

2014 - Sustainable Industrial Processing Summit & Exhibition



SHECHTMAN INTERNATIONAL SYMPOSIUM

Program



29 June - 04 July 2014
Fiesta Americana Condesa
Cancun, Mexico



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Welcome Message

Prof. Dan Shechtman - 2011 Nobel Prize Laureate in Chemistry

Scientific Conviction, Courage and Persistence



Imagine yourself making a new scientific discovery and nobody believing you. What would you have done if the most famous double Nobel laureate and head of a big scientific professional society publicly ridiculed you as a quasi-scientist in front of thousands of people in a scientific conference? How would you have behaved if, because of your discovery, the head of your research group fired you for "bringing disgrace" to the team? You would probably have quit university, science, technology and possibly even life.

That's not what Professor Dan Shechtman did. Probably because he is a materials and metals

scientist and engineer! He possesses deep scientific conviction, courage and persistence. He discovered quasi-crystals exactly 30 years ago, in 1982, while fast quenching an aluminum and magnesium alloy. This went against the established scientific knowledge which recognized only crystals and amorphous phases. Nobody believed him and furthermore he was ridiculed. A double Nobel laureate, fought against him for a decade and once ridiculed him in front of thousands of people at a scientific conference by saying: "There are no quasi-crystals, there are only quasi-scientists." the head of Shechtman's research group told him to "go back and read the textbook" and then fired him for "bringing disgrace" to the team.

This kind of behavior in society is normally called "bullying" and brings catastrophic consequences to people, sometimes even resulting in suicide. We frequently see these kinds of stories on TV and in journals these days in many different fields, but not in science.

Prof. Shechtman did not give up. His battle eventually forced scientists to change their fundamental concept of the matter. His discovery started to be recognized only about twelve years later the entire fundamental chemical knowledge of crystals and amorphous phases was completely changed by a materials engineer whose discovery reached wide recognition only about 20 years later and after all culminated in the awarding of the Nobel Prize in 2011, about 30 years after his original discovery.

Today the quasi-crystals he discovered through an electron microscope in a fast quenched metal alloy have found widespread sustainable applications from LEDs to engines and frying pans due to their non-stick, rust-free and heat-resistant properties.

His life story speaks volumes and is a great inspiration to young scientists and engineers who should possess the same type of scientific conviction, courage and persistence and should never withdraw when faced with difficulties wherever those difficulties might come from or whoever creates them.

This summit will honor the great lifetime achievements of Prof. Shechtman and will equally cover the important pillars of sustainability: (1) science, technology and industrial practice (2) political and social framework and (3) education in the entire cycle of materials science from mineral processing to metals extraction and the development of new materials.

Dr. Florian Kongoli

Summit Chairman and Organizer
Chairman FLOGEN Stars Outreach

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FLOGEN Technologies Inc.(USA/Canada)

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fkongoli@flogen.com

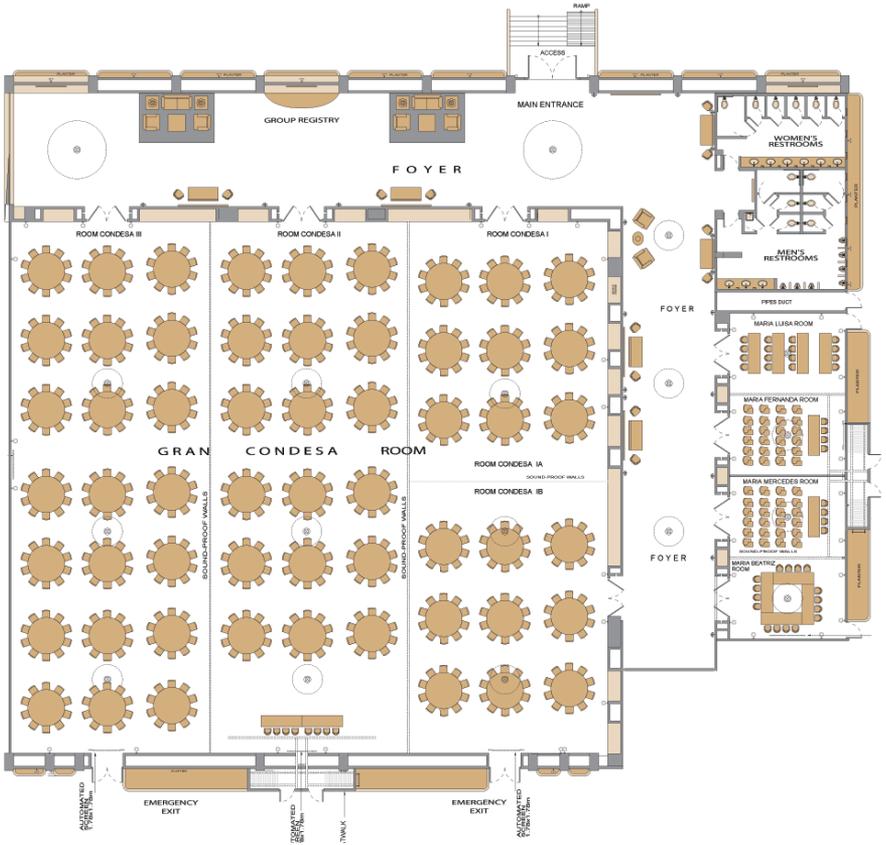


Calendar of Events

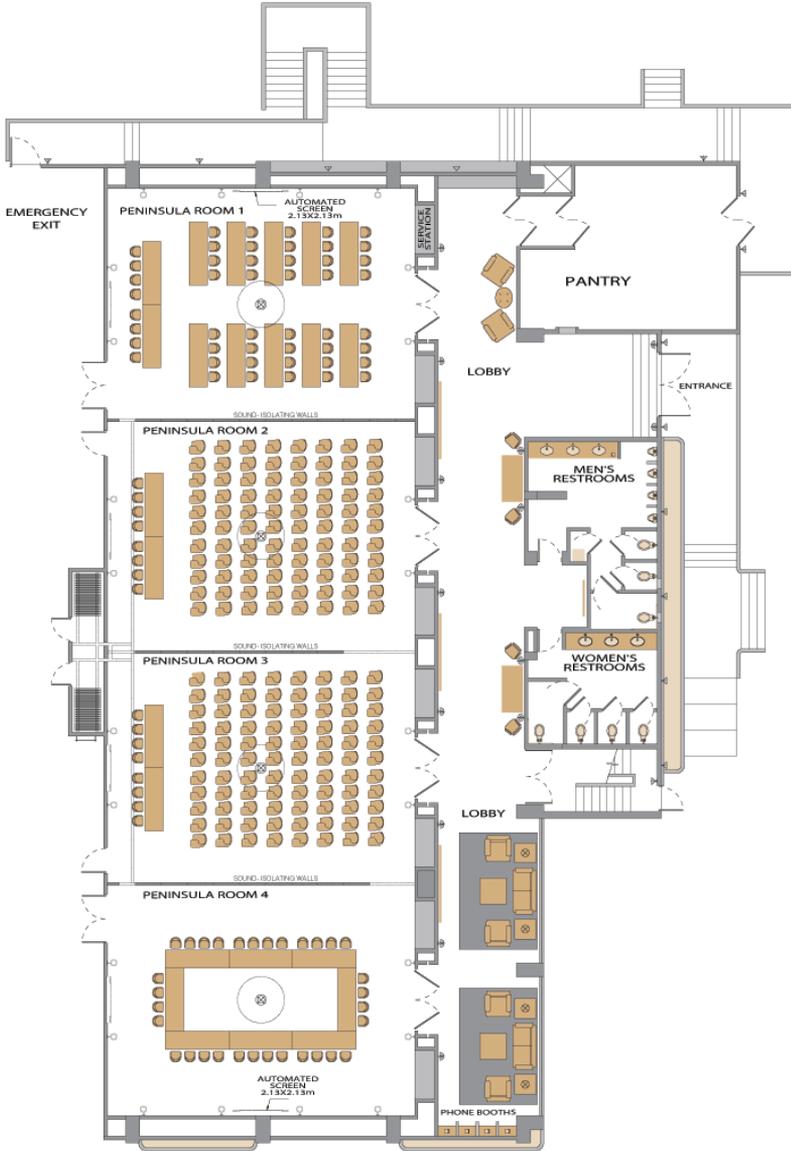
SUN	08:20 - 12:30 12:30 - 14:00 14:00 - 18:00 18:30 - 23:00	SHORT COURSES LUNCH SYMPOSIUM REGISTRATION POOL DECK AREA: Cocktail/full buffet dinner and LATINO DANCING SHOW plus after-show humor CONDOSA 3 CONDOSA 2 CONDOSA 1 MINING 1	BATTERY 1 PENINSULA 1 MOLTEN 1 RARE 1	QUASU 1 PENINSULA 2 IRON 1	MINERAL 1 PENINSULA 3 IRON 1	ENERGY 1 PENINSULA 4 IRON 1	ML & MF MULTI 1	
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	15:20 - 15:45							
	15:45 - 18:00							
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	09:40 - 11:10		SUMMIT PLENARY					
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	11:20 - 12:50		SUMMIT PLENARY					
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	15:20 - 15:45							
	15:45 - 18:00							
	18:00 - 20:30		MINING 5	BATTERY 5	RECYCLING 3	MOLTEN 5	IRON 5	ENERGY 5
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	09:40 - 11:10		SUMMIT PLENARY					
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	15:45 - 18:00							
SUN	18:00 - 20:30		MINING 6	BATTERY 7	RECYCLING 5	MOLTEN 7	IRON 7	ENERGY 7
	20:30 - 23:00							
	08:00 - 09:20		SUMMIT PLENARY					
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	09:40 - 11:10		SUMMIT PLENARY					
MON	11:10 - 11:20							
	11:20 - 12:50		SUMMIT PLENARY					
	12:50 - 14:00		BATTERY 8	RECYCLING 6	MOLTEN 8	IRON 8	ENERGY 8	
	14:00 - 15:20							
	15:20 - 15:45							
TUE	15:45 - 18:00		MINING 7	BATTERY 9	RECYCLING 7	MOLTEN 9	IRON 9	ENERGY 9
	18:00 - 20:30							
	20:30 - 23:00							
	08:00 - 09:20		SUMMIT PLENARY					
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WED	09:40 - 11:10		SUMMIT PLENARY					
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	11:20 - 12:50		SUMMIT PLENARY					
	12:50 - 14:00		BATTERY 10	RECYCLING 8	MOLTEN 10	IRON 10	ENERGY 10	
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THU	15:20 - 15:45							
	15:45 - 18:00							
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	20:30 - 23:00							
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	09:40 - 11:10		SUMMIT PLENARY					
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	12:50 - 14:00		BATTERY 12	RECYCLING 10	MOLTEN 12	IRON 12	ENERGY 12	
SAT	14:00 - 15:20							
	15:20 - 15:45							
	15:45 - 18:00							
	18:00 - 20:30		MINING 9	BATTERY 13	RECYCLING 11	MOLTEN 13	IRON 13	ENERGY 13
	20:30 - 23:00							
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	11:20 - 12:50		SUMMIT PLENARY					
MON	12:50 - 14:00		BATTERY 14	RECYCLING 12	MOLTEN 14	IRON 14	ENERGY 14	
	14:00 - 15:20							
	15:20 - 15:45							
	15:45 - 18:00							
	18:00 - 20:30		MINING 10	BATTERY 15	RECYCLING 13	MOLTEN 15	IRON 15	ENERGY 15
TUE	20:30 - 23:00							
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	09:40 - 11:10		SUMMIT PLENARY					
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	12:50 - 14:00		BATTERY 16	RECYCLING 14	MOLTEN 16	IRON 16	ENERGY 16	
	14:00 - 15:20							
	15:20 - 15:45							
	15:45 - 18:00							
THU	18:00 - 18:30							
	18:30 - 21:30		MINING 11	BATTERY 17	RECYCLING 15	MOLTEN 17	IRON 17	ENERGY 17
	21:30 - 23:00							
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FRI	09:40 - 11:10		SUMMIT PLENARY					
	11:10 - 11:20							
	11:20 - 12:50		SUMMIT PLENARY					
	12:50 - 14:00		BATTERY 18	RECYCLING 16	MOLTEN 18	IRON 18	ENERGY 18	
	14:00 - 15:20							
SAT	15:20 - 15:45							
	15:45 - 18:00							
	18:00 - 20:30		MINING 12	BATTERY 19	RECYCLING 17	MOLTEN 19	IRON 19	ENERGY 19
	20:30 - 23:00							
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	09:40 - 11:10		SUMMIT PLENARY					
	11:10 - 11:20							
	11:20 - 12:50		SUMMIT PLENARY					
	12:50 - 14:00		BATTERY 20	RECYCLING 18	MOLTEN 20	IRON 20	ENERGY 20	
MON	14:00 - 15:20							
	15:20 - 15:45							
	15:45 - 18:00							
	18:00 - 20:30		MINING 13	BATTERY 21	RECYCLING 19	MOLTEN 21	IRON 21	ENERGY 21
	20:30 - 23:00							
TUE	08:00 - 09:20		SUMMIT PLENARY					
	09:20 - 09:40							
	09:40 - 11:10		SUMMIT PLENARY					
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	11:20 - 12:50		SUMMIT PLENARY					
WED	12:50 - 14:00		BATTERY 22	RECYCLING 20	MOLTEN 22	IRON 22	ENERGY 22	
	14:00 - 15:20							
	15:20 - 15:45							
	15:45 - 18:00							
	18:00 - 20:30		MINING 14	BATTERY 23	RECYCLING 21	MOLTEN 23	IRON 23	ENERGY 23
THU	20:30 - 23:00							
	08:00 - 09:20		SUMMIT PLENARY					
	09:20 - 09:40							
	09:40 - 11:10		SUMMIT PLENARY					
	11:10 - 11:20							
FRI	11:20 - 12:50		SUMMIT PLENARY					
	12:50 - 14:00		BATTERY 24	RECYCLING 22	MOLTEN 24	IRON 24	ENERGY 24	
	14:00 - 15:20							
	15:20 - 15:45							
	15:45 - 18:00							
SAT	18:00 - 20:30		MINING 15	BATTERY 25	RECYCLING 23	MOLTEN 25	IRON 25	ENERGY 25
	20:30 - 23:00							
	08:00 - 09:20		SUMMIT PLENARY					
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	09:40 - 11:10		SUMMIT PLENARY					
SUN	11:10 - 11:20							
	11:20 - 12:50		SUMMIT PLENARY					
	12:50 - 14:00		BATTERY 26	RECYCLING 24	MOLTEN 26	IRON 26	ENERGY 26	
	14:00 - 15:20							
	15:20 - 15:45							
MON	15:45 - 18:00							
	18:00 - 20:30		MINING 16	BATTERY 27	RECYCLING 25	MOLTEN 27	IRON 27	ENERGY 27
	20:30 - 23:00							
	08:00 - 09:20		SUMMIT PLENARY					
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TUE	09:40 - 11:10		SUMMIT PLENARY					
	11:10 - 11:20							
	11:20 - 12:50		SUMMIT PLENARY					
	12:50 - 14:00		BATTERY 28	RECYCLING 26	MOLTEN 28	IRON 28	ENERGY 28	
	14:00 - 15:20							
WED	15:20 - 15:45							
	15:45 - 18:00							
	18:00 - 20:30		MINING 17	BATTERY 29	RECYCLING 27	MOLTEN 29	IRON 29	ENERGY 29
	20:30 - 23:00							
	08:00 - 09:20		SUMMIT PLENARY					
THU	09:20 - 09:40							
	09:40 - 11:10		SUMMIT PLENARY					
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	11:20 - 12:50		SUMMIT PLENARY					
	12:50 - 14:00		BATTERY 30	RECYCLING 28	MOLTEN 30	IRON 30	ENERGY 30	
FRI	14:00 - 15:20							
	15:20 - 15:45							
	15:45 - 18:00							
	18:00 - 20:30		MINING 18	BATTERY 31	RECYCLING 29	MOLTEN 31	IRON 31	ENERGY 31
	20:30 - 23:00							
SAT	08:00 - 09:20		SUMMIT PLENARY					
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	11:10 - 11:20							
	11:20 - 12:50		SUMMIT PLENARY					
SUN	12:50 - 14:00		BATTERY 32	RECYCLING 30	MOLTEN 32	IRON 32	ENERGY 32	
	14:00 - 15:20							
	15:20 - 15:45							
	15:45 - 18:00							
	18:00 - 20:30		MINING 19	BATTERY 33	RECYCLING 31	MOLTEN 33	IRON 33	ENERGY 33
MON	20:30 - 23:00							
	08:00 - 09:20		SUMMIT PLENARY					
	09:20 - 09:40							
	09:40 - 11:10		SUMMIT PLENARY					
	11:10 - 11:20							
TUE	11:20 - 12:50		SUMMIT PLENARY					
	12:50 - 14:00		BATTERY 34	RECYCLING 32	MOLTEN 34	IRON 34	ENERGY 34	
	14:00 - 15:20							
	15:20 - 15:45							
	15:45 - 18:00							
WED	18:00 - 20:30							

Meeting Rooms Diagram

Condesa and Maria's Rooms



Peninsula Rooms



4 MEETING ROOMS
420.08 M² CAP. 290 PAX.

Committees

This summit is being organized by an international committee spanning six continents and representing major industrial ferrous, nonferrous, materials and recycling companies as well as universities from around the world. Please select a continent below to view the associated organizers.



