



**Eleventh International Symposium on Environmental  
Issues and Waste Management in Energy and  
Mineral Production (SWEMP 2009)**

and

**Eighteenth International Symposium on Mine  
Planning & Equipment Selection (MPES 2009)**

**[November 16-18, 2009, Banff Park Lodge,  
Banff, Alberta, Canada]**



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**WELCOME TO SWEMP 2009**

Dear Colleagues,

We are inviting you to participate in a Joint Meeting of SWEMP and MPES. Both of these symposia have come to be recognized as leading venues for promoting international technology transfer. The Joint Meeting will begin with a common Plenary Session, on Monday, November 16, 2009, which will be attended by all delegates to SWEMP 2009 and MPES 2009.

Previous SWEMP conferences were held in Canada, Italy, Thailand, Turkey, and the United States. SWEMP 2009 includes more than 50 papers over a three-day period. These papers cover a wide range of environmental issues and disciplines, which are classified into the following topics:

- Mining & Reclamation, Rehabilitation and Mine-Site Closure
- Mine Tailings, Wastewater, Waste Disposal & Stability of Geotechnical Structures
- Contaminated Soil, Water, Acid Mine Drainage & Waste Characterization
- Technologies to Enhance Environmental Performance – Reduce, Reuse & Recycle and New Product Development
- Technological Enhancements: Health, Safety & Environment

Our plenary session speakers, luncheon and banquet speakers, and session chairs are leaders in their own fields of expertise. The following few pages provide you with their biographies and a summary of the Technical Program. Please note that all SWEMP presentations will be held in Castle Room of the Banff Park Lodge.

For further details, please consult the symposium website at:  
<http://www.mpes-cami-swemp.com/>

Yours Sincerely,

Dr. Raj K. Singhal, Symposium Chair

## TECHNICAL PROGRAM

### MONDAY, NOVEMBER 16 SUMMIT ROOM

**9:00 – 12:30    JOINT PLENARY SESSION – MPES 2009 & SWEMP 2009**

**9:00 – 10:30    PLENARY SESSION – I**

**Introduction:**            **Dr. Raj K. Singhal, Symposium Chair**

**Chair:**                    **Professor Richard McNearny**  
Montana Tech of the University of Montana, USA

**Opening Remarks:** **Ms. Martina Shehata**  
Vice President, Krupp Canada Inc, Canada

**Speakers:**            **Mr. Achmad Ardianto**  
Human Resources Director, PT ANTAM Tbk, Indonesia

**Mr. Jaroslav Tourek**  
SD Coal Mining Company, Czech Republic

**Professor Paul Dunn**  
Director WASM, Curtin University of Technology, Australia

**Dr. Pierre Meulien**  
Chief Scientific Officer, Genome BC

**Dr. Sue Baldwin**  
University of British Columbia, British Columbia

**10:30 – 11:00    Coffee Break**

**11:00 – 12:30    PLENARY SESSION – II**

**Chair:**                    **Professor Raimando Ciccu**  
University of Cagliari, Italy

**Speakers:**            **Mr. Greg Fauquier**  
Global Managing Director Mining & Mineral Processing, HATCH

**Professor Kostas Fytas**  
Universite Laval, Quebec, Canada

**Professor Uday Kumar**  
Lulea University of Technology, Sweden

**Professor Anders Lagerkvist**  
Lulea University of Technology, Sweden

**Professor Zhenqi Hu**  
China University of Mining & Technology, Beijing, China

**12:30 – 14:00    Lunch Break**

**MONDAY, NOVEMBER 16**  
**CASTLE ROOM**

**14:10 – 15:30 Session 21 – Mining & Reclamation, Rehabilitation and Mine-Site Closure**

**Chairs: Professor Miroslav Martis (Czech Republic)**  
**Dr. Libor Pecher (Czech Republic)**

Stand Continuity - An Appropriate Parameter for Ecological Networks in Post-Mining Landscapes  
Petr Sklenicka (Czech Republic)

