ocean Engineering, Korea

Design and Implementation of Monitoring System for Deep Sea Cobalt-rich Crust Sampling Vehicle
Dong Donglei, Huazhong University of Science and Technology, China

Seabed Mineral Resources Extraction-ICCP
Feng Guojing, Shanghai FB Oil Equipment, China

Low Grades Ultramagic-hosted SMS Deposits: Case Study of Pobeda Hydrothermal Field
Anna Firstova, VNIIOkeangeologia, Russia

GIS - based approach to define permissive areas for SMS exploration along the slow-spreading Mid-Atlantic Ridge
Sebastian Graber, GEOMAR Helmholtz Centre for Ocean Research Kiel, Germany

A3D method to dynamically model the cutting of submerged rocks with evaluation of pore pressure effects
Rudy Helmons, Delft University of Technology, The Netherlands

Design of Oval Plane Mirror Component in Marine Remote Sensing Satellite for Mineral Resources
Hu Yongming, Xi'an Institute of Optics, China

CO_2 outgassing suppressed by enhanced biological pump in the Eastern Tropical Pacific
Hyung Jeek Kim and Chan Min Yoo (*Presenter)*, Korea Institute of Ocean Science and Technology, Korea

Mineral associations in the crusts from Mendeleev Ridge based on SEM-EDS and microprobe analyses
Natalia Konstantinova, VNIIOkeangeologia, Russia

Characteristics of the Polish contract area in the Mid-Atlantic Ridge
Agata Kozłowska-Roman, Polish Geological Institute, Poland

Assessment of polymetallic nodule resources using high-resolution AUV based geophysical imagery, near-bottom photographs and seabed boxcore sampling.
Gregory Kurras, Seafloor Investigations, USA

In situ Biomarker Discovery in Deep-sea Amphipods for Deep-sea Mining activities using TMT-based Comparative Proteomics
Kwan Yick Hang, Hong Kong University of Science & Technology, China

A Non-Metallic Riser Concept for the Ultra-Deep Seabed Mining Vertical Transport System
Frank Lim, 2H Offshore, UK

Research on Shipborne Dewatering Process Technology in Deep-sea Sulfide Mine
Liu Shimei and Zhou Yueyuan, Changsha Research Institute of Mining and Metallurgy, China

Deep-sea Mining Equipment Researching in Marine Equipment and Technology Institute of Jiangsu University of Sci and Tech
Lu Daohua, Jiangsu University of Science and Technology, China

Determining and communicating marine mineral resource estimates to the broader minerals industry
Campbell McKenzie, RSC Mining, New Zealand

Titanium Concentration in the Mineral Phases of Ferromanganese Deposits from the N-W Pacific
Pavel Mikhailik, Far East Geological Institute, Russia

A review of the structural health monitoring for marine risers/pipes
Min Cheonhong, Korea Research Institute of Ships and Ocean Engineering, Korea

A study on the simulation-based design technology of the subsea equipment using DIMS toolkit
Jaewon Oh, Korea Research Institute of Ships and Ocean Engineering, Korea

A preliminary study on the geological continuity of polymetallic nodules in the deep-sea basin between guyots Suda and Scripps of the western Pacific based on coverage from Towed Camera Sledge
Ren Xiangwen, First Institute of Oceanography, China

Uranium in seafloor massive sulfides at the Mid-Atlantic Ridge
Anna Sukhanova, VNIIOkeangeologia, Russia

Copper-rich disseminated sulfides near a transform fault on the southern Carlsberg Ridge: Implications for off-axis seafloor massive sulfide mineralization
Wang Yejian, Second Institute of Oceanography, China

Transparency, public participation and access to justice in the context of deep sea mining: Luxury or legal obligation?
Klass Willaert, Ghent University, Belgium

Feasibility study of combined mining of rare-earth element rich mud and manganese nodules by pulp-lift in Japan's EEZ
Tetsuo Yamazaki, Osaka Prefecture University, Japan

Visual Simulation of Deep-Sea Mining System
Zhang Guiping, Central South University, China

Current Situation and Prospect of Technological Development in Deep Sea Mining by China Minmetals Corporation
Zhuo Xiaojun, Minmetals Corporation, China