

## **3<sup>rd</sup> Symposium on Massive Sulfide and Manganese Nodule Exploration and Environmental Studies**

May 23<sup>rd</sup> 2019

### **Introduction and Current Status of Polymetallic SMS Exploration (INDEX)**

09:00 Opening

09:15 U. Schwarz-Schampera and INDEX team (BGR): Current Status of Polymetallic Sulfide Exploration.

### **Multibeam Swath Bathymetry and Geological-Biological Interpretation (INDEX)**

09:45 R. Freitag & H. Wedemeyer (BGR): High-Resolution Mapping for Seafloor Massive Sulfides with BGR's HOMESIDE System.

10:15 T. Dufek, H. Sternberg, D. Adhikari (HCU Hamburg): HOMESIDE High-Resolution Bathymetric Mapping: Terrain Modeling and Backscatter Data.

10:45 D. Adhikari, T. Dufek, H. Sternberg (HCU Hamburg): HOMESIDE Bathymetric Data Processing.

11:15 M. Klischies, S. Graber, S. Petersen (GEOMAR, Kiel): Assessing the Geology of the INDEX Area and Guiding Systematic Exploration for Hydrothermal Deposits.

11:45 W. Weinrebe (Kiel): Insights into Ocean Biomass Distribution by Multibeam Water Column Imaging.

### **Environmental Studies – Biogeochemistry on Sediments (INDEX)**

12:15 N. Harms, N. Lahajnar, B. Gaye (U. Hamburg): South Indian Ocean Water Masses and Biogeochemical Processes in the INDEX Region.

### **12:45 Lunch break**

14:00 A. Noowong, G. Gomez, Th. Dittmar, A. Koschinsky (Jacobs U. Bremen): Novel Insights into DOM and Fe-Binding Ligands in Kairei and Pelagia Hydrothermal Systems.

### **Environmental Studies – Biodiversity (INDEX)**

14:30 T. C. Kihara (DZMB): What's in a Name? Traditional, Reverse and Integrative Taxonomy

15:00 K. Gerdes (DZMB): Benthic Megafauna Diversity in the German License Area for Marine Massive Sulfides.

15:30 K. Kniesz (DZMB): Amphipod Trap - First Insights into the Deep-Sea Scavengers along the Southeast Indian Ridge

### **16:00 Coffee break**

### **Marine Resources and Resource Assessments (INDEX)**

16:30 S. Fuchs (BGR): The Gold and Silver Potential of Seafloor Massive Sulfide Deposits.

17:00 D. Garbe-Schönberg (CAU Kiel): From Brine to Vapor: Variability in Hydrothermal Fluid Composition along the SEIR (Clusters 5 - 12).

17:30 H. Müller, A. Erhardt, U. Barckhausen (BGR): Near-Seafloor Magnetic and 3D-Seismic Imaging of Hydrothermal and Tectonic Signatures at the Edmond Site

#### **Beneficiation (INDEX)**

18:00 M. Sommerfeld, D. Friedmann, B. Friedrich (RWTH Aachen): Pyrometallurgical Treatment of Seafloor Massive Sulfides from the German License Area – Current Research Activities.

18:30 B. Emde & J. Hermsdorf (LZH): Laser-Based Material Analysis at 600 bar Water Pressure – EU-Project “ROBUST”.

**May 24<sup>th</sup> 2019**

#### **Current Status of the Exploration of Ferromanganese Nodules (MANGAN)**

09:00 C. Rühlemann and MANGAN team (BGR): Current Status of Manganese Nodule Exploration.

#### **Marine Resources and Resource Assessments (MANGAN)**

09:30 Th. Kuhn & C. Rühlemann (BGR): Methods for Resource Assessment of Ferromanganese Nodules - Lessons Learned from the German ISA Contract Area in the Pacific Ocean.

10:00 A. Koschinsky, J. R. Hein, A. Foster, D. Kraemer (Jacobs U. Bremen): Enrichment Mechanisms and Phase Associations of Platinum in Marine Ferromanganese Crusts and Nodules.

10:20 A. Wegorzewski & Th. Kuhn (BGR): The Crystal Chemistry of Trace Metals in Surface and Sediment-Covered Manganese Nodules.

10:40 K. Schier, D. Ernst, D. Garbe-Schönberg und M. Bau (Jacobs U. Bremen, CAU Kiel): Small-Scale Variability of Ga, Ge and Sb in Marine Ferromanganese Crusts and Nodules.

**11:00 Coffee break**

#### **Environmental Studies – Biodiversity (MANGAN)**

11:30 N. Mercado Salas & P. Martinez Arbizu (DZMB): The Use of Genetic Methods for Biodiversity and Impact Assessment in the CCZ (BGR License Area).

12:00 K. Uhlenkott, N. Mercado Salas, P. Martinez Arbizu (DZMB): Habitat Mapping with Random Forest Regression in the German Exploration Area for Polymetallic Mn Nodules.

12:30 L. Thomsen & B. Gillard (Jacobs U. Bremen): Analysis of the Transport and Deposition Behaviour of Plume Particles Generated by Mining Activity in the German Manganese Nodule License Area (CCZ).

**13:00 Lunch break**

#### **Beneficiation (MANGAN)**

Experimental Validation of a Metallurgical Zero-Waste Process Chain for Manganese Nodules from the German License Area:

14:00 M. Sommerfeld, D. Friedmann, B. Friedrich (RWTH Aachen): From Nodules to Ni-Cu-Co Concentrate, Manganese Alloys and Construction Materials.

14:15 S. Keber, T. Ewert (TU Clausthal): From Ni-Cu-Co Concentrate to Pure Metals.

**End**