AFRICA

- Rauf **Hurman Eric**, Wits University, South Africa

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- Kuo-Chih **Chou**, University of Science and Technology Beijing, China
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- Noam **Eliaz**, Tel Aviv University, ISRAEL
- Nahum **Frage**, Ben-Gurion University of the Negev, Israel
- Ehud **Gazit**, Tel Aviv University, Israel
- Aharon **Gedanken**, Bar-Ilan University, Ramat-Gan Israel
- Kohmei **Halada**, National Institute for Materials Science, Japan
- Fakhru **Islam**, Bangladesh University of Engineering and Technology, Bangladesh
- Tom **Jacob**, Indian Institute of Science Bangalore, India
- Gagik **Karamyan**, Institute of Chemical Physics, Armenia
- Shin-ya **Kitamura**, Tohoku University, Japan
- Arnold **Kiv**, Ben-Gurion University of the Negev, Israel
- Pavel A. **Kozlov**, Chelyabinsk Zinc Plant, Russia
- Ali Akbar **Mottahedi**, ROLLING equipment and Aluminum Technology, Iran
- Peter V. **Polyakov**, SFU, Russia
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- Khalil **Qureshi**, Pakistan Materials Research Society, Pakistan
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- Shreekant **Somany**, Somany Ceramics Limited, India

- Ranganathan **Srinivasa**, Indian Institute of Science, India
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- Prakash **Swatantra**, Academic Scientific and Industrial Research New Delhi (Ac-SIR), India
- Haim **Taitelbaum**, Bar-Ilan University, Israel
- Reshef **Tenne**, Helen and Martin Kimmel Center for Nanoscale Science, Israel
- Somnuk **Sirisoonthorn**, National Metal and Materials Technology Center, Thailand
- Alexander G. **Vorobiev**, Ore & Metals Publishers, Russia
- Tingan **Zhang**, Northeastern University, China
- Shmuel **Zilberg**, Hebrew University, Israel

AUSTRALIA

- Chris **Anderson**, Massey University, New Zealand
- Veena Sahajwalla, University of New South Wales, Australia
- Jeffrey **Sellar**, Monash University, Australia
- Raman **Singh**, Monash University (Melbourne), Australia

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- Dinesh **Pathak**, University of Pardubice, Czech Republic
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- Musa **Rizaj**, University of Prishtina, Kosovo
- Carsten **Schwandt**, University of Cambridge, Oman and United Kingdom
- Thomas **Schierle**, Hoppecke, Germany
- Seshadri **Seetharaman**, Sweden

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- Etnik **Sopoti**, ALMEX, Albania
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- Onuralp **Yucel**, Istanbul Technical University, Turkey
- Dragana **Zivkovic**, University of Bor, Serbia
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- Jurgen **Zuchowski**, GDMB, Germany

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- John A. **Meech**, British Columbia University, Canada
- G.V. **Shankar**, Innovation Saskatchewan, Canada
- Alex **Zunger**, Colorado University, USA

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- José Carlos **D'Abreu**, Pontifical Catholic University, Brazil
- Horacio Leal Barbosa **Filho**, ABM, Brazil
- Luiz de Andrade **Lima**, Federal University of Bahia, Brazil
- Enrique **Miranda**, IIMCh, Chile
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- Margarita Eugenia Gutiérrez **Ruiz**, UNAM, Mexico
- André Carlos **Silva**, Federal University of Goiás, Brazil
- Luis **Sobral**, CETEM, Brazil
- Mauricio **Torem**, PUC/ RIO, Brazil
- Alfredo Olaya **Zavala**, InterMet, Peru

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- World Academy of Ceramics
- European Materials Research Society
- Institute of Materials, Minerals and Mining
- Ecomaterials Forum
- Chilean Institute of Mining Engineers
- The American Ceramic Society
- Israel Chemical Society
- GDMB Society of Metallurgists and Miners
- The Southern African Institute of Mining and Metallurgy
- Brazilian Metallurgy, Materials and Minerals Association
- Cobalt Development Institute
- The Chemical Society of Pakistan
- Materials Research society of Serbia
- The Australian Ceramic Society
- Thai Ceramics Society
- Indian Council of Ceramic Tiles and Sanitaryware
- Sociedade Portuguesa de Quimica
- Association of Innovative Entrepreneurship CR
- Hellenic Metallurgical Society
- The Slovenian Chemical Society
- Mexican Society of Physics
- Association of Mining Engineers, Metallurgists and Geologists of Mexico

- Mexican Society of Science & Technology of Surfaces & Materials

Media

- Minerals Engineering International
- Steel Mint

Academic Institutions

- Centre for Natural Resources and the Environment
- National R&D Institute for Nonferrous and Rare Metals
- The National Metal and Materials Technology Center
- Ariel University
- Technion Israel Institute of Technology
- Bar-Ilan University
- Center for Research and Advanced Studies
- Iowa State University

Journals and Publishers

- Maney Publishing
- Mineral Processing & Extractive Metallurgy
- Copper Worldwide
- "Ore and Metals" Publishing House
- Journal of Mining and Metallurgy
- Journal of International
- Environmental Application & Science
- ChemElectroChem Journal
- ChemistryViews
- Nanomaterials and Energy
- Critical Reviews in Solid State and Materials Sciences

Partner Airlines

- SKYTEAM airlines
- American Airlines (AA) and One World Group
- Air Canada
- AIR FRANCE & KLM
- AVIS Rental Car

Exhibition Sponsor

- Thermo-Calc

Social Events

Sunday: Cocktail/full buffet dinner and LATINO DANCING Show plus after-show humor in the Pool Deck area. **Attire:** Business Casual.

Monday: Cocktail/full buffet dinner and CIRCUS KUZA SHOW plus after-show humor on in the Condesa Ballroom. **Attire:** Business Casual.

Tuesday: Cocktail/full buffet dinner and MEXICAN DANCING Show in the Beach front area and after-show humor and drinks in the Pool Deck. **Attire:** Business Casual.

Wednesday: Cocktail Reception/Dinner Gala/VIP Speeches/Awards Ceremony and INTERNATIONAL DANCING SHOW in the Condesa Foyer/Ballroom. **Attire:** Black tie/Business.

Every Day: Organized Entertainment activities after hours (Pool and beach volleyball, language and dance lessons, etc)

NOTE: Free Participation of all attendees guests/companion in all social activities, group dinners and shows

Companion Activities

Free Participation of all attendees guests/companion in all social activities, group dinners and shows

The organizers have assured reduced fees for numerous extra curriculum activities during your stay before, during or after the symposium. These include Aqua-world, High Speed Race Cars, and night life activities.

Detailed information can be found at:

<http://www.flogen.org/ShechtmanSymposium/?gid=41>

For on-site booking on site contact the organizers.

Summit Plenary Speakers

(Preliminary as of June 16, 2014 - to be updated on site)

SUMMIT PLENARY 1: Mon, June 30, 2014, Condesa Ballroom, 9:40 to 12:50

- **Florian Kongoli**, FLOGEN, Opening Speech: Sustainability (Part 1): The Role of Science, Engineering, Management and Politics: Reflections from Dan Shechtman Story.
- **Dan Shechtman**, (2011 Nobel Prize Laureate), Professor, Technion Institute of Technology and Iowa State Univ.: The Discovery of Quasi-Periodic Materials
- **Oscar Gonzalez Rocha**, CEO, Southern Copper Corporation: Sustainable Mining in the 21st Century
- **Fransaeer Dirk**, Managing Director, VITO: Sustainable Organization of a European Research Centre
- **George F. Smoot**, (2006 Nobel Prize Laureate); U. of California at Berkley, Mapping the Universe using Physics and Materials Sciences: Giving Sustainability a Universal Perspective.
- **Pierre Arcand**, Minister of Energy, Natural Resources and Northern Mining Plan, QC, Canada: Sustainable Development of New Mining and Energy Projects: Northern Plan

SUMMIT PLENARY 2: Tue, July 1, 2014, Condesa Ballroom, 9:40 to 12:50

- **Derek Fray**, Department of Materials Science and Metallurgy Univ. of Cambridge: University Technology Transfer - Highs and Lows
- **Kohmei Halada**, Strategic Advanced Materials, National Institute for Materials Science: Science has won against Economy - Japanese GENSO SENRYAKU
- **Jean-Marie Dubois**, CNRS: Push-Pull Alloys and the Heritage of Dan Shechtman
- **Vasant Kumar**, Univ. of Cambridge, United Kingdom: Developing Future Scenarios in Energy and Sustainability
- **Stéphane P.A. Bordas**, Univ. of Luxembourg, **Elias C. Aifantis**, Aristotle University of Thessaloniki, Greece: Challenges ahead for modelling and simulation in mechanics: from engineering to medicine
- **Tarja Halonen**, Former President of Finland: Reflections on Sustainable Development

SUMMIT PLENARY 3: Wed, July 2, 2014, Condesa Ballroom, 9:40 to 12:50

- **Thomas Buenger**, Aurubis AG, Germany: Environmentally Sound Copper Smelting and Refining
- **John A. Meech**, CERM3, Univ. of British Columbia, Canada: Sustainable Mining: Is that really possible?
- **André Carlos Silva**, Federal Univ. of Goiás, Brazil: New Developments in Sustainable Mining in Brazil
- **Shin-Ya Kitamura**, Institute of Multidisciplinary Research for Advanced Materials, Tohoku Univ., Japan: Bottleneck and Future Issues of Steel Production in Japan
- **Katerina Aifantis**, Univ. of Arizona United States: Next Generation Secondary Batteries
- **Cyro Takano**, Univ. of Sao Paulo, Brazil: Challenges of High Temperature Processing in Metallurgical Industries: Some highlights

SUMMIT PLENARY GALA: Wed, July 2, 2014, Condesa Ballroom, ~19:00 to 20:50

- **Florian Kongoli**, FLOGEN, Sustainability (Part 2): A Challenge for Scientists, Engineers and Society
- **Dan Shechtman**, (2011 Nobel Prize Laureate), Technion Institute of Technology and Iowa State Univ.: Scientific Blunders
- **Randy W. Schekman** (2013 Nobel Prize Laureate), Univ. of California, Berkeley: The challenge of publishing your most important work in 21st Century

SUMMIT PLENARY 4: Thu, July 3, 2014, Condesa Ballroom, 9:40 to 12:30

- **Rodrigo Martins**, New University of Lisbon: The Relevancy of Materials in Boosting Innovation: From Raw Materials to Creative Applications
- **Martin Pech-Canul**, CINVESTAV: The Sustainable Role of the Modified Central Paradigm of Materials Science and Engineering in the Development of New Materials
- **Manfred Mauntz**, cmc Instruments GmbH Germany (Deutschland): The impact of sensors for science and technology in the modern industrial society
- **Olof Forsen**, Aalto University Finland: The role of hydrometallurgy in sustainable production of metals
- **Antonio Peres**, Engineering Faculty Federal University of Minas Gerais, Brazil: Mineral Processing Overview in Brazil

Scientific Program

Oral Presentations:

Monday:

SESSION: MiningMonAM	1st Intl. Symp. on Sustainable Mining Operations
Mon June, 30 2014	Room: Condesa I
<u>Session Chair:</u> TBA	

08:00 AM: [MiningMonAM1] Keynote
Mining Issues and Advancement in Turkey Towards Sustainability
N. Demirel¹; A. Arol¹; ¹Middle East Technical University, Ankara, Turkey;

08:20 AM: [MiningMonAM2] Invited
Development of Sustainable Small Businesses in Mining-affected Communities
S. Mcfaul¹; J. Meech²; A. Xavier³; ¹SEF Canada LTD., Vancouver, Canada; ²University of British Columbia, Canada; ³UBC-Mining, Vancouver, Canada;

08:40 AM: [MiningMonAM3]
Gold, Silver and Copper Phytomining Using Helianthus Annuus L. (sunflower) Grown in Mine Tailings Amended With Cyanide
V. Wilson Corral¹; H. Gamboa Baez¹; J. Sarmiento Sanchez¹; C. Anderson²;
¹Autonomous University of Sinaloa, Culiacan, Mexico; ²Massey University, Palmerston North, New Zealand;

09:00 AM: [MiningMonAM4]
Can Phytoextraction Support the Gold Mining Industry in Developing Countries? Case Study for Indonesia
C. Anderson¹; J. Meech²; D. Krisnayanti³; ¹Massey University, Palmerston North, New Zealand; ²University of British Columbia, Vancouver, Canada; ³University of Mataram, Mataram, Indonesia;

09:20 AM Break

09:40 AM SUMMIT PLENARY

11:00 AM Break

11:20 AM SUMMIT PLENARY

12:30 PM LUNCH

SESSION:
MiningMonPM

**1st Intl. Symp. on Sustainable Mining
Operations**

Mon June, 30 2014

Room: Condesa I

Session Chair: TBA

02:00 PM: [MiningMonPM5]

Capabilities of the Present-day Engineering to Affect Global Political Processes

A. Brodt¹; ¹S.G.B.D. Technologies Ltd, Tel Aviv, Israel;

02:20 PM: [MiningMonPM6]

CO₂ Gas Storage as a New Alternative to Extend the Life Cycle of Depleted Oil and Gas Fields

T. Bodi¹; ¹Research Institute of Applied Earth Sciences University of Miskolc, Miskolc, Hungary;

02:40 PM: [MiningMonPM7] Keynote

Changing the Habits of Artisanal Miners

M. Veiga¹; **J. Meech**²; **G. Angeloci**¹; ¹UBC-MINING, Vancouver, Canada;
²University of British Columbia, Vancouver, Canada;

03:00 PM: [MiningMonPM8] Invited

Recognizing Confined Space Issues at Mine Reclamation Sites

J. Meech¹; **L. Mohammadi**²; ¹University of British Columbia, Vancouver, Canada;
²UBC-MINING, Vancouver, Canada;

03:20 AM Break - Poster Session

03:45 AM Organized Activities

SESSION:
BatteryMonAM

**1st Intl. Symp. on Sustainable Secondary Battery
Manufacturing and Recycling**

Mon June, 30 2014

Room: Condesa II

Session Chair: TBA

08:00 AM: [BatteryMonAM1] Plenary

A Metal-Free Organic-Based Aqueous Flow Battery for Massive Electrical Energy Storage

M. Aziz¹; ¹Harvard School of Engineering and Applied Sciences, Cambridge, United States;

08:20 AM: [BatteryMonAM2] Keynote

Recycle of Spent Lead Acid Battery Pastes via a New Hydrometallurgical Method

J. Yang¹; **W. Zhang**¹; ¹Huazhong University of Science and Technology, Wuhan, China;

08:40 AM: [BatteryMonAM3] Invited

Modeling Damage in Nanostructured Anodes

K. Aifantis¹; ¹University of Arizona, Tucson, United States;

09:00 AM: [BatteryMonAM4] Invited

Potentialities of Redox-active Organic Structures for Low-Polluting Li-Ion Batteries

P. Poizot¹; **F. Dolhem**²; ¹Institut des Matériaux Jean Rouxel (IMN) - UMR6502, NANTES, France; ²Laboratoire de Glycochimie, des Antimicrobiens et des Agroressources (LG-2A), FRE CNRS 3517, AMIENS, France;

09:20 AM Break

09:40 AM SUMMIT PLENARY

11:00 AM Break

11:20 AM SUMMIT PLENARY

12:30 PM LUNCH

SESSION: **1st Intl. Symp. on Sustainable Secondary Battery Manufacturing and Recycling**

Mon June, 30 2014 Room: Condesa II

Session Chair: TBA

02:00 PM: [BatteryMonPM5] Plenary

Nano-structured Carbon From Graphite Through Molten Salt Electrochemistry - Preparation, Characterisation, Application in Lithium Ion Batteries -

C. Schwandt¹; **Q. Xu**²; **A. Dimitrov**³; **R. Das Gupta**⁴; **A. Kamali**⁵; **D. Fray**⁶;
¹University of Nizwa, Nizwa, Oman; ²Northeastern University, Shenyang, China; ³SS. Cyril and Methodius University, Skopje, Macedonia; ⁴ELECTROVAYA, Mississauga, Canada; ⁵University of Cambridge, United Kingdom; ⁶Department of Materials Science and Metallurgy, University of Cambridge, United Kingdom;

02:20 PM: [BatteryMonPM6] Invited

The Li-s System: Challenges and Analytical Investigation of the Failure Mechanisms Involved

H. Schneider¹; ¹BASF SE, Tucson, United States;

02:40 PM: [BatteryMonPM7] Invited

Paste to Paste Recycling of Lead Acid Batteries

V. Kumar¹; ¹University of Cambridge, United Kingdom

03:00 PM: [BatteryMonPM8] Invited

Hierarchical Porous Si-based Electrodes for Minimal Volumetric Expansion

S. Lee¹; ¹University of Colorado at Boulder, Louisville, USA;

03:20 AM Break - Poster Session

03:45 AM Organized Activities

SESSION: Rare-
EarthMonAM

1st Intl. Symp. on Rare Earth and Platinum Group
Metals:Managing and Processing

Mon June, 30 2014

Room: Condesa III

Session Chair: TBA

08:00 AM: [Rare-EarthMonAM1] Keynote

Chalmers University of Technology Research on Critical Materials for a Sustainable Society

T. Retegan¹; C. Ekberg¹; B. Steenari¹; C. Tunsu¹; ¹CHALMERS University of Technology, Gothenburg, Sweden;

08:20 AM: [Rare-EarthMonAM2]

Extraction of Scandium From Lateritic Nickel Ore

A. Kaya¹; **Y. Topkaya**¹; ¹METU, Ankara, Turkey;

08:40 AM: [Rare-EarthMonAM3]

High Efficient Recovery of Pt From Spent Pem Fuel Cells by Hydrometallurgy : Platinum Concentration in Solution by Ion Exchange Resin

E. Billy¹; R. Laucournet¹; D. Vincent¹; ¹CEA, Grenoble, France;

09:00 AM: [Rare-EarthMonAM4]

The Environmental Impact of Plasma-based Smelting of Spent Catalysts for Precious Metal Recovery

S. Ismail¹; D. Deegan¹; T. Johnson¹; ¹TETRONICS International, Swindon, SN3 4DE, United Kingdom;

09:20 AM Break

09:40 AM SUMMIT PLENARY

11:00 AM Break

11:20 AM SUMMIT PLENARY

12:30 PM LUNCH

SESSION:

RecyclingMonPM

Mon June, 30 2014

Session Chair: TBA

2nd Intl. Symp. on Sustainable Materials
Recycling Processes and Products

Room: Condesa III

02:00 PM: [RecyclingMonPM5] Plenary

Technological Approach for Concentrating Minor Rare Metals From E-wastes in Japan

S. Owada¹; ¹WASEDA University, Tokyo, Japan;

02:20 PM: [RecyclingMonPM6]

Carbstone Process: A Novel Technology for the Valorisation of Steel Slags and CO₂

M. Quaghebeur¹; P. Nielsen¹; D. Van Mechelen²; O. Malek²; B. Laenen¹; ¹VITO NV, MOL, Belgium; ²RECMIX, 3600, Belgium;

02:40 PM: [RecyclingMonPM7]

Experiences on Leaching of Secondary Raw Materials for Hydrometallurgical Recovery of Valuable Metals

O. Forsen¹; J. Aromaa¹; ¹AALTO University, Espoo, Finland;

03:00 PM: [RecyclingMonPM8]

Unlocking the Potential of Ferrous and Non-ferrous Metal Scrap in Fine-grained Sorting Residue

M. Berwanger¹; D. Ruessmann¹; T. Pretz¹; ¹Department of Processing and Recycling, RWTH AACHEN University, 52062 Aachen, Germany;

03:20 AM Break - Poster Session

03:45 AM Organized Activities

SESSION: 2nd Intl. Symp. on Sustainable Molten Salt and MoltenMonAM Ionic Liquid Processing

Mon June, 30 2014 Room: Peninsula I

Session Chair: TBA

08:00 AM: [MoltenMonAM1] Plenary

Molten Ionic Media in Service for Sustainable Chemistry and the Environment

R. Fehrmann¹; ¹DTU Chemistry, Lyngby, Denmark;

08:20 AM: [MoltenMonAM2]

Electrochemical Reduction of Uranium (iv) Oxide and Its Analogues in Molten Lithium Chloride-potassium Chloride Eutectic

L. Brown¹; R. Abdulaziz¹; S. Simons¹; D. Inman¹; D. Brett¹; **P. Shearing**¹; ¹University College London, London, United Kingdom;

08:40 AM: [MoltenMonAM3]

Microscopy Analysis of Copper Slag With Aspect of Reprocessing Copper by Flotation

Z. Markovic¹; Z. Stirbanovic²; D. Milanovic¹; D. Urosevic¹; F. Kongoli³; ¹University of Belgrade - Technical Faculty in Bor, Serbia and Montenegro (formerly Yugoslavia); ²DIPL. MIN.ENG., Bor, Serbia and Montenegro (formerly Yugoslavia); ³FLOGEN Technologies INC, Mont-Royal, Canada;

09:00 AM: [MoltenMonAM4]

Phase Equilibrium in Lanthanide Halide Systems: Comparison Between the Mbr-labr3 and Mbr-cebr3 Systems

W. Gong¹; M. Gaune Escard²; ¹HUIZHOU University, Huizhou, China; ²ECOLE POLYTECHNIQUE, IUSTI, Universite De Provence, Marseille, France;

09:20 AM Break

09:40 AM SUMMIT PLENARY

11:00 AM Break

11:20 AM SUMMIT PLENARY

12:30 PM LUNCH

SESSION: **2nd Intl. Symp. on Sustainable Molten Salt and Ionic Liquid Processing**
MoltenMonPM

Mon June, 30 2014 Room: Peninsula I

Session Chair: TBA

02:00 PM: [MoltenMonPM5] Plenary

Creation of New Industry by Novel Molten Salt Electrochemical Processes

Y. Ito¹; ¹IMSEP CO.,LTD., Kyoto, Japan;

02:20 PM: [MoltenMonPM6]

The Molten Salt Electrolytic Winning of Metal and Oxygen From Lunar Materials

C. Schwandt¹; I. Crawford²; D. Fray³; ¹University of NIZWA, Nizwa, Oman; ²Department of Earth and Planetary Sciences, BIRKBECK College, University of London, London, United Kingdom; ³Department of Materials Science and Metallurgy, University of CAMBRIDGE, Cambridge, United Kingdom;

02:40 PM: [MoltenMonPM7]

Chemical and Electrochemical Controls of Rare-earth and Noble Metal Compounds and Processing of High Performance Materials by Using Molten Salts as Reaction Media

T. Yamamura¹; ¹Tohoku University, Sendai, Japan;

03:00 PM: [MoltenMonPM8]

Electrochemical Properties of Neodymium in Molten Salts

M. Mery¹; P. Masset¹; ¹FRAUNHOFER UMSICHT, Sulzbach-Rosenberg, Germany;

03:20 AM Break - Poster Session

03:45 AM Organized Activities

SESSION: **Quasi-crystalsMonAM**

2nd Intl. Symp. on Quasi-crystals, Metallic Alloys, Composites, Ceramics and Nano Materials

Mon June, 30 2014 Room: Peninsula II

Session Chair: TBA

08:00 AM: [Quasi-crystalsMonAM1] Plenary

Ultra-thin Graphene Coating and Nanocrystalline Alloy Structure: the Novel Nanotechnologies for Remarkable Corrosion Resistance

R. Singh¹; ¹MONASH University, Monash University, Australia;

08:20 AM: [Quasi-crystalsMonAM2] Keynote

Electrochemically Deposited Calcium Phosphate Coatings for Orthopedic and Dental Implants

N. Eliaz¹; ¹TEL-AVIV University, Tel-Aviv, Israel;

08:40 AM: [Quasi-crystalsMonAM3]

Preparing the Melt for the Amorphous State, Aimed at Producing Nanocrystal Materials Possessing Improved Magnetic Properties

V. Tsepelev¹; V. Belozero²; Y. Starodubtsev²; V. Konashkov¹; V. Vyukhin¹; A. Latypova¹; ¹Boris Yeltzin Ural Federal University, Ekaterinburg, Russian Federation; ²GAMMAMET Research & Production Enterprise, Ekaterinburg, Russian Federation;

09:00 AM: [Quasi-crystalsMonAM4]

Numerical Simulation and Theoretical Modeling of Longitudinal and Transverse Compressive Failure in Fiber Reinforced Composite Materials

T. Nadabe¹; N. Takeda¹; ¹Department of Advanced Energy, the University of Tokyo, Kashiwa-Shi, Japan;

09:20 AM Break

09:40 AM SUMMIT PLENARY

11:00 AM Break

11:20 AM SUMMIT PLENARY

12:30 PM LUNCH

SESSION:
CeramicMonPM

**1st Intl. Symp. on Composite, Ceramic and Nano
Materials Processing, Characterization and
Applications Symposium**

Mon June, 30 2014 Room: Peninsula II

Session Chair: TBA

02:00 PM: [CeramicMonPM5] Plenary

Mechanical Properties and Microstructure Characterization of Al-Si Cast Alloys Formation Using Carbide Nanoparticles.