Reconstruction of Landscape Disturbed by Open Mining – New Application of Remote Sensing and Terrestrial Data for Landscape Recovery Evaluation  
Lubomir Bodlak, Hana Vincikava, Katerina Novotna, Jakub Brom and Libor Pechar (Czech Republic)

Occupational Exposure to Noise and Vibration in Mine Reclamation  
Valentina Dentoni, Giorgio Massacci and Letizia Piras (Italy)

Reclamation Bonding Practices in Greece  
Dimitris Damigos, Korina Triantafyllou and Dimitris Kaliampakos (Greece)

Application of a Set of Heterogeneous Neural Networks to Modeling Soil Classification in Mining Regions  
Stanislaw Gruszczynski (Poland)

**15:30 – 15:50 Coffee Break**

**16:00 – 17:30 Session 22 – Mining & Reclamation, Rehabilitation and Mine-Site Closure**

**Chairs: Dr. Marie Vrbova (Czech Republic)**  
**Professor Ge Hao (China)**

Energetic-Dissipating Function of Selected Landscape Structures on Reclamation Plots  
Jan Prochazka, Jakub Brom, Jakub Stastny and Emilie Pecharova (Czech Republic)

Implementation of a Database for Risk Assessment of Abandoned Italian Mining Sites  
Annalisa Bandini, Paolo Berry, Carlo Dacquino (Italy)

Adaptive Management for Mine Site Reclamation and Rehabilitation  
Ursula Thorley (Canada)

Some Environmental Issues at a Surface Mine Located Near Populated Area  
Yoshiaki Sakai, Kikuo Matsui, Hideki Shimada, Takashi Sasaoka, Hideaki Nakagawa, Masatomo Ichinose (Japan)

Sustainable Socio-Economic Development in Mining Communities: North-Central British Columbia Perspectives  
Jacqueline Nelsen, Malcolm Scoble, and Aleck Ostry (Canada)

Strategic Environmental Assessment of Mining Activity Impact on Nature and Landscape:  
Evaluation of Success  
Miroslav Martis, Emilie Pecharova, Libor Pechar, and Ivana Kasparova (Czech Republic)

**19:00 – 21:00 Reception**

**TUESDAY, NOVEMBER 17**  
**CASTLE ROOM**

**9:00 – 10:30    Session 23 – Mining & Reclamation, Rehabilitation and Mine-Site Closure**

**Chairs:    Dr. Dimitris Damigos (Greece)**  
**Dr. Antonio Nieto (USA)**

Hazard-Based Model Application to Prioritize and Manage Mine Site Rehabilitation Work in Manitoba

Caius Priscu, Wing Keat Wong, Ernest Armit and Doina Priscu (Canada)

The Use of Pulp and Paper Sludge in Mine Site Rehabilitation

Dilip Nag and Chloe Hammond (Australia)

Biotope Assessment and Evaluation as a Method to Quantify the External Costs Related to Surface Brown Coal Mining

Oldrich Peleska and Martin Kabrna (Czech Republic)

Use of Wood Ash for Road Stabilization

Anders Lagerkvist and Bo Lind (Sweden)

Enhancement of Water Recovery in Marble Mining and Processing

Anupam Bhatnagar (India)

**10:30 – 11:00    Coffee Break**

**11:00 – 12:30    Session 24 – Mine Tailings, Wastewater, Waste Disposal & Stability of Geotechnical Structures**

**Chair:        Professor Dilip Nag (Australia)**  
**Professor Adilson Curi (Brazil)**

Study on the Utilization of Flyash for Radioactive Waste Disposal

Takashi Sasaoka, Hideki Shimada and Kikuo Matsui (Japan)

Power Industry - Waste as Alternative Energy Source

Lidia Gawlik, Eugeniusz Mokrzycki and Alicja Uliasz-Bocheńczyk (Poland)

