

students, representatives of the people and NGOs, (m) there is no permanent solution for coastal erosion, (IV) increase green walls instead of seawalls, (v) construction of seawalls may be taken up only at those places where it is very essential, but using right technology and quality, (vi) there should not be any developmental activities within 500 m from the shoreline as per the CRZ act, (vii) creation of digital database on coastline changes using RS and GIS technology is essential, and (viii) bringing out a brochure in Kannada on the theme of the workshop is necessary in order to create awareness among more number of local people

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International Conference on "Deep-Sea Minerals and Mining" DSMM-2008

The conference was organized by RWTH-Aachen University, Freie Universität-Berlin, and the Leibniz-Institute of Marine Sciences, University of Kiel. Participants consisting of geo-scientists, mining and process engineers, metallurgists and mineral economists from R&D organizations, academic institutes and various industries all over the world attended the Conference. There were about 100 delegates from 18 countries including the host country-Germany.

The Scientific Program consisted of four Target Fields: (1) Manganese Nodules and Crusts, (2) Seafloor Massive Sulfides (SMS), (3) Mineral Economics of DSM - Challenges and Opportunities, and (4) Deep-Sea Mining Concepts and Processing. The scientific sessions started with the Welcome address by Prof Dr F M Meyer, Dean Faculty of Geo-resources and Materials Engineering, and the Vice-Rector of RWTH Aachen University. Prof Dr P Herzig, Director IFM-Geomar also addressed the gathering.

Manganese Nodules and Crusts

The session was chaired by Prof F M Meyer and Prof S D Scott where nine

oral presentations were made. Two major points that were discussed during the session at length are: (i) how to develop proper protocols for analysis of scattered electronic metals in ferromanganese nodules such as Co, Ni, In, Ga, Ge, Mo, Se and Te etc. and how to get unanimity over the analytical procedures, (ii) the problems on the metallurgical extraction of these metals and (iii) though the Co-rich ferromanganese crusts hold a high hope as far as their potential is concerned, the major problem is how to dislodge them from the substrate-rock and mine them. These are thin crusts (up to few cms thickness) and are tightly attached to the substrate. Moreover, the knowledge on physical properties of Co-rich crusts is not sufficient as on date. There were five posters displayed pertaining to the target field 1.

Seafloor Massive Sulphides

The session on sea-floor massive deposits (SMS) was chaired by Prof P Halbach of FU-Berlin and Dr J R Hein of USGS. Eight oral presentations were made and the undersigned presented his paper on massive sulphides of Mt Jourdanne (SWIR) under this session. The other interesting papers were: (1) Modern seafloor massive sulphide deposits: distribution, types of deposits and origin - by S Petersen of Leibniz-institute of marine sciences, (2) Lessons from land to modern seafloor volcanogenic massive sulphides - by Prof S D Scott. Besides these, two other important presentations were made by S A Trebilcock who presented: (i) on the overview of Nautilus Minerals and on its activities at Solwara Prospect off the coast of Papua New Guinea and (ii) on the development of World's first SMS mining system. Lots of discussion took place especially on the first mining system of the SMS deposits. It was quite educative to learn on the latest status of the Nautilus Minerals, Canada.

Mineral Economics of DSM- Challenges and Opportunities

This session was chaired by Prof B Fiedrich and Dr H Post. Five oral presentations were made. The interesting papers were: (1) Economics of deep-sea mineral deposits - by H R Kudrass of

BGR, Germany, (2) Summary of Neptune Exploration Activities - 2007 - by S McDonald of Neptune Minerals Pic and (3) Marine mineral resources: rare metal sources for new technological applications - by U Schwarz-Schampera of BGR, Germany. It was interesting to note the developments in the Neptune Minerals front. Since becoming a public company in October 2005, Neptune Minerals has continued to advance its primary aims of exploration, application and development in marine mineral resources.

Deep-Sea Mining Concepts and Processing

The discussions in this session were more concentrated on the mining equipment development and the logistics to operate them in large-scale under deep-ocean water. Various new concepts were also discussed. There was only one poster presentation under this target field.

On 12th of March in the afternoon, there was a public lecture entitled "Marine Gashydrate: Energiequelle und CO₂-Speicher der Zukunft" arranged by the organizers that was open to public. The lecture was delivered in German language by Dr K Wallmann of IFM Geomar, Kiel and a large audience attended the lecture. On 13th of March, most of the participants and the organizers went on an excursion to the Hambach Lignite (coal) Open Pit which is the largest and deepest open-cast mine in Germany. A visit was also made to Erkelenz, WIRTH GmbH to see latest designs and developments on mining equipment especially for marine mining. As far as Indian participation is concerned, there were three participants including the undersigned. The other two were from Institute of Minerals and Materials Technology (CSIR), Bhubaneswar. However, there were no participants from NIO-Goa or NIOT-Chennai (-as per my personal expectation). Nevertheless, the Conference was timely and was very successful.

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