

2015 :: SUSTAINABLE INDUSTRIAL PROCESSING SUMMIT & EXHIBITION



AIFANTIS
INTERNATIONAL
SYMPOSIUM



GUDENAU
INTERNATIONAL
SYMPOSIUM



MEECH
INTERNATIONAL
SYMPOSIUM



TAKANO
INTERNATIONAL
SYMPOSIUM



VANYUKOV
INTERNATIONAL
SYMPOSIUM

ADVANCE PROGRAM



Nobel Laureates Opening Event
Technological Metals
Entrepreneurship Helping Life



Dan SHECHTMAN

2011

Nobel Prize in Chemistry



Ei-ichi NEGISHI

2010

FLOGEN
STAR OUTREACH

4 - 9 October 2015,
Cornelia Diamond
Antalya, Turkey

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Russia



Alexander Fedorov
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Russia



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Vincent Fournée
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France



Fernand Marquis
San Diego State
University USA

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Welcome Message

Welcome to the 2015 Sustainable Industrial Processing Summit and Exhibition. Following the previous rich tradition, the summit will cover 3 sustainability pillars: (1) Science, Technology and Industrial Practice, (2) Political and Social Framework and (3) Education.

This time, the summit honors the 2015 "Musketeers" of the closed cycle of materials sciences: from mining and mineral processing to metals extraction and processing and development of new materials. They are in alphabetic order:



Prof. Elias **Aifantis** - 2015 honoree
with Aifantis International Symposium
on Multiscale Material Mechanics and Multiphysics
and Sustainable Applications



Prof. Heinrich Wilhelm **Gudenau** - 2015 honoree
with Gudenau International Symposium
on Sustainable Iron and Steel Making



Prof. John **Meech** - 2015 honoree (postmortem)
with Meech International Symposium
on Sustainable Mining Operations



Prof. Cyro **Takano** - 2015 honoree
with Takano International Symposium
on Sustainable Metals & Alloys Processing

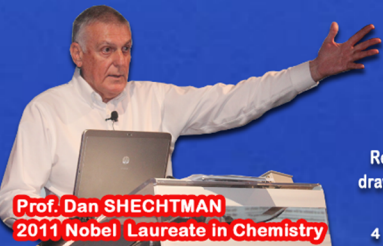


Prof. Andrey V. **Vanyukov** - 2015 honoree (postmortem)
with Vanyukov International Symposium
on Sustainable Non-ferrous Smelting and Processing

The honorees cover areas of materials sciences that look distinct but are actually related to each other and all have in common sustainability.

In this view, in their honor, the summit incorporates numerous International Symposia covering the field of minerals, metals and materials - dealing with mining, extraction, processing, manufacturing, recycling, waste treatment, and acting on environmental, health, legal, management, financial, policy, taxation, social and pedagogy issues.

An inspiring event with two Nobel Prize Laureates will serve as the "Curtain-Opening" event of the Summit (Sunday evening, 4 October 2015).



Technological Entrepreneurship - Key to World Peace and Prosperity

An inspiring interaction with Prof. Dan Shechtman, 2011 Nobel Prize in Chemistry and a Pioneer of Technological Start-up Revolution (Financial Times, 2012) - rich advices for success drawn from numerous successful entrepreneurs he helped.

Prof. Dan SHECHTMAN
2011 Nobel Laureate in Chemistry

4 October 2015, Cornelia Diamond Golf Resort & Spa, Antalya

Prof. Dan Shechtman, 2011 Nobel Laureate in Chemistry, will present and interact on the topic "Technological Entrepreneurship - Key to Sustainable World Peace and Prosperity". Besides being the 2011 Nobel Laureate in Chemistry, Professor Shechtman is known as one of the Pioneers of Technological Start-up Revolution (Financial Times, 2012). It is an inspiring accounting on his experience on the role of technological entrepreneurship on the sustainable world peace and prosperity with rich advices for success drawn from successful entrepreneurs he helped train.



Metals at the Service of Life: How Metals Help Synthesis of Organic Compounds

A stimulating interaction with Prof. Ei-ichi Negishi, 2010 Nobel Prize in Chemistry, about the role of metal-based reactions for an easier and efficient synthesis of complex organic compounds.

Prof. Ei-ichi NEGISHI
2010 Nobel Laureate in Chemistry

4 October 2015, Cornelia Diamond Golf Resort & Spa, Antalya

Prof. Ei-ichi Negishi, 2010 Nobel Prize in Chemistry, will present and interact on the topic of the special role of metals at the service of organic life: How they help the synthesis of organic compounds in general and the role of metal-based reactions for an easier and efficient synthesis of complex organic compounds, in particular.

The giant of Sustainability, Lord John Prescott, House of Lords, UK will be also our guest of honor.

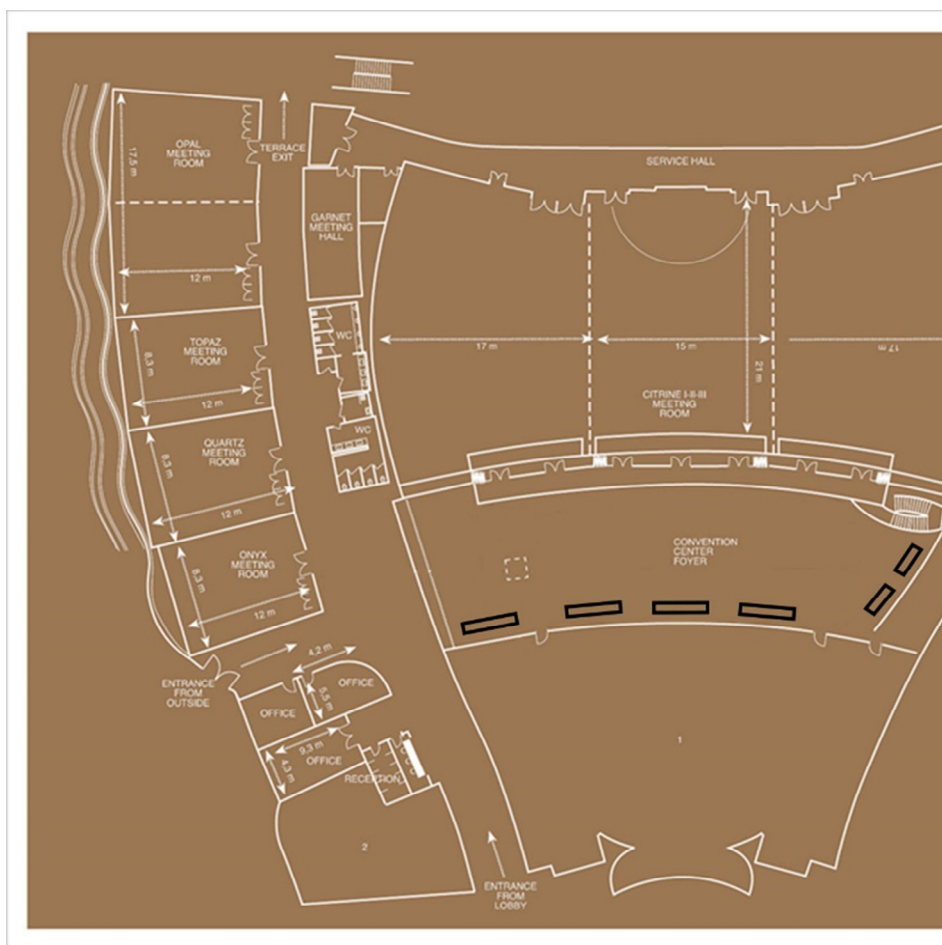
Dr. Florian Kongoli
Summit Chairman and Organizer
Chairman FLOGEN Stars Outreach
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Calendar of Events

SIPS 2015 - PRELIMINARY PROGRAM												
SUN 4th	08:20 - 12:30 12:30 - 14:00 14:00 - 18:00 18:30 - 23:00	SHORT COURSES										
		LUNCH/POSTERS										
		SYMPOSIUM REGISTRATION										
		Curtain-Opening Ceremony										
MON 5th	08:00 - 09:40 09:40 - 10:00 10:00 - 12:30 12:30 - 14:00 14:00 - 15:40 15:40 - 16:00 16:00 - 18:00 18:00 - 22:00	CITRINE 1 TAKANO 1	CITRINE 2 GUDENAU 1	CITRINE 3 MEECH 1	OPAL 1 MOLTEN 1	OPAL 2 VANUYKOV 1	ONYX PHYSICS 1	QUARTZ MINERAL 1	TOPAZ RECYCLING 1	THEATER AIFANTIS 1		
		BREAK/POSTERS/EXHIBITION										
		SUMMIT PLENARY										
		TAKANO 2	GUDENAU 2	MEECH 2	MOLTEN 2	VANUYKOV 2		PHYSICS 2	MINERAL 2	RECYCLING 2	AIFANTIS 2	
TUE 6th	08:00 - 09:40 09:40 - 10:00 10:00 - 12:30 12:30 - 14:00 14:00 - 15:40 15:40 - 16:00 16:00 - 18:00 18:00 - 22:00	POSTERS/EXHIBITION										
		ORGANIZED ACTIVITIES										
		Pool Dinner & Party										
		TAKANO 3	GUDENAU 3	MEECH 3	MOLTEN 3	VANUYKOV 3		AMTSEE 1	MINERAL 3	RECYCLING 3	AIFANTIS 3	
TUE 6th	08:00 - 09:40 09:40 - 10:00 10:00 - 12:30 12:30 - 14:00 14:00 - 15:40 15:40 - 16:00 16:00 - 18:00 18:00 - 22:00	BREAK/POSTERS/EXHIBITION										
		SUMMIT PLENARY										
		TAKANO 4	GUDENAU 4	MEECH 4	MOLTEN 4	VANUYKOV 4		AMTSEE 2	BATTERY 1	RECYCLING 4	AIFANTIS 4	
		POSTERS/EXHIBITION										
WED 7th	08:00 - 09:40 09:40 - 10:00 10:00 - 12:30 12:30 - 14:00 14:00 - 15:40 15:40 - 16:00 16:00 - 18:00 18:00 - 22:00	ORGANIZED ACTIVITIES										
		Beach Cocktail, Dinner & Party										
		TAKANO 5	GUDENAU 5	MEECH 5	MOLTEN 5	VANUYKOV 5		AMTSEE 3	BATTERY 2	RECYCLING 5	AIFANTIS 5	
		BREAK/POSTERS/EXHIBITION										
WED 7th	08:00 - 09:40 09:40 - 10:00 10:00 - 12:30 12:30 - 14:00 14:00 - 15:40 15:40 - 16:00 16:00 - 18:00 18:00 - 22:00	LUNCH/POSTERS/EXHIBITION										
		SUMMIT PLENARY										
		TAKANO 6	COATINGS 1	MEECH 6	MOLTEN 6	CERAMICS 1 (LOKANTA ROOM)		MSMMS	BATTERY 3	RECYCLING 6	AIFANTIS 6	
		POSTERS/EXHIBITION										
THU 8th	08:00 - 09:40 09:40 - 10:00 10:00 - 12:30 12:30 - 14:00 14:00 - 15:40 15:40 - 16:00 16:00 - 18:00 18:00 - 22:00	ORGANIZED ACTIVITIES										
		Gala Dinner										
		TAKANO 7	CEMENT	MEECH 7	ENERGY 1 (GARNET ROOM)	CERAMICS 2 (LOKANTA ROOM)	QUASI 1	BATTERY 4	AIFANTIS 11 (THEATER 2)		AIFANTIS 7	
		BREAK/POSTERS/EXHIBITION										
THU 8th	10:00 - 12:00 12:00 - 14:00 14:00 - 15:40 15:40 - 16:00 16:00 - 18:00 18:00 - 22:00	METALS/TAKANO ROUND TABLE	IRON/GUDENAU ROUND TABLE	MINING/MEECH ROUND TABLE	ENERGY ROUND TABLE (GARNET ROOM)	KIVCT ROUND TABLE (LOKANTA ROOM)	PHYSICS ROUND TABLE	BATTERY ROUND TABLE	RECYCLING ROUND TABLE (THEATER 2)	MULTISCALE/ AIFANTIS ROUND TABLE		
		TAKANO 8	RARE EARTH	ENVIRONMENT 1	ENERGY 2 (GARNET ROOM)	CERAMICS 3 (LOKANTA ROOM)		NANO	BATTERY 5	AIFANTIS 12 (THEATER 2)	AIFANTIS 8	
		LUNCH/POSTERS/EXHIBITION										
		POSTERS/EXHIBITION										
FRI 9th	08:00 - 09:40 09:40 - 10:00 10:00 - 12:30 12:30 - 14:00 14:00 - 15:40 15:40 - 16:00 16:00 - 18:00 18:00 - 22:00	BREAK/POSTERS/EXHIBITION										
		SUMMIT PLENARY										
		TAKANO 9	FERRO-ALLOYS	ENVIRONMENT 2	ENERGY 3 (GARNET ROOM)	CERAMICS 4 (LOKANTA ROOM)		AIFANTIS 13 (THEATER 2)		AIFANTIS 9		
		BREAK/POSTERS/EXHIBITION										
FRI 9th	10:00 - 12:00	LUNCH/POSTERS/EXHIBITION										
		SUMMIT PLENARY										
		TAKANO 10	ENVIRONMENT 3	ENERGY 4 (GARNET ROOM)	AIFANTIS 14 (THEATER 2)		AIFANTIS 15 (THEATER 2)		AIFANTIS 10			
		BREAK/POSTERS/EXHIBITION										

Meeting Rooms Diagram



International Committee

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.



AFRICA

- Madjib **Berkani**, University of Bejaia, Algeria

ASIA

- **Abhilash**, CSIR-National Metallurgical Laboratory, Jamshedpur, India
- Claudio **Capiglia**, RECRUIT R&D Co., Ltd., Japan
- Nikoloz **Chikhradze**, Tsulukidze Mining Institute, Georgia
- Ko-ichiro **Ohno**, Kyushu University Fukuoka, Japan
- Alexander **Kandelaki**, Ferdinand Tavadze Institute of Metallurgy & Materials Science, Georgia
- Mihkel **Koel**, Tallinn University of Technology, Estonia
- Li **Lu**, National University of Singapore, Singapore
- Ali Akbar **Mottahedi**, IROST, Iran
- Alfonso H.W. **Ngan**, University of Hong Kong, Hong Kong
- Viktor **Shumskiy**, VNIITsvetmet Institute, Kazakhstan
- Leiman **Svetlana**, VNIITsvetmet Institute, Kazakhstan
- Keng **Wu**, USTB Beijing, China
- Hui **Xia**, Nanjing University of Sciences and Technology, China

AUSTRALIA

- Chris **Berndt**, Swinburne University of Technology, Australia
- Yuri **Estrin**, Monash University, Australia
- Douglas **Macfarlane**, Monash University, Australia

EUROPE

- Zehra **Akdeniz**, Piri Reis University, Turkey
- TN **Alexandrov**, National University of mineral resources "Mountain" (St. Petersburg), Russia
- Ali Ihsan **Arol**, METU, Turkey
- Harm **Askes**, University of Sheffield, United Kingdom
- Ozgur **Aslan**, Atilim University, Turkey
- Magdalena **Bendova**, Institute of Chemical Process Fundamentals, Czech Republic
- Catherine **Bessada**, CNRS-Orleans, France
- Koen **Binnemans**, University of Leuven, Belgium
- Stephane **Bordas**, University of Luxembourg, Luxembourg
- Tobias **Brune**, RWTH Aachen, Germany
- Ozgen Umit **Colak**, Yildiz Technical University, Turkey
- Jordan **Daci**, Attorney at law, Human Rights Law, Public and European Law, Albania
- Jeff Th.M. **De Hosson**, University of Groningen, Netherlands
- Andrey N. **Dmitriev**, Ural Federal University, Russia
- Nurlan K. **Dosmukhamedov**, Innovative technologies in the mining industry, Russia
- Jean-Marie **Dubois**, CNRS, France
- Alexander N. **Fedorov**, Moscow institute of steel and alloys, Russia
- Rasmus **Fehrmann**, DTU Kemi, Denmark
- Vincent **Fournée**, CNRS, France
- Slobodan **Gadzuric**, University of Novi Sad, Serbia
- Emilie **Gaudry**, Lorraine University, France
- Marcelle **Gaune-Escard**, Ecole Polytechnique, France
- Istvan **Groma**, Eotvos University Budapest, Hungary
- Tomas **Havlik**, Kosice University, Slovak Republic
- Shefik **Imeri**, MIM-GOLESH, Kosovo
- Per **Isaksson**, Uppsala University, Sweden
- Sergey **Ivanov**, Siberian Non-Ferrous Metals, Russia
- Roland **Kalb**, PROIONIC, Austria
- Ayse **Kalem tas**, Bursa Technical University, Turkey
- Guido **Kleinschmidt**, SMS Siemag AG, Germany
- S. **Kozhakhmetov**, Eurasian scientific and technological center, Metals and Materials, Russia
- Alexey A. **Komkov**, Moscow institute of steel and alloys, Russia
- Alexander M. **Korsunsky**, University of Oxford, United Kingdom
- Pavel **Kozlov**, Chelyabinsk Zinc Plant, Russia
- Vasant **Kumar**, University of Cambridge, United Kingdom
- Sergey **Kuznetsov**, Kola Science Center of Russian Academy of Sciences, Russia

- Robert **Maass**, Institute for Materials Physics, Germany
- Zoran S **Markovic**, University of Belgrade, Serbia
- Patrick J. **Masset**, Fraunhofer UMSICHT, Germany
- Manfred **Mauntz**, cmc Instruments GmbH, Germany
- Alush **Musaj**, University of Mitrovica "Isa Boletini", Kosovo
- Jose Henrique **Noldin**, Lhoist, Belgium
- Ilya **Ovid'ko**, St. Petersburg State Polytechnical University, Russia
- Harald **Oye**, Norwegian University of Science and Technology, Norway
- Francesca **Pagnanelli**, Sapienza University of Rome, Italy
- George **Papatheodorou**, University of Patras, Greece
- Horst **Pook**, Hawar Group Qatar, Turkey
- Anamaria **Popescu**, Institutul de Chimie Fizica, Romania
- Musa **Rizaj**, University of Mitrovica "Isa Boletini", Kosovo
- Alexey E. **Romanov**, ITMO University, Russia
- Julius **Rubinstein**, Institute of Solid Fuel Preparation, Russia
- Leszek **Ryccerz**, Wroclaw University of Technology, Poland
- Carsten **Schwandt**, University of Cambridge, Oman and United Kingdom
- Seshadri **Seetharaman**, KTH Royal Institute of Technology, Sweden
- Sergey A. **Silyutin**, SUEK, Russia
- Paul **Steinmann**, University of Erlangen-Nuremberg, Germany
- Yuriy **Storozhev**, Siberian Federal University, Russia
- Anastassia **Tokmina**, UC RUSAL, Russia
- Gulsum **Topates**, Canakkale Onsekiz Mart University, Turkey
- Evgeny **Tsirulnikov**, Chernye Metally, Russia
- Leonid **Tsybulov**, Gipronickel Institute, Russia
- Deniz **Uzunsoy**, Bursa Technical University, Turkey
- Rui **Vilar**, Instituto Superior Tecnico, University of Lisbon, Portugal
- Alexander G. **Vorobiev**, "Ore and Metals", Russia
- Elena **Voskresenskaya**, Siberian Non-Ferrous Metals, Russia
- Helmut **Werheit**, University Duisburg-Essen, Germany
- Michael **Zaiser**, University of Erlangen-Nuremberg, Germany

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- Katerina **Aifantis**, University of Arizona, USA
- Austen **Angell**, Arizona State University, USA
- Laurent **Capolungo**, Georgia Institute of Technology, USA
- Harold L. **Dodds**, University of Tennessee, Nuclear Engineering Department, USA
- Anter **El-Azab**, Purdue University, USA
- Sanjeeva **Latchireddi**, EE Mill Solutions, USA
- Fernand **Marquis**, San Diego State University, USA
- Tadashi **Ogitsu**, Lawrence Livermore National Laboratory, USA
- Martin **Pech-Canul**, Cinvestav, Mexico

- Jurek Z. **Sasiadek**, Carleton University, Canada
- Marcello **Veiga**, University of British Columbia, Canada
- George Z. **Voyiadjis**, Louisiana State University, USA

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- Jose C D'**Abreu**, PUC-Rio, Brazil
- Marcos de Albuquerque **Contrucci**, Logos-Tecnocom Tecnologia, Brazil
- Achilles Junqueira Bourdot **Dutra**, Federal University of Rio de Janeiro, Brazil
- Mario Sanchez **Medina**, University de Concepcion, Chile
- Marcelo Breda **Mourao**, University of Sao Paulo, Brazil
- Antonio Eduardo Clark **Peres**, UFMG, Brazil
- Marcelo **Rocha**, Ferbasa, Brazil
- Andre Carlos **Silva**, Universidade Federal de Goias, Brazil
- Andre Paulo **Tschiptschin**, University of Sao Paulo, Brazil

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Professional Societies

- American Chemical Society
- The Institute of Materials, Minerals and Mining
- Società Chimica Italiana
- Hellenic Metallurgical Society
- The Australian Ceramic Society
- The Green Chemistry

Technology Institutes

- cmc Instruments
- National Center on complex processing of mineral raw materials of the Republic of Kazakhstan

Academic Institutions

- Bursa Technical University
- National R&D Institute for Nonferrous and Rare Metals
- Center for Research and Advanced Studies
- Nanjing University
- Swinburne University of Technology
- Institute of Metallurgy, Ural Branch of the Russian Academy of Sciences

- University of Mitrovica "ISA BOLETINI"
- Institute of Physical Chemistry "Ilie Murgulescu"
- VNIIstvetmet
- Mining University
- ITMO University
- Piri Reis University
- Nizwa University
- G.Tsulukidze Mining Institute
- Ferdinand Tavadze Institute of Metallurgy & Materials Science
- Université de Bejaia

Public Organizations

- Antalya Convention Bureau

Media

- Minerals Engineering International
- Global Trade Metal

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

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Social Events

(Preliminary)

Sunday 4 Oct.2015: Grand-Opening Event, Dinner, Show and Party. **Attire:** Business Casual. (Citrine 1,2,3)

Monday 5 Oct.2015: Beach Cocktail, Dinner, Show and Party. **Attire:** Business Casual.