M. Zinigrad¹; **K. Borodianskiy**²; R. Maev²; ¹Ariel University, Israel; ²University of Windsor, Canada;

02:20 PM: [CeramicMonPM6]

Processing of Boron Carbide Particulate Substrates by Direct Nitridation

M. Pech Canul¹; J. Flores Garcia¹; S. Gallardo Heredia¹; H. Hernandez Garcia²; J. Lopez Cuevas¹; ¹CINVESTAV-SALTILLO, Ramos Arizpe, Mexico; ²COMIMSA, Saltillo, Mexico;

02:40 PM: [CeramicMonPM7]

Ceramic Powder Obtained Via Hybrid Inorganic-organic Polymer Nanocomposites

A. Sarbu¹; A. Radu¹; L. Mara²; V. Fruth³; T. Velea²; A. Gradinaru²; A. Lungu¹; S. Garea⁴; C. Damian⁴; H. Mandal⁵; F. Yardim⁶; ¹National Research- Development Institute for Chemistry and PETRO Chemistry- ICECHIM BUCHAREST, ROMANIA, Bucharest, Romania; ²National Research- Development Institute for NONFERROUS and RARE METALS- IMNR BUCHAREST, ROMANIA, Pantelimon, Romania; ³Institute for PHYSICAL Chemistry "ILIE MURGULESCU" of the ROMANIAN ACADEMY- BUCHAREST, ROMANIA, Bucuresti, Romania; ⁴Univ. "POLITEHNICA" BUCHAREST, ROMANIA, Bucharest, Romania; ⁵SABANCI Univ. ISTANBUL, Turkey; ⁶TECHNICAL Univ., Istanbul, Turkey;

03:00 PM: [CeramicMonPM8]

High Temperature Synthesis of Zircon-Mullite-Zirconia Refractory Ceramic Composite From Clay Based Materials

F. Aramide¹; K. Alaneme¹; P. Olubambi²; J. Borode¹; ¹Department of Metallurgical and Materials Engineering, Federal University of Technology, Akure, Nigeria; ²APPLIED MICROSCOPY and TRIBOELECTROCHEMICAL Research Laboratory, Department of Chemical and Metallurgical Engineering, TSHWANE University of Technology, Pretoria, South Africa;

03:20 AM Break - Poster Session

03:45 AM Organized Activities

SESSION: 2nd Intl. Symp. on Advanced Sustainable Iron and Steel Making
IronMonAM

Mon June, 30 2014 Room: Peninsula III

Session Chair: TBA

08:00 AM: [IronMonAM1] Plenary

Iron and Steel Industry in Ukraine: Current State, Challenges and Future Perspective

V. Shatokha¹; ¹National Metallurgical ACADEMY of UKRAINE, Dnipropetrovsk, Ukraine;

08:20 AM: [IronMonAM2] Keynote

A Self Balancing Process Model for Blast Furnace

P. Demi¹; F. Kongoli²; ¹MIGRAL SRL, Bucharest -5, Romania; ²FLOGEN TECHNOLOGIES INC, Mont-Royal, Canada;

08:40 AM: [IronMonAM3]

Experimental Evaluation and Empirical Modeling for Rheological Behavior of Dual-phase Fluids

T. Higo¹; S. Sukenaga²; **N. Saito**¹; K. Nakashima¹; ¹KYUSHU University, Fukuoka, Japan; ²Tohoku University, Sendai, Japan;

09:00 AM: [IronMonAM4]

Titanium Ores and Concentrates and Their Treatment

A. Dmitriev¹; ¹Institute of Metallurgy, Ekaterinburg, Russian Federation;

09:20 AM Break

09:40 AM SUMMIT PLENARY

11:00 AM Break

11:20 AM SUMMIT PLENARY

12:30 PM LUNCH

SESSION: **2nd Intl. Symp. on Advanced Sustainable Iron and Steel Making**
IronMonPM

Mon June, 30 2014 Room: Peninsula III

Session Chair: TBA

02:00 PM: [IronMonPM5] Plenary
Mathematical Modelling and Practical Tasks Solution of Blast Furnace Smelting and Adjacent Repartitions

A. Dmitriev¹; ¹Institute of Metallurgy, Ekaterinburg, Russian Federation;

02:20 PM: [IronMonPM6] Invited
Reaction Mechanism of Iron Oxide-carbon Composite With Increasing Temperature

T. Murakami¹; **E. Kasai**²; ¹Tohoku University, Sendai, Japan; ²Graduate School of Environmental Studies, Tohoku University, Sendai, Japan;

02:40 PM: [IronMonPM7]
Use of Information System "Interactive Calculations in Ferrous Metallurgy"

A. Dmitriev¹; ¹Institute of Metallurgy, Ekaterinburg, Russian Federation;

03:00 PM: [IronMonPM8]
Burnt to A Crisp? - Why Oxygen Enhanced Combustion Does Not Have to Influence Steel Oxidation

C. Sobotka¹; **H. Antrekowitsch**²; ¹MontANUniversity LEOBEN- NICHTEISEN METALLURGIE, Leoben, Austria; ²Montanuniversitaet LEOBEN, Austria;

03:20 AM Break - Poster Session

03:45 AM Organized Activities

SESSION: **1st Intl. Symp. on Sustainable Mineral Processing**
MineralMonAM

Mon June, 30 2014 Room: Peninsula IV

Session Chair: TBA

08:00 AM: [MineralMonAM1] Plenary
Modeling Hydrometallurgical Extraction of Metals From Heterogeneous Materials

M. Free¹; ¹University of UTAH, Salt Lake City, United States;

08:20 AM: [MineralMonAM2]
Inner Lining Degradation in Ball Mills Operating With Phosphate Rock

A. Silva¹; **E. Silva**¹; **T. Maia**¹; ¹Universidade Federal de Goias, Catalao, Brazil;

08:40 AM: [MineralMonAM3]
Mineral Flow in Silos

A. Silva¹; **E. Silva**¹; **F. Reis**¹; ¹Universidade Federal de Goias, Catalao, Brazil;

09:00 AM: [MineralMonAM4]

Characterization of Red Mud and Spent Pot Lining for Potential Geopolymeric Applications

A. Peres¹; N. Nagem²; M. Costa²; A. Henriques¹; A. Mansur¹; H. Mansur¹;
¹Engineering Faculty Federal University of MINAS GERAIS, Belo Horizonte, Brazil; ²ALUMAR, Sao Luis, Brazil;

09:20 AM Break

09:40 AM SUMMIT PLENARY

11:00 AM Break

11:20 AM SUMMIT PLENARY

12:30 PM LUNCH

SESSION:
MineralMonPM

1st Intl. Symp. on Sustainable Mineral Processing

Mon June, 30 2014

Room: Peninsula IV

Session Chair: TBA

02:00 PM: [MineralMonPM5] Invited

Remining Old Tailings Dams

J. Meech¹; J. Wang¹; ¹University of British Columbia, Vancouver, Canada;

02:20 PM: [MineralMonPM6]

Mineral Paste Production From Phosphate Rock Tailings

A. Silva¹; E. Silva¹; J. Mesquita²; J. Arruda¹; ¹Universidade Federal de Goias, Catalao, Brazil; ²VALE FERTILIZANTES, Catalao, Brazil;

02:40 PM: [MineralMonPM7]

Effect of Different Slimes on Iron Ore Flotation Performance

A. Peres¹; **M. Marques**²; ¹Engineering Faculty Federal University of MINAS GERAIS, Belo Horizonte, Brazil; ²VALE, Nova Lima, Brazil;

03:00 PM: [MineralMonPM8]

Sustainable Mining Waste Management in Bor Basin, Serbia

Z. Markovic¹; F. Kongoli²; P. Pantovic³; Z. Stirbanovic⁴; ¹University of BELGRADE - TECHNICAL Faculty IN BOR, Bor, Serbia and Montenegro; ²FLOGEN TECHNOLOGIES INC, Mont-Royal, Canada; ³DING MIN.ENG., Bor, Serbia and Montenegro; ⁴DIPL. MIN.ENG., Bor, Serbia and Montenegro;

03:20 AM Break - Poster Session

03:45 AM Organized Activities

SESSION:
EnergyMonAM

**1st Intl. Symp. on Sustainable Energy Production:
Gas/Oil/Shale and new renewable carbon free
technologies**

Mon June, 30 2014 Room: Maria Louisa & Maria Fernanda

Session Chair: TBA

08:00 AM: [EnergyMonAM1]

Identifying Critical Operating Conditions for Premature Failures of Gearbox Components Due to Vibration Loading by Early Detection of the Associated Aging of the Lubricating Oil

U. Kuipers¹; **M. Mauntz**²; ¹University of Applied Science SOUTHWESTPHALIA, Hagen, Germany; ²CMC INSTRUMENTS GMBH, Eschborn, Germany;

08:20 AM: [EnergyMonAM2]

Underbalanced Drilling

M. Dehghani¹; ¹National IRANIAN OIL Company, Omiodieh, Iran;

08:40 AM: [EnergyMonAM3]

Applications of Electromagnetic Measurement Methods in Oil and Gas Industry

A. Esmaeili¹; M. Abdalla Ayoub²; ¹Universiti Teknologi Petronas (UTP), Omiodieh, Iran; ²Universiti Teknologi Petronas (UTP), Tronoh, Malaysia;

09:00 AM: [EnergyMonAM4] Keynote

Improving Energy Efficiency by Recent Breakthroughs in the Field of Materials Science and Engineering

J. Jerz¹; ¹Institute of Materials & Machine Mechanics SAS, Bratislava, Slovakia;

09:20 AM Break

09:40 AM SUMMIT PLENARY

11:00 AM Break

11:20 AM SUMMIT PLENARY

12:30 PM LUNCH

SESSION:
EnergyMonPM

**1st Intl. Symp. on Sustainable Energy Production:
Gas/Oil/Shale and new renewable carbon free
technologies**

Mon June, 30 2014 Room: Maria Louisa & Maria Fernanda

Session Chair: TBA

02:00 PM: [EnergyMonPM5]

Non-destructive Testing (NDT) in Ferromagnetic Materials

M. Dehghani¹; ¹National IRANIAN OIL Company, Omiodieh, Iran;

02:20 PM: [EnergyMonPM6] Invited

High-temperature Geothermal Energy - Why No Canadian Development?

M. Ghomshei¹; J. Meech²; N. Mousavi¹; ¹CARNOTECH Energy INC., Vancouver, Canada; ²University of British Columbia, Vancouver, Canada;

02:40 PM: [EnergyMonPM7] Invited
Gas to Liquids (GTL) Technology
M. Dehghani¹; ¹National IRANIAN OIL Company, Omiodieh, Iran;

03:00 PM: [EnergyMonPM8]
LNG as A Fuel in Meeting the Energy Needs of Asia
A. Esmaeili¹; ¹Universiti Teknologi Petronas (UTP), Omidieh, Iran;

03:20 AM Break - Poster Session

03:45 AM Organized Activities

SESSION: MultiscaleMonAM	Multiscale Material Mechanics in the 21st Century: Old Ideas for New Models Across Materials, Processes and Scales
Mon June, 30 2014	Room: Maria Mercedes & Maria Beatriz
<u>Session Chair:</u> TBA	

08:00 AM: [MultiscaleMonAM1] Plenary
Perseverance Inspired by Prof. Shechtman in 1987 Leads to Discovery of Mysterious Current Spike and Nano-confinement in Semiconductors
R. Nowak¹; ¹NORDIC Hysitron Laboratory, AALTO University, Espoo, Finland;

08:20 AM: [MultiscaleMonAM2] Invited
On the Two Hidden Contributions to Volume Change Implied by the Deformation of an Actual Material and on Their Distinct Physical Role
G. Guzzetta¹; ¹RETIRED from DEPT. of EARTH SCIENCES, UNIVERSITA DI NAPOLI 'FEDERICO II', Nizza Monferrato, Italy;

08:40 AM: [MultiscaleMonAM3] Invited
On Materials Informatics and Knowledge Discovery in Materials
R. King¹; ¹MISSISSIPPI State UNIV., Mississippi, United States;

09:00 AM: [MultiscaleMonAM4] Invited
Phase Transitions in A Slender 3-D SMA Cylinder: A Generalization of Ericksen's Classical 1-d Results
H. Dai¹; ¹CITY UNIV. of HONG KONG, Kowloon Tong, Hong Kong;

09:20 AM Break
09:40 AM SUMMIT PLENARY
11:00 AM Break
11:20 AM SUMMIT PLENARY
12:30 PM LUNCH

SESSION:
MultiscaleMonPM

**Multiscale Material Mechanics in the 21st Century:
Old Ideas for New Models Across Materials,
Processes and Scales**

Mon June, 30 2014

Room: Maria Mercedes & Maria Beatriz

Session Chair: TBA

02:00 PM: [MultiscaleMonPM5] Invited

Surface Effect at Nanoscale Based on Gurtin's Theory: A Critical Review of Recent Advances

J. Liu¹; ¹Department of Engineering Mechanics, CHINA University of PETROLEUM, Qingdao, China;

02:20 PM: [MultiscaleMonPM6] Invited

The Thermal Conductivity of Carbon Nanotube Nanofluids: From the Nano to the Macro Scales

F. Marquis¹; ¹SAN DIEGO State University, Department of Mechanical Engineering, San Diego, United States;

02:40 PM: [MultiscaleMonPM7] Invited

Adaptive Methods for Multiscale Fracture

S. Bordas¹; P. Kerfriden²; A. Akbari²; O. Goury²; ¹University of Luxembourg, Kirchberg, Luxembourg; ²Cardiff University, United Kingdom;

03:00 PM: [MultiscaleMonPM8] Invited

On Relationship Between Size Effect and Strain Rate Effect of Strength of Quasi-brittle Materials

C. Qi¹; E. Aifantis²; ¹BEIJING University of Civil Engineering and ARCHITECTURE, Beijing, China; ²ARISTOTLE University of THESSALONIKI, Thessaloniki, Greece;

03:20 AM Break - Poster Session

03:45 AM Organized Activities

Tuesday:

SESSION: MiningTueAM	1st Intl. Symp. on Sustainable Mining Operations
Tue July, 01 2014	Room: Condesa I
<u>Session Chair:</u> TBA	

08:00 AM: [MiningTueAM1] Keynote
Mine of the Future - Applying Advanced Manufacturing Technology to Mining
G. Baiden¹; ¹PENGUIN AUTOMATED SYSTEMS INC., Naughton, Canada;

08:20 AM: [MiningTueAM2] Invited
Bitcoin - the "New Gold" for a "Safe - Haven" Investment?
R. Gu¹; **J. Meech**¹; ¹University of British Columbia, Vancouver, Canada;

08:40 AM: [MiningTueAM3]
Worldview and Resource Development
M. Lytle¹; **M. Hitch**²; ¹SNOWDEN MINING INDUSTRY CONSULTANTS, Calgary, Canada; ²University of British Columbia, Vancouver, Canada;

09:00 AM: [MiningTueAM4]
Biomining: Lead Concentrates Oxidation
T. Velea¹; ¹National Research- Development Institute for NONFERROUS and RARE METALS- IMNR BUCHAREST, Pantelimon, Romania;

09:20 AM Break
09:40 AM SUMMIT PLENARY
11:00 AM Break
11:20 AM SUMMIT PLENARY
12:30 PM LUNCH

SESSION: MiningTuePM	1st Intl. Symp. on Sustainable Mining Operations
Tue July, 01 2014	Room: Condesa I
<u>Session Chair:</u> TBA	

02:00 PM: [MiningTuePM5] Invited
Decreasing Energy Consumption in Cement Production
S. Aguero Starkman¹; **J. Meech**²; ¹UBC-MINING, Vancouver, Canada; ²University of British Columbia, Vancouver, Canada;

02:20 PM: [MiningTuePM6]
The Kolar Gold Mines, India: Present Status and Prospects for Phytomining
R. Chandra¹; **V. Sathya**¹; **B. Anjan Kumar Prusty**²; **P. Azeez**²; **S. Mahimairaja**¹; ¹TNAU, Coimbatore, India; ²SACON; ENVIRONMENTAL Impact ASSESSMENT Division GUJARAT Institute of Desert Ecology, Coimbatore, India;

02:40 PM: [MiningTuePM7]

Development Paradigm and Mining Clusters in Western Kachhh, Gujarat, India: Need for Sustainable Landuse in Mining Areas and Management of Dry Land Ecosystems

B. Anjan Kumar Prusty¹; ¹SACON; ENVIRONMENTAL Impact ASSESSMENT Division GUJARAT Institute of Desert Ecology, Coimbatore, India;

03:00 PM: [MiningTuePM8]

Gold, Silver, and Copper Phytoextraction by Helianthus Annuus L. (sunflower) Grown on Mine Tailings Amended With Rooting and Cyanide

E. Wilson Perea¹; **V. Wilson Corral**²; J. Sarmiento Sanchez²; C. Anderson³; L. Partida Ruvalcaba²; M. Rodriguez Lopez⁴; T. Velazquez Alacaraz²; J. Toribio Jimenez⁵; W. Rubio Carrasco⁶; ¹CEJUS, Badiraguato, Mexico; ² Univ. of SINALOA, Culiacan, Mexico; ³MASSEY Univ., Palmerston North, New Zealand; ⁴CEJUS, Surutato, Mexico; ⁵ Univ. of GUERRERO, Chilpancingo, Mexico; ⁶CENTRO DE INVESTIGACION EN ALIMENTACION Y DESARROLLO, Culiacan, Mexico;

03:20 AM Break - Poster Session

03:45 AM Organized Activities

SESSION: BatteryTueAM	1st Intl. Symp. on Sustainable Secondary Battery Manufacturing and Recycling
Tue July, 01 2014	Room: Condesa II
<u>Session Chair:</u> TBA	

