



39TH UNDERWATER MINING INSTITUTE

FINAL PROGRAM

TOWARD THE SUSTAINABLE DEVELOPMENT OF MARINE MINERALS:
GEOLOGICAL, TECHNICAL, AND ECONOMIC ASPECTS

UNDERWATER MINING INSTITUTE 2010 • GELENDZHİK, RUSSIA
WWW.UNDERWATERMINING.ORG

4 OCTOBER 2010 (Monday)

WELCOMING RECEPTION AND REGISTRATION

The Brigantine Hotel

Revolyutzionnaya Street 377, Gelendzhik

20:00 to 21:30 *Brigantine Restaurant*

5 OCTOBER 2010 (Tuesday)

TECHNICAL SESSION I

State Scientific Centre Yuzhmorgeologiya

9:00 to 17:30

9:00 WELCOME

Call to Order

Charles L. Morgan

UMI Program Chair

Welcoming Remarks

Artur Pronkin

Director General, State Scientific Centre Yuzhmorgeologiya, Gelendzhik

(State Scientific Center of the Russian Federation Federal State Unitary Geological Enterprise, Southern Scientific & Production Association for Marine Geological Operations)

Georgy Cherkashov

Deputy Director, VNIIOkeangeologia, St. Petersburg

(Institute for Geology and Mineral Resources of the Ocean)

Introductory Remarks

Charles L. Morgan

Presentations

9:20 Deepwater Seafloor Resource Production - Development of the World's Next Offshore Frontier

Glen Smith

Nautilus Minerals, Queensland, Australia

9:40 Cash Flow Models of Different Deep Sea Mining Deposits

Henk van Muijen

MTI Holland, The Netherlands

10:00 How to Increase Economy of Seafloor Massive Sulfide Mining

Tetsuo Yamazaki

Osaka Prefecture University, Osaka, Japan

10:20 Predicative Modelling for Environmental Management and Mineral Exploration - Potential Applications for the Marine Minerals Industry

Campbell McKenzie

Kenex Ltd, Wellington, New Zealand

10:40 Break (30 min)

11:10 Deep Ocean Seafloor Mineral Extraction - Environmental and Social Responsibility for a New Industry

Samantha Smith

Nautilus Minerals, Queensland, Australia

11:30 Specific Communities Inhabiting Manganese Nodules

V.F. Melnik

FSC Yuzhmorgeologiya, Gelendzhik, Russia

11:50 Taxonomic and Trophic Structure of Megabenthic Community on Polymetallic Nodules Fields in NE Pacific Ocean

Valcana Stoyanova

Interoceanmetal Joint Organization, Szczecin, Poland

12:10 Marine Minerals Potential in the Pacific Islands Region and the Proposed Management Strategy

Akuila Tavake

SOPAC, Suva, Fiji

12:30 Break for Lunch (2 hrs)

14:30 New Insights of Mn Nodule Exploration from the German Licence Area in the Pacific Manganese Nodule Belt

Thomas Kubn

Bundesanstalt für Geowissenschaften und Rohstoffe, Hannover, Germany

14:50 Geotechnical Research of the Sea Bottom Sediments in Aspect of Regionalization

Ivo Dreiseitl

Interoceanmetal Joint Organization, Szczecin, Poland

15:10 Paleooceanographic Conditions During the Formation of Fe-mn Crusts from the Pacific Ocean: Biostratigraphic and Geochemical Evidence

Irina Pulyaeva
SSC Yuzhmorgeologiya, Gelendzhik, Russia

15:30 Volcanic Edifices of the Magellan Seamount Guyots (the Pacific Ocean) and Peculiarities of Their Ore Occurrences

T.E. Sedysheva
SSC Yuzhmorgeologiya, Gelendzhik, Russia

15:50 Break (30 min)

16:20 Metal-rich Manganese Nodules from a Seamount Platform in the South Pacific

Peter Halbach
Free University, Berlin, Germany



16:40 Local Variability of Ore Bed Parameters in Co-rich Manganese

M. Ye. Melnikov
SSC Yuzhmorgeologiya, Gelendzhik, Russia

17:00 Energy Resource or a Geological Hazard? – A Case Study on Gas Hydrates with Special Reference to the Western Continental Margin of India

S. Rajendran
Asia Pacific Institute of Soil Bio-Engineering, Cochin, India

17:20 End of Technical Session I

18:30 RUSSIAN-UKRAINE DINNER (optional, additional prepaid cost)

Easy stroll to a terraced restaurant overlooking the Bay of Gelendzhik.

Participants as of 9/28/10:

Avram
Baker
Barriga
Boel
Brockett, 2
Cherkshov
Choi, 2
De Ronde
Denegre
Ditchburn
Glasby
Goodden
Graham, 2
Halbach
Hein
Heydon
Hogeweg

Iizasa
Isbrecht
Kanagy
KORDI (Chi,
Hyeong, Kim, Kim,
Lee, Moon)
Koschinsky
Kuhn
Leroy
Maslennikov, 2
Melekestseva
Morgan, 2
Okamoto
Pulyaeva, 4
Rajendran
Ren
Rupert

Smith, G
Smith, S
Tawake
Trivedi
Van Bloois
Van Heijzen
Van Muijen
Van Nijen
Waquet
Weixler
Wiltshire
Wu
Yamazaki
Yang
Zhou

6 OCTOBER 2010 (Wednesday)

TECHNICAL SESSION II

State Scientific Centre Yuzhmorgeologiya

9:00 to 17:30

(Concurrent is the Safari Zoo Tour for spouses and guests only, 10:00 – 14:00; optional, prepaid; meet in the lobby of the Brigantine Hotel; *Participants as of 9/27/10: Brockett, Lee, Graham, Morgan*)