Tuesday 6 Oct.2015: Pool Cocktail, Dinner, Show and Party. **Attire:** Business Casual. (to be decided if there are enough pre-registrants)

Wednesday 7 Oct.2015: Gala Cocktail, Dinner, Show and Party. **Attire:** Black tie/Business. (Citrine 1,2,3)

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 for those we have pre-registered for free during registration process. Due to space limitation the persons who have not preregistered need to pay an additional fee of 50 Euros on site to participate on social events.

WARNING: Organizing Committee reserve the right to modify/change or cancel the social activities without prior notice depending on the number of registrants in the web site for each activity.

Accompanying Activities

Free Participation of all attendees guests/companion in all social activities, group dinners and shows for those who have pre-registered for free during registration process and are staying to Cornelia Diamond of Ela Resort. Due to space limitation the persons who have not preregistered need to pay an additional fee of 50 Euros on site to participate on social events.

The organizers have assured reduced fees for numerous extra curriculum activities during your stay before, during or after the symposium.

Detailed information can be found at: <http://www.flogen.org/sips2015/?gid=42>

For on-site booking on site contact the organizers.

Grand Opening Event

Science and Technology and Everyday Life

Sunday, October 04, 2015, 18:00 to 23:30, Citrine (1,2,3)
(as of September 25, 2015 – to be updated on-site)

Guests of Honor: Lord John Prescott, House of Lord, UK; Dan Shechtman; 2011 Nobel Laureate in Chemistry and Ei-ichi. Negishi; 2010 Nobel Laureate in Chemistry

Technological Entrepreneurship - Key to World Peace and Prosperity
Dan Shechtman¹; 2011 Nobel Laureate in Chemistry ¹Technion, Haifa, Israel/Iowa State University

Pursuit of "Lofty" Dreams with Eternal Optimism
Ei-ichi. Negishi¹; 2010 Nobel Laureate in Chemistry ¹Purdue University, West Lafayette, United States;

Reflections on Climate Change and Reality (provisional title)
Lord John Prescott, House of Lord, UK

Informal Conversation with Guests of Honor
Dinner and Show

Summit Plenary

(Preliminary as of October 4, 2015 - to be updated on site)

SUMMIT PLENARY 1: Mon, October 05, 2015, Citrine (1,2,3), 10:00 to 12:30

10:00am: [PlenaryMonAM1]
Role Of Science On Sustainability: Diagnostic And Strongly Remedial
F. Kongoli¹ ;¹Flogen Technologies Inc., Mont-Royal, Canada;

10:30am: [PlenaryMonAM2]
Challenges In Materials Science And Engineering
D. Shechtman¹ ;¹Technion, Haifa, Israel;

11:00am: [PlenaryMonAM3]
Reflections On Sustainability
J. Prescott¹ ;¹House of Lords, London, United Kingdom (Great Britain);

11:30am: [PlenaryMonAM4]
Alternative Power Generation Infrastructure Master Plan For Turkey
T. Turna¹ ;¹Yildirim Energy Holding AS, Maslak, Turkey;

12:00am: [PlenaryMonPM5]
Sustainable Mining: Is This An Oxymoron?
M. Veiga¹; ¹UBC-Mining, Vancouver, Canada;

SUMMIT PLENARY 2: Tue, October 06, 2015, Citrine (1,2,3), 10:00 to 12:30

10:00am: [PlenaryTueAM1]
Zr-catalyzed Asymmetric Carboalumination Of Alkene (zaca) For Highly Selective Syntheses Of Various Fine Organic Compounds
E. Negishi¹; ¹Purdue University, West Lafayette, United States;

10:30am: [PlenaryTueAM2]
New Sciences For A New Era
R. Santilli¹; ¹CEO and Chief Scientist of Thunder Energies Corporation, Palm Harbor, United States;

11:00am: [PlenaryTueAM3]
The Next Battery Revolution - Thoughts For A Sustainable Paradigm
V. Kumar¹; ¹University of Cambridge, Cambridge, United Kingdom (Great Britain);

11:30am: [PlenaryTueAM4]
Blast Furnace Ironmaking In Europe
J. Noldin¹; ¹Lhoist, Limelette, Belgium;

12:00am: [PlenaryTuePM5]
From Mining To Metallurgy. A Brazilian Overview
J. D'Abreu¹; ¹PUC-Rio, Rio de Janeiro, Brazil;

SUMMIT PLENARY 3: Wed, October 07, 2015, Citrine (1,2,3), 10:00 to 12:30

10:00am: [PlenaryWedAM1]
The Role Of Critical Materials Recycling In Energy Sustainability
B. Mishra¹; ¹Worcester Polytechnic Institute, Worcester, United States;

10:30am: [PlenaryWedAM2]
[Boron-related materials, preparation, structure and application] **Self-propagating High-temperature Synthesis Of Advanced Materials**
S. Sonmez¹; ¹O. Yucel¹; ¹Istanbul Technical University, Istanbul, Turkey;

11:00am: [PlenaryWedAM3]
The Science Of Surfaces: From Atoms And Electrons To Money Savings
J. Dubois¹; ¹Institut Jean Lamour, Nancy, France;

11:30am: [PlenaryWedAM4]
Energy Choices And Consequences
H. Dodds¹; ¹University of Tennessee, Knoxville, United States;

12:00am: [PlenaryWedPM5]

Perspectives On The Role Of New Materials In Sustainable Development

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

ROUND TABLES: Thu, October 08, 2015, 10:00 to 12:30

Citrine 1 – Metals/Takano Round Table

Citrine 2 - Iron/Gudenau Round Table

Citrine 3 – Mining/Meech round table

Garnet – Energy Round Table

Lokanta – Kivcet Round Table

Onyx – Physics Round Table

Quartz – Battery Round Table

Theater 2 – Recycling Round Table

Theater – Multiscale/Aifantis Round Table

Gala Dinner

October 07, 2015, 18:00 to 23:30, Citrine (1,2,3)
(as of September 25, 2015 – to be updated on-site)

With the participation of the guests of honor and symposia honorees

Special Presentation:

Metals at the service of organic life

Ei-ichi. Negishi¹; 2010 Nobel Laureate in Chemistry ¹Purdue University, West Lafayette, United States;

Scientific Program

Oral Presentations:

Monday:

Takano International Symposium (1st Intl. Symp. on Sustainable Metals & Alloys Processing)	
SESSION: MetalsMonAM	
Mon Oct, 05 2015	Room: Citrine I
<u>Session Chairs:</u> Jose D'Abreu ; Marcelo Mourao ;	

08:00 AM: [0] Plenary

Some Reflections And Challenges For Sustainability Of Pyrometallurgical Industry

C. Takano¹; **M. Mourao**¹; ¹University of Sao Paulo, Sao Paulo, Brazil;

08:20 AM: [MetalsMonAM1] Plenary

Corrosion And Sustainability

S. Wolyne¹; ¹University of Sao Paulo, Sao Paulo, Brazil;

08:40 AM: [MetalsMonAM2]

Pretreatment Of Jaccurici Ore From Ferbasa-brazil: Effect On Energy Consumption

E. Ringdalen¹; **M. Rocha**²; **P. Figueiredo**³; ¹Sintef, Trondheim, Norway; ²Ferbasa Brasil, Salvador, Brazil; ³SENAI CIMATEC, Salvador, Brazil;

09:00 AM: [MetalsMonAM3] Plenary

Self-reduction The Ultimate Optimization Of Iron Smelting

M. Contrucci¹; **M. Mourao**²; **J. D'Abreu**³; **C. Takano**²; ¹MAC Engenharia Consultiva, Rio de Janeiro, Brazil; ²University of Sao Paulo, Sao Paulo, Brazil; ³PUC-Rio, Rio de Janeiro, Brazil;

09:20 AM: [MetalsMonAM4] Keynote

Ore-based Metallics Overview: Update

A. Hassan¹; ¹IIIMA-International Iron Metallics Association Ltd., Caracas, Venezuela;

09:40 AM Break

10:00 AM - 12:30 PM [**SUMMIT PLENARY**](#)

12:30 PM LUNCH

Takano International Symposium
SESSION: MetalsMonPM (1st Intl. Symp. on Sustainable Metals & Alloys Processing)

Mon Oct, 05 2015

Room: **Citrine I**

Session Chairs: Eli **Ringdalen**; Jose Henrique **Noldin**;

02:00 PM: [MetalsMonPM5]

Influence Of The Binder On The Mechanical Properties And On The Reduction Process Of The Chromite Self-reducing Pellets

C. Takano¹; A. Zambrano²; M. Mourao¹; S. Tagusagawa¹; A. Nogueira¹; ¹University of Sao Paulo, Sao Paulo, Brazil; ²Pontificia Universidad Catolica del Peru, Lima, Peru;

02:20 PM: [MetalsMonPM6]

Fugitive Dust Measurements In The Metallurgical Industry

S. Graadahl¹; B. Wittgens¹; H. Fardal¹; **I. Kero**²; ¹SINTEF, Trondheim, Norway; ²Sintef Materials & Chemistry, Trondheim, Norway;

02:40 PM: [MetalsMonPM7]

Fume Formation From Liquid Ferromanganese

I. Kero¹; D. Slizovskiy²; G. Tranell²; B. Wittgens³; ¹Sintef Materials & Chemistry, Trondheim, Norway; ²Norwegian University of Science and Technology, Trondheim, Norway; ³SINTEF, Trondheim, Norway;

03:00 PM: [MetalsMonPM8]

Application And Results Of Oxipyr(r) Diluted Combustion In Copper Furnaces

M. Potesser¹; D. Spoljaric¹; J. Rauch¹; M. Demuth¹; ¹Messer Group, Gumpoldskirchen, Austria;

03:20 PM: [MetalsMonPM9]

Challenges In Transporting The Off-gases From The Silicon Process

M. Ksiazek¹; I. Kero²; B. Wittgens¹; ¹SINTEF, Trondheim, Norway; ²Sintef Materials & Chemistry, Trondheim, Norway;

04:00 PM Organized Activities

Gudenau International Symposium
SESSION: IronMonAM (3rd Intl. Symp. on Advanced Sustainable Iron and Steel Making)

Mon Oct, 05 2015

Room: **Citrine II**

Session Chairs: Keng **Wu**; Ko-ichiro **Ohno**;

08:00 AM: [IronMonAM0]

[Oxygen applications for sustainable steelmaking/steel melting] **The Study Of Dynamic Reaction Process Method Of Metallurgical Reaction Engineering**

K. Wu¹; L. Zhu²; Y. She²; R. Du²; ¹State Key Laboratory of Advanced Metallurgy, University of Science and Technology Beijing, Beijing, China; ²University of Science and Technology Beijing, Beijing, China;

08:20 AM: [IronMonAM1] Invited

[Oxygen applications for sustainable steelmaking/steel melting] **Temperature Distribution Simulation Of Iron Ore Sintering Process Based On Consideration About Fine Coke Combustion Behavior In Quasi-particle**

K. Ohno¹; **H. Ogi**¹; **K. Noda**²; **K. Nishioka**³; **T. Maeda**¹; **M. Shimizu**¹; **K. Kunitomo**¹; ¹Kyushu University, Fukuoka, Japan; ²Nippon Steel & Sumitomo Metal Corporation, Kimitsu City, Japan; ³Nippon Steel & Sumitomo Metal Corporation, Kamisu, Japan;

08:40 AM: [IronMonAM2]

[Oxygen applications for sustainable steelmaking/steel melting] **Flameless Oxyfuel Combustion**

T. Niehoff¹; ¹Linde AG, Unterschleissheim, Germany (Deutschland);

09:00 AM: [IronMonAM3]

[Oxygen applications for sustainable steelmaking/steel melting] **Energy And Emission Optimization Potentials For The Steel Production Due To Application Of Oxygen Combustion**

M. Potesser¹; **J. Rauch**¹; **D. Spoljaric**¹; **M. Demuth**¹; ¹Messer Group, Gumpoldskirchen, Austria;

09:20 AM: [IronMonAM4]

[Oxygen applications for sustainable steelmaking/steel melting] **The Development Of Steel Industry In Iran By Drleaf**

N. Towhidi¹; **M. Monzavi**²; **A. Rayhanizadeh**³; ¹University of Tehran, Tehran, Iran (Islamic Republic of Iran); ²Tehran, Iran (Islamic Republic of Iran); ³Karaj, Iran (Islamic Republic of Iran);

09:40 AM Break

10:00 AM - 12:30 PM [SUMMIT PLENARY](#)

12:30 PM LUNCH

Gudenau International Symposium

SESSION: **IronMonPM (3rd Intl. Symp. on Advanced Sustainable Iron and Steel Making)**

Mon Oct, 05 2015

Room: **Citrine II**

Session Chairs: Hirokazu **Konishi**; Tateo **Usui**;

02:00 PM: [IronMonPM5] Plenary

Iron Making: Review, Perspective And Sustainability

H. Gudenau¹; ¹Aachen, Germany (Deutschland);

02:20 PM: [IronMonPM6] Plenary

Current Challenges Of Japanese Ironmaking Technology

K. Ohno¹; ¹Kyushu University, Fukuoka, Japan;

02:40 PM: [IronMonPM7] Invited

The Influence Of Initial Melt Formation On Reducibility Of Iron Ore Agglomerates

H. Konishi¹ ;H. Kawabata¹ ;H. Ono¹ ;¹Osaka University, Suita, Japan;

03:00 PM: [IronMonPM8]

Effect Of Wet Magnetic Separation For Zinc Removal From Bf Sludge

C. Park¹ ;M. Shin² ;¹POSCO, Keumho-dong, Kwangyang-si, Korea (Republic of [South] Korea); ²POSCO, Kwangyang-si, Korea (Republic of [South] Korea);

03:20 PM: [IronMonPM9] Plenary

Various Factors Influencing Upon Reduction Rate Of Carbon Composite Iron Oxide Pellets

T. Usui¹ ;H. Konishi² ;K. Ichikawa³ ;H. Ono² ;H. Kawabata² ;F. Pena⁴ ;M. Souza⁴ ;P. Assis⁵ ;¹Osaka University, Ibaraki, Japan; ²Osaka University, Suita, Japan; ³JFE Steel Corporation, Fukuyama, Japan; ⁴UFOP (Federal University of Ouro Preto), Ouro Preto, Brazil; ⁵UFOP (Federal University of Ouro Preto) / REDEMAT, Ouro Preto, Brazil;

04:00 PM Organized Activities

SESSION: MiningMonAM	Meech International Symposium
	(2nd Intl. Symp. on Sustainable Mining Operations)
Mon Oct, 05 2015	Room: Citrine III
<u>Session Chairs:</u> Christopher Anderson ; Marcello Veiga ;	

08:00 AM: [MiningMonAM0]

Opening Speech

C. Anderson¹ ;M. Veiga² ;¹Massey University, Palmerston North, New Zealand; ²UBC-Mining, Vancouver, Canada;

08:20 AM: [MiningMonAM1]

Economic Development Models In Mining-affected Communities

S. Mcfaul¹ ;A. Xavier² ;J. Nava¹ ;M. Ledezma³ ;¹SEF Canada Ltd., Vancouver, Canada; ²UBC-Mining, Vancouver, Canada; ³Tecnologico de Monterrey, San Luis Potosi, Mexico;

08:40 AM: [MiningMonAM2]

Local Perceptions Of Large Versus Small-scale Mining: Three Cases From The Developing World

A. Botta¹ ;Z. Toledo Orozco¹ ;G. Thomson¹ ;¹University of British Columbia, Vancouver, Canada;

09:00 AM: [MiningMonAM3]

Trends In African Mineral Policy Reforms: Implications For Sustainable Mining At All Scales

J. Hinton¹ ;¹Auranda Minerals, Entebbe, Uganda;

09:20 AM: [MiningMonAM4]

Social Risk In The Extractives Sector: Do Miners Need New Skills To Be Successful?

J. Fraser¹; **A. Xavier**²; ¹NBK Institute of Mining Engineering, University of British Columbia, Vancouver, Canada; ²UBC-Mining, Vancouver, Canada;

09:40 AM Break

10:00 AM - 12:30 PM [SUMMIT PLENARY](#)

12:30 PM LUNCH

SESSION: MiningMonPM	Meech International Symposium (2nd Intl. Symp. on Sustainable Mining Operations)
Mon Oct, 05 2015	Room: Citrine III
<u>Session Chairs:</u> Zarai Toledo Orozco ; Robert Kaplan ;	

02:00 PM: [MiningMonPM5]

The Management Of Socio-political Risk Through Corporate Transitions At Mining Projects

G. Thomson¹; ¹University of British Columbia, Vancouver, Canada;

02:20 PM: [MiningMonPM6]

Review Of Canadian Indigenous Mining Policy Frameworks

S. Zimmerling¹; ¹, Ottawa, Canada;

02:40 PM: [MiningMonPM7]

Mine Closure Planning Of The New Afton Mine With The Stk'emlupsemc Te Secwepemc Nation

B. Collins¹; **D. Van Zyl**²; ¹, Vancouver, Canada; ²University of British Columbia, Vancouver, Canada;

03:00 PM: [MiningMonPM8]

Sustainable Development In Football: A Strategy Of The Fluminense Football Club

L. Rodrigues F.¹; **M. Veiga**²; ¹Fluminense Football Club, Rio de Janeiro, Brazil; ²UBC-Mining, Vancouver, Canada;

03:20 PM: [MiningMonPM9]

Women And Mine Development: Capturing Vulnerability Using Open Data And Gis

A. Stockwell¹; ¹University of British Columbia, Vancouver, Canada;

04:00 PM Organized Activities

SESSION: MoltenMonAM	3rd Intl. Symp. on Sustainable Molten Salt and Ionic Liquid Processing
Mon Oct, 05 2015	Room: Opal I
<u>Session Chairs:</u> Jomar Thonstad ; Harald Arnljot Oye ;	

08:00 AM: [MoltenMonAM0] Plenary

Electrochemical Properties Of Lithium Hydride In Molten Chlorides

P. Masset¹ ;¹Fraunhofer UMSICHT, Sulzbach-Rosenberg, Germany (Deutschland);

08:20 AM: [MoltenMonAM1] Plenary

Application Of Molten Salts In The Reprocessing Of Spent Oxide Nuclear Fuel

C. Schwandt¹ ;¹University of Nizwa, Nizwa, Oman;

08:40 AM: [MoltenMonAM2]

Electrochemical Behavior Of Neodymium In Mixed Molten Salts

M. Mery¹ ;**P. Masset**¹ ;**C. Schmetterer**¹ ;¹Fraunhofer UMSICHT, Sulzbach-Rosenberg, Germany (Deutschland);

09:00 AM: [MoltenMonAM3] Plenary

Molten Salt Chemistry Within The Carbon Cathode During Aluminium Electrolysis

H. Oye¹ ;¹NTNU, Trondheim, Norway;

09:20 AM: [MoltenMonAM4]