Satellite Image Based Strategies to Evaluate the Impact of Dismissed Mine Site: An Application to the Brajrajnagar Coal Mines Complex, India

Giuseppe Bonifazi, Lino Nardoni Silvia Serranti Fabio Volpe (Italy)

Geotechnical Aspects for the Optimization of Dump Design at Chinh Bac Mine Waste Dump in Vietnam

Marcus Fuchsschwanz, Martin Ziegler, Shakeel Ahmad, Jose Pateiro Fernandez, Per Nicolai Martens and Guido Deissmann (Germany)

Less-Invasive Borehole Technology With Non-Invasive Geophysical Applications in Determination of 3 D Electrical Resistivity Distribution for Contamination Problems

Ali Ismet Kanli; Zsuzsanna Nyári, Ali Ismet Kanli, János Stickel and Axel Tillmann (Turkey)

**12:40 – 14:00    Lunch Break**

**14:10 – 15:30 Session 25 – Mine Tailings, Wastewater, Waste Disposal & Stability of Geotechnical Structures**

**Chairs: Professor Toyoharu Nawa (Japan)  
Professor Steve Hall (Canada)**

An In-Line Process Designed for Wastewater Treatment and Tailings Stabilization  
J. Ming Zhuang and Tony Walsh (Canada)

Application of Fence Type Electrode Arrangement Method for Leakage Detection System of Waste Landfill

Sang-Jae Han, Byung-II Kim, Jong-Yun Kim, Dong-Wook Ahn, and Soo-Sam Kim (South Korea)

Thiosalt in Mining Waste: Reaction Kinetics Modelling

Jorge C Miranda-Trevino, Kelly Hawboldt, Christina Bottaro and Faisal Khan (Canada)

Tracing the Sulfur Cycle at an Abandoned High-Sulfide Tailings Impoundment Using Chemical and Isotope Techniques

Mike Moncur; Carol Ptacek, Bernhard Mayer, David Blowes and Jean Birks (Canada)

Flow Visualization and Tracer Gas Measurement for Gas and Particles Diffusion in Dead Spaces along a Mine Ventilation Airway

Kyuro Sasaki, Gabriel Arpa, Arif Widia Tmojo and Yuich Sugai (Japan)

**15:30 – 15:50 Coffee Break**

**16:00 – 17:30 Session 26 – Contaminated Soil, Water, Acid Mine Drainage & Waste Characterization**

**Chair: Professor Gerald J. Zagury (Canada)**

Role of DOM's as metal-binding capacity during AMD treatment in passive bioreactors

Carmen Mihaela Neculita (South Korea), Yves Dudal (France) and Gerald Zagury (Canada)

Technologies to Control Acid Mine Drainage Out of the Underground Cavities at Abandoned Metal Mines

Nobuyuki Masuda (Japan)

Lower Life Cycle Costs for Water Treatment

David Sanguinetti, David Kratochvil and Michael Bratty (Canada)

The Use of *Chromolaena Odorata* (L) King & H.E. Robins for the Treatment of Soil Contaminated with Metals and Crude Oil under Green House Conditions

Harrison Atagana (South Africa)

Recent Japanese Technology on Gaseous Fuel Recovery from Coal

Sohei Shimada (Japan)

**19:00 – 21:00 Banquet**

**Facilitated by: Dr. Raj K. Singhal**

**Banquet Speaker: Professor Carsten Drebenedt (Germany)**

**Introduced by: Dr. Meena Singhal**

**WEDNESDAY, NOVEMBER 18**  
**CASTLE ROOM**

**9:00 – 10:30    Session 27 – Contaminated Soil, Water, Acid Mine Drainage & Waste Characterization**

**Chairs:    Professor Christian Buhrow (Germany)**  
**Professor Michael Hitch (Canada)**

Extraction of Arsenate and Arsenite Species from Contaminated Soils: Can One Preserve the Original Oxidation State?