08:00 AM: [BatteryTueAM1] Plenary

Energy Storage Initiative at Argonne National Laboratory

E. Bunel¹; ¹ARGONNE National Laboratory, Lemont, United States;

08:20 AM: [BatteryTueAM2] Invited

Modeling Cracking in Thin Film Anodes for Li-ion Batteries, Using the Extended Finite Element Method

S. Natarajan¹; K. Aifantis²; ¹The University of NEW SOUTH WALES, Sydney, Australia; ²University of ARIZONA, Tucson, United States;

08:40 AM: [BatteryTueAM3] Invited

Transition Metal-oxides in Li-o2 Batteries: First Principles Modeling in Conjunction With Synchrotron Characterization

M. Chan¹; ¹Argonne National Laboratory, United States;

09:00 AM: [BatteryTueAM4] Invited

Role of Mechanics in the Design of Durable Lithium Ion Batteries

S. Nadimpalli¹; V. Sethuraman²; G. Bucci³; A. Bower²; P. Guduru²; ¹NEW JERSEY Institute of Technology, Newark, United States; ²BROWN University, Providence, United States; ³MIT, Providence, United States;

09:20 AM Break
09:40 AM SUMMIT PLENARY
11:00 AM Break
11:20 AM SUMMIT PLENARY
12:30 PM LUNCH

SESSION: **1st Intl. Symp. on Sustainable Secondary Battery
BatteryTuePM Manufacturing and Recycling**
Tue July, 01 2014 Room: Condesa II
Session Chair: TBA

02:00 PM: [BatteryTuePM5] Invited
Charge Transport in Lithium Peroxide: Relevance for Rechargeable Metal-air Batteries
D. Siegel¹; ¹University of MICHIGAN, Ann Arbor, United States;

02:20 PM: [BatteryTuePM6] Invited
Mechanistic Understanding of Lithiation Processes in Silicon-Based Nanomaterials
G. Hwang¹; ¹The University of TEXAS at AUSTIN, Austin, United States;

02:40 PM: [BatteryTuePM7] Invited
Sustainability in Li-S Batteries
V. Kumar¹; ¹University of CAMBRIDGE, Cambridge, United Kingdom;

03:00 PM: [BatteryTuePM8] Invited
Heat Generation and Conduction Studies of Li-ion Batteries
Q. Hao¹; C. Chan²; E. Segal¹; ¹University of ARIZONA, Tucson, United States;
²ARIZONA State University, Tempe, United States;

03:20 AM Break - Poster Session
03:45 AM Organized Activities

SESSION: **Rare- 1st Intl. Symp. on Rare Earth and Platinum Group
EarthTueAM Metals:Managing and Processing**
Tue July, 01 2014 Room: Condesa III
Session Chair: TBA

08:00 AM: [Rare-EarthTueAM1] Keynote
Recovery and Separation of Rare Earth Elements Form Wasted Magnets
T. Nagai¹; ¹CHIBA Institute of Technology, Narashino, Japan;

08:20 AM: [Rare-EarthTueAM2] Invited
Targeting Fluorescent Lamp Waste for the Recovery of Cerium, Lanthanum, Europium, Gadolinium, Terbium and Yttrium
C. Tunsu¹; C. Ekberg¹; T. Retegan¹; M. Foreman¹; ¹CHALMERS University of Technology, Gothenburg, Sweden;

08:40 AM: [Rare-EarthTueAM3]

Phase Diagrams of the DyBr₃-MBr (M = Li-Cs)

I. Chojnacka¹; L. Rycerz¹; ¹Chemical Metallurgy GROUP, WROCLAW University of Technology, Wroclaw, Poland;

09:00 AM: [Rare-EarthTueAM4]

Identifying Supply Chain Risks for Critical & Strategic Materials

J. Goddin¹; W. Martin²; K. Marshall²; A. Clifton³; ¹M, M, Great Britain; ²GRANTA Design Limited, Cambridge, Great Britain; ³Rolls-Royce PLC, Derby, United Kingdom;

09:20 AM Break

09:40 AM SUMMIT PLENARY

11:00 AM Break

11:20 AM SUMMIT PLENARY

12:30 PM LUNCH

SESSION:

RecyclingTuePM

Tue July, 01 2014

Session Chair: TBA

2nd Intl. Symp. on Sustainable Materials

Recycling Processes and Products

Room: Condesa III

02:00 PM: [RecyclingTuePM5]

Simulation and Optimization of Distillation Processes Ethanol-propanol Stream Using CHEMCAD and MINITAB Software

M. Rizaj¹; A. Dushi¹; F. Kongoli²; ¹University of PRISHTINA, Prishtina, Kosovo; ²FLOGEN TECHNOLOGIES INC, Mont-Royal, Canada;

02:20 PM: [RecyclingTuePM6]

Recycling of Metallurgical Wastes by A Sustainable Ironbath Process

G. Roesler¹; J. Antrekowitsch¹; C. Pichler¹; ¹Chritian DOPPLER Laboratory for Optimization and Biomass Utilization in Heavy Metal Recycling, Leoben, Austria;

02:40 PM: [RecyclingTuePM7]

Preparation of Nanocrystalline Hardmetal Powders From Tungsten-containing Wastes

A. Gachechiladze¹; V. Garibashvili¹; **A. Kandelaki**¹; O. Mikadze²; A. Mikeladze¹; Z. Mirijanashvili¹; G. Tavadze¹; ¹Ferdinand Tavadze Institute of Metallurgy and Materials Science, Tbilisi, Georgia; ²Georgian Technical Univ., Tbilisi, Georgia;

03:00 PM: [RecyclingTuePM8]

Pyrometallurgical Approaches for Metal and Material Recovery From Slags and Residues

G. Ye¹; ¹SWEREA MEFOS, Lulea, Sweden;

03:20 AM Break - Poster Session

03:45 AM Organized Activities

SESSION: **2nd Intl. Symp. on Sustainable Molten Salt and Ionic Liquid Processing**
MoltenTueAM

Tue July, 01 2014 Room: Peninsula I

Session Chair: TBA

08:00 AM: [MoltenTueAM1] Plenary

Electrodeposition in Ionic Liquids: From Nanoscale Processes to Macroporous Materials

F. Endres¹; ¹CLAUSTHAL Univ. of Technology, Clausthal-Zellerfeld, Germany;

08:20 AM: [MoltenTueAM2]

Electrochemical Separation of Dy From Nd Magnet Scrap in A Molten LiCl-KCl

H. Konishi¹; **H. Ono**¹; **T. Nohira**²; **T. Oishi**³; ¹OSAKA University, Suita, Japan; ²KYOTO University, Kyoto, Japan; ³National Institute of Advanced Industrial Science and Technology, Tsukuba, Japan;

08:40 AM: [MoltenTueAM3]

Electrochemical Synthesis of Nanoscale Powders of Carbon-containing Compounds (doped, Undoped Carbon Tubes and Fibers, Tungsten Carbides) in Molten Salts

I. Novoselova¹; **S. Volkov**¹; ¹Institute of GENERAL and INORGANIC Chemistry, Kiev, Ukraine;

09:00 AM: [MoltenTueAM4]

Determination of Solvation Free Energy of Dissolved Actinides in Molten Salts

A. Gray Weale¹; **P. Masset**²; **C. Lutzko**³; ¹University of MELBOURNE, Melbourne, Australia; ²FRAUNHOFER UMSICHT, Sulzbach-Rosenberg, Germany; ³SCHOOL of Chemistry, Melbourne, Australia;

09:20 AM Break

09:40 AM SUMMIT PLENARY

11:00 AM Break

11:20 AM SUMMIT PLENARY

12:30 PM LUNCH

SESSION: **2nd Intl. Symp. on Sustainable Molten Salt and Ionic Liquid Processing**
MoltenTuePM

Tue July, 01 2014 Room: Peninsula I

Session Chair: TBA

02:00 PM: [MoltenTuePM5] Plenary

Interaction of Carbon With Molten Salts and Ionic Liquids

D. Fray¹; ¹Department of Materials Science and Metallurgy, University of CAMBRIDGE, CAMBRIDGE, Cambridge, United Kingdom;

02:20 PM: [MoltenTuePM6]

Diamond Electrodes in Molten Salt and Aqueous Electrolytes: Theory, Experiment and Application.

I. Novoselova¹; S. Volkov¹; ¹Institute of GENERAL and INORGANIC Chemistry, Kiev, Ukraine;

02:40 PM: [MoltenTuePM7]

Development of Non-platinum Catalysts for Intermediate Temperature Water Electrolysis With Molten Salt Electrolyte

A. Nikiforov¹; **I. Petrushina**¹; ¹TECHNICAL University of DENMARK, Kongens Lyngby, Denmark;

03:00 PM: [MoltenTuePM8]

The MBr-EuBr₂ Molten Salt Mixtures: From Experiments to Assessment (M=alkali Metal)

M. Gaune Escard¹; S. Gadzuric²; **W. Gong**³; L. Rycerz⁴; ¹POLYTECH, Marseille, France; ²Faculty of SCIENCES, Novi Sad, Serbia and Montenegro (formerly Yugoslavia); ³HUIZHOU University, Huizhou, China; ⁴Chemical Metallurgy GROUP, WROCLAW University of Technology, Wroclaw, Poland;

03:20 AM Break - Poster Session

03:45 AM Organized Activities

SESSION: **Quasi-crystalsTueAM**

Tue July, 01 2014

Session Chair: TBA

2nd Intl. Symp. on Quasi-crystals, Metallic Alloys, Composites, Ceramics and Nano Materials

Room: Peninsula II

08:00 AM: [Quasi-crystalsTueAM1] Keynote

Cyclic Deformation Behavior of Rare-Earth Containing Lightweight Magnesium Alloys

F. Mirza¹; **D. L. Chen**¹; D. Li²; X. Zeng²; ¹Department of Mechanical and Industrial Engineering, RYERSON University, Toronto, Canada; ²SHANGHAI JIAO TONG University, Shanghai, China;

08:20 AM: [Quasi-crystalsTueAM2] Keynote

The Golden Ratio in Atomic Architecture

R. Heyrovska¹; ¹PRIVATE Research SCIENTIST, Praha, Czech Republic;

08:40 AM: [Quasi-crystalsTueAM3]

Influence of Zn Interlayer / Coating on the Ultrasonic Spot-welded Al-to-Cu and Al-to-steel Joints

V. Patel¹; **S. Bhole**¹; D. L. Chen¹; ¹Department of Mechanical and Industrial Engineering, RYERSON University, Toronto, Canada;

09:00 AM: [Quasi-crystalsTueAM4] Keynote

The Magic of Nanoplasmonics: from Superhydrophobic and 3D Suspended Devices for SERS/TERS-like Applications to Hot-electrons Based Nanoscopy.

R. Proietti Zaccaria¹; ¹Italian Institute of Technology, Genova, Italy;

09:20 AM Break
09:40 AM SUMMIT PLENARY
11:00 AM Break
11:20 AM SUMMIT PLENARY
12:30 PM LUNCH

SESSION:
CeramicTuePM

**1st Intl. Symp. on Composite, Ceramic and Nano
Materials Processing, Characterization and
Applications Symposium**

Tue July, 01 2014 Room: Peninsula II

Session Chair: TBA

02:00 PM: [CeramicTuePM5] Keynote
**The Impact of Functional Applications and Nanoscience/Nanotechnology
on Updating Composite Materials Concepts and Classifications**
M. Pech Canul¹; F. Kongoli²; ¹CINVESTAV-SALTILLO, Ramos Arizpe, Mexico;
²FLOGEN TECHNOLOGIES INC, Mont-Royal, Canada;

02:20 PM: [CeramicTuePM6] Plenary
Innovations in Processing of Lightweight Metal Matrix Composites
R. Reddy¹; ¹The University of ALABAMA, Tuscaloosa, United States;

02:40 PM: [CeramicTuePM7] Invited
Interfaces in Epitaxial Structures Based on Oxide Ferroelectrics
L. Pintilie¹; ¹National Institute of Materials PHYSICS, Magurele, Romania;

03:00 PM: [CeramicTuePM8]
**Carbon Coated LiMPO₄(M=Co&Ni) Nanoparticles for High Power Lithium-
ion Batteries**
V. Madhusudhan Rao¹; ¹VIGNAN'S FOUNDATION for Science ,Technology &
Research, Guntur, India;

03:20 AM Break - Poster Session

03:45 AM Organized Activities

SESSION:
IronTueAM

**2nd Intl. Symp. on Advanced Sustainable Iron and
Steel Making**

Tue July, 01 2014 Room: Peninsula III

Session Chair: TBA

08:00 AM: [IronTueAM1] Invited
Utilization of Process By-products for Direct Reduced Iron Production
I. Sohn¹; J. Yu¹; B. Lee²; ¹YONSEI University Materials Science and
Engineering, Seoul, South Korea; ²POSCO, Gwangyang, South Korea;

08:20 AM: [IronTueAM2]

Structure and Viscosity Relationship in the B₂O₃-containing Calcium-aluminate Based Fluxes

G. Kim¹; **I. Sohn**¹; ¹YONSEI University Materials Science and Engineering, Seoul, South Korea;

08:40 AM: [IronTueAM3] Keynote

Recovery of Paddy Field Damaged by Tsunami and Earthquake Using Steelmaking Slag

S. Kitamura¹; ¹Tohoku University, Sendai, Japan;

09:00 AM: [IronTueAM4]

Physicochemical Properties of Steel Slags: Challenges of the Mexican Steel Industry

A. Conejo Nava¹; ¹, Morelia, Mexico;

09:20 AM Break

09:40 AM SUMMIT PLENARY

11:00 AM Break

11:20 AM SUMMIT PLENARY

12:30 PM LUNCH

SESSION: 2nd Intl. Symp. on Advanced Sustainable Iron and Steel Making

IronTuePM Tue July, 01 2014 Room: Peninsula III

Session Chair: TBA

02:00 PM: [IronTuePM5]

Modeling the Shaft Reduction Process for DRI Production Combined With Gasification of Biomass

J. De Castro¹; ¹UFF - Federal FLUMINENSE University, Volta Redonda, Brazil;

02:20 PM: [IronTuePM6]

Influence of Lime Addition on the Properties of Cement-Bonded Cold Pellets

S. Villanueva Bravo¹; ¹UASLP, Engineering Faculty, San Luis Potosi, Mexico;

02:40 PM: [IronTuePM7]

Partial Substitution of the Anthracite by Elephant Glass Charcoal Into the Iron Ore Sintering Process

J. De Castro¹; ¹UFF - Federal FLUMINENSE University, Volta Redonda, Brazil;

03:00 PM: [IronTuePM8]

Energy Dynamics of Electric Arc Furnace Steelmaking

S. Prakash¹; ¹CSIR-National Metallurgical Laboratory, Jamshedpur, India;

03:20 AM Break - Poster Session

03:45 AM Organized Activities

SESSION:
MineralTueAM

**1st Intl. Symp. on Sustainable Mineral
Processing**

Tue July, 01 2014

Room: Peninsula IV

Session Chair: TBA

08:00 AM: [MineralTueAM1]

Recovery of Iron Oxide Particles From Reject Slimes

A. Peres¹; E. Castro²; C. Sales¹; G. Valadao¹; ¹Engineering Faculty Federal Univ. of MINAS GERAIS, Belo Horizonte, Brazil; ²SAMARCO, Mariana, Brazil;

08:20 AM: [MineralTueAM2]

Effect of Operating Conditions on Beneficiation of Western Canadian Coals by Air Dense Medium Fluidized Bed (ADMFB)

E. Azimi¹; **J. Szymanski**¹; ¹University of ALBERTA, Edmonton, Canada;

08:40 AM: [MineralTueAM3] Invited

Sustainability and Eco-efficiency in Selecting Comminution Routes for Brazilian Iron Ore Grinding

J. Segura¹; **L. Tavares**²; ¹PEMM/UFRJ, Rio de Janeiro, Brazil; ²UNIVERSIDADE Federal DO RIO DE JANEIRO, Rio de Janeiro, Brazil;

09:00 AM: [MineralTueAM4] Keynote

Fuzzy Logic in Mining - Are Right and Wrong Fuzzy Concepts?

J. Meech¹; ¹University of British Columbia, Vancouver, Canada;

09:20 AM Break

09:40 AM SUMMIT PLENARY

11:00 AM Break

11:20 AM SUMMIT PLENARY

12:30 PM LUNCH

SESSION:
MineralTuePM

**1st Intl. Symp. on Sustainable Mineral
Processing**

Tue July, 01 2014

Room: Peninsula IV

Session Chair: TBA

02:00 PM: [MineralTuePM5] Plenary

New Hydrometallurgical Solutions for Stainless Steel Dust Treatment

O. Forsen¹; J. Aromaa¹; A. Kekki²; A. Stefanova²; ¹AALTO University, Espoo, Finland; ²ResearchER, Espoo, Finland;

02:20 PM: [MineralTuePM6]

Processing of Phosphate Rocks in Latin America

M. Schorr¹; B. Valdez¹; J. Ocampo¹; ¹Univ. of Baja California, Mexicali, Mexico;

02:40 PM: [MineralTuePM7]

The Treatment of High Grade Chromium Ores in Albania

G. Demi¹; ¹Faculty of GEOLOGY and MINES, Tirana, Albania;

03:00 PM: [MineralTuePM8]

Production of Pellets Starting from Fines Manganese Ore not Previously Roasted

J. Conti De Souza¹; N. Scardine²; ¹Federal Institute of Education, Sciences, Technology of the Espirito Santos State, Serra, Brazil; ²Federal Institute of Education, Sciences, Technology of the Espirito Santos State, Vitoria, Brazil;

03:20 AM Break - Poster Session

03:45 AM Organized Activities

SESSION:
EnergyTueAM

**1st Intl. Symp. on Sustainable Energy Production:
Gas/Oil/Shale and new renewable carbon free
technologies**

Tue July, 01 2014 Room: Maria Louisa & Maria Fernanda

Session Chair: TBA

08:00 AM: [EnergyTueAM1] Keynote

Production of Spray-dried Oxygen Carrier Particles for Chemical Looping Combustion

D. Vangeneugden¹; ¹VITO, Mol, Belgium;

08:20 AM: [EnergyTueAM2] Keynote

Production Optimization of an Oil Reservoir

A. Esmaeili¹; ¹Universiti Teknologi Petronas (UTP), Omidieh, Iran;

08:40 AM: [EnergyTueAM3]

Microbial Eor

M. Dehghani¹; ¹National IRANIAN OIL Company, Omiodieh, Iran;

09:00 AM: [EnergyTueAM4]

Applications of Fiber Optical Sensors in Petroleum Industry

A. Esmaeili¹; **M. Dehghani**²; ¹Universiti Teknologi Petronas (UTP), Omidieh, Iran; ²National IRANIAN OIL Company, Omiodieh, Iran;

09:20 AM Break

09:40 AM SUMMIT PLENARY

11:00 AM Break

11:20 AM SUMMIT PLENARY

12:30 PM LUNCH

SESSION: **1st Intl. Symp. on Sustainable Energy Production:
Gas/Oil/Shale and new renewable carbon free
technologies**

Tue July, 01 2014 Room: Maria Louisa & Maria Fernanda

Session Chair: TBA

02:00 PM: [EnergyTuePM5] Keynote

Oil Well Sand Production Control

M. Dehghani¹; ¹National IRANIAN OIL Company, Omiodieh, Iran;

02:20 PM: [EnergyTuePM6]

Determining Relative Permeability Correlation for an Oil Field

A. Esmaeili¹; ¹Universiti Teknologi Petronas (UTP), Omidieh, Iran;

02:40 PM: [EnergyTuePM7]

Hybrid Renewable Energy Systems

M. Dehghani¹; ¹National IRANIAN OIL Company, Omiodieh, Iran;

03:00 PM: [EnergyTuePM8]

Effects of Microwave Radiation on Oil Recovery

A. Esmaeili¹; ¹Universiti Teknologi Petronas (UTP), Omidieh, Iran;

03:20 AM Break - Poster Session

03:45 AM Organized Activities

SESSION: **Multiscale Material Mechanics in the 21st Century:
Old Ideas for New Models Across Materials,
Processes and Scales**