Inert Anodes For Aluminium Electrolysis

J. Thonstad¹ ;¹Norwegian University of Science and Technology, Trondheim, Norway;

09:40 AM Break

10:00 AM - 12:30 PM [**SUMMIT PLENARY**](#)

12:30 PM LUNCH

SESSION: **MoltenMonPM** **3rd Intl. Symp. on Sustainable Molten Salt and Ionic Liquid Processing**

Mon Oct, 05 2015

Room: **Opal I**

Session Chairs: Carsten **Schwandt**;

02:00 PM: [MoltenMonPM5]

Density Screening Of Rtils

Y. Marcus¹ ;¹Hebrew University, Jerusalem, Israel;

02:20 PM: [MoltenMonPM6] Keynote

Selective Ionic Liquid Gas Absorption

A. Kunov Kruse¹ ;**R. Fehrmann**¹ ;**A. Riisager**¹ ;**P. Thomassen**¹ ;**S. Mossin**¹ ;**H. Kolding**¹ ;¹DTU Chemistry, Lyngby, Denmark;

02:40 PM: [MoltenMonPM7]

Electrical Conductivity Of Cryolite - Based System With Low Melting Temperature

P. Palimaka¹ ;**S. Pietrzyk**¹ ;¹AGH University of Science and Technology, Krakow, Poland;

03:00 PM: [MoltenMonPM8] Plenary

Valuable Metals Recovery By Electrolysis In Molten Salts

T. Amietszajew¹; S. Seetharaman¹; R. Bhagat¹; ¹Warwick Manufacturing Group, Coventry, United Kingdom (Great Britain);

03:20 PM: [MoltenMonPM9]

The Effect Of Aluminium On The Entropy Of Calcia-alumina-silica Melts

A. Gray Weale¹; P. Masset²; ¹University of Melbourne, Melbourne, Australia; ²Fraunhofer UMSICHT, Sulzbach-Rosenberg, Germany (Deutschland);

04:00 PM Organized Activities

SESSION: **Non-ferrousMonAM**

**Vanyukov International Symposium
(3rd Intl. Symp. on Sustainable Non-ferrous
Smelting and Processing)**

Mon Oct, 05 2015

Room: **Opal II**

Session Chairs: Leonid **Tsymbulov**; Pavel **Kozlov**;

08:00 AM: [Non-ferrousMonAM0] Plenary

[KIVCET] Kivcet Feed Flexibility: 28 Years Of Experience At Portovesme

D. Longu¹; A. Galleri²; ¹Portovesme srl, Portoscuso, Italy; ²Portovesme srl, Portosuso, Italy;

08:20 AM: [Non-ferrousMonAM1] Keynote

Control Of Operating Parameters In Kivcet Furnace

F. Kongoli¹; D. Longu²; ¹Flogen Technologies Inc., Mont-Royal, Canada; ²Portovesme SRL, Portoscuso, Italy;

08:40 AM: [Non-ferrousMonAM2] Plenary

[KIVCET] Interconnection Of Technical Organization And Technological Capabilities In Modern Lead Smelting Processes

V. Shumskiy¹; ¹VNIITsvetmet, Ust-Kamenogorsk, Kazakhstan;

09:00 AM: [Non-ferrousMonAM3] Plenary

[KIVCET] Teck's Kivcet Furnace Integrity – 18 Year Review

D. Rioux¹; ¹Teck Metals Ltd, Trail, Canada;

09:20 AM: [Non-ferrousMonAM4] Invited

[KIVCET] Commissioning And First Operation Experience Of Kivcet Plants In China

A. Pescetelli¹; G. Cois²; D. Sanna²; ¹Texeco Consulting, Rome, Italy; ²TEXECO CONSULTING sas, Roma, Italy;

09:40 AM Break

10:00 AM - 12:30 PM [SUMMIT PLENARY](#)

12:30 PM LUNCH

SESSION: **Non-ferrousMonPM**

**Vanyukov International Symposium
(3rd Intl. Symp. on Sustainable Non-ferrous
Smelting and Processing)**

Mon Oct, 05 2015

Room: **Opal II**

Session Chairs: Viktor **Shumskiy**; Aleksandr **Fedorov**;

02:00 PM: [Non-ferrousMonPM5] Invited

[KIVCET] Applications Of Kivcet Process For Pb Smelting In China

Z. Leru¹; ¹Changsha Engineering & Research Institute Ltd. of Nonferrous Metallurgy (CINF), Changsha, China;

02:20 PM: [Non-ferrousMonPM6] Plenary

[KIVCET] Smelting Of Gold-bearing Raw Materials As Solution For Improvement Of Lead Production Profitability

V. Shumskiy¹; ¹I. Startsev¹; ¹N. Ushakov¹; ¹A. Zharmenov²; ¹VNIItsvetmet, Ust-Kamenogorsk, Kazakhstan; ²RSE, Almaty, Kazakhstan;

02:40 PM: [Non-ferrousMonPM7] Invited

[KIVCET] Main Developments Of Kivcet Furnace Engineering

A. Carminati¹; ¹Forni Engineering S.r.l., Milan, Italy;

03:00 PM: [Non-ferrousMonPM8]

Structure Of Mattes Resulting From The Autogenous Smelting Of Copper And Zinc Concentrates In Vanyukov's Furnace

E. Selivanov¹; ¹R. Gulyaeva¹; ¹N. Sel'menskikh¹; ¹V. Belyaev²; ¹Institute of Metallurgy, Ural Branch of the Russian Academy of Science, Yekaterinburg, Russian Federation; ²Ural Mining and Metallurgical Company, Yekaterinburg, Russian Federation;

03:20 PM: [Non-ferrousMonPM9] Plenary

Formation Of Accretions In Waelz Kilns As The Result Of Various Oxidised Feed Material Recycling

P. Kozlov¹; ¹JSC CZP, Chelyabinsk, Russian Federation;

04:00 PM Organized Activities

SESSION: **PhysicsMonAM**

**1st Intl. Symp. on Physics of Surfaces and
Interfaces, from Fundamentals to Sustainable
Applications**

Mon Oct, 05 2015

Room: **Onyx**

Session Chairs: Jean-Marie **Dubois**; Mariana **Calin**;

08:00 AM: [PhysicsMonAM0] Invited

Macroscopic Surface Properties Of Quasicrystals And Complex Metallic Alloys: Towards Sustainable Alternatives To F-containing Surface Layers?

J. Dubois¹; ¹E. Belin Ferre²; ¹Institut Jean Lamour, Nancy, France; ²LCPMR, Paris, France;

08:20 AM: [PhysicsMonAM1] Plenary

Tailoring The Microstructures And Surfaces Of Metastable Ti-based Alloys At The Nano-scale For Implant Applications

M. Calin¹; A. Gebert²; F. Gostin²; A. Helth²; M. Bonisch²; S. Pilz²; R. Schmidt²; U. Hempel³; M. Zehetbauer⁴; J. Eckert²; ¹Leibniz-Institute for Solid State and Materials Research Dresden (IFW Dresden), Dresden, Germany (Deutschland); ²IFW Dresden, Dresden, Germany (Deutschland); ³TU Dresden, Institute of Physiological Chemistry, Dresden, Germany (Deutschland); ⁴University of Vienna, Faculty of Physics, Vienna, Austria;

08:40 AM: [PhysicsMonAM2] Invited

Atomic-scale (co-) Deposition: Some Results On Thermodynamics Of Supported Nanoalloys

I. Braems¹; E. Maras²; J. Marie³; F. Berthier⁴; Y. Girard³; B. Legrand⁵; ¹IMN-CNRS, Nantes Cedex, France; ²Aalto University, Aalto, Finland; ³Laboratoire Matériaux et Phénomènes Quantiques - CNRS/Université Paris Diderot, Paris, France; ⁴CNRS - Université de Paris Sud 11, Orsay, France; ⁵Service de Recherche de Metallurgie Physique, CEA Saclay, Gif-sur-Yvette, France;

09:00 AM: [PhysicsMonAM3] Keynote

Complex Metallic Alloy Surfaces: From Chemical Bonding Network To Heterogeneous Catalytic Properties

J. Ledieu¹; ¹Institut Jean Lamour UMR7198 CNRS - Université de Lorraine, Nancy 54011, France;

09:20 AM: [PhysicsMonAM4] Plenary

Surface Science Of Pdga As A Model For Intermetallic Compounds In Heterogeneous Catalysis

O. Groning¹; J. Prinz¹; A. Yakutovich¹; C. Pignedoli¹; D. Passerone¹; R. Widmer¹; ¹Empa Materials Science and Technology, Dübendorf, Switzerland (Confederation of Helvetia);

09:40 AM Break

10:00 AM - 12:30 PM [SUMMIT PLENARY](#)

12:30 PM LUNCH

SESSION: **PhysicsMonPM** **1st Intl. Symp. on Physics of Surfaces and Interfaces, from Fundamentals to Sustainable Applications**

Mon Oct, 05 2015

Room: **Onyx**

Session Chairs: Isabelle **Braems**;

02:00 PM: [PhysicsMonPM5] Invited

Nanostructuration In The Lead-free K-Nb-O, K-Ta-Nb-O And K-Na-Nb-O Systems

V. Demange¹; France;

02:20 PM: [PhysicsMonPM6] Invited

Heavy Rare Earths At Grain Boundaries To Achieve Maximum Coercivity In Industrial Magnetic Materials

S. Kobe¹; ¹Josef Stefan Institute, Ljubljana, Slovenia;

02:40 PM: [PhysicsMonPM7] Invited

Reactive Diffusion For Contact Formation In Advanced MOS Devices

D. Mangelinck¹; **K. Hoummada**²; **M. El Kousseifi**²; **F. Panciera**²; **M. Descoins**²; **M. Bertoglio**²; **T. Epicier**³; **M. Gregoire**⁴; ¹IM2NP-CNRS-AMU, Marseille cedex 20, France; ²IM2NP-CNRS-AMU, Marseille, France; ³MATEIS, UMR 5510, Villeurbanne, France; ⁴STMicroelectronics, Crolles, France;

03:00 PM: [PhysicsMonPM8] Invited

Surface Treatment Of Polymers: Fundamental And Applied Research

T. Duquet¹; ¹CIRIMAT - CNRS, Toulouse, France;

03:20 PM: [PhysicsMonPM9] Invited

Insights In The Synthesis Of Carbon Nanostructures From Computer Simulation: Role Of Metal-carbon Interfaces

C. Bichara¹; ¹CINaM - CNRS and Aix Marseille University, Marseille, France;

04:00 PM Organized Activities

SESSION:MineralMonAM **2nd Intl. Symp. on Sustainable Mineral Processing: Principles, Technologies and Industrial Practice**

Mon Oct, 05 2015

Room: **Quartz**

Session Chairs: **Ali Ihsan Arol**; **Andre Carlos Silva**

08:00 AM: [MineralMonAM0] Plenary

Sustainable Mineral Processing Tailings Deposition

A. Silva¹; **E. Silva**¹; **W. Souza**²; ¹Universidade Federal de Goias, Catalao, Brazil; ²Federal University of Goias, Catalao, Brazil;

08:20 AM: [MineralMonAM1] Invited

Hematite Pulp Dispersion With Reagent Addition

J. Alexandrino¹; **A. Peres**²; **E. Silva**³; **A. Silva**³; **O. Rodrigues**⁴; ¹Universidade Federal de Goias, Joao Monlevade, Brazil; ²Engineering Faculty Federal University of Minas Gerais, Belo Horizonte, Brazil; ³Universidade Federal de Goias, Catalao, Brazil; ⁴Universidade Federal de Ouro Preto, Ouro Preto, Brazil;

08:40 AM: [MineralMonAM2] Keynote

MgO Sinter Production Process Upgrade At MIM - Golesh Co.

S. Imeri¹; **F. Gara**¹; **S. Hasi**¹; **M. Rizaj**²; **N. Deva**³; **F. Kongoli**⁴; ¹MIM-GOLESH, Prishtina, Kosovo; ²University of Prishtina, Prishtina, Kosovo; ³University Isa Boletini - Mitrovica, Mitrovica, Kosovo; ⁴Flogen Technologies Inc., Mont-Royal, Canada;

09:00 AM: [MineralMonAM3]

The Prospects For The Use Of High-power Nanosecond Pulses To Flotation Separation Of Sulfide Minerals From Rock-forming Minerals

I. Bunin¹; **V. Chanturiya**¹; **I. Khabarova**¹; **M. Ryazantseva**¹; ¹Research Institute of Comprehensive Exploitation of Mineral Resources Russian Academy of Science, Moscow, Russian Federation;

09:20 AM: [MineralMonAM4]

Use Of Supercritical Carbon Dioxide In Underbalanced Drilling Operation

M. Dehghani¹; ¹National Iranian Oil Company (N.I.O.C), Omidieh, Iran (Islamic Republic of Iran);

09:40 AM Break

10:00 AM - 12:30 PM [SUMMIT PLENARY](#)

12:30 PM LUNCH

SESSION: **MineralMonPM** **2nd Intl. Symp. on Sustainable Mineral Processing: Principles, Technologies and Industrial Practice**

Mon Oct, 05 2015

Room: **Quartz**

Session Chairs: **Andre Carlos Silva**; **Raphael Silva Tomaz**;

02:00 PM: [MineralMonPM5] Keynote

Barite And Magnetite Production From Phosphate Rock Ore By Jigging

A. Silva¹; **E. Silva**¹; **R. Tomaz**¹; **C. Filho**²; ¹Universidade Federal de Goias, Catalao, Brazil; ²UFG, Catalao, Brazil;

02:20 PM: [MineralMonPM6]

Limestone Fines Briquetting

A. Silva¹; **E. Silva**¹; **M. Barros**¹; ¹Universidade Federal de Goias, Catalao, Brazil;

02:40 PM: [MineralMonPM7]

Influence Of Conditioning And Flotation Time Using Macaúba's Oil In Microflotation

C. Pacheco¹; **A. Silva**¹; **E. Silva**¹; ¹Universidade Federal de Goias, Catalao, Brazil;

03:00 PM: [MineralMonPM8]

Microflotation Using Jatropha Curcas Oil As Apatite Collector

A. Silva¹; **E. Silva**¹; **I. Moraes**²; **V. Moraes**²; **C. Filho**²; ¹Universidade Federal de Goias, Catalao, Brazil; ²UFG, Catalao, Brazil;

03:20 PM: [MineralMonPM9]

Microflotation Of Apatite With Pulp Oils And Macauba Chestnut

A. Silva¹; **E. Silva**¹; **C. Pacheco**¹; **T. Rocha**¹; **D. Sousa**²; ¹Universidade Federal de Goias, Catalao, Brazil; ²Instituto Federal Goiano, Catalao, Brazil;

04:00 PM Organized Activities

SESSION: **RecyclingMonAM**

**3rd Intl. Symp. on Sustainable Materials
Recycling Processes and Products**

Mon Oct, 05 2015

Room: **Topaz**

Session Chairs: Tomas **Havlik**; Francesca **Pagnanelli**;

08:00 AM: [RecyclingMonAM0] Plenary

First Outcomes From Photolife Project: Process And Automated Pilot Plant For Simultaneous And Integral Recycling Of Different Kinds Of Photovoltaic Panels

F. Pagnanelli¹; E. Moscardini²; T. Abo Atia³; L. Toro³; P. Altimari³; ¹Sapienza University of Rome, Rome, Italy; ²Universita , Roma, Italy; ³Sapienza University, Rome, Italy;

08:20 AM: [RecyclingMonAM1] Plenary

Leaching Of EAF Steelmaking Dust In Sulfuric Acid Dilute Solution: Case Of Calcium

T. Havlik¹; F. Kukurugya²; A. Miskufova²; J. Jascisak²; L. Parilak³; ¹Technical University of Kosice, Faculty of Metallurgy,, Kosice, Slovakia (Slovak Republic); ²Technical University, Faculty of Metallurgy, Dept. of Non-ferrous Metals and Waste Treatment, Kosice, Slovakia (Slovak Republic); ³ZP VVC s.r.o., Podbrezova, Slovakia (Slovak Republic);

08:40 AM: [RecyclingMonAM2] Plenary

*[Solid and liquid wastes from industrial processes: Innovations in material recovery and environmental protection]***Potential Of Industrial Wastes Recycling From Lead, Zinc Or Copper Industry To Contribute To The Supply Of Minor Metals**

S. Steinlechner¹; J. Antrekowitsch²; ¹Chair of Nonferrous Metallurgy, Leoben, Austria; ²Christian Doppler Laboratory for Optimization and Biomass Utilization in Heavy Metal Recycling, Leoben, Austria;

09:00 AM: [RecyclingMonAM3] Plenary

*[Solid and liquid wastes from industrial processes: Innovations in material recovery and environmental protection]***Steel Mill Dust Recycling In The 21st Century**

J. Antrekowitsch¹; S. Steinlechner²; ¹Christian Doppler Laboratory for Optimization and Biomass Utilization in Heavy Metal Recycling, Leoben, Austria; ²Chair of Nonferrous Metallurgy, Leoben, Austria;

09:20 AM: [RecyclingMonAM4]

Bulk Nanocomposites By Explosive Consolidation In Ti-Al-Ni-B System

N. Chikhradze¹; F. Marquis²; M. Chikhradze³; G. Abashidze⁴; ¹Tbilisi, Georgia; ²San Diego State University, Department of Mechanical Engineering, San Diego, United States; ³Georgian Technical University, Tbilisi, Georgia; ⁴G. Tsulukidze Mining Institute, Tbilisi, Georgia;

09:40 AM Break

10:00 AM - 12:30 PM [**SUMMIT PLENARY**](#)

12:30 PM LUNCH

SESSION: **RecyclingMonPM**

**3rd Intl. Symp. on Sustainable Materials
Recycling Processes and Products**

Mon Oct, 05 2015

Room: **Topaz**

Session Chairs: Juergen **Antrekowitsch**; Toyohisa **Fujita**;

02:00 PM: [RecyclingMonPM5] Plenary

Recycling Of Rare Earth And Platinum Group Metals From Wastes For Sustainable Resources Processing

T. Fujita¹ ;¹The University of Tokyo, Bunkyo, Japan;

02:20 PM: [RecyclingMonPM6]

Photoelectrocatalytic Degradation Of Pharmaceutical Compounds To Water Recycle On The Pharmaceutical Industry

S. Wohlmuth Da Silva¹ ;A. Santos² ;A. Meneguzzi² ;M. Siqueira Rodrigues³ ;**A. Moura Bernardes**² ;¹Universidade Federal do Rio Grande do Sul, Porto Alegre, Brazil; ²UFRGS, Porto Alegre, Brazil; ³FEEVALE, Porto Alegre, Brazil;

02:40 PM: [RecyclingMonPM7]

Utilization Of Waste Materials From The Mineral Wool Production Into Construction Materials

P. Bibora¹ ;P. Leber² ;I. Chromkova² ;M. Frank² ;¹Vyzkumny Ustav Stavebnich Hmot,a.s., Brno, Czech Republic; ²Research Institute for Building Materials, Brno, Czech Republic;

03:00 PM: [RecyclingMonPM8]

Problems Of Zirconium Dioxide Recovery From Concentrate And Tailings

N. Tyushkova¹ ;¹Moscow Institute of Steel and Alloys, Moscow, Russian Federation;

03:20 PM: [RecyclingMonPM9]

Spectral Inductive Detection Of Residual Metals In Solid Waste Treatment

M. Berwanger¹ ;T. Pretz¹ ;¹Department of Processing and Recycling, RWTH Aachen University, 52062 Aachen, Germany (Deutschland);

04:00 PM Organized Activities

Aifantis International Symposium

SESSION: **MultiscaleMonAM** (2nd Intl. symp. on Multiscale Material Mechanics in the 21st Century)

Mon Oct, 05 2015

Room: **Theater**

Session Chairs: Stephane **Bordas**; Yuri **Estrin**;

08:00 AM: [MultiscaleMonAM0] Plenary

[Defects on solids] **Mechanics And Nanomechanics. The Problems Of Nanotechnology**

B. Semenov¹ ;**N. Morozov**² ;¹St. Petersburg State Polytechnical University, Saint Petersburg, Russian Federation; ²Saint Petersburg State University Faculty of Mathematics and Mechanics, Saint Petersburg, Russian Federation;

08:20 AM: [MultiscaleMonAM1] Invited

[*Defects on solids*] **Advances In Nano-porous Materials: Metallic Muscles At Work**
J. Dehossan¹ ;¹Un. of Groningen, Groningen, Netherlands;

08:40 AM: [MultiscaleMonAM2] Keynote

[*Defects on solids*] **Disclination Concept In Mechanics Of Materials**
A. Romanov¹ ;¹Togliatti State University, Togliatti, Russian Federation;