9:00 IMMS General Membership Meeting

Cornel de Ronde, President

Presentations

9:30 Gallium-rich Hydrothermal Ferromanganese Crusts from the Sea of Japan Underwater Volcanoes

P. Mikhailik

Russian Academy of Sciences, Vladivostok, Russia

9:50 Rare and Valuable Metals for High-tech Applications Found in Marine Ferromanganese Nodules and Crusts: Relationships to Genetic Endmembers

Andrea Koschinsky-Fritsche

Jacobs University, Bremen, Germany

10:10 Chatham Rise Phosphate Project - Technical and Environmental Challenges and Economic Opportunities to Marine Phosphate Extraction in New Zealand

Chris Castle

Widespread Energy, Takaka, New Zealand

10:30 Break (30 min)

11:00 Evolution of Geotechnical Properties in Hydrothermal Sulfide Mounds, the Reveal of a Maturation Threshold

Benoît Waquet

Technip Mines, Cedex, France

11:20 Study of Trace Element Zonation in Vent Chimneys of Ancient and Modern Black Smokers Using Laser Ablation Inductively Coupled Plasma Mass Spectrometry (LA-ICPMS)

V. V. Maslennikov

Russian Academy of Sciences (Ural), Miass, Russia

11:40 Hydrothermal Exploration along the Northern Central Indian Ridge, 8°-12° S: Preliminary Results of Bathymetry, Volcanic Rock, and Hydrothermal Plume

Jonguk Kim

Korea Ocean Research & Development Institute, Ansan, Korea

12:00 Phase Composition of Gold from Massive Sulfides of the Semenov-2 Hydrothermal Field (13° 31.13' N), Mid-Atlantic Ridge

I. Yu. Melekestseva

Russian Academy of Sciences (Ural), Miass, Russia

12:20 Break for Lunch (2 hrs)

Poster Session (30 minutes)

Please feel free to approach the authors for a personal presentation during this time.

14:20 Hydrothermal Activity and Mineralization in Submarine Volcanoes of the Tonga Arc, Western Pacific

Jonguk Kim

Korea Ocean Research & Development Institute, Ansan, Korea

A Developing Country's Challenges in Permitting / Regulating Underwater Mining – PNG Experience

Jerry Naime and Gretel Orake-Ngason

Ministry Resources Authority, Papua New Guinea

Preliminary Economic Evaluation of Rare Metal Recovery from Cobalt-rich Manganese Crusts

Tetsuo Yamazaki

Osaka Prefecture University, Japan

Presentations

14:50 The Brothers Hydrothermal System: A Model for Submarine Arc Volcanoes and the Formation of VMS Deposits

Cornel E.J. de Ronde

GNS Science, Lower Hutt, New Zealand

15:10 Fluid Inclusions in Brothers Dacite Reveal Metal Transporting Mechanisms

Ian Graham

GNS Science, Lower Hutt, New Zealand

15:30 Dating of Iron Oxide Crusts in the Study of Submarine Hydrothermal Events and Mineral Deposition

Robert Ditchburn

GNS Science, Lower Hutt, New Zealand



15:50 Break (30 min)

16:10 Underwater Hyperspectral Imaging of Marine Mineral Deposits

Fredrik Soreide

Norwegian University of Science and Technology, Trondheim, Norway

16:30 Challenges of Deep Water Mining: A Key to Better Operation in Deep Waters is Obtaining the Information at the Resolution Necessary for the Application

Francois Leroy

Teledyne Benthos, Massachusetts, United States

16:50 Systematically Converting the Deep Sea Mining Installation to Proven Technology

Jan Willem van Bloois

IHC Merwede B.V., Kinderdijk, The Netherlands

17:10 Closing Remarks, End of Technical Session II



6 OCTOBER 2010 (Wednesday)

BANQUET

The Brigantine Hotel

18:00 to 21:00

Valeriy Yubko, Banquet Speaker

*Deputy Director General, State Scientific Centre Yuzhmorgeologiya, Gelendzhik
(State Scientific Center of the Russian Federation Federal State Unitary Geological
Enterprise, Southern Scientific & Production Association for Marine Geological
Operations)*

7 – 9 OCTOBER 2010 (Thursday through Saturday)
GEOTECHNICAL FIELD TOUR



Please gather in the lobby of the Brigantine Hotel by 8:00 each day.

7 October: Taman Peninsula (10-hour bus tour)

8 October: Zhane River (10-hour bus tour)

9 October: Sail Rock (boat ride) and Wine Tasting/Tour

This field tour required pre-registration.

Registrants as of 9/28/10 include the following:

Bradford Baker*

Fernando Barriga

Simon Boel

Georgy Cherkashov

Hunsoo Choi (Kyunghee Lee)

Julien Denegre

FIO (Xiangwen Ren and Yaomin Yang)

Geoff Glasby

GNS Science [Cornel de Ronde, Robert Ditchburn, and Ian Graham (Lesley Graham)]

James Hein

Robert Heydon

Kokichi Iizasa

KORDI (Sang-Bum Chi, Kiseong Hyeong, Jonguk Kim, Woong-Seo Kim,

Kyeong-Yong Lee, Jai-Woon Moon)*

Thomas Kuhn

Valeriy Maslennikov (Svetlana Maslennikov)

Irina Melekestseva

Charles Morgan (Karynne Morgan)*

Jerry Naime

Gretel Orake-Ngason

Daria Pulyaeva (Seif Mahmoud)

Irina Pulyaeva

S. Rajendran

Akuila Tawake

Joyce van Heijzen*

John Wiltshire

Hongyun Wu

Tetsuo Yamazaki

Huaiyang Zhou



*Participates only on Day 1, 7 October