Tue July, 01 2014 Room: Maria Mercedes & Maria Beatriz

Session Chair: TBA

08:00 AM: [MultiscaleTueAM1] Invited

**A Revamped Paradigm of Composite Materials: From Ancient-to-modern
Concepts and Applications**

M. Pech Canul¹; E. Aifantis²; ¹CINVESTAV-SALTILLO, Ramos Arizpe, Mexico;
²ARISTOTLE University of THESSALONIKI, Thessaloniki, Greece;

08:20 AM: [MultiscaleTueAM2] Invited

Sextus Empiricus and the Scientific Scepticism

S. Baloyannis¹; ¹ARISTOTLE UNIV. of THESSALONIKI, Thessaloniki, Greece;

08:40 AM: [MultiscaleTueAM3]

Thermal Shock Investigation of Steel Work Roll in Cold Rolling Process

A. Mottahedi¹; ¹IROST, Tehran, Iran;

09:00 AM: [MultiscaleTueAM4] Invited
Coarse-Graining Approaches for Complex Materials as 'non-simple' Continua
P. Trovalusci¹; ¹Univ. di Roma La Sapienza, Italy;

09:20 AM Break
09:40 AM SUMMIT PLENARY
11:00 AM Break
11:20 AM SUMMIT PLENARY
12:30 PM LUNCH

SESSION: MultiscaleTuePM	Multiscale Material Mechanics in the 21st Century: Old Ideas for New Models Across Materials, Processes and Scales
Tue July, 01 2014	Room: Maria Mercedes & Maria Beatriz
<u>Session Chair:</u> TBA	

02:00 PM: [MultiscaleTuePM5] Invited
Disclinations and Pentagonal Symmetry in Micro- and Nanocrystalline Objects
A. Romanov¹; A. Kolesnikova²; L. Dorogin³; A. Vikarchuk⁴; ¹IOFFE PHYSICAL TECHN. INST., St Petersburg, Russian Federation; ²INSTITUTE of PROBLEMS of Mechanical Engineering, St. Petersburg, Russian Federation; ³Institute of PHYSICS, University of TARTU, Tartu, Estonia; ⁴TOGLIATTI State University, Togliatti, Russian Federation;

02:20 PM: [MultiscaleTuePM6] Invited
One More Law of Thermodynamics?
V. Berdichevsky¹; ¹WAYNE State University, Detroit, United States;

02:40 PM: [MultiscaleTuePM7] Invited
Polymer Structure and Dynamics in Polymer / Layered-silicate Nanocomposites
S. Anastasiadis¹; ¹Institute of ELECTRONIC STRUCTURE and LASER, FOUNDATION for Research and Technology-HELLAS, Heraklion Crete, Greece;

03:00 PM: [MultiscaleTuePM8] Invited
Symmetry Analysis and Invariance Relations in Mechanics of Materials
J. Ganghoffer¹; ¹INSTITUT National Polytechnique de Lorraine, Nancy, France;

03:20 AM Break - Poster Session
03:45 AM Organized Activities

Wednesday:

SESSION:
MiningWedAM

**1st Intl. Symp. on Sustainable Mining
Operations**

Wed July, 02 2014

Room: Condesa I

Session Chair: TBA

08:00 AM: [MiningWedAM1] Keynote

Mining, Processing, and Metals Recovery From Low Grade Sources

J. Salminen¹; ¹TECHNICAL Research CENTRE of FINLAND, Espoo, Finland;

08:20 AM: [MiningWedAM2] Invited

Review of First Nations Issues and Mining in Canada

J. Meech¹; **A. Xavier**²; M. Veiga²; ¹University of British Columbia, Vancouver, Canada; ²UBC-MINING, Vancouver, Canada;

08:40 AM: [MiningWedAM3] Invited

Phytomining of Platinum Group Metals - Major Driving Forces and New Approaches

J. Meech¹; **P. Shi**²; C. Anderson³; ¹Univ. of British Columbia, Vancouver, Canada; ²UBC-MINING, Vancouver, Canada; ³MASSEY Univ., Palmerston North, New Zealand;

09:00 AM: [MiningWedAM4]

The Use of Engineered Bioreactor Systems for Treating Runoffs and Leachates From Artisanal Gold Mining Operations

J. Higgins¹; C. Anderson²; ¹ENVIRONMENTAL Development CORPORATION, Mississauga, Canada; ²MASSEY University, Palmerston North, New Zealand;

09:20 AM Break

09:40 AM SUMMIT PLENARY

11:00 AM Break

11:20 AM SUMMIT PLENARY

12:30 PM LUNCH

SESSION:
MiningWedPM

**1st Intl. Symp. on Sustainable Mining
Operations**

Wed July, 02 2014

Room: Condesa I

Session Chair: TBA

02:00 PM: [MiningWedPM5] Plenary

Agriculture: A Framework for Sustainable Mining in Developing Countries?

C. Anderson¹; ¹MASSEY University, Palmerston North, New Zealand;

02:20 PM: [MiningWedPM6]

Efficient Use of Fly Ash in Underground Mines

B. Mustafa¹; S. Kelmendi²; H. Qela¹; ¹TREPCA MIN.& METALL. Co. Mitrovica, Kosovo; ²PRISTINE Univ., Mitrovica, Kosovo;

02:40 PM: [MiningWedPM7]

Limestone Mine Dust-effects on Some Plant Species

B. Gurugubelli¹; ¹ACADAMIC, PT.RS University, Raipur, India;

03:00 PM: [MiningWedPM8]

An Integrated Mine Plan - Connecting Long, Medium and Short Term Planning Strategies at Goldcorp Penasquito

R. Vivas¹; ¹MINTEC, Tucson, United States;

03:20 AM Break - Poster Session

03:45 AM Organized Activities

SESSION: BatteryWedAM	1st Intl. Symp. on Sustainable Secondary Battery Manufacturing and Recycling
Wed July, 02 2014	Room: Condesa II
<u>Session Chair:</u> TBA	

08:00 AM: [BatteryWedAM1] Keynote

Vanadium Redox Flow Batteries Versus Hydrogen Storage Using System Dynamics Simulation

B. Glowacki¹; ¹Department of Physics & Energy, University of Limerick, Ireland;

08:20 AM: [BatteryWedAM2] Keynote

Global Warming and Lead-Carbon Batteries

P. Moseley¹; ¹ALABC, Chilton, United Kingdom;

08:40 AM: [BatteryWedAM3] Invited

Electrospun Nanocomposite Electrode Materials

W. Sigmund¹; ¹University of FLORIDA, Gainesville, United States;

09:00 AM: [BatteryWedAM4] Invited

Overall Up to Date on Li-ion Technology

C. Capiglia¹; ¹RECRUIT R&D, Osaka, Japan;

09:20 AM Break

09:40 AM SUMMIT PLENARY

11:00 AM Break

11:20 AM SUMMIT PLENARY

12:30 PM LUNCH

SESSION: BatteryWedPM	1st Intl. Symp. on Sustainable Secondary Battery Manufacturing and Recycling
Wed July, 02 2014	Room: Condesa II
<u>Session Chair:</u> TBA	

02:00 PM: [BatteryWedPM5] Keynote

Metastable Materials for Li-ion Batteries

S. Dutton¹; **A. Amigues**¹; ¹University of Cambridge, United Kingdom;

02:20 PM: [BatteryWedPM6] Invited

3d Mesostructured Electrodes for High Energy and Power Density Primary and Secondary Batteries

P. Braun¹; ¹University of Illinois at Urbana-Champaign, Urbana, United States;

02:40 PM: [BatteryWedPM7] Invited

Why Na Batteries Could Outperform Li Ones?

J. Gaubicher¹; F. Florent¹; P. Moreau¹; M. Cuisinier¹; S. Patrick¹; D. Elkaim²; D. Guyomard¹; ¹IMN/CNRS, Nantes, France; ² Synchrotron Soleil, St Aubin, France;

03:00 PM: [BatteryWedPM8] Invited

Dynamics and Ion Mobility in Polymer Single Ion Conductors for Lithium Ion Batteries

J. Maranas¹; ¹PENN State University, University Park, United States;

03:20 AM Break - Poster Session

03:45 AM Organized Activities

SESSION:
RecyclingWedAM

**2nd Intl. Symp. on Sustainable Materials
Recycling Processes and Products**

Wed July, 02 2014

Room: Condesa III

Session Chair: TBA

08:00 AM: [RecyclingWedAM1]

Leaching of Zinc, Iron and Calcium From EAF Dust in Sulfuric Acid

T. Havlik¹ ; L. Parilak²; ¹TECHNICAL University of KOSICE, Faculty of Metallurgy,, Kosice, Slovakia;²ZP VVC S.R.O., PODBREZOVA, Slovakia;

08:20 AM: [RecyclingWedAM2]

Strategies to Recover the Valuable Metal Fraction From Flue Dust of the Secondary Copper Production

R. Rumpold¹; J. Antrekowitsch¹; ¹Christian Doppler Laboratory for Optimization and Biomass Utilization in Heavy Metal Recycling, Leoben, Austria;

08:40 AM: [RecyclingWedAM3]

Complex Evaluation of the Processes and Efficiency of Electrolytic Tin Scrap Refining in HCl-SnCl₂ Solutions

T. Kekesi¹; T. Kulcsar¹; ¹University of MISKOLC, Miskolc, Hungary;

09:00 AM: [RecyclingWedAM4]

Recovery of Technology Metals From A WEEE-fraction

P. Stuhlfarrner¹; S. Luidold¹; H. Schnideritsch¹; H. Antrekowitsch¹; ¹Montanuniversitaet LEOBEN, Leoben, Austria;

09:20 AM Break

09:40 AM SUMMIT PLENARY

11:00 AM Break

11:20 AM SUMMIT PLENARY

12:30 PM LUNCH

SESSION:
RecyclingWedPM

**2nd Intl. Symp. on Sustainable Materials
Recycling Processes and Products**

Wed July, 02 2014

Room: Condesa III

Session Chair: TBA

02:00 PM: [RecyclingWedPM5]

Recovery of Valuable Metals From the Waste From Uranium Production and Processing of Secondary Materials

G. Zakrzewska Koltuniewicz¹; ¹Institute of NUCLEAR Chemistry and Technology, Warsaw, Poland;

02:20 PM: [RecyclingWedPM6] Invited

Photovoltaic Panel Recycling: From Type-selective Processes to Flexible Apparatus for Simultaneous Treatment of Different Types

F. Pagnanelli¹; ¹SAPIENZA University of ROME, Rome, Italy;

02:40 PM: [RecyclingWedPM7]

Innovative Perspective for Recovery Selected Metals From Industrial Waste Solutions and Wastewaters

V. Pencak¹; **G. Maruskinova²**; ¹Company, Kosice - Saca, Slovakia; ²TECHNICAL University KOSICE SLOVAKIA, Kosice, Slovakia;

03:00 PM: [RecyclingWedPM8]

Recovery of Precious Metals From Printed Circuits Boards

D. Fontana¹; **G. Torelli¹**; **R. De Carolis¹**; **R. Guzzinati¹**; **M. Pietrantonio¹**; **S. Pucciarmati¹**; ¹ENEA, Rome, Italy;

03:20 AM Break - Poster Session

03:45 AM Organized Activities

SESSION:
MoltenWedAM

**2nd Intl. Symp. on Sustainable Molten Salt and
Ionic Liquid Processing**

Wed July, 02 2014

Room: Peninsula I

Session Chair: TBA

08:00 AM: [MoltenWedAM1] Plenary

Achieving Inert Graphite Anode and High Efficiency for Electrolysis of Solid Metal Oxides and Metal Sulfides in Molten Chlorides

X. Jin¹; **G. Chen²**; ¹WUHAN University, Wuhan, China; ²University of NOTTINGHAM, Nottingham, United Kingdom;

08:20 AM: [MoltenWedAM2]

Rheological Characteristics of Molten Ionic Slag Having Network Structure

K. Mukherjee¹; ¹CSIR-National Metallurgical Laboratory, Jamshedpur, India;

08:40 AM: [MoltenWedAM3]

Experimental Investigations and Thermodynamic Modeling of KCl-LiCl-UCI₃ System

K. Kumar¹; **S. Ghosh**²; **K. Nagarajan**²; ¹INDIAN Institute of Technology MADRAS, Chennai, India; ²Chemistry GROUP, Kalpakkam, India;

09:00 AM: [MoltenWedAM4]

Density, Excess Properties, Electrical Conductivity and Viscosity of Ionic Liquid Binary Mixtures With Lower Amides

S. Gadzuric¹; **M. Vranes**¹; **A. Tot**¹; **N. Zec**¹; **S. Papovic**¹; **S. Dozic**¹; **M. Gaune Escard**²; ¹Faculty of SCIENCES, Novi Sad, Serbia and Montenegro; ²ECOLE POLYTECHNIQUE, IUSTI, Universite de Provence, Marseille, France;

09:20 AM Break

09:40 AM SUMMIT PLENARY

11:00 AM Break

11:20 AM SUMMIT PLENARY

12:30 PM LUNCH

SESSION:

MoltenWedPM

2nd Intl. Symp. on Sustainable Molten Salt and Ionic Liquid Processing

Wed July, 02 2014

Room: Peninsula I

Session Chair: TBA

02:00 PM: [MoltenWedPM5]

Synthesis of Novel Compounds and Nanomaterials in Molten Salts

S. Kuznetsov¹; ¹Institute of Chemistry, KOLA Science CENTRE RAS, Apatity, Russian Federation;

02:20 PM: [MoltenWedPM6]

The Electrical Conductivity of Some Chloride Melts in A Wide Temperature Range

A. Salyulev¹; **A. Potapov**¹; ¹Institute of HIGH TEMPERATURE ELECTROCHEMISTRY, Ekaterinburg, Russian Federation;

02:40 PM: [MoltenWedPM7]

Theoretical Description of Ionic Liquids: From Molecule to Real System

Z. Akdeniz¹; ¹PIRI REIS University, Istanbul, Turkey;

SESSION:

CeramicWedAM

1st Intl. Symp. on Composite, Ceramic and Nano Materials Processing, Characterization and Applications Symposium

Wed July, 02 2014

Room: Peninsula II

Session Chair: TBA

08:00 AM: [CeramicWedAM1] Keynote

Characterization of Relaxor Ferroelectric Ceramics and Single Crystals by

Acoustic Emission

M. Roth¹; E. Dulkan¹; B. Mihailova²; ¹The HEBREW University of JERUSALEM, Jerusalem, Israel; ²DPT GEOWISSENSCHAFTEN, HAMBURG Univ., Germany;

08:20 AM: [CeramicWedAM2]

Taguchi Experimental Design for Films/coatings Optimization of (NH₄)₂SiF₆, (NH₄)₃AlF₆, NH₄AlF₄ Phases on Aluminum Sheet Substrates by HYSY-CVD Route

S. Gallardo Heredia¹; J. Flores Garcia¹; E. Trujillo Vazquez¹; **M. Pech Canul**¹; M. Pech Canul²; ¹CINVESTAV-SALTILLO, Ramos Arizpe, Mexico; ²CINVESTAV-MERIDA, Merida, Mexico;

08:40 AM: [CeramicWedAM3]

Fabrication and Characterization of Radiation Modified Bioresorbable Polymeric Composite Film

K. Dey¹; R. Khan²; ¹Department of APPLIED & ENVIRONMENTAL Chemistry, University of CHITTAGONG, Chittagong, Bangladesh; ²BANGLADESH ATOMIC Energy COMMISSION, Dhaka, Bangladesh;

09:00 AM: [CeramicWedAM4]

Crystallization Process of the Faujasite Zeolite: Effect of Alumina and Silica Sources

A. Medina Ramirez¹; ¹University of LA CIENEGA, Sahuayo de Morelos, Mexico;

09:20 AM Break

09:40 AM SUMMIT PLENARY

11:00 AM Break

11:20 AM SUMMIT PLENARY

12:30 PM LUNCH

SESSION:
CeramicWedPM

1st Intl. Symp. on Composite, Ceramic and Nano Materials Processing, Characterization and Applications Symposium

Wed July, 02 2014 Room: Peninsula II

Session Chair: TBA

02:00 PM: [CeramicWedPM5] Keynote

The Story of Stable Non-Lewis Molecules: From Transient Species to "Bottleable" Compounds

S. Zilberg¹; ¹The HEBREW University of JERUSALEM, Jerusalem, Israel;

02:20 PM: [CeramicWedPM6] Invited

Investigation of Production of Silicon Nitride From Turkish Rice Husks

Y. Topkaya¹; A. Geveci¹; B. Alpay¹; ¹METU, Ankara, Turkey;

02:40 PM: [CeramicWedPM7]

Sequential Deposition of Dental Porcelain /hydroxyapatite on 316L Substrate by Electrophoretic Deposition as Biomedical Coating

G. Garcia¹; ¹University of LA CIENEGA, Sahuayo, Mexico;

02:00 PM: [CeramicWedPM8] Plenary

Inorganic Nanotubes and Fullerene-like Nanoparticles at the Crossroad between Solid State Chemistry and Nanotechnology

R. Tenne¹; ¹WEIZMANN Institute of SCIENCE, Rehovot, Israel;

03:20 AM Break - Poster Session

03:45 AM Organized Activities

SESSION: **Non-ferrousWedAM**

2nd Intl. Symp. on Sustainable Non-ferrous Smelting in 21st Century

Wed July, 02 2014

Room: Peninsula III

Session Chair: TBA

08:00 AM: [Non-ferrousWedAM1] Plenary

A Novel Pathway for Manufacturing of Metals From Metal Oxides

R. Reddy¹; ¹The University of ALABAMA, Tuscaloosa, United States;

08:20 AM: [Non-ferrousWedAM2] Keynote

Indium Recovery From Spent Cu-in Sputtering Target

W. Chen¹; **S. Huang**²; ¹RESOURCES RECYCLING and MANAGEMENT Research CENTER, National CHENG KUNG University, Tainan City, Taiwan; ²National CHENG KUNG University, Tainan City, Taiwan;

08:40 AM: [Non-ferrousWedAM3]

The Development of A New Environmentally-friendly Technology for Integrated Processing of Gold-bearing Antimony Ores

J. Bagdavadze¹; **R. Chagelishvili**²; **T. Gagnidze**²; **A. Kandelaki**¹; **Z. Tsikaridze**¹; **K. Ukleba**¹; ¹FERDINAND TAVADZE Institute of Metallurgy and Materials SCIENCE, Tbilisi, Georgia; ²IVANE JAVAKHISHVILI TBILISI State University, RAFAEL AGLADZE Institute of INORGANIC Chemistry and ELECTROChemistry, Tbilisi, Georgia;

09:00 AM: [Non-ferrousWedAM4]

Control and Optimization of the Use of Electric Furnace Gases as Combustibles in Rotary Kilns of Newco Ferronikeli

S. Imeri¹; **N. Tahiraj**²; **M. Rizaj**³; **H. Jashari**⁴; **M. Rustemi**⁵; **M. Gerguri**⁶; **F. Kongoli**⁷; **S. Misini**⁸; ¹NNP-DACI, Prishtina, Kosovo; ²NEWCO FERRONIKELI COMPLEX, Prishtina, Kosovo; ³PRISHTINA University, Prishtina, Kosovo; ⁴PRISHTINA, Prishtina, Kosovo; ⁵JUGOHROM FERROALLOYS, Tetove, Macedonia (Former Yugoslav Republic of Macedonia); ⁶DACI, Prishtina, Kosovo; ⁷FLOGEN TECHNOLOGIES INC, Mont-Royal, Canada; ⁸University for BUSINESS and Technology, Prishtina, Kosovo;

09:20 AM Break

09:40 AM SUMMIT PLENARY

11:00 AM Break

11:20 AM SUMMIT PLENARY

12:30 PM LUNCH

SESSION: **Non-ferrousWedPM**

2nd Intl. Symp. on Sustainable Non-ferrous Smelting in 21st Century

Wed July, 02 2014

Room: Peninsula III

Session Chair: TBA

02:00 PM: [Non-ferrousWedPM5] Plenary

Molten Salts: From the Theory to Industrial Processes

P. Masset¹; ¹FRAUNHOFER UMSICHT, Sulzbach-Rosenberg, Germany;

02:20 PM: [Non-ferrousWedPM6] Plenary

Molten Slags and Salts - Understanding Towards Novel Process Approaches

S. Seetharaman¹; **L. Teng**²; **L. Wang**³; ¹Royal Institute of Technology, Stockholm, Sweden; ²ABB, VASTERAS, SWEDEN, Vasteras, Sweden; ³UNIV. of SCI. & TECH BEIJING, Beijing, China;