09:00 AM: [MultiscaleMonAM3] Invited

[*Defects on solids*] **Threading Dislocations In Iii-nitride Structures For Optoelectronic Device Applications**
V. Bougrov¹ ;¹ITMO University, Saint-Petersburg, Russian Federation;

09:20 AM: [MultiscaleMonAM4] Invited

[*Defects on solids*] **Antiplane Dislocation-based Fracture Mechanics Within Generalized Continua**
M. Mousavi¹ ;¹Aalto University, Espoo, Finland;

09:40 AM Break

10:00 AM - 12:30 PM [SUMMIT PLENARY](#)

12:30 PM LUNCH

Aifantis International Symposium

SESSION: MultiscaleMonPM (2nd Intl. symp. on Multiscale Material Mechanics in the 21st Century)

Mon Oct, 05 2015

Room: **Theater**

Session Chairs: Alfonso **Ngan**; Mahmoud **Mousavi**;

02:00 PM: [MultiscaleMonPM5] Keynote

[*Defects on solids*] **Formation Of The Internal Cavity In Icosahedral Small Copper Particles After Annealing**

A. Vikarchuk¹ ;A. Priezzheva¹ ;M. Dorogov¹ ;L. Dorogin² ;**A. Romanov**¹ ;¹Togliatti State University, Togliatti, Russian Federation;²Institute of Physics, University of Tartu, Tartu, Estonia;

02:20 PM: [MultiscaleMonPM6] Keynote

[*Defects on solids*] **Defects In Solids: Elastic Models And The Boundary-value Problems**

A. Kolesnikova¹ ;A. Romanov² ;¹ITMO University, St.Petersburg, Russian Federation; ²Togliatti State University, Togliatti, Russian Federation;

02:40 PM: [MultiscaleMonPM7]

[*Multiscale Computational Mechanics*] **Influence Of Strain Gradient On Magnetoelectric Effect Of Multiferroic Composites**

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

03:00 PM: [MultiscaleMonPM8] Keynote

[*Multiscale Computational Mechanics*] **Plasticity Simulation Based On The Dynamics Of Full Dislocation-density Functions – Predicting Size Effect Of Strength And Dislocation Pattern Formation**

A. Ngan¹ ;H. Leung² ;P. Leung² ;B. Cheng² ;K. Aifantis³ ;¹Univ. of Hong Kong, Pokfulam, Hong Kong (Special Administrative Region of China); ²University of Hong Kong, Hong Kong, Hong Kong (Special Administrative Region of China); ³University of Arizona, Tucson, United States;

03:20 PM: [MultiscaleMonPM9] Keynote

[*Multiscale Computational Mechanics*] **Peridynamic Modelling Of Granular Fracture In Polycrystalline Materials**

E. Oterkus¹ ;D. De Meo¹ ;N. Zhu¹ ;C. Diyaroglu¹ ;¹University of Strathclyde, Glasgow, United Kingdom (Great Britain);

04:00 PM Organized Activities

Tuesday:

SESSION: **MetalsTueAM** **Takano International Symposium**
(1st Intl. Symp. on Sustainable Metals & Alloys Processing)

Tue Oct, 06 2015 Room: **Citrine I**

Session Chairs: Hirokazu **Konishi**; Tateo **Usui**;

08:00 AM: [MetalsTueAM0]

Evaluation Of Heat Treated Coal-iron Ore Briquettes

C. Narita¹; M. Mourao²; C. Takano²; L. Cardona²; ¹Polytechnic School of the University of Sao Paulo, Sao Paulo, Brazil; ²University of Sao Paulo, Sao Paulo, Brazil;

08:20 AM: [MetalsTueAM1]

Evaluation Of The Compression Strength And Co2 Reactivity Of Coal-charcoal Composite Briquettes

L. Cardona¹; M. Mourao¹; C. Narita²; C. Takano¹; ¹University of Sao Paulo, Sao Paulo, Brazil; ²Polytechnic School of the University of Sao Paulo, Sao Paulo, Brazil;

08:40 AM: [MetalsTueAM2]

Development Of Gas Fuel Injection Technology In Iron Ore Sintering Process

Y. Iwami¹; K. Iwase¹; T. Hirose¹; T. Yamamoto¹; N. Oyama¹; H. Matsuno¹; ¹JFE Steel Corporation, Fukuyama, Japan;

09:00 AM: [MetalsTueAM3]

Gaseous Reduction Behavior Of Iron Ore Sinter And Kinetic Analysis In Consideration Of Calcium Ferrite Reaction Process

T. Usui¹; M. Ohmi²; H. Kawabata²; M. Naito³; H. Ono²; Y. Nakamuro⁴; M. Nishi⁵; P. Assis⁶; ¹Osaka University, Ibaraki, Japan; ²Osaka University, Suita, Japan; ³Nippon Steel & Sumikin Technology Co., Ltd., Futtsu, Japan; ⁴Naniwa Pump Mfg. Co., Ltd., Osaka, Japan; ⁵Izumi Industry, Inc., Hakui-gun, Japan; ⁶UFOP (Federal University of Ouro Preto) / REDEMAT, Ouro Preto, Brazil;

09:20 AM: [MetalsTueAM4]

A New Design For The Iron Ore Sintering Process Based On Mathematical Modeling

J. De Castro¹; M. De Campos¹; E. Pinto Da Rocha²; ¹UFF - Federal Fluminense University, Volta Redonda, Brazil; ², Volta Redonda, Brazil;

09:40 AM Break

10:00 AM - 12:30 PM [SUMMIT PLENARY](#)

12:30 PM LUNCH

Takano International Symposium
SESSION: MetalsTuePM (1st Intl. Symp. on Sustainable Metals & Alloys Processing)

Tue Oct, 06 2015

Room: **Citrine I**

Session Chairs: Tiago **Ribeiro**; Marcos **de Campos**;

02:00 PM: [MetalsTuePM5] Keynote

Alternative Carbon Sources For Reduction

H. Ahmed¹; S. Lotfian¹; A. Eltawil¹; A. Andersson¹; **B. Bjorkman**¹; ¹Lulea University of Technology, Lulea, Sweden;

02:20 PM: [MetalsTuePM6]

Direct Reduction Of Iron: A Review On Midrex And Hyl Patents

T. Ribeiro¹; J. Ferreira Neto¹; C. Takano²; J. Poco³; ¹Institute for Technological Research, Sao Paulo, Brazil; ²University of Sao Paulo, Sao Paulo, Brazil; ³University Center of FEI, Sao Bernardo do Campo, Brazil;

02:40 PM: [MetalsTuePM7]

Vacuum Treatment Of Ferrosilicon

J. Safarian¹; K. Tang²; K. Hildal³; ¹Research Scientist, Trondheim, Norway; ², Trondheim, Norway; ³Senior R&D Engineer, Kristiansand, Norway;

03:00 PM: [MetalsTuePM8]

Simulation Of The Dysprosium Diffusion In Ndfeb Magnets

J. De Castro¹; **M. De Campos**¹; ¹UFF - Federal Fluminense University, Volta Redonda, Brazil;

03:20 PM: [MetalsTuePM9]

Metallic Neodymium Production

J. De Castro¹; **M. De Campos**¹; ¹UFF - Federal Fluminense University, Volta Redonda, Brazil;

04:00 PM Organized Activities

Gudenau International Symposium
SESSION: IronTueAM (3rd Intl. Symp. on Advanced Sustainable Iron and Steel Making)

Tue Oct, 06 2015

Room: **Citrine II**

Session Chairs: Thomas **Niehoff**; Panagiotis **Sismanis**;

08:00 AM: [IronTueAM0]

Technology Of Desulphuration And Boron Microalloying Of Low Carbon Steel With Slag CaO-SiO₂-MgO-Al₂O₃-B₂O₃

A. Babenko¹; V. Zhuchkov²; A. Sychev³; A. Upolovnikova¹; L. Smirnov¹; A. Akberdin⁴; M. Vitushenko⁵; O. Yilmaz⁶; O. Kerimoglu⁷; Y. Yalcinoglu⁶; ¹Institute of Metallurgy, Ekaterinburg, Russian Federation; ²Institute of Metallurgy of Ural Division of RAS, Ekaterinburg, Russian Federation; ³, Ekaterinburg, Russian

Federation; ⁴Chemical and Metallurgical Institute named after Zh. Abishev, Karaganda, Kazakhstan; ⁵JSC ArcelorMittal Temirtau, Temirtau, Kazakhstan; ⁶Eti Maden I.G.M., Ankara, Turkey; ⁷Etiproducts LTD, Moscow, Russian Federation;

08:20 AM: [IronTueAM1]

Recarburizers For Iron And Steel Production

S. Geimer¹; ¹CS Additive GmbH, Essen, Germany (Deutschland);

08:40 AM: [IronTueAM2] Keynote

Experimental Study Of Efficient Approach To Fine Particle Separation Using Mechanical Stirring By A Fluctuating Magnetic Field

K. Ishida¹; **T. Pretz**²; ¹JFE steel corp., Kawasaki, Japan; ²Department of Processing and Recycling, RWTH Aachen University, 52062 Aachen, Germany (Deutschland);

09:00 AM: [IronTueAM3]

Conveyor Cooling Effects On The Wire Rod Residual Stresses During Production

P. Sismanis¹; ¹Sidenor SA, Marousi, Greece;

09:20 AM: [IronTueAM4]

[Oxygen applications for sustainable steelmaking/steel melting] **Concept Of Converter-vessel-changing By SMS Group**

C. Thiede¹; ¹SMS Group, 40237 Dusseldorf, Germany (Deutschland);

09:40 AM Break

10:00 AM - 12:30 PM [**SUMMIT PLENARY**](#)

12:30 PM LUNCH

Gudenau International Symposium

SESSION: IronTuePM (3rd Intl. Symp. on Advanced Sustainable Iron and Steel Making)

Tue Oct, 06 2015

Room: **Citrine II**

Session Chairs: Michael **Potesser**;

02:00 PM: [IronTuePM5]

[Oxygen applications for sustainable steelmaking/steel melting] **Extraction Possibilities Of The Iron, Titanium And Vanadium From Titanium-containing Iron Ores**

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

02:20 PM: [IronTuePM6]

[Oxygen applications for sustainable steelmaking/steel melting] **Applying Innovative Technologies In Manufacturing Liquid Metal**

V. Tsepelev¹; ¹Boris Yeltzin Ural Federal University, Ekaterinburg, Russian Federation;

02:40 PM: [IronTuePM7]

[Oxygen applications for sustainable steelmaking/steel melting] **System Evaluation Of The New Concept Of Stove Oxygen Enrichment With Flue Gas Recirculation**
C. Wang¹; A. Cameron²; P. Martin³; ¹Swerea MEFOS, Lulea, Sweden; ²Linde Gas, Guildford, United Kingdom (Great Britain); ³Primetals Technologies USA LLC, Canonsburg, United States;

03:00 PM: [IronTuePM8]

[Oxygen applications for sustainable steelmaking/steel melting] **Effect Of Mold Flux Properties On The Thin Slab Continuous Caster Of High Carbon Steel**
J. Park¹; I. Sohn²; ¹Yonsei University, Seoul, Korea (Republic of [South] Korea); ²Yonsei University Materials Science and Engineering, Seoul, Korea (Republic of [South] Korea);

03:20 PM: [IronTuePM9]

Metamorphosis Or Steel Is Always Sustainable In Climate Change
G. Still¹; ¹, Schwerte, Germany (Deutschland);

04:00 PM Organized Activities

SESSION: MiningTueAM	Meech International Symposium (2nd Intl. Symp. on Sustainable Mining Operations)
Tue Oct, 06 2015	Room: Citrine III
<u>Session Chairs:</u> Suzette McFaul ; Jocelyn Fraser ;	

08:00 AM: [MiningTueAM0]

Estelle Levin Limited - Asm: Our Work, Approach And Vision
A. Rolfe¹; ¹Estelle Levin Limited, Cambridge, United Kingdom (Great Britain);

08:20 AM: [MiningTueAM1]

Co-existence Of Large-scale Gold Mining With Artisanal Gold Miners
J. Selder¹; M. Veiga²; ¹, Vancouver, Canada; ²UBC-Mining, Vancouver, Canada;

08:40 AM: [MiningTueAM2]

Feasibility Study For A Fairtrade Gold Centre Of Excellence Programme
R. Stocklin Weinberg¹; M. Veiga²; A. Stockwell³; ¹Miller-Preiswerk, Vancouver, Canada; ²UBC-Mining, Vancouver, Canada; ³University of British Columbia, Vancouver, Canada;

09:00 AM: [MiningTueAM3]

From Minamata To Mitigation: Exploring Geographically Representative Monitoring Of Lead And Mercury In Artisanal Gold Mining Communities Of Northern Nigeria
K. Dales¹; B. Ranieri²; M. Veiga²; ¹Independent Element, Vancouver, Canada; ²UBC-Mining, Vancouver, Canada;

09:20 AM: [MiningTueAM4]

Perceptions Of Small And Large Scale Mining In Tambogrande, Piura, Peru

Z. Toledo Orozco¹; M. Veiga²; ¹University of British Columbia, Vancouver, Canada; ²UBC-Mining, Vancouver, Canada;

09:40 AM Break

10:00 AM - 12:30 PM [SUMMIT PLENARY](#)

12:30 PM LUNCH

SESSION: MiningTuePM	Meech International Symposium (2nd Intl. Symp. on Sustainable Mining Operations)
Tue Oct, 06 2015	Room: Citrine III
<u>Session Chairs:</u> Zarai Toledo Orozco ; Kirsten Dales ;	

02:00 PM: [MiningTuePM5]

Asgm In West Nusa Tenggara Province, Indonesia: How Fast The Use Of Mercury Affect The Environment

B. Krisnayanti¹; C. Anderson²; ¹Agriculture Faculty, University of Mataram, Mataram, Indonesia; ²Massey University, Palmerston North, New Zealand;

02:20 PM: [MiningTuePM6]

The Strategic Plan For Incam: The Indonesian Centre For Artisanal Mining

D. Nurjaman¹; Y. Prabangkara²; C. Anderson³; R. Stocklin Weinberg⁴; ¹Agency for The assessment and Application of Technology, Jakarta, Indonesia; ²Deputy for Mining and energi Infrastructure, The Coordinating, Jakarta, Indonesia; ³Massey University, Palmerston North, New Zealand; ⁴Miller-Preiswerk, Vancouver, Canada;

02:40 PM: [MiningTuePM7]

Mercury And Heavy Metal Origin And Contamination Of The Puyango-tumbes River System, Ecuador

R. Kaplan¹; M. Veiga¹; C. Gonzalez Mueller²; C. Velasquez Lopez³; L. Granda³; L. Leonor Rivera²; ¹UBC-Mining, Vancouver, Canada; ²UNIDO, Geneva, Switzerland (Confederation of Helvetia); ³INIGEMM, Quito, Ecuador;

03:00 PM: [MiningTuePM8]

Heavy Metal Contamination Of Agricultural Products And Human Exposure Via Food Intake In The Artisanal Gold Mining Province Of Portovelo & Zaruma, El Oro State, South Ecuador

B. Ranieri¹; K. Dales²; M. Veiga¹; ¹UBC-Mining, Vancouver, Canada; ²Independent Element, Vancouver, Canada;

03:20 PM: [MiningTuePM9]

Mine Closure Planning And Remediation For Mercury Contaminated Artisanal Mine Sites In Ecuador

B. Nichols¹; M. Veiga²; ¹University of British Columbia, Vancouver, Canada; ²UBC-Mining, Vancouver, Canada;

04:00 PM Organized Activities

SESSION: **MoltenTueAM** **3rd Intl. Symp. on Sustainable Molten Salt and Ionic Liquid Processing**
Tue Oct, 06 2015 Room: **Opal I**
Session Chairs: Ana-Maria Julieta Popescu;

08:00 AM: [MoltenTueAM0]

Copper Extraction From Copper Sulfide By Electro-reduction In Molten Borax

L. Kartal¹; G. Kartal Sireli²; S. Timur¹; ¹Istanbul Technical University, Istanbul, Turkey; ²Istanbul Technical University (ITU), Istanbul, Turkey;

08:20 AM: [MoltenTueAM1]

Nanoclusters Of ZnCl₂: On Pursuit Of The Liquid Structure

Z. Akdeniz¹; ¹Piri Reis University, Istanbul, Turkey;

08:40 AM: [MoltenTueAM2]

Simulation Of Phase Diagrams Of Ternary Systems Bounding LiF-NaF-KF-PuF₃ system For Prediction Of Crystallization Stage

V. Lutsyk¹; A. Zelenaya¹; E. Nasrulin¹; A. Zyryanov¹; ¹Institute of Physical Materials Science SB RAS, Ulan-Ude, Russian Federation;

09:00 AM: [MoltenTueAM3]

Influence Of The Second Coordination Sphere On The Standard Rate Constants Of Charge Transfer For Nb(V, IV) Chloride Complexes

S. Kuznetsov¹; A. Popova²; ¹Institute of Chemistry, Kola Science Centre RAS, Apatity, Russian Federation; ²Institute of Chemistry, Kola Science Centre of Russian Academy of Sciences, Apatity, Russian Federation;

09:20 AM: [MoltenTueAM4]

Deposition Of The Refractory Metal Carbides Coatings On Carbon Steels And Fibers: Their Properties And Applications

V. Dolmatov¹; Y. Stulov²; **S. Kuznetsov**²; ¹Institute of Chemistry, Kola Science Center RAS, Apatity, Russian Federation; ²Institute of Chemistry, Kola Science Centre RAS, Apatity, Russian Federation;

09:40 AM Break

10:00 AM - 12:30 PM [**SUMMIT PLENARY**](#)

12:30 PM LUNCH

SESSION: **MoltenTuePM** 3rd Intl. Symp. on Sustainable Molten Salt and Ionic Liquid Processing

Tue Oct, 06 2015

Room: **Opal I**

Session Chairs: TBA

02:00 PM: [MoltenTuePM5]

Effect Of Oxidant Usage On The Copper Leaching Degree From Smelting Slag Using Sulphuric Acid

G. Strainovic¹; ¹University of Belgrade - Technical Faculty in Bor, Bor, Serbia and Montenegro (formerly Yugoslavia);

02:20 PM: [MoltenTuePM6]

Investigation By XPS Of The Interface Between Graphite Electrode And Ionic Liquid Based Electrolyte

C. Santini¹; E. Bolimowska²; A. Mele³; A. Padua⁴; H. Rouault⁵; A. Benayad⁵; F. Castiglione³; ¹CNRS, Villeurbanne, France; ²CNRS, CEA-Liten, Villeurbanne, France; ³Dipartimento di Chimica, Politecnico di Milano, Milan, Italy; ⁴CNRS, Aubiere, France; ⁵CEA-Liten, Grenoble, France;

02:40 PM: [MoltenTuePM7]

Wetting Technological Substrates With Ionic Liquids: An Experimental Study With Porous Silicon

P. Haumesser¹; W. Darwich²; P. Bockowski³; A. Charlot²; F. Gaillard³; C. Santini²; ¹CEA LETI, Grenoble, France; ²CNRS, Villeurbanne, France; ³CEA Leti, Grenoble, France;

03:00 PM: [MoltenTuePM8]

Physicochemical, Thermal And Electrochemical Properties Of Dicyanamide Anion Based Ionic Liquids Mixtures With γ -butyrolactone As Electrolyte System For Lithium-ion Batteries

N. Zec¹; M. Bester Rogac²; S. Gadzuric³; M. Vranes³; ¹Faculty of Sciences, Novi Sad, Serbia and Montenegro (formerly Yugoslavia); ²Faculty of Chemistry and Chemical Technology, Ljubljana, Slovenia; ³Faculty of Sciences, University of Novi Sad, Novi Sad, Serbia and Montenegro (formerly Yugoslavia);

03:20 PM: [MoltenTuePM9]

Some News About Speciation In Molten Fluorides... A Successful Connection Between Experiments And Modeling

C. Bessada¹; K. Machado¹; D. Zanghi¹; S. Cadars¹; V. Sarou Kanian¹; M. Salanne²; ¹CNRS CEMHTI, Orleans, France; ²CNRS PHENIX, Paris, France;

04:00 PM Organized Activities

SESSION: Non-ferrousTueAM

**Vanyukov International Symposium
(3rd Intl. Symp. on Sustainable Non-ferrous
Smelting and Processing)**

Tue Oct, 06 2015

Room: **Opal II**

Session Chairs: Ahmet **Geveci**;

08:00 AM: [Non-ferrousTueAM0]