M. Giral, G.J. Zagury, L. Deschênes and J.-P. Blouin (Canada)

Microbial Genomics for Monitoring Metal and Sulphate Remediation

Susan Baldwin; Jana Schmidtova, Sangwon Lee, Steven Hallam, Al Mattes, Stephane Brienne and Ron Martel (Canada)

Identifying Heavy Metal Sources and Mobilization Processes in a Historic Metal Mining District using Natural Tracers

Holger Weiss and Michael Schubert (Germany)

Geoelectrical Surveys for Identification and Monitoring of AMD in Groundwaters Influenced by Lignite Open-Cast Mining

Markus Hirsch and Holger Weiss (Germany)

Competitive Heavy Metal Removal using Adsorbing Agents for Acid Mine Drainage

Jaeyoung Choi, Jeong-Gi Um and Ik Woo (South Korea)

**10:30 – 11:00    Coffee Break**

**11:00 – 12:30    Session 28 – Technologies to Enhance Environmental Performance – Reduce, Reuse & Recycle and New Product Development**

**Chairs:    Dr. Lidia Gawlik (Poland)**  
**Dr. Sohei Shimada (Japan)**

Beneficial Use of Fly Ash and Red Mud in Geopolymer Concrete

Josee Duchesne (Canada)

Recycle of Excavation Material from Tunneling

Marilena Cardu, Alessandro Giraudi, and Enrica Michelotti (Italy)

Uban Mine -- Sustainable Development in Construction

Toyoharu Nawa (Japan)

Microalgae-Derived Biofuel Production from Mine Waters

Steve Hall, Ashley Scott, Helen Shang, and Simon Shephard (Canada)

A Review of Mineral Carbon Sequestration: Technical Expectations and its Potential Roles in Carbon Management Policies

Sheila Ballantyne and Michael Hitch (Canada)

**12:30 – 14:00    Lunch Break**

**14:10 – 15:30 Session 29 – Technological Enhancements: Health, Safety & Environment****Chair: Professor Nader Ghafoori (USA)**

New Approach for Energy Efficient Blast Calculation  
Carsten Drebenstedt and Juraj Ortuta (Germany)

A Review on the Handling of Tailings from Gold and Copper Processing Plants in Papua New Guinea  
Jim Pae Lem (Papua New Guinea)

Characterization of Waste from Mining of Sand as Raw Material for Structural Ceramics  
Edilson Pissato, Lindolfo Soares and Wildor Theodoro Hennies (Brazil)

Pastefill - Stope Wall Interface Failure Mechanisms  
Euler De Souza; Stylianos Manaras (Canada)

Management and Control of Hazards in Mine Backfill Operations  
Euler De Souza, Jamie Archibald and Luc Beauchamp (Canada)

**15:30 – 15:50 Coffee Break****16:00 – 17:30 Session 30 – Technological Enhancements: Health, Safety & Environment****Chair: Dr. Mr. Jim Pae Lem (Papua New Guinea)**

Fluidized Bed and Pulverized Coal Combustion Residues for Secondary Pavements  
Nader Ghafoori, Hamidou Diawara and Li Wang (USA)

Numerical Thermo-Mechanical Modelling by FLAC on Coal Fires in North China  
Carsten Drebenstedt and Dorel Gusat (Germany)

REACH – What Does It Mean for Mining?  
Christian Buhrow and Lydia Engel (Germany)

Application of Paste Backfill In Underground Coal Fires  
Carsten Drebenstedt and Manoon Masniyom (Germany)

Discrete Tracer Movements Method for Mine Network Airways  
A. Widiatmojo, K.Sasaki, G. Arpa, and Y. Sugai (Japan)

Development of Gis-Based Emergency Management System for Underground Coal Mine Safety  
S.Salap, M.O.Karslioglu, and N.Demirel (Turkey)