02:40 PM: [Non-ferrousWedPM7]

Anode Slime Gained During Electrolytic Refining Process of Secondary Copper Anodes

N. Deva¹; **M. Rizaj**¹; **I. Duman**²; **F. Kongoli**³; ¹University of PRISHTINA, Prishtina, Kosovo; ²ISTANBUL TECHNICAL University, Istanbul, Turkey; ³FLOGEN TECHNOLOGIES INC, Mont-Royal, Canada;

03:00 PM: [Non-ferrousWedPM8]

A Sustainable Recycling Process for Simultaneous Recovery of Zn, Pb and Ag From A Dumped Slag

A. Unger¹; **S. Steinlechner**²; **J. Antrekowitsch**³; ¹University of LEOBEN, Austria; ²MontANUNIVERSITAT, Leoben, Australia; ³CHRISTIAN DOPPLER Laboratory for OPTIMIZATION and BIOMASS UTILIZATION IN HEAVY METAL RECYCLING, Leoben, Austria;

03:20 AM Break - Poster Session

03:45 AM Organized Activities

SESSION: **MineralWedAM**

1st Intl. Symp. on Sustainable Mineral Processing

Wed July, 02 2014

Room: Peninsula IV

Session Chair: TBA

08:00 AM: [MineralWedAM1]

Mining and Mineral Processing on Pegmatites: an Example of Curimatau Micro Region, Paraiba State, Brazil

F. Souza¹; **P. Sales**²; **A. Sobrinho**³; ¹IFPB, Campina Grande, Brazil; ²IFPB, Picui, Brazil; ³ESCOLA ESTADUAL PADRE JERONIMO, Santa Luzia, Brazil;

08:20 AM: [MineralWedAM2]

Utilization of Oil Shale From Aleksinac Coal Basin in Cement Industry as Alternative Energy Source

Z. Markovic¹; Z. Stirbanovic²; J. Sokolovic¹; P. Pantovic³; L. Markovic⁴;
¹University of BELGRADE - TECHNICAL Faculty IN BOR, Bor, Serbia and Montenegro (formerly Yugoslavia); ²DIPL. MIN.ENG., Bor, Serbia and Montenegro (formerly Yugoslavia); ³DING MIN.ENG., Bor, Serbia and Montenegro (formerly Yugoslavia); ⁴University of BELGRADE - MINING and GEOLOGY Faculty BELGRADE, Bor, Serbia and Montenegro;

08:40 AM: [MineralWedAM3]

A Novel Biopolymer for Improve Iron Ores Flotation Process Sustainability

M. Costa¹; ¹KEMIRA, Barueri, Brazil;

09:00 AM: [MineralWedAM4]

Effect of High-power Nanosecond Pulses on Surface Structure and Flotation Properties of Sphalerite and Chalcopyrite

I. Bunin¹; V. Chanturiya¹; I. Khabarova¹; ¹Research Institute of COMPREHENSIVE EXPLOITATION of MINERAL RESOURCES RUSSIAN ACADEMY of SCIENCE, Moscow, Russian Federation;

09:20 AM Break

09:40 AM SUMMIT PLENARY

11:00 AM Break

11:20 AM SUMMIT PLENARY

12:30 PM LUNCH

SESSION:
MineralWedPM

1st Intl. Symp. on Sustainable Mineral Processing

Wed July, 02 2014

Room: Peninsula IV

Session Chair: TBA

02:00 PM: [MineralWedPM5]

Recovery Carbon Matter From Coal Dams Tailings

I. A.s. De Brum¹; G. Brandt Gonzalez Da Vila¹; J. C. B. De Azambuja¹; P. M. Zancan¹; ¹UFRGS, Porto Alegre, Brazil;

02:20 PM: [MineralWedPM6]

Study on Preparation of Iron Carbide From High Phosphorus Oolitic Hematite and the Effect on Gangue

H. Wang¹; ¹WUHAN University of Science and Technology, Wuhan, China;

02:40 PM: [MineralWedPM7]

Development of the Technology for Processing of Molybdenum Sulfide Concentrates by Direct Reduction

G. Karamyan¹; K. Hakobyan¹; A. Hakobyan¹; A. Melkomyan¹; ¹Institute of Chemical Physics of NAS of ARMENIA, Yerevan, Armenia;

03:00 PM: [MineralWedPM8]

N-carboxymethyl Chitosan in Differential Flotation of Galena and Chalcopyrite

Y. Xiang¹; Q. Liu¹; K. Wang¹; ¹University of ALBERTA, Edmonton, Canada;

03:20 AM Break - Poster Session

03:45 AM Organized Activities

SESSION:
EnergyWedAM

**1st Intl. Symp. on Sustainable Energy Production:
Gas/Oil/Shale and new renewable carbon free
technologies**

Wed July, 02 2014 Room: Maria Louisa & Maria Fernanda

Session Chair: TBA

08:00 AM: [EnergyWedAM1]

Predicting Fluid-flow in Naturally Fractured Reservoirs

A. Esmaeili¹; M. Abdalla Ayoub²; M. Dehghani³; ¹Universiti Teknologi Petronas (UTP), Omidieh, Iran; ²Universiti Teknologi Petronas (UTP), Tronoh, Malaysia; ³National IRANIAN OIL Company, Omiodieh, Iran;

08:20 AM: [EnergyWedAM2]

Gas Analysis by Laser-induced Breakdown Spectroscopy

M. Dehghani¹; ¹National IRANIAN OIL Company, Omiodieh, Iran;

08:40 AM: [EnergyWedAM3]

Technologies for Removing Sulfur From Heavy Crude Oil

A. Esmaeili¹; ¹Universiti Teknologi Petronas (UTP), Omidieh, Iran;

09:00 AM: [EnergyWedAM4]

Copper and Environment

M. Dehghani¹; ¹National IRANIAN OIL Company, Omiodieh, Iran;

09:20 AM Break

09:40 AM SUMMIT PLENARY

11:00 AM Break

11:20 AM SUMMIT PLENARY

12:30 PM LUNCH

SESSION:
EnergyWedPM

**1st Intl. Symp. on Sustainable Energy Production:
Gas/Oil/Shale and new renewable carbon free
technologies**

Wed July, 02 2014 Room: Maria Louisa & Maria Fernanda

Session Chair: TBA

02:00 PM: [EnergyWedPM5] Invited

Oil Well Stimulation by Electro Acoustic Waves

A. Esmaeili¹; ¹Universiti Teknologi Petronas (UTP), Omidieh, Iran;

02:20 PM: [EnergyWedPM6]

Cutting-edge Process Management for Asia's Heavy Oil

A. Esmaeili¹; ¹Universiti Teknologi Petronas (UTP), Omidieh, Iran;

02:40 PM: [EnergyWedPM7]

Optimization of Water Injection Well Placement for Water Injection Into an Oil Reservoir to Enhance Oil Recovery

A. Esmaeili¹; **M. Abdalla Ayoub**²; ¹Universiti Teknologi Petronas (UTP), Omidieh, Iran;²Universiti Teknologi Petronas (UTP), Tronoh, Malaysia;

03:00 PM: [EnergyWedPM8]

Gas Lift as an Artificial Lift for Production From an Oil Field

A. Esmaeili¹; **M. Abdalla Ayoub**²; ¹Universiti Teknologi Petronas (UTP), Omidieh, Iran;²Universiti Teknologi Petronas (UTP), Tronoh, Malaysia;

03:20 AM Break - Poster Session

03:45 AM Organized Activities

SESSION: MultiscaleWedAM	Multiscale Material Mechanics in the 21st Century: Old Ideas for New Models Across Materials, Processes and Scales
Wed July, 02 2014	Room: Maria Mercedes & Maria Beatriz
<u>Session Chair:</u> TBA	

08:00 AM: [MultiscaleWedAM1] Invited

Inclusion of Arbitrary Polygon With Graded Eigenstrain in an Anisotropic Piezoelectric Plane

K. Xu¹; ¹SHANGAI University, Shanghai, China;

08:20 AM: [MultiscaleWedAM2] Invited

From REBO Potentials to A Mechanical Model of Graphene Under A Combination of Bending and Stretching Loads

N. Pugno¹; **A. Favata**¹; **P. Podio Guidugli**²; ¹University of Trento, Trento, Italy; ²University of Rome TorVergata, Italy;

08:40 AM: [MultiscaleWedAM3] Invited

On Consistency of Constitutive Prescriptions in Statistical and Continuum Mechanics

P. Podio Guidugli¹; ¹University of Rome TorVergata, Italy;

SESSION: Nanomaterials WedPM	1st Intl. Symp. on Synthesis and Properties of Nanomaterials for Future Energy Demands
Wed July, 02 2014	Room: Maria Mercedes & Maria Beatriz
<u>Session Chair:</u> TBA	

02:00 PM: [Nanomaterials WedPM5]

Na2S-P2S5 Glass/ Glass-ceramic Solid Electrolytes for Rechargeable Sodium Batteries at Room Temperature

P. Jha¹; ¹SCHOOL of Physics and Materials Science, Patiala, India;

02:20 PM: [Nanomaterials WedPM6]

Anticancer Drug-loaded Plasmonic Core-shell Nanocapsules for Targeted Cancer Therapy

P. Thakur¹; ¹ITALIAN Institute of Technology, Naples, Italy;

02:40 PM: [Nanomaterials WedPM7]

Chalcopyrite Type Solar Cells

D. Pathak¹; ¹UNIVERZITA PARDUBICE, Pardubice, Czech Republic;

03:20 AM Break - Poster Session

03:45 AM Organized Activities

Thursday:

SESSION: **CoatingsThuAM** **The High Temperature Protection Coatings**

Thu July, 03 2014

Room: Condesa I

Session Chair: TBA

08:00 AM: [CoatingsThuAM1] Plenary

Recent Developments in Surface Protection of Titanium and Titanium-aluminum Alloys Against Environmental Degradation at Elevated Temperatures

R. Yankov¹; J. Von Borany¹; P. Masset²; A. Donchev³; M. Schuetze³; ¹Institute of ION BEAM Physics and Materials Research, HELMHOLTZ-ZENTRUM DRESDEN-ROSSENDORF (HZDR), Dresden, Germany; ²FRAUNHOFER UMSICHT, Sulzbach-Rosenberg, Germany; ³DECHEMA FORSCHUNGSINSTITUT, Frankfurt am Main, Germany;

08:20 AM: [CoatingsThuAM2]

Coatings for Heat Storage Applications

P. Masset¹; S. Schuster¹; ¹FRAUNHOFER UMSICHT, Sulzbach-Rosenberg, Germany;

08:40 AM: [CoatingsThuAM3]

Heat Treatment Process Effect on Carburized Layer of Aircraft Engine Heavily-loaded Steel Components

P. Rokicki¹; K. Dychton¹; A. Nownotnik¹; M. Goral¹; M. Drajewicz¹; J. Sieniawski¹; M. Zagula Yavorska¹; ¹RZESZOW Univ. of Technology, Research and Development Laboratory for Aerospace Materials, Rzeszow, Poland;

09:00 AM: [CoatingsThuAM4]

Densified Oxide Based Coatings for High Temperature Applications

C. Weih¹; P. Masset¹; G. Wolf¹; K. Fehr²; S. Schuster¹; ¹FRAUNHOFER UMSICHT, Sulzbach-Rosenberg, Germany; ²DEPT. FEHR GEO- & UMWELTWISSENSCHAFTEN, Germany;

09:20 AM Break
09:40 AM SUMMIT PLENARY
11:00 AM Break
11:20 AM SUMMIT PLENARY
12:30 PM LUNCH

SESSION: MiningThuPM	1st Intl. Symp. on Sustainable Mining Operations
Thu July, 03 2014	Room: Condesa I
<u>Session Chair:</u> TBA	

02:00 PM: [MiningThuPM5]
Evaluation of Energy Efficiency Heating and Grind of Iron Ore Using Energy Microwave
L. Martins Da Silva¹; ¹UNIV. Federal FLUMINENSE, Volta Redonda, Brazil;

SESSION: BatteryThuAM	1st Intl. Symp. on Sustainable Secondary Battery Manufacturing and Recycling
Thu July, 03 2014	Room: Condesa II
<u>Session Chair:</u> TBA	

08:00 AM: [BatteryThuAM1] Invited
Macroporous Battery Materials Made From Ionic Liquids
F. Endres¹; ¹CLAUSTHAL Univ. of Technology, Clausthal-Zellerfeld, Germany;

08:20 AM: [BatteryThuAM2] Invited
The SAE Battery Recycling Committee: an Industry Approach to A Consolidated View of Battery Recycling Issues, Opportunities and Requirements
T. Ellis¹; **J. Hohn**¹; ¹RSR TECHNOLOGIES INC, Dallas, United States;

08:40 AM: [BatteryThuAM3] Invited
The Production of PbO₂ From Recycled Lead Acid Batteries as the Replacement of Pb₃O₄
T. Ellis¹; **J. Hohn**¹; ¹RSR TECHNOLOGIES INC, Dallas, United States;

09:00 AM: [BatteryThuAM4] Keynote
Conversion Reactions: Extension and Application
Z. Wang¹; ¹Institute of PHYSICS, CHINESE ACADEMY of SCIENCES, Beijing, China;

09:20 AM Break
09:40 AM SUMMIT PLENARY
11:00 AM Break
11:20 AM SUMMIT PLENARY
12:30 PM LUNCH

SESSION: **1st Intl. Symp. on Sustainable Secondary Battery
BatteryThuPM Manufacturing and Recycling**
Thu July, 03 2014 Room: Condesa II
Session Chair: TBA

02:00 PM: [BatteryThuPM5] Invited
Recycled Lead Acid Paste as an Anode Materials for Li-Ion Batteries
M. Sonmez¹; B. Derin¹; O. Keles¹; S. Gurmen¹; ¹ISTANBUL TECHNICAL
University, Istanbul, Turkey;

02:20 PM: [BatteryThuPM6] Invited
**Transition Metal Oxides as New Energy Storage Materials for Sodium-ion
Batteries**
S. Jiao¹; W. Wang¹; ¹University of Science and Technology Beijing, China;

02:40 PM: [BatteryThuPM7] Invited
Multifunctional Coatings for Lithium Ion Batteries
X. Xiao¹; ¹GENERAL MOTORS GLOBAL R&D CENTER, Warren, United States;

03:00 PM: [BatteryThuPM8] Invited
Li_{1-x}Sn_{2+x}Pn₂ (Pn = P, As): Novel Layered Li Compounds
K. Kovnir¹; ¹University of CALIFORNIA, DAVIS, Davis, United States;

03:20 AM Break - Poster Session

03:45 AM Organized Activities

SESSION: **Rare- 1st Intl. Symp. on Rare Earth and Platinum Group
EarthThuAM Metals:Managing and Processing**
Thu July, 03 2014 Room: Condesa III
Session Chair: TBA

08:00 AM: [Rare-EarthThuAM1] Keynote
Selective Extraction of Rare Earths From Permanent Magnet Using Mg
T. Kim¹; ¹KITECH, Incheon, South Korea;

08:20 AM: [Rare-EarthThuAM2] Keynote
Study on Halide Process for Rare Metal Recycling
N. Sato¹; ¹Tohoku University, Sendai, Japan;

08:40 AM: [Rare-EarthThuAM3]
**Nanocrystalline Metals and Alloys of Platinum Group With Nanoscale
Porosity**
I. Popov¹; ¹The HEBREW University of JERUSALEM, Jerusalem, Israel;

SESSION:
RecyclingThuPM

**2nd Intl. Symp. on Sustainable Materials
Recycling Processes and Products**

Thu July, 03 2014

Room: Condesa III

Session Chair: TBA

02:00 PM: [RecyclingThuPM5]

Development of the Technology and Implementation of Recycling Processes of Technogenic Wastes of Metallurgy With the Recovery of Zinc, Lead, Tin and Iron

P. Kozlov¹; **F. Kongoli**²; ¹CHELYABINSK ZINC PLANT, Chelyabinsk, Russian Federation; ²FLOGEN TECHNOLOGIES INC, Mont-Royal, Canada;

02:20 PM: [RecyclingThuPM6]

Recycling of Hot Extruded P/M Aluminium Alloy 6061-SiC Particle Composite - Interaction Between Sic Reinforcement Particles and Matrix

J. Kasala¹; ¹ALEXANDER DUBCEK University of TRENCIN, Trencin, Slovakia;

02:40 PM: [RecyclingThuPM7]

The Use of Marble Cutting Residues as A Substitute Fluxing Agent for Iron Ore Pellet Production

J. Conti De Souza¹; N. Scardine²; I. Da Silva²; J. Oliveura²; ¹Federal Institute of Education, Sciences, Technology of the Espirito Santos State, BRAZIL (IFES), Serra, Brazil; ²Federal Institute of Education, Sciences, Technology of the Espirito Santos State, BRAZIL (IFES), Vitoria, Brazil;

03:00 PM: [RecyclingThuPM8]

Study of Molten Salts System in the Treatment of Waste Printed Circuit Boards by Low-temperature Alkaline Smelting

J. Liu¹; **X. Guo**¹; D. Li¹; Q. Tian¹; ¹Central South University, Changsha, China;

03:20 AM Break - Poster Session

03:45 AM Organized Activities

SESSION:
EnvironmentalThuAM

**3rd Intl. Symp. on Environmental, Health,
Policy, Legal, Management and Social Issues
Related to Metals, Materials and Mineral
Processing**

Thu July, 03 2014

Room: Peninsula I

Session Chair: TBA

08:00 AM: [EnvironmentalThuAM1]

Development of an Arsenic Stabilization Method to Remediate Wastes and Soils and Its Use to Improve the Security of Metallurgical Waste Disposal Sites

M. Gutierrez Ruiz¹; F. Romero¹; A. Ceniceros¹; G. Martinez¹; T. Tavares²; ¹UNAM, Mexico, Mexico; ²Department of ANALYTICAL Chemistry, Institute of Chemistry UFBA, Salvador, Brazil;

08:20 AM: [EnvironmentalThuAM2]

The Ethos of Science, Production and Management in the Light of Modern Environmental Policy: the Precautionary Principle and Social and Humanitarian Expertise

N. Konovalova¹; ¹Boris Yeltsin Ural Federal University, Ekaterinburg, Russian Federation;

08:40 AM: [EnvironmentalThuAM3]

Development of Best Praxis for Random Sampling Analysis of Alloy Content in Steel Scrap Deliveries and its Impact on the Electric Arc Furnace

P. Jonsson¹; A. Tilliander¹; A. Gauffin¹; ¹Royal Institute of Technology, Stockholm, Sweden;

09:00 AM: [EnvironmentalThuAM4]

The Viability of the Phosphate Industry: Towards A Sustainable Mineral Mining Policy in Israel

M. Danon¹; ¹MINISTRY of National INFRASTRUCTURES, Energy and WATER RESOURCES, Jerusalem, Israel;

09:20 AM Break

09:40 AM SUMMIT PLENARY

11:00 AM Break

11:20 AM SUMMIT PLENARY

12:30 PM LUNCH

SESSION:

EnvironmentalThuPM

3rd Intl. Symp. on Environmental, Health, Policy, Legal, Management and Social Issues Related to Metals, Materials and Mineral Processing

Thu July, 03 2014

Room: Peninsula I

Session Chair: TBA

02:00 PM: [EnvironmentalThuPM5]

Legal Analysis of Mining and Mineral Processing Concession Contracts in the European Union and in the Republic of Albania

A. Nuni¹; **J. Daci**²; ¹Univ. of TIRANA, Albania; ²WISDOM Univ., Tirana, Albania;

02:20 PM: [EnvironmentalThuPM6]

Design, Performance and Litigation of Mining and Mineral Processing Contracts: Case of Albania