Improvement Of Vaniukov Smelting At Norilsk Nickel's Operations

L. Tsymbulov¹ ;M. Kniazev² ;S. Eroshevich³ ;V. Tozik³ ;V. Fomichev³ ;V. Lazarev³ ;¹JS Gipronickel Institute, Saint-Petersburg, Russian Federation; ²LLC, Sankt-Peterburg, Russian Federation; ³OJSC - MMC, Norilsk, Russian Federation;

08:20 AM: [Non-ferrousTueAM1]

Method Of Copper-nickel Matte Continuous Converting In Vaniukov Furnace To Blister Copper, Dump Slag And German Silver, A Marketable Copper-nickel Alloy

L. Tsymbulov¹ ;M. Kniazev² ;V. Tozik³ ;S. Pigarev⁴ ;V. Fomichev³ ;V. Lazarev³ ;¹JS Gipronickel Institute, Saint-Petersburg, Russian Federation; ²LLC, Sankt-Peterburg, Russian Federation; ³OJSC - MMC, Norilsk, Russian Federation; ⁴LLC, Saint Petersburg, Russian Federation;

08:40 AM: [Non-ferrousTueAM2]

From Waste Heat Recovery To Power Generation

S. Koster¹ ;¹Oschatz GmbH, Essen, Germany (Deutschland);

09:00 AM: [Non-ferrousTueAM3]

Experimental Investigation And Modelling Of Microstructure And Phase Composition Of The Copper Smelting Slags

K. Starodub¹ ;A. Kondratiev¹ ;V. Cheverikin¹ ;A. Khvan¹ ;A. Dinsdale¹ ;A. Saynazarov² ;¹National University of Science and Technology, Moscow, Russian Federation; ²JSC, Almalyk, Uzbekistan;

09:20 AM: [Non-ferrousTueAM4]

Temperature Effect On Copper Losses To Slag With Colemanite Addition At Fixed Oxygen Partial Pressure

A. Geveci¹ ;A. Rusen² ;Y. Topkaya¹ ;¹METU, Ankara, Turkey; ²Karamanoglu Mehmetbey University, Karaman, Turkey;

09:40 AM Break

10:00 AM - 12:30 PM [SUMMIT PLENARY](#)

12:30 PM LUNCH

SESSION: Non-ferrousTuePM

**Vanyukov International Symposium
(3rd Intl. Symp. on Sustainable Non-ferrous
Smelting and Processing)**

Tue Oct, 06 2015

Room: **Opal II**

Session Chairs: TBA

02:00 PM: [Non-ferrousTuePM5]

Vanyukov Process For Secondary Lead Materials And Semi-products Processing

A. Fedorov¹; **L. Dityatovskiy**²; N. Dosmukhamedov³; A. Komkov⁴; ¹National University of Science and Technology, Moscow, Russian Federation; ²EMC Vanyukov Process, Moscow, Russian Federation; ³KazNTU, Almaty, Kazakhstan; ⁴NRTU, Moscow, Russian Federation;

02:20 PM: [Non-ferrousTuePM6]

Processing Of Lead Sulfide Concentrates In Vanyukov Furnaces

A. Fedorov¹; A. Komkov²; **L. Dityatovskiy**³; ¹National University of Science and Technology, Moscow, Russian Federation; ²NRTU, Moscow, Russian Federation; ³EMC Vanyukov Process, Moscow, Russian Federation;

02:40 PM: [Non-ferrousTuePM7]

Development And Manufacturing Application Of Vanyukov Process Non-ferrous Metals

A. Fedorov¹; ¹National University of Science and Technology, Moscow, Russian Federation;

03:00 PM: [Non-ferrousTuePM8]

The Main Results Of Research And Industrial Development Process Vanyukov In Kazakhstan

S. Kozhakhmetov¹; S. Kvyatkovskiy¹; ¹Center of Earth Sciences, Metallurgy and Ore Beneficiation, Almaty, Kazakhstan;

03:20 PM: [Non-ferrousTuePM9]

Titanium Magnetite Concentrates Reduction Smelting Technology

M. Naimanbayev¹; ¹Center of Earth Sciences, Metallurgy and Ore Beneficiation, Almaty, Kazakhstan;

04:00 PM Organized Activities

**1st Intl. Symp. on Advanced Materials
and Technologies for Sustainable Energy
and the Environment(AMTSEE)**

SESSION:MaterialsForEnergyTueAM

Tue Oct, 06 2015

Room: **Onyx**

Session Chairs: Fernand **Marquis**; Kui **Liu**;

08:00 AM: [MaterialsForEnergyTueAM0]

Materials Challenges And Opportunities In Wind Energy

F. Marquis¹ ;R. Vilar² ;¹San Diego State University, Department of Mechanical Engineering, San Diego, United States; ²Instituto Superior Tecnico, Lisboa, Portugal;

08:20 AM: [MaterialsForEnergyTueAM1]

Preparation Of Nanostructured Lead Oxide With Carbon For Application Of High-performance Lead Acid Battery

Y. Hu¹ ;J. Wang¹ ;W. Zhang¹ ;V. Kumar² ;J. Yang¹ ;¹Huazhong University of Science and Technology (HUST), Wuhan, China; ²University of Cambridge, Cambridge, United Kingdom (Great Britain);

08:40 AM: [MaterialsForEnergyTueAM2]

Fundamental Research And Processing Developments On Manufacturing High Quality Alloy 690 For Pwrs Sg Tubing Application

K. Liu¹ ;¹Institute of Metals Research, Chinese Academy of Sciences, Shenyang, China;

09:00 AM: [MaterialsForEnergyTueAM3] Invited

Fabrication, By Electrodeposition, Of Mixed Transition Metal Oxides And Its Composites With Carbon Nanofoams For Application As Redox-supercapacitor Electrodes

F. Montemor¹ ;**R. Della Noce**¹ ;¹Instituto Superior Tecnico, Lisbon, Portugal;

09:20 AM: [MaterialsForEnergyTueAM4]

Mechanism Of Li Insertion Into Tio2 Polymorphs

M. Zukalova¹ ;¹, Prague, Czech Republic;

09:40 AM Break

10:00 AM - 12:30 PM [SUMMIT PLENARY](#)

12:30 PM LUNCH

**1st Intl. Symp. on Advanced Materials
SESSION:MaterialsForEnergyTuePM and Technologies for Sustainable Energy
and the Environment(AMTSEE)**

Tue Oct, 06 2015

Room: **Onyx**

Session Chairs: Fernand **Marquis**; Natia **Jalagonia**;

02:00 PM: [MaterialsForEnergyTuePM5]

Impregnation Of Nano Zero-valent Iron In Biopolymers For Remediation Of Wastewater

R. Chedia¹ ;**N. Jalagonia**¹ ;T. Kuchukhidze² ;E. Sanaia² ;G. Kvartskhava² ;¹Ilia Vekua
Sokhumi Institute of Physics and Technology, Tbilisi, Georgia; ², Tbilisi, Georgia;

02:20 PM: [MaterialsForEnergyTuePM6] Invited

Nanostructured Manganese Oxide-based Materials As Promising Electrodes For Supercapacitors

H. Xia¹ ;¹, Nanjing, China;

02:40 PM: [MaterialsForEnergyTuePM7] Invited

Metal Oxide-based Nanostructure Arrays For Electrochemical Energy Storage Devices

J. Liu¹ ;¹Wuhan University of Technology, Wuhan, China;

03:00 PM: [MaterialsForEnergyTuePM8] Invited

Metal Oxychloride/metal Electrode Systems For Chloride Ion Batteries

X. Zhao¹ ;¹Nanjing Tech University, Nanjing, China;

03:20 PM: [MaterialsForEnergyTuePM9]

Direct Electro-oxidation Of Cellulose At Au Electrode In Ionic Liquids

Y. Sugano¹ ;¹Abo Akademi University, Turku, Finland;

04:00 PM Organized Activities

**SESSION:MineralTueAM 2nd Intl. Symp. on Sustainable Mineral Processing:
Principles, Technologies and Industrial Practice**

Tue Oct, 06 2015

Room: **Quartz**

Session Chairs: Aly **Abdel-Rehim**;

08:00 AM: [MineralTueAM0]

Sand Production Management For Oil And Gas Reservoirs

M. Dehghani¹ ;¹National Iranian Oil Company (N.I.O.C), Omidieh, Iran (Islamic Republic of Iran);

08:20 AM: [MineralTueAM1]

Transformation Of Concentration Coordinates And Polyhydration Of Concentration Complexes In Multicomponent Systems

V. Lutsyk¹ ;V. Vorob'eva¹ ;M. Parfenova² ;¹Institute of Physical Materials Science SB RAS, Ulan-Ude, Russian Federation; ²Tomsk State University of Control Systems and

Radio-electronics, Tomsk, Russian Federation;

08:40 AM: [MineralTueAM2]

Kinetics Of Oxidized Roasting Of Egyptian Galena

A. Abdel Rehim¹ ;¹Alexandria University, Alexandria, Egypt;

09:00 AM: [MineralTueAM3]

The Use Of Fired Ceramic Tile Wastes In The Production Of Blended Cement

M. Toker Derdiyok¹ ;¹H. Ergin¹ ;¹Istanbul Technical University, Istanbul, Turkey;

09:20 AM: [MineralTueAM4]

Perspective Of Production Of Base Metals And Rare Metals In Kosovo

S. Kelmendi¹ ;¹N. Murati² ;²A. Vitaku² ;²B. Mustafa³ ;¹Faculty of Geo-sciences and technology, Pristine University, Mitrovica, Kosovo;²University of Prishtina, Mitrovica, Kosovo; ³Trepca Min.& Metall. Company;University of Prishtina, Mitrovica, Kosovo;

09:40 AM Break

10:00 AM - 12:30 PM [SUMMIT PLENARY](#)

12:30 PM LUNCH

SESSION: **BatteryTuePM**

**2nd Intl. Symp. on Sustainable Secondary Battery
Manufacturing and Recycling**

Tue Oct, 06 2015

Room: **Quartz**

Session Chairs: **Katerina Aifantis**; **Vasant Kumar**;

02:00 PM: [BatteryTuePM5] Keynote

**Energy Research At Chemical Sciences And Engineering Division At Argonne
National Laboratory**

A. Burrell¹ ;¹Argonne National Laboratory, Lemont, United States;

02:20 PM: [BatteryTuePM6] Invited

**Materials & Energy Sustainability In The Recovery Of Lead From Secondary
Sources**

S. Sonmez¹ ;¹V. Kumar² ;²J. Yang³ ;¹Istanbul Technical University, Istanbul, Turkey; ²University of Cambridge, Cambridge, United Kingdom (Great Britain); ³Huazhong University of Science and Technology (HUST), Wuhan, China;

02:40 PM: [BatteryTuePM7]

The Italian Way To The Collection And Recycling Of Lead Acid Accumulators

A. Pescetelli¹ ;¹C. Sancilio² ;²A. Tine² ;¹Texeco Consulting, Rome, Italy; ²Texeco Consulting sas, Roma, Italy;

03:00 PM: [BatteryTuePM8]

**Thermodynamic Model For Design And Optimization Of Waste Lead Acid
Batteries Smelting**

A. Pescetelli¹ ;¹C. Sancilio² ;²A. Tine² ;¹Texeco Consulting, Rome, Italy; ²Texeco Consulting sas, Roma, Italy;

03:20 PM: [BatteryTuePM9] Plenary

Recent Progress On Nanostructure Anode Materials For Lithium Ion Batteries

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

04:00 PM Organized Activities

SESSION: **RecyclingTueAM** **3rd Intl. Symp. on Sustainable Materials Recycling Processes and Products**

Tue Oct, 06 2015

Room: **Topaz**

Session Chairs: **Andrea Moura Bernardes**; **Jae Park**;

08:00 AM: [RecyclingTueAM0]

*[Solid and liquid wastes from industrial processes: Innovations in material recovery and environmental protection]***Utilization Of Industrial Waste Materials In Production Of**

Thin-walled Fibre-cement Elements

R. Cechmanek¹; ¹Vyzkumny Ustav Stavebnich Hmot,a.s., Brno, Czech Republic;

08:20 AM: [RecyclingTueAM1]

Quantitative Evaluation Of Material Re-processing Applied In Material Separation Systems For Recycling

A. Jadidi Alamdari¹; **M. Colledani**²; ¹Politecnico di Milano - Dept. of Mech. Eng., Milan, Italy; ²Politecnico di Milano, Milan, Italy;

08:40 AM: [RecyclingTueAM2]

Creative Use Of Scrap Tires For Sustainable Golf Courses

J. Park¹; ¹University of Wisconsin-Madison Civil and Environmental, Madison, United States;

09:00 AM: [RecyclingTueAM3] Keynote

The Possibilities Of CO2 Utilization For The Recovery Of Rare Earth Elements From Mineral Waste Sources

J. Ahn¹; ¹KIGAM (Korea Institute of Geoscience and Mineral Resources), Daejeon, Korea (Republic of [South] Korea);

09:20 AM: [RecyclingTueAM4]

*[Solid and liquid wastes from industrial processes: Innovations in material recovery and environmental protection]***Reclamation Of Valuable Metal Cations From Waste**

Slags Through A Novel Mechanical Approach

S. Jung¹; **I. Sohn**²; ¹Yonsei University, Seoul, Korea (Republic of [South] Korea); ²Yonsei University Materials Science and Engineering, Seoul, Korea (Republic of [South] Korea);

09:40 AM Break

10:00 AM - 12:30 PM [**SUMMIT PLENARY**](#)

12:30 PM LUNCH

SESSION: **RecyclingTuePM** **3rd Intl. Symp. on Sustainable Materials Recycling Processes and Products**

Tue Oct, 06 2015

Room: **Topaz**

Session Chairs: **Mattias Berwanger**;

02:00 PM: [RecyclingTuePM5]

[Solid and liquid wastes from industrial processes: Innovations in material recovery and environmental protection] **New Approach In Waste Water Treatment Technology: Use Of CO2 And Nbm (nano Based Materials) To Improve Heavy Metals Removal From Industrial Wastewaters**

V. Pencak¹ ;¹V.M.BioTech s.r.o., Kosice - Saca, Slovakia (Slovak Republic);

02:20 PM: [RecyclingTuePM6]

Leaching Electric Arc Furnace Dust In Hydrochloric Acid

I. Kobialkova¹ ;¹T. Havlik² ;²F. Kukurugya³ ;³G. Maruskinova¹ ;¹, Kosice, Slovakia (Slovak Republic); ²Technical University of Kosice, Faculty of Metallurgy,, Kosice, Slovakia (Slovak Republic); ³Technical University, Faculty of Metallurgy, Dept. of Non-ferrous Metals and Waste Treatment, Kosice, Slovakia (Slovak Republic);

02:40 PM: [RecyclingTuePM7]

Development Of An Optimized Process For Recovery And Reuse Of Spent Membranes For Hydrogen Separation

E. Palo¹ ;¹F. Pagnanelli² ;²E. Moscardini³ ;³L. Baldassari⁴ ;⁴A. Salladini⁵ ;⁵S. Scalisi⁶ ;⁶G. Iaquaniello⁷ ;⁷L. Toro⁸ ;⁸¹KT - Kinetics Technology S.p.A., Roma, Italy; ²Sapienza University of Rome, Rome, Italy; ³Universita , Roma, Italy; ⁴Eco Recycling, spin off Spienza University, Civita Castellana, Italy; ⁵Processi Innovativi s.r.l., Roma, Italy; ⁶Kt - Kinetics Technology S.p.A., Rome, Italy; ⁷KT - Kinetics Technology S.p.A., Rome, Italy; ⁸Sapienza University, Rome, Italy;

03:00 PM: [RecyclingTuePM8]

Flux Skimming As A Source Of Secondary Zinc

J. Piroskova¹ ;¹J. Trpcevska² ;²M. Laubertova³ ;³E. Smincakova⁴ ;⁴H. Horvathova⁵ ;⁵¹, Kosice, Slovakia (Slovak Republic); ²Technical University of Kosice, Faculty of Metallurgy, Department of Non-ferrous Metals and Waste Treatment, Kosice, Slovakia (Slovak Republic); ³Technical University of Kosice, Faculty of Metallurgy, Dep. of Non Ferrous Metals and Waste Treatment, Kosice, Slovakia (Slovak Republic); ⁴Technical University of Kosice, Faculty of Metallurgy, Department of Chemistry, Kosice, Slovakia (Slovak Republic); ⁵Technical University of Kosice, Kosice, Slovakia (Slovak Republic);

03:20 PM: [RecyclingTuePM9]

Zinc (ii) Adsorption From Synthetic Solution By Modified Zeolites

H. Horvathova¹ ;¹A. Miskufova² ;²M. Palencar³ ;³A. Kochmanova⁴ ;⁴¹Technical University of Kosice, Kosice, Slovakia (Slovak Republic); ²Technical University, Faculty of Metallurgy, Dept. of Non-ferrous Metals and Waste Treatment, Kosice, Slovakia (Slovak Republic); ³Department of Non-ferrous Metals and Waste Treatment, Kosice,

Slovakia (Slovak Republic); ⁴, Kosice, Slovakia (Slovak Republic);

04:00 PM Organized Activities

Aifantis International Symposium
SESSION: MultiscaleTueAM (2nd Intl. symp. on Multiscale Material Mechanics in the 21st Century)

Tue Oct, 06 2015

Room: **Theater**

Session Chairs: Jeff **DeHosson**; Benjamin **Klusemann**;

08:00 AM: [MultiscaleTueAM0]

[*Multiscale Computational Mechanics*] **Generation Of Fine Grain Layers In The Vicinity Of Frictional Interfaces In Metal Forming: Theory And Experiment**

S. Alexandrov¹; R. Goldstein¹; ¹Institute for Problems in Mechanics, Moscow, Russian Federation;

08:20 AM: [MultiscaleTueAM1] Invited

[*Size effects in plasticity: from Small to Meso Scale*] **Thermodynamically Consistent Continuum Dislocation Dynamics And Strain Gradient Terms In Small Scale Plasticity**

T. Hochrainer¹; ¹Bremen University, Bremen, Germany (Deutschland);

08:40 AM: [MultiscaleTueAM2] Invited

[*Size effects in plasticity: from Small to Meso Scale*] **Phase-mixture Modeling Of Nanocrystalline Materials Including Gradient Effects Of Higher Order**

B. Klusemann¹; S. Bargmann²; Y. Estrin³; ¹Hamburg University of Technology, Institute of Continuum Mechanics and Material Mechanics, Hamburg, Germany (Deutschland); ²Hamburg University of Technology, Institute of Continuum Mechanics and Material Mechanics; Helmholtz-Zentrum Geesthacht, Institute of Materials Research, Hamburg, Germany (Deutschland); ³Monash University, Centre for Advanced Hybrid Materials, Clayton, Australia;

09:00 AM: [MultiscaleTueAM3]

[*Size effects in plasticity: from Small to Meso Scale*] **Intrinsic And Extrinsic Size-effects In Metallic Systems**

J. Dehossn¹; ¹Un. of Groningen, Groningen, Netherlands;

09:20 AM: [MultiscaleTueAM4] Plenary

[*Size effects in plasticity: from Small to Meso Scale*] **Mechanics Meets Electronics In Nanoscale**

R. Nowak¹; ¹Nordic Hysitron Laboratory, Aalto University, Espoo, Finland;

09:40 AM Break

10:00 AM - 12:30 PM **SUMMIT PLENARY**

12:30 PM LUNCH

Aifantis International Symposium
SESSION: MultiscaleTuePM (2nd Intl. symp. on Multiscale Material Mechanics
in the 21st Century)

Tue Oct, 06 2015

Room: **Theater**

Session Chairs: Istvan **Groma**; Laszlo **Toth**;

02:00 PM: [MultiscaleTuePM5] Plenary

[Dislocation Patterning] **Which Macroscopic Parameters Characterize Dislocation Networks?**

V. Berdichevsky¹ ;¹Wayne State University, Detroit, United States;

02:20 PM: [MultiscaleTuePM6] Keynote

[Dislocation Patterning] **30 Years Of Gradient Terms**

I. Groma¹ ;¹Eotvos University Budapest, Budapest, Hungary;

02:40 PM: [MultiscaleTuePM7] Keynote

[Dislocation Patterning] **Effects Of Elastic Anharmonicity And Dislocation Climb On Patterning**

P. Ispanovity¹ ;¹I. Groma² ;¹Eotvos University, Budapest, Hungary; ²Eotvos University Budapest, Budapest, Hungary;

03:00 PM: [MultiscaleTuePM8] Keynote

[Dislocation Patterning] **The Role Of Geometrically Necessary Dislocations In The Plastic Behavior Of Pure Copper At Extreme Large Strains**