J. Daci¹; L. Ndoj²; ¹WISDOM University, Tirana, Albania; ²EUROPEAN University of TIRANA/ ASS. ATTORNEY AT LAW, Tirana, Albania;

02:40 PM: [EnvironmentalThuPM7]

Environmental Pollution and Industrial Corrosion in Fluvial/marine Ports: Health, Social and Legal Aspects

B. Valdez¹; M. Schorr¹; N. Lotan²; E. Valdez³; A. Eliezer⁴; J. Bastidas⁵;

¹University of BAJA CALIFORNIA, Mexicali, Mexico; ²TECHNION-ISRAEL Institute of Technology, Haifa, Israel; ³CENTRO DE INVESTIGACION MEDICA IXCHEL, Mexicali, Mexico; ⁴SAMI SHAMOON College of Engineering, Ber

Sheva, Israel; ⁵CENTRO NACIONAL DE INVESTIGACIONES METALURGICAS (CENIM), Madrid, Spain;

03:00 PM: [EnvironmentalThuPM8]

Altered Patterns of Genetic Structure and Diversity in Mammal Species Exposed to Mine Tailings in Huautla, Morelos, Mexico

E. Tovar Sanchez¹; M. Ortiz Hernandez¹; E. Sanchez Salinas¹; P. Mussali Galante¹; ¹UNIVERSIDAD AUTONOMA DEL ESTADO DE MORELOS, Cuernavaca, Mexico;

03:20 AM Break - Poster Session

03:45 AM Organized Activities

SESSION: **1st Intl. Symp. on Composite, Ceramic and Nano
CeramicThuAM Materials Processing, Characterization and
Applications Symposium**

Thu July, 03 2014 Room: Peninsula II

Session Chair: TBA

08:00 AM: [CeramicThuAM1]

Fabrication of cryo-milling Experiment Set Up to Produce Copper Nanopowder, its Consolidation Using HSPC Technique in FSW Machine

Y. Beemaiah¹; ¹DON BOSCO Institute of Technology, Bengaluru, India;

08:20 AM: [CeramicThuAM2] Keynote

Nanoparticles Based on Metallic Iron - Preparation, Characteristics and Applications

M. Cernik¹; ¹TUL, Liberec, Czech Republic;

08:40 AM: [CeramicThuAM3]

Synthesis of Magnetic Nano - Fe₃O₄ With Tunable Size

W. Wang¹; **X. Guo**¹; Q. Tian¹; W. Ning¹; F. Mao¹; ¹CENTRAL SOUTH University, Changsha, China;

09:00 AM: [CeramicThuAM4]

Investigation of Modified Ceramic Masses Properties

O. Gulzhan¹; ¹KAZAKH National TECHNICAL University, Almaty, Kazakhstan;

09:20 AM Break

09:40 AM SUMMIT PLENARY

11:00 AM Break

11:20 AM SUMMIT PLENARY

12:30 PM LUNCH

SESSION: **Quasi-
CrystalsThuPM**

**2nd Intl. Symp. on Quasi-crystals, Metallic
Alloys, Composites, Ceramics and Nano
Materials**

Thu July, 03 2014

Room: Peninsula II

Session Chair: TBA

02:00 PM: [Quasi-crystalsThuPM5]

Designing & Evaluation of ANSI 852.0 Alloy as A Die Cast Material

C. Shah¹; D. Mathane²; D. Soman²; **M. Joshi**³; ¹GROWELL INDUSTRIES, Vadodara, India; ²M.S.University of BARODA, Vadodara, India; ³INDUS University, AHMEDABAD, India;

02:20 PM: [Quasi-crystalsThuPM6]

Merging of Metal Nanoparticles Via Wetting-like Process

I. Popov¹; ¹The HEBREW University of JERUSALEM, Israel;

02:40 PM: [Quasi-crystalsThuPM7]

Mechanical Behavior and Simulation of Load Sharing in Bundles of Ceramic-fiber Composites

L. Neckel¹; J. Pereira Da Silva²; P. Guglielmi²; H. Al Qureshi³; **D. Hotza**⁴; ¹UNESC, Criciuma, Brazil; ²TUHH, Hamburg, Germany; ³UFSC, Florianopolis, Brazil; ⁴UFSC, Davis, United States;

SESSION: **Non-
ferrousThuAM**

**2nd Intl. Symp. on Sustainable Non-ferrous
Smelting in 21st Century**

Thu July, 03 2014

Room: Peninsula III

Session Chair: TBA

08:00 AM: [Non-ferrousThuAM1] Keynote

Physical-chemical Properties of Low-temperature Electrolytes of Interest for Aluminum Production

Y. Zaikov¹; O. Tkacheva¹; A. Redkin¹; A. Kataev¹; ¹Institute of HIGH TEMPERATURE ELECTROCHEMISTRY of the Ural Branch of the RUSSIAN ACADEMY of SCIENCES, Ekaterinburg, Russian Federation;

08:20 AM: [Non-ferrousThuAM2] Keynote

The Current State and Perspectives of the Technological Development of Lead Industry

V. Shumskiy¹; **S. Leiman**¹; ¹VNIItsvetmet, Ust-Kamenogorsk, Kazakhstan;

08:40 AM: [Non-ferrousThuAM3]

Studies of Noble Metals Behavior in Lead Smelting Processes

V. Shumskiy¹; **S. Leiman**¹; ¹VNIItsvetmet, Ust-Kamenogorsk, Kazakhstan;

09:00 AM: [Non-ferrousThuAM4]

Commissioning and the First Experience of Running of KIVCET Process for Complex Lead-zinc Raw Materials Smelting at Chinese Plants

V. Shumskiy¹; A. Carminati²; D. Sanna³; L. Zhang⁴; **S. Leiman**¹; ¹VNIITsvetmet, Ust-Kamenogorsk, Kazakhstan; ²Forni Engineering S.r.l., Milan, Italy; ³Texeco Consulting, Rome, Italy; ⁴Changsha Engineering & Research Institute of Nonferrous Metallurgy, Changsha, China;

09:20 AM Break

09:40 AM SUMMIT PLENARY

11:00 AM Break

11:20 AM SUMMIT PLENARY

12:30 PM LUNCH

SESSION: **Non-ferrousThuPM**

2nd Intl. Symp. on Sustainable Non-ferrous Smelting in 21st Century

Thu July, 03 2014

Room: Peninsula III

Session Chair: TBA

02:00 PM: [Non-ferrousThuPM5] Keynote

Development of Convergence Technologies for the Recovery of Critical Rare Elements From Power Plants Waste for Simultaneous Co2 Utilization

T. Thriveni¹; N. Seong Young¹; **J. Ahn**¹; ¹KIGAM (KOREA Institute of Geoscience and Mineral Resources), Daejeon, South Korea;

02:20 PM: [Non-ferrousThuPM6]

Physical and CFD Modelling Study of Mixing and Mass Transfer Phenomena in Subsonic-sonic Transition Operated Platinum Group Metals (PGMs) - Peirce-Smith (PS) Converters

D. Chibwe¹; G. Akdogan¹; ¹Univ. of Stellenbosch, Stellenbosch, South Africa;

02:40 PM: [Non-ferrousThuPM7] Invited

Five Years of Eco Clean Smelting Operation at YGJ Lead Smelter Using SKSTM Bottom Blowing Oxygen Bottom Blowing-molten Slag Reduction Technology

J. Zahng¹; ¹Dongying Fangyuan Non-Ferrous Metals Co., Calgary, Canada;

03:00 PM: [Non-ferrousThuPM8] Keynote

Five Years of Eco Clean Copper Smelting Operation at Fangyuan Smelter Using Advanced SKSTM Oxygen Bottom Blowing Technology

J. Zahng¹; ¹Dongying Fangyuan Non-Ferrous Metals Co., Calgary, Canada;

03:20 AM Break - Poster Session

03:45 AM Organized Activities

SESSION:
MineralThuAM

**1st Intl. Symp. on Sustainable Mineral
Processing**

Thu July, 03 2014

Room: Peninsula IV

Session Chair: TBA

08:00 AM: [MineralThuAM1]

The Control of Process With Logical Circuits

S. Kelmendi¹; K. Fetahu²; H. Qela³; ¹Faculty of GEO-SCIENCES and Technology, Pristine Univ., Mitrovica, Kosovo; ²Faculty of Geology and Mining, Univ. of Tirana, Tirana, Albania; ³Trepca Mining Complex, Mitrovica, Kosovo;

08:20 AM: [MineralThuAM2]

Testing of New Technology of Vapor-oxidation of Molybdenum Concentrates in the Pilot Plant

A. Hakobyan¹; ¹Institute of Chemical Physics of NAS of ARMENIA, Yerevan, Armenia;

08:40 AM: [MineralThuAM3]

Life Cycle Assessment as an Indicator Tool for Sustainable Development in Mineral Processing

K. Brashear¹; A. Louk¹; D. Rowley¹; ¹VIRGINIA TECH, Blacksburg, United States;

09:00 AM: [MineralThuAM4]

Physico-chemical Basis and Development of Waste-free Technology of Integrated Processing of Collective Polymetallic Concentrates

G. Karamyan¹; K. Hakobyan¹; A. Hakobyan¹; A. Melkomyan¹; V. Hayrapetyan¹; G. Paramazyan¹; ¹Institute of Chemical Physics of NAS of ARMENIA, Yerevan, Armenia;

09:20 AM Break

09:40 AM SUMMIT PLENARY

11:00 AM Break

11:20 AM SUMMIT PLENARY

12:30 PM LUNCH

SESSION:
MineralThuPM

**1st Intl. Symp. on Sustainable Mineral
Processing**

Thu July, 03 2014

Room: Peninsula IV

Session Chair: TBA

02:00 PM: [MineralThuPM5]

Online Smart Sensor to Measure Stockpile

X. Pan¹; ¹University of Johannesburg, Johannesburg, South Africa;

02:20 PM: [MineralThuPM6]

Optimization of Mineral Process

X. Pan¹; ¹University of Johannesburg, Johannesburg, South Africa;

02:40 PM: [MineralThuPM7]

Online Smart Ore Tracking System Using Smart Sensor Technology

X. Pan¹; ¹University of Johannesburg, Johannesburg, South Africa;

03:00 PM: [MineralThuPM8]

New Technology of Environmentally Sound Processing of Copper Sulphide Concentrate

G. Karamyan¹; A. Brukvin²; O. Tsibin²; K. Hakobyan¹; A. Hakobyan¹; A. Melkomyan¹; ¹Institute of Chemical Physics of NAS of ARMENIA, Yerevan, Armenia; ²A.A. BAYKOV Metallurgy and Materials Science Institute of RAS, Moscow, Russian Federation;

03:20 AM Break - Poster Session

03:45 AM Organized Activities

SESSION:
EnergyThuAM

**1st Intl. Symp. on Sustainable Energy Production:
Gas/Oil/Shale and new renewable carbon free
technologies**

Thu July, 03 2014 Room: Maria Louisa & Maria Fernanda

Session Chair: TBA

08:00 AM: [EnergyThuAM1]

Technologies to Make 2nd Generation Bio-fuels

A. Esmaeili¹; ¹Universiti Teknologi Petronas (UTP), Omidieh, Iran;

08:20 AM: [EnergyThuAM2]

Microbial Reservoir Souring

A. Esmaeili¹; ¹Universiti Teknologi Petronas (UTP), Omidieh, Iran;

08:40 AM: [EnergyThuAM3]

Electrochemical Synthesis of PbTe Thermoelectric Materials in NaOH Solution

Z. Shi¹; ¹NORTHEASTERN University, Shenyang, China;

09:00 AM: [EnergyThuAM4]

Energy Conversion of Porous Media Combustion Into Electric Power

V. Bubnovich¹; ¹UNIVERSIDAD DE SANTIAGO, Santiago, Chile;

09:20 AM Break

09:40 AM SUMMIT PLENARY

11:00 AM Break

11:20 AM SUMMIT PLENARY

12:30 PM LUNCH

SESSION: **2nd Intl. Symp. on Advanced Sustainable Iron and Steel Making**
IronThuPM
Thu July, 03 2014 Room: Maria Louisa & Maria Fernanda
Session Chair: TBA

02:00 PM: [IronThuPM5]

Expert Model for BOF Steelmaking Process

S. Pandey¹; D. Senk²; A. Shukla¹; ¹IIT MADRAS, CHENNAI, India; ²INSTITUT FUR EISENHUTTENKUNDE, RWTH AACHEN, Aachen, Germany;

02:20 PM: [IronThuPM6]

Modeling of the Ruhrstahl Heraeus (RH) Degassing Process

T. Pandey¹; D. Senk²; A. Shukla¹; ¹IIT MADRAS, CHENNAI, India; ²INSTITUT FUR EISENHUTTENKUNDE, RWTH AACHEN, GERMANY, Aachen, Germany, Germany;

02:40 PM: [IronThuPM7]

Mathematical Model of Operational Inner Profile of Blast Furnace Based on Heat Flux Monitoring by Wireless Measurement System

H. Zhao¹; ¹University of Science and Technology Beijing, China;

SESSION: **1st Intl. Symp. on Synthesis and Properties of Nanomaterials for Future Energy Demands**
Nanomaterials ThuAM
Thu July, 03 2014 Room: Maria Mercedes & Maria Beatriz
Session Chair: TBA

08:00 AM: [Nanomaterials ThuAM1]

Synthesis, Characterization and Properties of Radiation-induced Gum Ghatti-poly(acrylic Acid-aniline) Hydrogels

K. Sharma¹; ¹SHOOLINI University of BIOTechnology and MANAGEMENT SCIENCES, SOLAN, HIMACHAL PRADESH, Solan, India;

08:20 AM: [Nanomaterials ThuAM2]

Effect of Annealing on the Defect Concentration of Microwave Induced Synthesized Zinc Oxide Nanophosphors

V. Kumar¹; ¹Univ. of the FREE State, Bloemfontein 9300, South Africa;

08:40 AM: [Nanomaterials ThuAM3]

Electrical Conductivity of Barium Doped LaInO₃ Electrolyte

K. Sood¹; ¹THAPAR University, PATIALA, Patiala, India;

09:00 AM: [Nanomaterials ThuAM4]

Pt/NiO/MWCNTs Composite Based Room Temperature Hydrogen Gas Sensor

S. Dhali¹; ¹NIT, KURUKSHETRA, Kurukshetra, India;

09:20 AM Break
09:40 AM SUMMIT PLENARY
11:00 AM Break
11:20 AM SUMMIT PLENARY
12:30 PM LUNCH

SESSION: Nanomaterials ThuPM	1st Intl. Symp. on Synthesis and Properties of Nanomaterials for Future Energy Demands
Thu July, 03 2014	Room: Maria Mercedes & Maria Beatriz
<u>Session Chair:</u> TBA	

02:00 PM: [Nanomaterials ThuPM5]
Preparation and Characterization of Cr₂O₃ Thin Films Deposited Using Electron Beam Evaporation Method
V. Baloria¹; ¹GURU NANAK DEV University, AMRITSAR, Amritsar, India;

02:20 PM: [Nanomaterials ThuPM6]
Synthesis and Characterization of Sodium Impregnated Calcium Oxide as A Solid Nano Catalyst for Transesterification of Vegetable Oils
D. Kumar¹; ¹CHONBUK National University, Jeonju, South Korea;

02:40 PM: [Nanomaterials ThuPM7]
NiS/CNT Composites as Counter Electrode for Dye-sensitized Solar Cell Applications
A. Mahajan¹; ¹GURU NANAK DEV University, INDIA, Amritsar, India;

03:00 PM: [Nanomaterials ThuPM8]
Improved Performance of Dye-sensitized Solar Cell Using Cetyl Trimethylammonium Bromide Capped Silver Nanoparticles.
T. Tanvi¹; ¹GURU NANAK DEV University, Amritsar, India;

03:20 AM Break - Poster Session
03:45 AM Organized Activities

Friday:

SESSION: BatteryFriAM	1st Intl. Symp. on Sustainable Secondary Battery Manufacturing and Recycling
Fri July, 04 2014	Room: Condesa II
<u>Session Chair:</u> TBA	

08:00 AM: [BatteryFriAM1] Invited

In Situ Nanoscale Electrochemistry Studies on Anode Materials for Li Ion Batteries

R. Shahbazian Yassar¹; ¹Michigan Technological University, Houghton, United States;

08:20 AM: [BatteryFriAM2] Invited

In Situ Synthesis of High-energy Cathodes for Lithium-ion Batteries

F. Wang¹; ¹BROOKHAVEN National Laboratory, Upton, United States;

08:40 AM: [BatteryFriAM3] Invited

Electrochemical Assemblies of Metal Oxide at the Interface of Soft Colloidal Templates/electrode in Reverse Micelle and Applications in Super Capacitors

L. Hu¹; **S. Jiao**²; ¹SCHOOL of Metallurgical and Ecological Engineering, University of Science and Technology Beijing, China; ²University of Science and Technology Beijing, China;

09:00 AM: [BatteryFriAM4] Invited

Synthesis and Characterization of Phosphate Cathode Materials Prepared by A Polymeric Steric Entrapment Precursor Route

D. Ribero Rodriguez¹; ¹University of ILLINOIS, Urbana, United States;

09:20 AM Organized Activities

SESSION: EnvironmentalFriAM	3rd Intl. Symp. on Environmental, Health, Policy, Legal, Management and Social Issues Related to Metals, Materials and Mineral Processing
Fri July, 04 2014	Room: Peninsula I
<u>Session Chair:</u> TBA	

08:00 AM: [EnvironmentalFriAM2]

Relationship Between Different Types of Genotoxic Damage and Arsenic Blood Concentration in Individuals Residing in an Arsenic Contaminated Area in Central Mexico

P. Mussali Galante¹; **M. Ortiz Hernandez**¹; **E. Sanchez Salinas**¹; **E. Tovar Sanchez**¹; ¹Universidad Autonoma Del Estado De Morelos, Cuernavaca, Mexico;

08:20 AM: [EnvironmentalFriAM1]

Investigation on Clean Recycling Arsenic From the High-arsenic Dust

Y. Yi¹; **X. Guo**¹; **D. Li**¹; **J. Shi**¹; ¹CENTRAL SOUTH University, Changsha, China;

SESSION:
CeramicFriAM

**1st Intl. Symp. on Composite, Ceramic and Nano
Materials Processing, Characterization and
Applications Symposium**

Fri July, 04 2014 Room: Peninsula II

Session Chair: TBA

08:00 AM: [CeramicFriAM1]

Novel Nanotubular Surfaces for Biomechanics Applications

T. Shokuhfar¹; ¹Michigan Technological University, Houghton, United States;

08:20 AM: [CeramicFriAM2]

Biomimetic Bone Graft Substitutes Using A Polymer-induced Liquid-precursor (PILP) Mineralization Process

L. Gower¹; ¹University of FLORIDA, Gainesville, United States;

08:40 AM: [CeramicFriAM3]

Biodegradable Core-shell Microcapsules for Controlled Release Applications

L. Gower¹; **M. Bewernitz**¹; **A. Chidambaram**¹; ¹University of FLORIDA, Gainesville, United States;

09:00 AM: [CeramicFriAM4]

Tuning the Optical Properties of Ordered Arrays of Ag Nanostructures Created by Ion Implantation Through A Mask of Colloidal Silica Particles

J. Cheang Wong¹; ¹Instituto De Fisica, Univ. Nacional Autonoma De Mexico;

09:20 AM Organized Activities

SESSION: **Non-ferrousFriAM**

2nd Intl. Symp. on Sustainable Non-ferrous Smelting in 21st Century

Fri July, 04 2014

Room: Peninsula III

Session Chair: TBA

08:00 AM: [Non-ferrousFriAM1]

Valuable Metals Separation From Copper Anode Slime by Alkaline Smelting-leaching Process

D. Li¹; **X. Guo**¹; **Z. Xu**¹; **J. Liu**¹; ¹CENTRAL SOUTH University, Changsha, China;

08:20 AM: [Non-ferrousFriAM2] Keynote

Calcification-carbonation Method for Utilization of Red Mud

T. Zhang¹; **L. Guozhi**¹; **Z. Xiaofeng**¹; **L. Yan**¹; **Z. Qiuyue**¹; **D. Zhihe**¹; **Z. Zimu**¹; ¹NORTHEASTERN University, CHINA, Shenyang, China;