L. Toth¹ ;¹Metz University, Metz, France;

03:20 PM: [MultiscaleTuePM9]

[Gradient Plasticity] **Interfaces In Gradient Plasticity**

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

04:00 PM Organized Activities

Wednesday:

SESSION: MetalsWedAM **Takano International Symposium**
(1st Intl. Symp. on Sustainable Metals & Alloys Processing)

Wed Oct, 07 2015

Room: **Citrine I**

Session Chairs: TBA

08:00 AM: [MetalsWedAM0] Plenary

Some Special Applications Of Carbothermic Self-reduction Of Iron Ore

M. Mourao¹ ;¹University of Sao Paulo, Sao Paulo, Brazil;

08:20 AM: [MetalsWedAM1]

Rare-earths: From The Extraction To The Application

M. De Campos¹ ;J. De Castro¹ ;¹UFF - Federal Fluminense University, Volta Redonda, Brazil;

08:40 AM: [MetalsWedAM2]

Hysteresis Modeling Of Ndfb Magnets And Thin Films

M. De Campos¹ ;J. De Castro¹ ;¹UFF - Federal Fluminense University, Volta Redonda, Brazil;

09:00 AM: [MetalsWedAM3]

On The Induration Process Of Iron Ore Pellets Incorporating Biomass Coal

F. Vitoretto¹ ;M. Freitas² ;C. Hosken² ;J. De Castro¹ ;B. Gambarato³ ;¹UFF - Federal Fluminense University, Volta Redonda, Brazil;²UFF/ EEIMVR, Volta Redonda, Brazil; ³UNIFOA, Volta Redonda, Brazil;

09:20 AM: [MetalsWedAM4]

Phase Diagrams With Melt Immiscibility And System Fe-Cu-S

V. Lutsyk¹ ;V. Vorob'eva¹ ;A. Zyryanov¹ ;S. Shodorova¹ ;¹Institute of Physical Materials Science SB RAS, Ulan-Ude, Russian Federation;

09:40 AM Break

10:00 AM - 12:30 PM [**SUMMIT PLENARY**](#)

12:30 PM LUNCH

SESSION: MetalsWedPM **Takano International Symposium**
(1st Intl. Symp. on Sustainable Metals & Alloys Processing)

Wed Oct, 07 2015

Room: **Citrine I**

Session Chairs: Mery-Cecilia **Gomez-Marroquin**;

02:00 PM: [MetalsWedPM5] Plenary

On The DRI Carburization In Shaft Furnaces: Process Sustainability

J. D'Abreu¹ ;¹PUC-Rio, Rio de Janeiro, Brazil;

02:20 PM: [MetalsWedPM6]

Solidification Of Slags For Application In Cement

T. Ribeiro¹ ; J. Ferreira Neto¹ ; J. Faria¹ ; C. Fredericci¹ ; F. Chotoli¹ ; A. Nunis¹ ; B. Ferraro¹ ; A. Malynowskyj¹ ; V. Quarcioni¹ ; A. Lotto¹; ¹Institute for Technological Research, Sao Paulo, Brazil;

02:40 PM: [MetalsWedPM7]

Environmental Management And Recycling Of Spent Refractories: Past, Present And Future

G. Lenz E Silva¹ ; R. G. De Sa² ; ¹University of Sao Paulo, Sao Paulo, Brazil; ²Techminerals Ltd - Industrial minerals consultancy, Belo Horizonte, Brazil;

03:00 PM: [MetalsWedPM8]

Reduction Of Zinc Ferrite Contained In Steelmaking Dusts By Co - Co2 Gas Mixtures

M. Gomez Marroquin¹ ; J. D'Abreu² ; ¹Universidad Nacional de Ingenieria-UNI, Lima, Peru; ²PUC-Rio, Rio de Janeiro, Brazil;

03:20 PM: [MetalsWedPM9]

Improvement Of Thermal Neutralization System Of Anode Gases Harmful Components Of Aluminium Production

Y. Storozhev¹ ; P. Peter² ; I. Smirnova³ ; ¹Syberian Federal University, Krasnoyarsk, Russian Federation; ²Vasyliovich, Krasnoyarsk, Russian Federation; ³, Krasnoyarsk, Russian Federation;

04:00 PM Organized Activities

Gudenau International Symposium	
SESSION: IronWedAM (3rd Intl. Symp. on Advanced Sustainable Iron and Steel Making)	
Wed Oct, 07 2015	Room: Citrine II
<u>Session Chairs:</u> TBA	

08:00 AM: [IronWedAM0] Keynote

[Oxygen applications for sustainable steelmaking/steel melting] **Efficient Utilisation Of Fuel Energy In The Steel Industry Using A New Spray-emulsion Reactor Within A New Structure Of Energy And Metallurgical Units**

V. Tsymbal¹ ; A. Olennikov¹ ; V. Kozhemyachenko¹ ; I. Rybenko¹ ; F. Kongoli² ; ¹Siberian State Industrial University, Novokuznetsk, Russian Federation; ²Flogen Technologies Inc., Mont-Royal, Canada;

08:20 AM: [IronWedAM1] Plenary

SMS Group At A Glance - Innovative Technologies For The Steel Industry

W. Häusler¹ ; G. Kleinschmidt² ; T. Germershausen³ ; ¹SMS Group, Dusseldorf, Germany (Deutschland); ²SMS Siemag AG, Dusseldorf, Germany (Deutschland); ³, Düsseldorf, Germany (Deutschland);

08:40 AM: [IronWedAM2]

The Thermophysical Bases Of Control Of The Fireproof Lining Wear In The Blast Furnace Hearth

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

09:00 AM: [IronWedAM3]

Information System - Interactive Calculations In Ferrous Metallurgy

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

09:20 AM: [IronWedAM4] Invited

Zone Of Cohesion In Ore-thermal Furnaces

N. Gennadiy Mikhailovich¹ ;¹Innovative University of Eurasia, Pavlodar, Kazakhstan;

09:40 AM Break

10:00 AM - 12:30 PM [SUMMIT PLENARY](#)

12:30 PM LUNCH

SESSION:CoatingsWedPM

2nd Intl. Symp. on Sustainable Surface and Interface Engineering: Coatings for Extreme Environments

Wed Oct, 07 2015

Room: Citrine II

Session Chairs: Patrick **Masset**;

02:00 PM: [CoatingsWedPM5]

A Review On Structured Surfaces For Anti-wetting And Anti-corrosion Applications

A. Foerg¹ ;P. Masset¹ ;¹Fraunhofer UMSICHT, Sulzbach-Rosenberg, Germany (Deutschland);

02:20 PM: [CoatingsWedPM6] Invited

Cold Spray Coating Applications In Repair Of Structural Gas Turbine Components

D. Srinivasan¹ ;P. Manjakuppam¹ ;A. Mohammed¹ ;J. Pal¹ ;P. Raghupatruni¹ ;K. Jegannathan² ;L. Levy³ ;¹GE India Technology Centre, Bangalore, India; ²ASB Industries, Ohio, United States; ³GE Power and Water, Greenville, United States;

02:40 PM: [CoatingsWedPM7]

Reactive Very Low Pressure Plasma Spraying For Manufacturing Nitrides Containing Composite Materials: Case Of Ti Tixny Nitrides Coatings

G. Montavon¹ ;M. Planche¹ ;A. Quet² ;L. Bianchi² ;¹Belfort-Montbéliard University of Technology (UTBM), 90010 Belfort cedex, France;²CEA/DAM, 37260 Monts, France;

03:00 PM: [CoatingsWedPM8]

Resisting Corrosion At High Temperatures By Adds Nb To Fe-al Intermetallic Coating

Z. Zhang¹ ;¹Nanjing University of Aeronautics and Astronautics, Nanjing, China;

03:20 PM: [CoatingsWedPM9]

Electrophoretic Deposition And Characterisation Of Peek Coatings On Near-beta Titanium Alloy

A. Sak¹ ;**T. Moskalewicz**¹ ;S. Zimowski² ;M. Kot² ;A. Radziszewska¹ ;B. Dubiel³ ;A. Cieniek¹ ;¹AGH University of Science and Technology, Faculty of Metals Engineering and Industrial Computer Science, Krakow, Poland; ²AGH University of Science and Technology, Faculty of Mechanical Engineering and Robotics, Krakow, Poland; ³AGH University of Science and Technology, Krakow, Poland;

04:00 PM Organized Activities

SESSION: MiningWedAM	Meech International Symposium
	(2nd Intl. Symp. on Sustainable Mining Operations)
Wed Oct, 07 2015	Room: Citrine III
<u>Session Chairs:</u> Thomas Robertson ; Naci Emre Altun ;	

08:00 AM: [MiningWedAM0]

Mercury Use In Artisanal Mining In Antioquia, Colombia: An Anthropological Perspective

T. Robertson¹ ;¹Massey University, Palmerston North, New Zealand;

08:20 AM: [MiningWedAM1]

Gold Recovery Study From A Small Scale Mine Tailings From Costa Rica

A. Goncalves¹ ;¹UBC, Vancouver, Canada;

08:40 AM: [MiningWedAM2]

Asgm Wrap Up

M. Veiga¹ ;J. Selder² ;¹UBC-Mining, Vancouver, Canada; ², Vancouver, Canada;

09:00 AM: [MiningWedAM3]

Discussion

M. Veiga¹ ;C. Anderson² ;¹UBC-Mining, Vancouver, Canada; ²Massey University, Palmerston North, New Zealand;

09:20 AM: [MiningWedAM4]

Discussion

M. Veiga¹ ;C. Anderson² ;¹UBC-Mining, Vancouver, Canada; ²Massey University, Palmerston North, New Zealand;

09:40 AM Break

10:00 AM - 12:30 PM [**SUMMIT PLENARY**](#)

12:30 PM LUNCH

SESSION: **MiningWedPM** **Meech International Symposium**
(2nd Intl. Symp. on Sustainable Mining Operations)
Wed Oct, 07 2015 Room: **Citrine III**
Session Chairs: Ruby **Stocklin Weinberg**; Benjamin **Collins**;

02:00 PM: [MiningWedPM5]

An Electronic Nose Based On Fuzzy Logic To The Environmental Monitoring Of The Industrial Plants

F. Villecco¹; **T. Zarra**¹; **V. Naddeo**¹; ¹University of Salerno, Salerno, Italy;

02:20 PM: [MiningWedPM6]

Low-tech, Low Cost Water Solutions: How To Reach The Last 10% Who Do Not Have Access To Clean Water?

B. Nichols¹; **K. Wagoner**²; **R. Pillers**³; **A. Xavier**⁴; ¹University of British Columbia, Vancouver, Canada; ²Potters for Peace, Greensboro, United States; ³Potters for Peace, Managua, Nicaragua; ⁴UBC-Mining, Vancouver, Canada;

02:40 PM: [MiningWedPM7]

An Outstanding Industrial Symbiosis Opportunity: Marble Quarrying-thermal Power Production In Muöla, Turkey

N. Altun¹; ¹Middle East Technical University, Mining Engineering Department, Ankara, Turkey;

03:00 PM: [MiningWedPM8]

Process Analysis And Energy Efficiency Improvement On Portland Limestone Cement Grinding Circuit

A. Farzanegan¹; **S. Aguero Starkman**¹; ¹UBC-Mining, Vancouver, Canada;

03:20 PM: [MiningWedPM9]

Geo-hydrological Evaluation Of Mining Clusters In Western Kachchh, Gujarat, India

B. Anjan Kumar Prusty¹; **V. V**¹; ¹Gujarat Institute of Desert Ecology (GUIDE), Bhuj, India;

04:00 PM Organized Activities

SESSION: **MoltenWedAM** **3rd Intl. Symp. on Sustainable Molten Salt and Ionic Liquid Processing**
Wed Oct, 07 2015 Room: **Garnet**
Session Chairs: TBA

08:00 AM: [MoltenWedAM0]

Co2 - Laser As A Heating Source For Preparing Materials For Raman Structural Studies Of : Glasses, Melts And Graphene / Sic

G. Papatheodorou¹; ¹Institute of Chemical Engineering Sciences- FORTH, Patras, Greece;

08:20 AM: [MoltenWedAM1]

Thermodynamic Database For Molten Salt Reactor Fuel

O. Benes¹; ¹JRC-ITU, Karlsruhe, Germany (Deutschland);

SESSION: EnergyWedPM **2nd Intl. Symp. on Sustainable Energy Production: Gas/Oil/Shale; Coal; Nuclear; Waste/Bioprocessing and renewables: wind/waves**

Wed Oct, 07 2015

Room: **Garnet**

Session Chairs: Harold Dodds

02:00 PM: [EnergyWedPM5]

Energy Choices And Consequences--continued

H. Dodds¹; ¹University of Tennessee, Knoxville, United States;

02:20 PM: [EnergyWedPM6]

Innovative Approach With The Oil Condition Monitoring System Wearsensa®: Continuous, Online Detection And Control Of Friction Loss And Wear

M. Mauntz¹; **U. Kuipers**²; **J. Peuser**¹; ¹cmc Instruments GmbH, Eschborn, Germany (Deutschland); ²University of Applied Science Southwestphalia, Hagen, Germany (Deutschland);

02:40 PM: [EnergyWedPM7]

Advantages Of Fast Spectrum Reactors In A Closed Fuel Cycle For Sustainability Of Nuclear Energy

T. Sofu¹; ¹Argonne National Laboratory, Argonne, United States;

03:00 PM: [EnergyWedPM8]

Nuclear Education And Training At Harbin Engineering University, China

P. Gao¹; ¹Harbin Engineering University, Harbin, China;

03:20 PM: [EnergyWedPM9] Invited

The Comet Method For Temperature Reactivity Coefficient And Control Rod Worth Calculations

F. Rahnama¹; **D. Zhang**²; ¹Georgia Institute of Technology, Roswell, United States; ²Georgia Institute of Technology, Atlanta, United States;

04:00 PM Organized Activities

SESSION: Non-ferrousWedAM

**Vanyukov International Symposium
(3rd Intl. Symp. on Sustainable Non-ferrous Smelting and Processing)**

Wed Oct, 07 2015

Room: **Lokanta**

Session Chairs: Konstantin **Starodub**; Yangren Li;

08:00 AM: [Non-ferrousWedAM0]

Experience And Perspective Of Vanyukov Technology Application For Complex Processing Of Sulphide And Oxide Materials

A. Komkov¹ ;¹NRTU, Moscow, Russian Federation;

08:20 AM: [Non-ferrousWedAM1]

Space Diagrams For Metals' And Slags' Systems Illustrated The Processes Of Self-propagating High Temperature Synthesis

V. Lutsyk¹ ;A. Zyryanov¹ ;E. Nasrulin¹ ;M. Parfenova² ;¹Institute of Physical Materials Science SB RAS, Ulan-Ude, Russian Federation;²Tomsk State University of Control Systems and Radio-electronics, Tomsk, Russian Federation;

08:40 AM: [Non-ferrousWedAM2] Plenary

Alumina Production Technologies - Current Status And Prospective Trends

A. Panov¹ ;A. Senyuta¹ ;¹RUSAL Engineering and Technology Centre, Saint Petersburg, Russian Federation;

09:00 AM: [Non-ferrousWedAM3]

Vanyukov Process For Laterite Ore Processing

A. Fedorov¹ ;A. Komkov² ;L. Dityatovskiy³ ;¹National University of Science and Technology, Moscow, Russian Federation; ²NRTU, Moscow, Russian Federation; ³EMC Vanyukov Process, Moscow, Russian Federation;

09:20 AM: [Non-ferrousWedAM4] Invited

[KIVCE7] Main Developments Of The Engineering Of Kivcet Furnace

A. Carminati¹ ;¹Forni Engineering S.r.l., Milan, Italy;

09:40 AM Break

10:00 AM - 12:30 PM [**SUMMIT PLENARY**](#)

12:30 PM LUNCH

SESSION:CompositeWedPM **3rd Intl. Symp. on Composite, Ceramic and Nano Materials Processing, Characterization and Applications**

Wed Oct, 07 2015

Room: **Lokanta**

Session Chairs: Martin **Pech-Canul**; Helmut **Werheit**;

02:00 PM: [CompositeWedPM5]

Electrochemical Properties Of Sn-cu-c Core-shell Nanocomposite For Lithium Ion Batteries

H. Algul¹ ;M. Tokur¹ ;M. Uysal² ;T. Cetinkaya¹ ;A. Alp¹ ;H. Akbulut¹ ;¹Sakarya University, Sakarya, Turkey; ²Sakarya University Metallurgical Materials Engineering, Sakarya, Turkey;

02:20 PM: [CompositeWedPM6] Invited

Synthesis And Characterization Of Boron Carbide Thin Films

T. Tavsanoğlu¹ ;M. Jeandin² ;O. Addemir³ ;¹Mugla Sitki Kocman University, Mugla, Turkey; ²Mines ParisTech, Evry, France; ³Istanbul Technical University, Istanbul, Turkey;

02:40 PM: [CompositeWedPM7]

Elastic And Spectroscopic Properties Of B4c Up To 70 Gpa: Emphasis On The Equation Of State And Distortional Transition(s)

M. Manghnani¹; ¹University of Hawaii-Manoa, Honolulu, United States;

03:00 PM: [CompositeWedPM8]

Elastic And Spectroscopic Properties Of B4c Up To 70 Gpa: Emphasis On The Equation Of State And Distortional Transition(s)2

M. Manghnani¹; ¹University of Hawaii-Manoa, Honolulu, United States;

03:20 PM: [CompositeWedPM9]

Development Of Production Technology Of Amorphous-nanocrystalline Composites Based On Nanocarbon By Method Of Their Sintering Under High Pressure

S. Lezhnev¹; **D. Kuis**²; **G. Okatova**²; **N. Svidunovich**²; **V. Urbanovich**³; **P. Rudak**²; **I. Tobolich**²; **A. Tolkushkin**¹; ¹Karaganda State Industrial University, Temirtau, Kazakhstan; ²Belarusian state technological university, Minsk, Belarus; ³Scientific-Practical Materials Research Centre of NAS of Belarus, Minsk, Belarus;

04:00 PM Organized Activities

SESSION:**MaterialsForEnergyWedAM**

1st Intl. Symp. on Advanced Materials and Technologies for Sustainable Energy and the Environment(AMTSEE)

Wed Oct, 07 2015

Room: **Onyx**

Session Chairs: TBA

08:00 AM: [MaterialsForEnergyWedAM0]

Circular Economy And Eco-innovation In Cities

S. Stefanov¹; ¹, Pancevo, Serbia and Montenegro (formerly Yugoslavia);

SESSION:**MultifunctionalMaterialsWedPM**

1st Intl. Symp. on Multifunctional and Smart Materials, Systems and Structures for Sustainability (MSMSSS)

Wed Oct, 07 2015

Room: **Onyx**

Session Chairs: **Fernand Marquis**;

02:00 PM: [MultifunctionalMaterialsWedPM5]

Nano And Nanostructured Hybrid Materials Systems For Multifunctional Applications

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

02:20 PM: [MultifunctionalMaterialsWedPM6]

Nanostructured Materials: Addressing Corrosion And Cracking In Extreme Environments

I. Roy¹; **G. Jacob**¹; ¹Schlumberger, Rosharon, United States;

02:40 PM: [MultifunctionalMaterialsWedPM7]

Smart Functional Coatings For Corrosion Protection Of Aa2024 Alloys

F. Montemor¹ ; **R. Della Noce**¹ ;¹Instituto Superior Tecnico, Lisbon, Portugal;

03:00 PM: [MultifunctionalMaterialsWedPM8]

Variations For Multifunctional Composites - A Material Family For Solutions Of Problems After Ddt (mosquito Killing) And Decontamination Of Radioactive Solutions

L. Kotai¹ ;¹Research Centre for Natural Sciences, Hungarian Academy of Sciences, Budapest, Hungary;

SESSION:**BatteryWedAM** **2nd Intl. Symp. on Sustainable Secondary Battery Manufacturing and Recycling**

Wed Oct, 07 2015

Room: **Quartz**

Session Chairs: Seref **Sonmez**; Elena **Kuzmina**;

08:00 AM: [BatteryWedAM0]

Preparation Of Nanocrystalline Lithium Niobate Powder Using Pechini Polymeric Precursor Method

C. Yerlikaya¹ ;A. Kamali² ;V. Kumar² ;¹ITU Chemical and Metallurgical Faculty, Istanbul, Turkey; ²University of Cambridge, Cambridge, United Kingdom (Great Britain);

08:20 AM: [BatteryWedAM1]

Sustainable Hydrometallurgy Lead Acid Batteries Recycling Based On Carboxylic Acids

X. He¹ ;V. Kumar² ;J. Yang³ ;¹University of Cambridge, cambridge, Great Britain; ²University of Cambridge, Cambridge, United Kingdom (Great Britain); ³Huazhong University of Science and Technology (HUST), Wuhan, China;

08:40 AM: [BatteryWedAM2]

A Novel Pyrometallurgical Process For The Recovery Of Metal Values From The Cathode Active Materials Of The Spent Lithium-ion Batteries

B. Khoshandam¹ ;V. Kumar² ;¹Faculty of Chemical, Petroleum and Gas Engineering, Semnan, Iran (Islamic Republic of Iran); ²University of Cambridge, Cambridge, United Kingdom (Great Britain);

09:00 AM: [BatteryWedAM3]

On The Processes On The Lithium Electrode In Lithium-sulfur Batteries

V. Kolosnitsyn¹ ;**E. Kuzmina**² ;E. Karaseva² ;A. Ivanov² ;V. Kumar³ ;¹Laboratory of Electrochemistry in Ufa Institute of Chemistry of the Russian Academy of Sciences, Ufa, Russian Federation; ²Laboratory of electrochemistry in Ufa Institute of Chemistry of the Russian Academy of Sciences, Ufa, Russian Federation; ³University of Cambridge, Cambridge, United Kingdom (Great Britain);

09:20 AM: [BatteryWedAM4]

Application Of Carbon Nanomaterials In Energy Storage Systems

A. Kamali¹ ;**V. Kumar**¹ ;D. Fray² ;¹University of Cambridge, Cambridge, United

Kingdom (Great Britain); ²Department of Materials Science and Metallurgy, University of Cambridge, Cambridge, Cambridge, United Kingdom (Great Britain);

09:40 AM Break

10:00 AM - 12:30 PM [SUMMIT PLENARY](#)

12:30 PM LUNCH

SESSION: **BatteryWedPM** **2nd Intl. Symp. on Sustainable Secondary Battery Manufacturing and Recycling**

Wed Oct, 07 2015

Room: **Quartz**

Session Chairs: Claudio **Capiglia**; PV **Aravind**;

02:00 PM: [BatteryWedPM5]

A Brief Review Of Progress In Li-S Batteries

V. Kumar¹ ;K. Xi¹ ;¹University of Cambridge, Cambridge, United Kingdom (Great Britain);

02:20 PM: [BatteryWedPM6] Invited

Pathways To Low Cost Energy Dense Non-aqueous Flow Batteries

F. Brushett¹ ;¹Massachusetts Institute of Technology, Cambridge, United States;

02:40 PM: [BatteryWedPM7] Invited

Decoupling Conductivity And Mechanical Properties In Polymer Electrolytes Using High Aspect Ratio Nanofillers

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

03:00 PM: [BatteryWedPM8] Invited

Reversible Solid Oxide Fuel Cells For Energy Storage: Present Status And A Comparison With Alternatives

P. Aravind¹ ;¹Delft University of Technology, Delft, Netherlands;

03:20 PM: [BatteryWedPM9] Invited

Scalable And Sustainable Production Of Metal-oxide Coated 3D Graphene For Electrochemical Energy Storage

T. Fisher¹ ;¹Purdue University, West Lafayette, United States;

04:00 PM Organized Activities

SESSION: **RecyclingWedAM**

3rd Intl. Symp. on Sustainable Materials Recycling Processes and Products

Wed Oct, 07 2015

Room: **Theater 2**

Session Chairs: TBA

08:00 AM: [RecyclingWedAM0]

Zeolite Synthesized From Finnish Industrial Waste Coal Fly Ash By A Two Step Process

G. Das¹ ;B. Talling² ;¹, Espoo, Finland; ²Ekolite Oy, Turku, Finland;

08:20 AM: [RecyclingWedAM1]

Recycling Of Indium From Selected Types Of Waste

G. Maruskinova¹; T. Havlik²; I. Kobialkova¹; ¹, Kosice, Slovakia (Slovak Republic); ²Technical University of Kosice, Faculty of Metallurgy, Kosice, Slovakia (Slovak Republic);

08:40 AM: [RecyclingWedAM2]

Hydrometallurgical Treatment Of Used Nd-Fe-B Magnets

M. Palencar¹; A. Miskufova²; A. Kochmanova³; H. Horvathova⁴; ¹Department of Non-ferrous Metals and Waste Treatment, Kosice, Slovakia (Slovak Republic); ²Technical University, Faculty of Metallurgy, Dept. of Non-ferrous Metals and Waste Treatment, Kosice, Slovakia (Slovak Republic); ³, Kosice, Slovakia (Slovak Republic); ⁴Technical University of Kosice, Kosice, Slovakia (Slovak Republic);

09:00 AM: [RecyclingWedAM3]

[Solid and liquid wastes from industrial processes: Innovations in material recovery and environmental protection] **Spent Magnets From Waste Electronic Devices - A Source Of Rare Earth Elements**

A. Miskufova¹; M. Palencar²; A. Kochmanova³; H. Horvathova⁴; T. Havlik⁵; ¹Technical University, Faculty of Metallurgy, Dept. of Non-ferrous Metals and Waste Treatment, Kosice, Slovakia (Slovak Republic); ²Department of Non-ferrous Metals and Waste Treatment, Kosice, Slovakia (Slovak Republic); ³, Kosice, Slovakia (Slovak Republic); ⁴Technical University of Kosice, Kosice, Slovakia (Slovak Republic); ⁵Technical University of Kosice, Faculty of Metallurgy, Kosice, Slovakia (Slovak Republic);

09:20 AM: [RecyclingWedAM4]

The Possibilities For Obtaining Of Rare Earths From Spent Fluorescent Lamps Phosphor

A. Kochmanova¹; A. Miskufova²; M. Palencar³; H. Horvathova⁴; I. Polackova⁵; ¹, Kosice, Slovakia (Slovak Republic); ²Technical University, Faculty of Metallurgy, Dept. of Non-ferrous Metals and Waste Treatment, Kosice, Slovakia (Slovak Republic); ³Department of Non-ferrous Metals and Waste Treatment, Kosice, Slovakia (Slovak Republic); ⁴Technical University of Kosice, Kosice, Slovakia (Slovak Republic); ⁵Schimmel SK s.r.o., Dietoma, Slovakia (Slovak Republic);

09:40 AM Break

10:00 AM - 12:30 PM [SUMMIT PLENARY](#)

12:30 PM LUNCH

Aifantis International Symposium

SESSION: MultiscaleWedPM (2nd Intl. symp. on Multiscale Material Mechanics in the 21st Century)

Wed Oct, 07 2015

Room: **Theater 2**

Session Chairs: Thomas **Hochrainer**; Elena **Atroshchenko**;

02:00 PM: [MultiscaleWedPM5] Invited

Advances In Complexity Theory. Connection To Tsallis Non Extensive Statistical

Mechanics

G. Pavlos¹ ;¹Democritus University of Thrace, Xanthi, Greece;

02:20 PM: [MultiscaleWedPM6]

Universal Characteristics Of Different Physical Complex Systems As Revealed From Experimental Data Analysis. Applications On Materials, Space Plasmas, Seismogenesis, Climate, Dna And Others.

G. Pavlos¹ ;A. Iliopoulos² ;L. Karakatsanis¹ ;E. Pavlos¹ ;D. Monos³ ;¹Democritus University of Thrace, Xanthi, Greece; ²Aristotle University Of Thessaloniki, Volos, Greece; ³, Philadelphia, United States;

02:40 PM: [MultiscaleWedPM7] Plenary

[*Applied Mathematics*] **Iso-ito Calculus**

S. Georgiev¹ ;¹Sorbonne University, Paris, France;

03:00 PM: [MultiscaleWedPM8] Keynote

[*Applied Mathematics*] **Iso-stochastic Differential Equations**

S. Georgiev¹ ;¹Sorbonne University, Paris, France;

03:20 PM: [MultiscaleWedPM9]

[*Dislocation Patterning*] **Microstructurally Based Cross-slip Mechanisms And Their Effects On Dislocation Microstructure Evolution In Fcc Crystals**

J. El Awady¹ ;A. Hussein¹ ;¹Johns Hopkins University, Baltimore, United States;

04:00 PM Organized Activities

Aifantis International Symposium

SESSION: MultiscaleWedAM (2nd Intl. symp. on Multiscale Material Mechanics in the 21st Century)

Wed Oct, 07 2015

Room: **Theater**

Session Chairs: Chengzhi **Qi**; Patrizio **Neff**;

08:00 AM: [MultiscaleWedAM0] Invited

[*Gradient Plasticity*] **Thermodynamically Consistent Strain Gradient Cyclic Plasticity Model, Applied In Torsion Of Thin Wires**

X. Zhang¹ ;G. Kang² ;¹, Chengdu, China; ²Applied Mechanics and Structure Safety Key Laboratory of Sichuan Province, School of Mechanics and Engineering, Southwest Jiaotong University, Chengdu, China;

08:20 AM: [MultiscaleWedAM1] Invited

[*Gradient Plasticity*] **Elasto-plastic Model Of Quasi-brittle Material Based On Gauge And Phase Transition Theories**

C. Qi¹ ;¹Beijing University of Civil Engineering and Architecture, Beijing, China;

08:40 AM: [MultiscaleWedAM2]

[*Gradient Elasticity*] **Validation And Identification Of Gradient-elasticity From Full-field Measurements**

J. Rethore¹ ;¹LaMCoS INSA Lyon,CNRS, Villeurbanne, France;

09:00 AM: [MultiscaleWedAM3] Keynote
[*Gradient Elasticity*] **Boundary Conditions In The Indeterminate Couple Stress Model: New Perspectives**
P. Neff¹ ;¹University Duisburg-Essen, Essen, Germany (Deutschland);

09:20 AM: [MultiscaleWedAM4] Invited
[*Gradient Plasticity*] **Fracture In Strain Gradient Plasticity**
E. Martinez Paneda¹ ;¹University of Oviedo, Gijon, Spain;

09:40 AM Break

10:00 AM - 12:30 PM [SUMMIT PLENARY](#)

12:30 PM LUNCH

Aifantis International Symposium	
SESSION: MultiscaleWedPM (2nd Intl. symp. on Multiscale Material Mechanics in the 21st Century)	
Wed Oct, 07 2015	Room: Theater
<u>Session Chairs:</u> Thomas Hochrainer ; Elena Atroshchenko ;	

02:00 PM: [MultiscaleWedPM5] Invited
Wave Propagation In Relaxed Micromorphic Continua: Modeling Meta-materials Exhibiting Frequency Band-gaps
A. Madeo¹ ;¹INSAVALOR, Villeurbanne, France;

02:20 PM: [MultiscaleWedPM6] Invited
Mechanisms And Modelling Of Dislocation Patterns
S. Sandfeld¹ ;¹Friedrich-Alexander University Erlangen-Nurnberg, Furth, Germany (Deutschland);

02:40 PM: [MultiscaleWedPM7]
Crack Propagation In Micropolar Materials With Defects
E. Atroshchenko¹ ;¹S. Bordas² ;¹Department of Mechanical Engineering, University of Chile, Santiago, Chile; ²University of Luxembourg, Kirchberg, Luxembourg;

03:00 PM: [MultiscaleWedPM8]
[*Coupled Continuum Mechanics*] **Multiplicative Finite Strain Elastoplastic Formulation Coupled To Anisotropic Damage**
R. Balieu¹ ;¹N. Kringos¹ ;¹KTH Royal Institute of Technology, Stockholm, Sweden;

03:20 PM: [MultiscaleWedPM9]
[*Multiscale Computational Mechanics*] **Multi-scale Methods For Fracture And Digital Twins**
S. Bordas¹ ;¹P. Kerfriden² ;¹L. Beex³ ;¹University of Luxembourg, Kirchberg, Luxembourg; ²Cardiff University, Cardiff, United Kingdom (Great Britain); ³University of Luxembourg, Luxembourg, Luxembourg;

04:00 PM Organized Activities

Thursday

SESSION: **MetalsThuAM** **Takano International Symposium**
(1st Intl. Symp. on Sustainable Metals & Alloys Processing)

Thu Oct, 08 2015 Room: **Citrine I**

Session Chairs: Andre **Hirano**; Hesham **Ahmed**;

08:00 AM: [MetalsThuAM0] Keynote

Influence Of Gas Flow Distribution As An Approach To The Blast Furnace Hearth Phenomena

A. Hirano¹; ¹ThyssenKrupp, Rio de Janeiro, Brazil;

08:20 AM: [MetalsThuAM1]

Self-reducing Briquettes From Ironmaking Residues: Liquid And Solid Reduction

J. D'Abreu¹; ¹PUC-Rio, Rio de Janeiro, Brazil;

08:40 AM: [MetalsThuAM2]

The Influence Of The Mixing Step Evaluation On The Iron Ore Agglomeration Process

P. Pereira¹; ¹, Guarapari, Brazil;

09:00 AM: [MetalsThuAM3]

Control Of Layers Growth Kinetics In Fe-n, Fe-n-cr And Fe-n-cr-c Systems: Application To Nitriding Of Steel 32crmov13

T. Lazhar¹; ¹Universite de Tebessa, Tebessa, Algeria;

09:20 AM: [MetalsThuAM4]

Non-traditional Pyrometallurgical Processes Applied To Metals, Slags And Concentrates

J. Ferreira Neto¹; ¹Institute for Technological Research, Sao Paulo, Brazil;

09:40 AM Break

10:00 AM - 12:00 PM [ROUND TABLE](#)

12:00 PM LUNCH

SESSION: **MetalsThuPM** **Takano International Symposium**
(1st Intl. Symp. on Sustainable Metals & Alloys Processing)

Thu Oct, 08 2015 Room: **Citrine I**

Session Chairs: Tiago **Ribeiro**; Paulo **Assis**;

02:00 PM: [MetalsThuPM5]

Improvement Of The Biomass Production Using Nanotechnology Based Materials

V. Pencak¹ ;¹V.M.BioTech s.r.o., Kosice - Saca, Slovakia (Slovak Republic);

02:20 PM: [MetalsThuPM6]

Interaction Between Metal And Refractory In Vim - A New Approach

F. Beneduce¹ ;¹USP, Sao Paulo, Brazil;

02:40 PM: [MetalsThuPM7]

Evaluation Of Energy Improvement Of Gases Generated In Charcoal Production By Microwave

A. S. Morais¹ ;**T. Leal**² ;**T. Oliveira**³ ;**P. Assis**⁴ ;**A. Daniel**⁵ ;**M. Porto**⁵ ;**J. Ilidio**⁶ ;**R. Artilha**² ;**L. Silva**² ;**K. Ribeiro**⁷ ;¹Ondatec - Tecnologia Industrial em Micro-ondas, UBERABA, Brazil; ²Federal University of Ouro Preto, Ouro Preto, Brazil; ³Redemat UFOP, Itabirito, Brazil; ⁴UFOP (Federal University of Ouro Preto) / REDEMAT, Ouro Preto, Brazil; ⁵CEMIG, Belo Horizonte, Brazil; ⁶UFOP, Ouro Preto, Brazil; ⁷Universidade Federal de Ouro Preto, Ouro Preto, Brazil;

03:00 PM: [MetalsThuPM8]

Recovery Of Metallic Iron From Liquid LD Steel Slag

A. Lotto¹ ;**A. Malynowskyj**¹ ;**J. Ferreira Neto**¹ ;**T. Ribeiro**¹ ;**J. Faria**¹ ;**C. Fredericci**¹ ;**F. Chotoli**¹ ;**A. Nunis**¹ ;**V. Quarcioni**¹ ;¹Institute for Technological Research, Sao Paulo, Brazil;

SESSION: CementThuAM 2nd Intl. Symp. on Sustainable Cement Production

Thu Oct, 08 2015

Room: Citrine II

Session Chairs: TBA

08:00 AM: [CementThuAM0]

Investigation Of The Carbonation Reactions In Eco-friendly Cements

H. Yildirim¹ ;**K. Hofmann**² ;**T. Proske**² ;**S. Hainer**² ;**C. Graubner**² ;**B. Albert**³ ;¹, Darmstadt, Germany (Deutschland); ²Technische Universitaet Darmstadt, Darmstadt, Germany (Deutschland); ³Technische Universtiaet Darmstadt, Darmstadt, Germany (Deutschland);

08:20 AM: [CementThuAM1]

Process Analysis And Energy Efficiency Improvement On Portland Limestone Cement Grinding Circuit

S. Aguero Starkman¹ ;¹UBC-Mining, Vancouver, Canada;

08:40 AM: [CementThuAM2]

Trends And Developments In Green Cement And Concrete Technology

A. Drammeh¹ ;**O. Sidibeh**² ;¹Drammeh Trading Company, Banjul, Gambia, The; ²Gacem Cement Gambia, Banjul, Gambia;

09:00 AM: [CementThuAM3]

Green Concrete As A Useful Resource In Low-cost Rural Housing And Development

C. Aigbavboa¹ ;¹University of Johannesburg, Johannesburg, South Africa (South Africa);

SESSION: **RareThuPM** **2nd Intl. Symp. on Rare Earth and Platinum Group Metals: Managing and Processing**

Thu Oct, 08 2015 Room: **Citrine II**

Session Chairs: Claudio **Sangregorio**;

02:00 PM: [RareThuPM5] Keynote

Exploring The Magnetic Properties Of Ferrite Nanoparticles For The Development Of Rare-earth-free Permanent Magnet

C. Sangregorio¹; ¹ICCOM-CNR, Sesto Fiorentino, Italy;

02:20 PM: [RareThuPM6] Plenary

Compositional Characterization Of Secondary Copper Anodes Obtained From Aqueous Residues Of Pm And Pgm Refining Processes

N. Deva¹; **M. Rizaj**²; I. Duman³; F. Kongoli⁴; ¹Public University of Mitrovica - Isa Boletini -, Faculty of Geosciences, Republic of Kosova, Mitrovica, Kosovo; ²University of Prishtina, Prishtina, Kosovo; ³Istanbul Technical University, Istanbul, Turkey; ⁴Flogen Technologies Inc., Mont-Royal, Canada;

02:40 PM: [RareThuPM7]

Electrodeposition Of Rare Earth Metals From BmPtFSi Ionic Liquid

D. Panias¹; E. Bourbos²; I. Giannopoulou²; ¹, Athens, Greece; ²National Technical University of Athens, Athens, Greece;

SESSION: **MiningThuAM** **Meech International Symposium (2nd Intl. Symp. on Sustainable Mining Operations)**

Thu Oct, 08 2015 Room: **Citrine III**

Session Chairs: Jacopo **Seccatore**; Fabio **Moreno**;

08:00 AM: [MiningThuAM0]

The Music Of Blasting

J. Seccatore¹; M. Cardu²; J. Bettencourt¹; ¹Research Center for Responsible Mining, Universidade de São Paulo; Instituto de Geociencias, Universidade de Sao Paulo, Sao Paulo, Brazil; ²DIATI, Politecnico di Torino, Italy, Torino, Italy;

08:20 AM: [MiningThuAM1]

Metals, Living Plants And Sustainable Mining: Phytoextraction In The 21st Century

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

08:40 AM: [MiningThuAM2]

Phytoremediation Of Hg-contaminated Mine Sites: An Evaluation Of Processes And Their Associated Risks

F. Moreno¹; C. Anderson²; ¹CETESB, Sao Paulo, Brazil; ²Massey University, Palmerston North, New Zealand;

09:00 AM: [MiningThuAM3]

Green Technologies For Elemental Recovery And Sustainability

A. Hunt¹ ;H. Parker¹ ;L. Rylott¹ ;A. Muñoz Garcia¹ ;V. Budarin¹ ;N. Bruce¹ ;J. Clark¹ ;¹University of York, York, United Kingdom (Great Britain);

09:20 AM: [MiningThuAM4]

Resource Assessment For Phytomining Of Platinum Group Metals

C. Anderson¹ ;**P. Shi²** ;M. Veiga² ;J. Meech² ;¹Massey University, Palmerston North, New Zealand; ²UBC-Mining, Vancouver, Canada;

09:40 AM Break

10:00 AM - 12:00 PM [ROUND TABLE](#)

12:00 PM LUNCH

SESSION:**EnvironmentalThuPM**

**4th Intl. Symp. on Environmental, Health,
Policy, Legal, Management and Social Issues
Related to Metals, Materials and Mineral
Processing**

Thu Oct, 08 2015

Room: **Citrine III**

Session Chairs: TBA

02:00 PM: [EnvironmentalThuPM5]

Leaching Of Hexavalent Chromium From Stainless Steelmaking Slags And The PH Influence On The Chromium Mobility