08:40 AM: [Non-ferrousFriAM3]

New Method of Laterite Ore Processing: Smelting in Two-zone Vaniukov Furnace to Ferronickel

L. Tsymbulov¹; ¹JS Gipronickel Institute, Saint-Petersburg, Russian Federation;

09:00 AM: [Non-ferrousFriAM4] Keynote
Experimental Study on Flow Characteristics of Self-stirring Reactor Drove by Pressure Energy
T. Zhang¹; ¹Northeastern University, Shenyang, China;

09:20 AM Organized Activities

SESSION: MineralFriAM	1st Intl. Symp. on Sustainable Mineral Processing
Fri July, 04 2014	Room: Peninsula IV
<u>Session Chair:</u> TBA	

08:00 AM: [MineralFriAM1]
Microbial Bio-amphiphiles: Environmentally Benign Flotation Agents for the Selective Separation of Mineral Particles
C. Liao¹; Y. Yah¹; H. El Shall¹; **L. Gower**¹; ¹University of FLORIDA, Gainesville, United States;

SESSION: Nanomaterials FriAM	1st Intl. Symp. on Synthesis and Properties of Nanomaterials for Future Energy Demands
Fri July, 04 2014	Room: Maria Mercedes & Maria Beatriz
<u>Session Chair:</u> TBA	

08:00 AM: [Nanomaterials FriAM1]
Effect of Different Carbon Sources on Direct Synthesis of Nano Tungsten Carbide From Scheelite
H. Singh¹; O. Pandey²; ¹Government Polytechnic College, Ferozepur, India; ²THAPAR University, Patiala, India;

08:20 AM: [Nanomaterials FriAM2] Invited
Dielectric Behaviour, Phenomenon of A.c. Conduction and Density of Defect States (DOS) in Chalcogenide Semiconducting Se₇₀Te₂₈M₂ (M=ag, Cd, Zn) Glasses
C. Dohare¹; ¹Banaras Hindu University, Varanasi, India;

08:40 AM: [Nanomaterials FriAM3]
L- α -diheptanoylphosphatidylcholine (DHPC) Capped Gold Nanoparticles: Synthesis
S. Thakur¹; ¹University of JOHANNESBURG, Amritsar, India;

09:00 AM: [Nanomaterials FriAM4]
Synthesis and Characterization of Cd_{0.9}Se_{0.1} Nanoparticles Prepared by Chemical Method for Used as Thermoelectric Materials
T. Sarakonsri¹; ¹CHIANG MAI University, Maung, Thailand;

09:20 AM Organized Activities

Poster Presentations:

SESSION: MiningPoster **1st Intl. Symp. on Sustainable Mining Operations**

Room: Condesa/ Peninsula Foyer

Poster Session

Monday-Thursday, 30June-03July, 2014

[MiningPoster1] **Open Pit and Underground Mining: A Mixed Method for Small Mineral Exploration on Pegmatite Boddies of Central Borborema Province, in Paraiba, Brazil**

F. Souza¹; P. Sales²; A. Sobrinho³; ¹IFPB, Campina Grande, Brazil; ²IFPB, Picui, Brazil; ³ESCOLA ESTADUAL PADRE JERONIMO, Santa Luzia, Brazil;

SESSION: MineralPoster **1st Intl. Symp. on Sustainable Mineral Processing**

Room: Condesa/ Peninsula Foyer

Poster Session

Monday-Thursday, 30June-03July, 2014

[MineralPoster1] **Research on Receiving Some Compounds of Molybdenum From A Molibdenite Concentrate**

S. Altantsetseg¹; ¹MONGOLIAN University of Science and Technology, Ulaanbaatar, Mongolia;

[MineralPoster2] **Use of Residual Frying Oil as A Collector in Phosphate Ore Flotation**

P. Oliveira¹; A. Oliveira¹; J. Pinto¹; I. Simoes¹; D. Costa¹; A. Silva²; ¹UNIVERSIDADE Federal DO SUL E SUDESTE DO PARA, Maraba, Brazil; ²Universidade Federal de Goias, Catalao, Brazil;

[MineralPoster3] **Electrochemical Behavior of Galvanic Interaction Between Chalcopyrite and Galena**

M. Idelfonso¹; C. Albuquerque Junior¹; ¹UEZO, Rio de Janeiro, Brazil;

[MineralPoster4] **Flotation of Low Grade Copper Ore by Tionocarbamates Collectors**

G. Strainovic¹; Z. Markovic¹; Z. Stirbanovic²; ¹University of BELGRADE - TECHNICAL Faculty IN BOR, Bor, Serbia and Montenegro (formerly Yugoslavia); ²DIPL. MIN.ENG., Bor, Serbia and Montenegro;

[MineralPoster5] **Variability Reduction and Efficiency Increase in Nickel Reduction Roasters Using Advanced Process Control**

R. Malagoni¹; R. Gedraite¹; F. Lobato¹; D. De Souza²; ¹UFU, Uberlandia, Brazil; ²UFTM, Uberaba, Brazil;

SESSION:Non-ferrousPoster

2nd Intl. Symp. on Sustainable Non-ferrous Smelting in 21st Century

Room: Condesa/Peninsula Foyer

Poster Session

Monday-Thursday, 30June-03July, 2014

[Non-ferrousPoster1] **the Effect of Heat Treatment on the Microstructure and the Mechanical**

J. Mirza Rosca¹; D. Herrera Santana¹; O. Martel Fuentes¹; ¹University of LAS PALMAS DE GRAN CANARIA, Las Palmas de Gran Canaria, Spain;

[Non-ferrousPoster2] **Lead Electrorecovery From Oxychloride Melts**

Y. Khalimullina¹; P. Pershin¹; P. Arkhipov¹; Y. Zaikov¹; ¹Institute of HIGH TEMPERATURE ELECTROChemistry of the URAL BRANCH of the RUSSIAN ACADEMY of SCIENCES, Ekaterinburg, Russian Federation;

SESSION:IronPoster

2nd Intl. Symp. on Advanced Sustainable Iron and Steel Making

Room: Condesa/Peninsula Foyer

Poster Session

Monday-Thursday, 30June-03July, 2014

[IronPoster1] **Quality of Metal Junk and Monitoring of Metal and Slag Condition During Arc-melting Process**

O. Sheshukov¹; I. Nekrasov¹; M. Tsimbalist¹; A. Sivtsov¹; D. Yegiazaryan¹; ¹Institute of Metallurgy Ural Division Of Russian Academy Of Sciences, Ekaterinburg, Russian Federation;

[IronPoster2] **Modifier Structure and Metal Quality**

O. Sheshukov¹; L. Marshuk¹; M. Lapin¹; I. Nekrasov¹; L. Ovchinnikova¹; ¹Institute of Metallurgy Ural Division Of Russian Academy Of Sciences, Ekaterinburg, Russian Federation;

SESSION:RecyclingPoster

2nd Intl. Symp. on Sustainable Materials Recycling Processes and Products

Room: Condesa/Peninsula Foyer

Poster Session

Monday-Thursday, 30June-03July, 2014

[RecyclingPoster1] **Construction Waste for Production of Recycled Aggregate - the Case Study of Salvador City/Brazil**

I. A.S. De Brum¹; ¹UFRGS, Porto Alegre, Brazil;

SESSION:Quasi-
crystalsPoster

**2nd Intl. Symp. on Quasi-crystals, Metallic Alloys,
Composites, Ceramics and Nano Materials**

Room: Condesa/Peninsula Foyer

Poster Session

Monday-Thursday, 30June-03July, 2014

[Quasi-crystalsPoster1] **Electron Microscopy Study of Strengthening Phases in Mg Alloys**

W. Sun¹; ¹Institute of Microstructure and Property of Advanced MATERIALS, BEIJING University of Technology, Beijing, China;

[Quasi-crystalsPoster2] **Elastic Properties and Acoustic Waves Attenuation in Single-Quasicrystals Ag₄₂In₄₂Yb₁₆**

P. Turchin¹; ¹SIBERIAN Federal University, Krasnoyarsk, Russian Federation;

[Quasi-crystalsPoster3] **Importance of the Interstitial Region for Producing Magnetism in Nanostructured Al-Cu-Fe Phases**

C. Landauro¹; M. Pillaca²; M. Pinto¹; ¹SAN MARCOS University, Lima, Peru; ²UNMSM, Lima, Peru;

[Quasi-crystalsPoster4] **Experimental Study of Microstrain in the Nanostructured W-AL₇₀Cu₂₀Fe₁₀ Phase**

M. Pillaca¹; C. Landauro²; M. Pinto²; ¹UNMSM, Lima, Peru; ²SAN MARCOS Univ., Lima, Peru;

SESSION:EnvironmentalPoster

**3rd Intl. Symp. on Environmental, Health,
Policy, Legal, Management and Social
Issues Related to Metals, Materials and
Mineral Processing**

Room: Condesa/Peninsula Foyer

Poster Session

Monday-Thursday, 30June-03July, 2014

[EnvironmentalPoster1] **Partly Dislocation of the Industrial Waste From Mitrovica Industrial Park and Its Impact on the Environment**

I. Malollari¹; N. Lajqi²; M. Sadiku²; I. Muliqi²; M. Kelmendi²; S. Hoda²; B. Baruti²; ¹University of TIRANA-Faculty of NATURAL SCIENCE, Tirana, Albania; ²University of PRISHTINA-Faculty of MINING and Metallurgy, Mitrovica, Kosovo;

[EnvironmentalPoster2] **Information Technology in Agricultural Production**

Z. Jugovic¹; ¹, Cacak, Serbia and Montenegro (formerly Yugoslavia);

[EnvironmentalPoster3] **Study of the Biosorption of Heavy Metals of Anthropogenic Effluents Using Escherichia Coli**

O. Monge¹; T. Certucha¹; F. Almendariz¹; L. Platt¹; A. Gomez¹; ¹UNIVERSIDAD DE SONORA, Hermosillo, Mexico;

[EnvironmentalPoster4] **Adsorption Capacity of A Chelating Resin in the Heavy Metals Adsorption From Contaminated Effluent**

M. Ramona¹; T. Certucha¹; G. Agustin¹; A. Luis¹; V. Leobardo¹; ¹UNIVERSIDAD DE SONORA, Hermosillo, Mexico;

SESSION: MoltenPoster

2nd Intl. Symp. on Sustainable Molten Salt and Ionic Liquid Processing

Room: Condesa/ Peninsula Foyer

Poster Session

Monday-Thursday, 30 June-03 July, 2014

[MoltenPoster1] **the Increase in Viscosity and Solidification on Cooling as A Consequence of Occurrences of Atomic Quantum Effects**

V. Pavlov¹; A. Potapov²; ¹URAL State MINING University, Ekaterinburg, Russian Federation; ²Institute of HIGH TEMPERATURE ELECTROChemistry, Ekaterinburg, Russian Federation;

[MoltenPoster2] **Corrosion Resistance of Ti-6Al-4V in Molten Chloro-fluoride**

A. Popescu¹; E. Neacsu²; M. Gaune Escard³; K. Yanushkevich⁴; C. Donath¹; V. Constantin²; ¹ILIE MURGULESCU Institute of PHYSICAL Chemistry, Laboratory of Molten Salts, Bucharest, Romania; ²ILIE MURGULESCU Institute of PHYSICAL Chemistry, Bucharest, Romania; ³Ecole Polytechnique, Marseille, France; ⁴Scientific-Practical Materials Research Centre NAS, Minsk, Belarus;

[MoltenPoster3] **Main Problems of Realization of Electrodeposition of Refractory and Noble Metals From Low- and Medium-temperature Melts**

V. Malyshev¹; D. Shakhnin²; A. Gab³; M. Gaune Escard⁴; ¹IGIC NASU, Kyiv, Ukraine; ²V.I. VERNADSKY Institute of GENERAL and INORGANIC Chemistry of the National ACADEMY of SCIENCES of UKRAINE, Kyiv, Ukraine; ³National TECHNICAL University of UKRAINE, Kyiv, Ukraine; ⁴Ecole Polytechnique, Mecanique Energetique, CNRS UMR, Marseille, France;

[MoltenPoster4] **Relationship Between the Passivation Properties of Noble and Refractory Metals and Their Electrochemical Behavior in Low-temperature Ionic Liquids**

N. Tumanova¹; S. Kochetova²; V. Malyshev¹; D. Shakhnin²; M. Gaune Escard³; ¹IGIC NASU, Kyiv, Ukraine; ²V.I. VERNADSKY Institute of GENERAL and INORGANIC Chemistry of the National ACADEMY of SCIENCES of UKRAINE, Kyiv, Ukraine; ³ECOLE POLYTECHNIQUE, MECANIQUE ENERGETIQUE, CNRS UMR, Marseille, France;

[MoltenPoster5] **Electrochemical Synthesis of Molybdenum and Tungsten Carbides Coatings From Ionic Melts**

H. Kushkhov¹; R. Mamhegova¹; F. Kuchmezova¹; M. Adamokova¹; ¹KABARDINO-BALKARIAN State University, Nalchik, Russian Federation;

[MoltenPoster6] **Synthesis, Characterization and Photostability of Ionic Liquids With Inorganic Anions**

M. Vranes¹; S. Dozic¹; N. Banic¹; B. Abramovic¹; J. Csanadi¹; S. Gadzuric¹; ¹Faculty of SCIENCES, Novi Sad, Serbia and Montenegro (formerly Yugoslavia);

SESSION:Nanomaterials
Poster

**1st Intl. Symp. on Synthesis and Properties of
Nanomaterials for Future Energy Demands**

Room: Condesa/Peninsula Foyer

Poster Session

Monday-Thursday, 30June-03July, 2014

[Nanomaterials Poster1] **Deterioration of Stainless Steel Used in the Metallic Industry of Mexicali by the Diffusivity of Carbon**

G. Lopez¹; ¹Instituto Tecnologico de Mexicali, Mexicali, Mexico;

[Nanomaterials Poster2] **Influence of One-dimensional CdS Nanoparticles on Physical Parameters of Ferroelectric Liquid Crystal for Display and Non Display Applications**

A. Chaudhary¹; ¹BGU, Beer Sheva, Israel;

[Nanomaterials Poster3] **Organic Nanowires for Molecular Electronic Device Applications**

R. Saini¹; ¹GURU NANAK DEV University, Amritsar, India;

[Nanomaterials Poster4] **Characterization of Tris (8-hydroxyquinoline) Aluminum Films for Device Applications**

M. Singh¹; ¹, Bari, Italy;

[Nanomaterials Poster5] **Pure and Doped Zinc Oxide Thin Films by Spray Pyrolysis**

O. Singh¹; ¹, Winnipeg, Canada;

[Nanomaterials Poster6] **Multifractal Analysis of SiO₂/polyester Hybrid for Immobilization of Ru(II) Complex**

D. Pathak¹; S. Talu²; S. Stach³; M. Milanova⁴; J. Zaharieva⁴; D. Todorovsky⁴; ¹UNIVERZITA PARDUBICE, Pardubice, Czech Republic; ²TECHNICAL University of CLUJ-NAPOCA, Faculty of Mechanical Engineering, Cluj-Napoca, Romania; ³Univ. of SILESIA, Faculty of COMPUTER Science and Materials SCIENCE, Institute of INFORMATICS, Sosnowiec, Poland; ⁴Univ. of SOFIA, Faculty of Chemistry, Sofia, Bulgaria;

[Nanomaterials Poster7] **Solution Based Organic-inorganic Semiconductor Hybrid Solar Cells**

M. Ikram¹; ¹GOVERNMENT College University LAHORE, Pakpattan, Pakistan;

[Nanomaterials Poster8] **Multifractal Characterisation of Thin Ferrite Films Deposited by Spray-pyrolysis**

M. Milanova¹; S. Talu²; S. Stach³; D. Pathak⁴; J. Zaharieva¹; D. Todorovsky¹; ¹Univ. of SOFIA, Sofia, Bulgaria; ²TECHNICAL University of CLUJ-NAPOCA, Cluj-Napoca, Romania; ³University of SILESIA, Faculty of COMPUTER Science and Materials SCIENCE, Institute of INFORMATICS, Sosnowiec, Poland; ⁴UNIVERZITA PARDUBICE, Pardubice, Czech Republic;

[Nanomaterials Poster9] **Organic Materials for Photovoltaic Applications:**

Review and Mechanism

N. Kaur¹; ¹Univ. Degli Studi Di Brescia, Bari, Italy;

[Nanomaterials Poster10] X-ray Absorption Near Edge Spectroscopy Studies of RCo_{1-x}Ni_xO₃ (R = La, Nd)

V. Kumar¹; ¹National Institute of Technology HAMIRPUR, Hamirpur, India;

SESSION:EnergyPoster	1st Intl. Symp. on Sustainable Energy Production: Gas/Oil/Shale and new renewable carbon free technologies
	Room: Condesa/Peninsula Foyer
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[EnergyPoster1] Alumina Sol-Gel Coatings for Corrosion Protection of Steel P92

M. Mosquera Feijoo¹; M. Nofz¹; R. Sojref¹; R. Saliwan Neumann¹; I. Doerfel¹; A. Kranzmann¹; F. Perez Trujillo²; ¹Federal Institute for Materials Research and TESTING, Berlin, Germany;²Univ. Complutense de Madrid, Spain;

SESSION: CeramicPoster	1st Intl. Symp. on Composite, Ceramic and Nano Materials Processing, Characterization and Applications Symposium
	Room: Condesa/Peninsula Foyer
Poster Session	Monday-Thursday, 30June-03July, 2014

[CeramicPoster1] Microstructure, Mechanical and Chemical Properties of Au/sio₂ Composites

A. Reznickova¹; ¹ICT Prague, Czech Republic;

[CeramicPoster2] Preparation of TiO₂-SiO₂ Film Deposited on Silicon Rubber Electrical Insulators Using SOL-GEL DIP-coating Method

M. Jafari¹; ¹Material engineering of Najafabad Univ., Esfahan, Iran

[CeramicPoster3] Synthesis and Characterization of Gold Nanoshells on Ag Nanoparticles Templates

J. Moller¹; ¹CIMAV, CHIHUAHUA, Mexico;

SESSION:CoatingsPoster	The High Temperature Protection Coatings
	Room: Condesa/Peninsula Foyer
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[CoatingsPoster1] Al-N Surface Layer Modification of Aircraft Engine Compressor Blades

P. Rokicki¹; A. Nownotnik¹; K. Dychton¹; M. Goral¹; M. Drajewicz¹; J. Sieniawski¹; ¹RZESZOW Univ. of Technology, Research and Development Laboratory for Aerospace Materials, Rzeszow, Poland;

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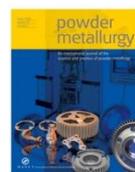
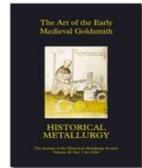
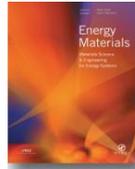
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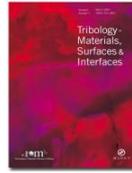
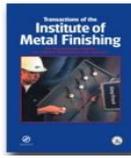
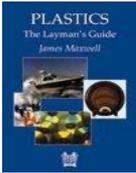


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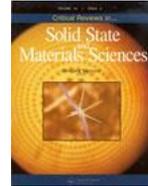
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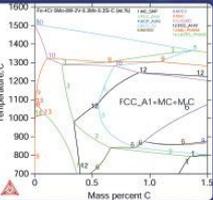
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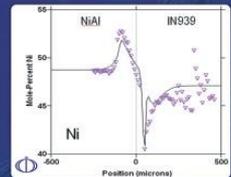
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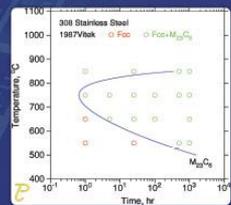
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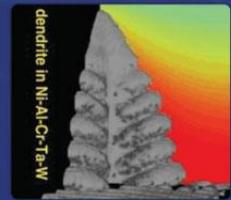
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