L. Bonin¹ ;F. Delaunois² ;V. Vitry² ;¹Universite de Mons, Mons, Russian Federation; ²Universite de Mons, Mons, Belgium;

02:20 PM: [EnvironmentalThuPM6]

Application Of Fuzzy Logic In The Humanistic Evaluation Of Urban Transportation Projects

M. Quintella Cury¹ ;¹Getulio Vargas Foundation, Rio de Janeiro, Brazil;

02:40 PM: [EnvironmentalThuPM7] Keynote

Drenica River Pollution By Ferronikeli Co. Industrial Water

S. Imeri¹ ;F. Gara¹ ;N. Tahiraj² ;R. Krasniqi² ;F. Kongoli³ ;S. Misini⁴ ;¹MIM-GOLES, Prishtina, Kosovo; ²Newco Ferronikeli Complex, Prishtina, Kosovo; ³Flogen Technologies Inc., Mont-Royal, Canada; ⁴University for Business and Technology, Prishtina, Kosovo;

03:00 PM: [EnvironmentalThuPM8]

Adapting To Climate Change Impacts: The Moral And Practical Challenge To Help The Most Vulnerable Communities In Developing Countries And Working Towards Sustainable Communities

M. Ramesh Babu¹ ;¹EFICOR, New Delhi, India;

03:20 PM: [EnvironmentalThuPM9]

Environmental Impact Assessment Of Mining In Kosovo: Towards Better And Sustainable Environmental Management

R. Istrefi¹ ;**M. Kerolli Mustafa**² ;¹University of Prishtina, 10000, Kosovo; ²International Business College Mitrovica, Mitrovica, Kosovo;

04:00 PM Organized Activities

SESSION:EnergyThuAM	2nd Intl. Symp. on Sustainable Energy Production: Gas/Oil/Shale; Coal; Nuclear; Waste/Bioprocessing and renewables: wind/waves
Thu Oct, 08 2015	Room: Garnet
<u>Session Chairs:</u> Manfred Mauntz ; Harold Dodds ;	

08:00 AM: [EnergyThuAM0] Invited
Non-power Nuclear Reactors: The First Building Blocks For Establishing A Nuclear Power Program
A. Hawari¹ ;¹North Carolina State University, Raleigh, United States;

08:20 AM: [EnergyThuAM1]
R&d Strategy For Advanced Nuclear Technology
K. Pasamehmetoglu¹ ;¹Idaho National Laboratory, Idaho Falls, United States;

08:40 AM: [EnergyThuAM2]
Nanostructured Materials And Design Innovations For Step Changes In Multi Stage Stimulation
I. Roy¹ ;**G. Jacob**¹ ;¹Schlumberger, Rosharon, United States;

09:00 AM: [EnergyThuAM3]
An Integrated Approach To Human Resource Development For The Nuclear Industry
K. Peddicord¹ ;¹Texas A&M University, College Station, United States;

09:20 AM: [EnergyThuAM4]
Minimum Miscibility Pressure Prediction For An Oil Reservoir
A. Esmaeili¹ ;¹Khazar University - Azerbaijan, Omiodieh, Iran (Islamic Republic of Iran);

09:40 AM Break

10:00 AM - 12:00 PM [ROUND TABLE](#)

12:00 PM LUNCH

SESSION: **EnergyThuPM** **2nd Intl. Symp. on Sustainable Energy Production:
Gas/Oil/Shale; Coal; Nuclear; Waste/Bioprocessing
and renewables: wind/waves**

Thu Oct, 08 2015

Room: **Garnet**

Session Chairs: Puzhen **Gao**; Tanju **Sofu**;

02:00 PM: [EnergyThuPM5]

Prediction Methods Of Sand Production For An Oil Well

A. Esmaeili¹ ;¹National Iranian Oil Company (N.I.O.C), Omidieh, Iran (Islamic Republic of Iran);

02:20 PM: [EnergyThuPM6]

**Local Thermal Effect On Vapor Extraction (vapex) Process For Heavy Oil
Enhanced Recovery**

A. Esmaeili¹ ;¹National Iranian Oil Company (N.I.O.C), Omidieh, Iran (Islamic Republic of Iran);

02:40 PM: [EnergyThuPM7]

**Application Of Artificial Neural Networks Technique For Estimating Porosity And
Permeability In An Oil Field**

A. Esmaeili¹ ;¹National Iranian Oil Company (N.I.O.C), Omidieh, Iran (Islamic Republic of Iran);

03:00 PM: [EnergyThuPM8]

Produced Water Reinjection Into An Oil Reservoir And Formation Damage

A. Esmaeili¹ ;¹Khazar University - Azerbaijan, Omidieh, Iran (Islamic Republic of Iran);

03:20 PM: [EnergyThuPM9]

**Optimization Of Smart Water Injection In Sandstone Reservoirs Using Different
Injected Water Salinities For Enhance Oil Recovery**

A. Esmaeili¹ ;¹Khazar University - Azerbaijan, Omidieh, Iran (Islamic Republic of Iran);

04:00 PM Organized Activities

SESSION: **CompositeThuAM** **3rd Intl. Symp. on Composite, Ceramic and Nano
Materials Processing, Characterization and
Applications**

Thu Oct, 08 2015

Room: **Lokanta**

Session Chairs: Martin **Pech-Canul**; Helmut **Werheit**;

08:00 AM: [CompositeThuAM0] Plenary

Structural Defects: Essential Elements Of Icosahedral Boron-rich Solids

H. Werheit¹ ;¹University Duisburg-Essen, Koeln, Germany (Deutschland);

08:20 AM: [CompositeThuAM1] Plenary
Structural Defects: Essential Elements Of Icosahedral Boron-rich Solids 2
H. Werheit¹; ¹University Duisburg-Essen, Koeln, Germany (Deutschland);

08:40 AM: [CompositeThuAM2] Invited
[Boron-related materials, preparation, structure and application] **Unique Phase Stability Trend Of Elemental Boron And Boron Carbide**
T. Ogitsu¹; ¹Lawrence Livermore National Laboratory, Livermore, United States;

09:00 AM: [CompositeThuAM3] Invited
[Boron-related materials, preparation, structure and application] **Unique Phase Stability Trend Of Elemental Boron And Boron Carbide 2**
T. Ogitsu¹; ¹Lawrence Livermore National Laboratory, Livermore, United States;

09:20 AM: [CompositeThuAM4]
[Boron-related materials, preparation, structure and application] **Phase Transition And Isotope-induced Phonon Softening In Natb4.3c Boron Carbide At Moderate Temperatures**
H. Werheit¹; **A. Leithe Jasper**²; **T. Tanaka**³; ¹University Duisburg-Essen, Koeln, Germany (Deutschland); ²Max-Planck Institut fur die chemische Physik fester Stoffe, Dresden, Germany (Deutschland); ³NIMS, Tsukuba, Japan;

09:40 AM Break

10:00 AM - 12:00 PM [ROUND TABLE](#)

12:00 PM LUNCH

SESSION: CompositeThuPM **3rd Intl. Symp. on Composite, Ceramic and Nano Materials Processing, Characterization and Applications**

Thu Oct, 08 2015

Room: **Lokanta**

Session Chairs: Jean-Francois **Halet**;

02:00 PM: [CompositeThuPM5] Invited
[Boron-related materials, preparation, structure and application] **Electronic Structure And Physical Properties Of Some Boron-rich Ternary Compounds**
J. Halet¹; ¹Institut des Sciences Chimiques de Rennes, Rennes, France;

02:20 PM: [CompositeThuPM6] Invited
[Boron-related materials, preparation, structure and application] **Electronic Structure And Physical Properties Of Some Boron-rich Ternary Compounds 2**
J. Halet¹; ¹Institut des Sciences Chimiques de Rennes, Rennes, France;

02:40 PM: [CompositeThuPM7] Invited
[Boron-related materials, preparation, structure and application] **Building A Framework For Understanding Amorphous Hydrogenated Boron Carbide As A Novel Semi-insulating Electronic Material**
M. Paquette¹; **B. Nordell**¹; **C. Keck**¹; **T. Nguyen**¹; **J. Hurley**¹; **G. Bhattarai**¹; **A. Caruso**¹; **P. Rulis**¹; **S. Purohit**¹; **A. Alnafisah**¹; **N. Oyler**¹; **W. Lanford**²; ¹University of

Missouri-Kansas City, Kansas City, United States; ²University at Albany, Albany, United States;

03:00 PM: [CompositeThuPM8] Invited

[Boron-related materials, preparation, structure and application] **Building A Framework For Understanding Amorphous Hydrogenated Boron Carbide as A Novel Semi-insulating Electronic Material 2**

M. Paquette¹; B. Nordell¹; C. Keck¹; T. Nguyen¹; J. Hurley¹; G. Bhattarai¹; A. Caruso¹; P. Rulis¹; S. Purohit¹; A. Alnafisah¹; N. Oyler¹; W. Lanford²; ¹University of Missouri-Kansas City, Kansas City, United States; ²University at Albany, Albany, United States;

03:20 PM: [CompositeThuPM9]

[Boron-related materials, preparation, structure and application] **Synthesis And Characterization Of Boron Nitride Powders Produced Under Concentrated Light**

L. Sartinska¹; Y. Voynich¹; G. Frolov¹; O. Koval¹; I. Timofeeva¹; A. Kasumov¹; ¹Frantsevich Institute for Problems of Materials Science, NAS of Ukraine, Kyiv, Ukraine;

04:00 PM Organized Activities

SESSION: **Quasi-CrystalsThuAM**

3rd Intl. Symp. on Quasi-crystals, Metallic Alloys, Composites, Ceramics and Nano Materials

Thu Oct, 08 2015

Room: **Onyx**

Session Chairs: Victor Ioan **Stanciu**;

08:00 AM: [Quasi-CrystalsThuAM0]

Tungsten Carbide Nano Powder Obtained By Mechanical Alloying In High Energy Mill

V. Stanciu¹; V. Vitry¹; F. Delaunois¹; ¹Universite de Mons, Mons, Belgium;

08:20 AM: [Quasi-CrystalsThuAM1] Keynote

Structural Insights At The Atomic Level Of Important Materials

R. Heyrovska¹; ¹Private Research Scientist, Praha, Czech Republic;

09:00 AM: [Quasi-CrystalsThuAM3]

Ammonium Jarosite Characteristics And Its Utilization Options

M. Kerolli Mustafa¹; J. Djokic¹; A. Djikic¹; ¹International Business College Mitrovica, Mitrovica, Kosovo;

SESSION: **NanomaterialsThuPM** **2nd Intl. Symp. on Synthesis and Properties of
Nanomaterials for Future Energy Demands**
Thu Oct, 08 2015 Room: **Onyx**
Session Chairs: TBA

02:00 PM: [NanomaterialsThuPM5]

Development Of Nano-powders By Electrolysis

M. Mery¹; C. Guzzo¹; P. Masset¹; ¹Fraunhofer UMSICHT, Sulzbach-Rosenberg, Germany (Deutschland);

02:20 PM: [NanomaterialsThuPM6]

Preparation Of Sn On Graphene-based Composites As Anode Materials For Lithium-ion Batteries

B. Jarulertwathana¹; T. Sarakonsri²; ¹Chiang Mai University, Muang, Thailand; ²Chiang Mai University, Maung, Thailand;

02:40 PM: [NanomaterialsThuPM7]

Fabrication Of Novel Nano Ag-tiox Composite By Sustainable Redox Process

N. Ullah¹; ¹, Peshawar, Pakistan;

SESSION: **BatteryThuAM** **2nd Intl. Symp. on Sustainable Secondary Battery
Manufacturing and Recycling**
Thu Oct, 08 2015 Room: **Quartz**
Session Chairs: Jiakuan **Yang**; Wei **Zhang**;

08:00 AM: [BatteryThuAM0]

The Effect Of Alkalescency Reagents-ammonia On Leaching Of Spent Lead Pastes Based On Citric Acid Method

J. Yang¹; W. Zhang¹; Y. Hu¹; W. Yu¹; J. Dong¹; J. Wang¹; M. Li¹; V. Kumar²; ¹Huazhong University of Science and Technology (HUST), Wuhan, China; ²University of Cambridge, Cambridge, United Kingdom (Great Britain);

08:20 AM: [BatteryThuAM1]

Detection Of Ni (ii) In Pb (ii)-rich Waste Solution By Competing Ligand Exchange-adsorptive Stripping Voltammetry

Y. Liu¹; V. Kumar²; ¹University of Cambridge, Cambridge, Great Britain; ²University of Cambridge, Cambridge, United Kingdom (Great Britain);

08:40 AM: [BatteryThuAM2] Invited

The Role Of Stress-diffusion Interactions On The Fracture And Crack Growth In Lithium Ion Battery Electrodes Using The Extended Finite Element Method

S. Natarajan¹; K. Aifantis²; ¹Indian Institute of Technology Madras, Chennai, India; ²University of Arizona, Tucson, United States;

09:00 AM: [BatteryThuAM3] Invited

Preparation Of Tin And Tin Sulfide Alloy On Carbons And Graphene Via

Chemical Method For Use As Anodes In Lithium-ion Batteries

T. Sarakonsri¹; K. Aifantis²; T. Waket³; S. Hackney⁴; ¹Chiang Mai University, Maung, Thailand; ²University of Arizona, Tucson, United States; ³Department of Chemistry and Center for Innovation in Chemistry (PERCH-CIC), Faculty of Science, Chiang Mai University, Chiang Mai 50200, Thailand, Chiang Mai, Thailand; ⁴Materials Science and Engineering, Michigan Technological University, Houghton, United States;

09:20 AM: [BatteryThuAM4] Invited

Nmp-free Processing Of Lithium Ion Batteries

R. Das Gupta¹; ¹Electrovaya, Mississauga, Canada;

09:40 AM Break

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SESSION: **BatteryThuPM** **2nd Intl. Symp. on Sustainable Secondary Battery Manufacturing and Recycling**

Thu Oct, 08 2015

Room: **Quartz**

Session Chairs: Jiakuan **Yang**; Wei **Zhang**;

02:00 PM: [BatteryThuPM5]

Infiltration Of Small Amount Of CuO To Modify The Catalytic Property Of The Cathode In Solid Oxide Fuel Cell

C. Gao¹; Y. Liu²; R. Tomov¹; V. Kumar¹; ¹University of Cambridge, Cambridge, United Kingdom (Great Britain); ²University of Cambridge, Cambridge, Great Britain;

02:20 PM: [BatteryThuPM6]

Potential Anode Alternatives For Rechargeable Lithium-ion Batteries

K. Xi¹; V. Kumar¹; ¹University of Cambridge, Cambridge, United Kingdom (Great Britain);

02:40 PM: [BatteryThuPM7]

Inkjet Printing And Inkjet Infiltration Of Functional Coatings For Energy Applications

R. Tomov¹; V. Kumar¹; B. Glowacki¹; ¹University of Cambridge, Cambridge, United Kingdom (Great Britain);

03:00 PM: [BatteryThuPM8]

Safety And Health Concerns With Lithium-ion Batteries

A. Gul¹; ¹Ipyk University, Istanbul, Turkey;

03:20 PM: [BatteryThuPM9]

The Effect Of Carbon Materials On The Properties Of Epoxy

A. Gul¹; A. Kamali²; D. Fray³; ¹Ipyk University, Istanbul, Turkey; ²University of Cambridge, Cambridge, United Kingdom (Great Britain); ³Department of Materials Science and Metallurgy, University of Cambridge, Cambridge, Cambridge, United Kingdom (Great Britain);

04:00 PM Organized Activities

Aifantis International Symposium

SESSION: **MultiscaleThuAM** (2nd Intl. symp. on Multiscale Material Mechanics in the 21st Century)

Thu Oct, 08 2015

Room: **Theater 2**

Session Chairs: Jan **Kratochvil**; Ioannis **Tsagrakis**;

08:00 AM: [MultiscaleThuAM0]

[*Gradient Plasticity*] **Modeling Frictional Effects In Wear Of Metals Using Strain Gradient Plasticity**

B. Deliktas¹; G. Voyiadjis²; I. Turtuk¹; ¹Uludag University, Bursa, Turkey; ²Louisiana State University, Baton Rouge, United States;

08:20 AM: [MultiscaleThuAM1]

Biomedical β -type Titanium Alloys: Nanostructuring And Biofunctionality

H. Yilmazer¹; B. Aksakal²; ¹Yildiz Technical University, Istanbul, Turkey; ²Department of Metallurgical and Materials Engineering, Yildiz Technical University, Istanbul, Turkey;

08:40 AM: [MultiscaleThuAM2]

[*Size effects in plasticity: from Small to Meso Scale*] **Large Scale Discrete Dislocation Dynamics Simulations Of Plastic Deformation Of Nickel Superalloys**

J. El Awady¹; A. Hussein¹; ¹Johns Hopkins University, Baltimore, United States;

09:00 AM: [MultiscaleThuAM3] Invited

[*Multiscale Computational Mechanics*] **Mechanics Of Multiscale And Statistically Heterogeneous Materials**

G. Frantziskonis¹; ¹, Tucson, United States;

09:20 AM: [MultiscaleThuAM4]

Scaling Effects In Reversible Microplastic Strain

S. Kustov¹; V. Nikolaev²; ¹University of Balearic Islands, Palma de Mallorca, Spain; ²ITMO University, 197101, St. Petersburg, Russian Federation;

09:40 AM Break

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12:00 PM LUNCH

Aifantis International Symposium

SESSION: MultiscaleThuPM (2nd Intl. symp. on Multiscale Material Mechanics in the 21st Century)

Thu Oct, 08 2015

Room: **Theater 2**

Session Chairs: Erkan **Oterkus**; George **Efremidis**;

02:00 PM: [MultiscaleThuPM5]

Analysis Of Anisotropic Finite Cracked Wedge Under Antiplane Shear Loading

H. Ghasemi¹ ;¹, Qazvin, Iran (Islamic Republic of Iran);

02:20 PM: [MultiscaleThuPM6]

The Nature Of Structure Evolution Upon Severe Plastic Deformation

A. Glezer¹ ;¹National University of Science and Technology, Moscow, Russian Federation;

02:40 PM: [MultiscaleThuPM7]

[Multiscale Computational Mechanics] **This Abstract Was Withdrawn By The Authors**

X. Guo¹ ;**W. Wu**¹ ;**G. Weng**² ;¹Tianjin University, Tianjin, China; ²Rutgers University, New Brunswick, New Jersey, USA, Warren, United States;

03:00 PM: [MultiscaleThuPM8]

[Coupled Continuum Mechanics] **Internal Structure Of Granular Media And Its Determination Problem**

S. Patil¹ ;¹Indian Institute of Science, Bangalore, India;

03:20 PM: [MultiscaleThuPM9]

[Defects on solids] **Discrete Dislocation Dynamics Simulations Of Twinning Plasticity In Magnesium**

J. El Awady¹ ;**H. Fan**¹ ;¹Johns Hopkins University, Baltimore, United States;

04:00 PM Organized Activities

Aifantis International Symposium

SESSION: MultiscaleThuAM (2nd Intl. symp. on Multiscale Material Mechanics in the 21st Century)

Thu Oct, 08 2015

Room: **Theater**

Session Chairs: Jan **Kratochvil**; Ioannis **Tsagrakis**;

08:00 AM: [MultiscaleThuAM0] Keynote

[Dislocation Patterning] **Strain Gradient Model Of Mechanisms Controlling Evolution Of Deformation Band Substructure**

J. Kratochvil¹ ;¹Czech Technical University, Prague, Czech Republic;

08:20 AM: [MultiscaleThuAM1]

On The Role Of Strain Gradients In The Suppression Of Material Instabilities At Small Length Scales

I. Tsagrakis¹ ;¹Aristotle University of Thessaloniki, Thessaloniki, Greece;

08:40 AM: [MultiscaleThuAM2]

[Gradient Plasticity] Deformation Version Of Gradient Plasticity And Size Effects In Elastoplastic Axisymmetric Boreholes

G. Efremidis¹ ;¹University of Thessaly, Volos, Greece;

09:00 AM: [MultiscaleThuAM3]

[Coupled Continuum Mechanics] Numerical Modeling Of Hydrogen Diffusion In Metals Accounting For Large Deformations

O. Aslan¹ ;¹Atilim University, Ankara, Turkey;

09:20 AM: [MultiscaleThuAM4] Plenary

Granular Fabric In Critical State Theory: From Discrete To Continuum

Y. Dafalias¹ ;¹National Technical University of Athens and University of California at Davis, Athens, Greece;

09:40 AM Break

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12:00 PM LUNCH

Aifantis International Symposium

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Thu Oct, 08 2015

Room: **Theater**

Session Chairs: Erkan **Oterkus**; George **Efremidis**;

02:00 PM: [MultiscaleThuPM5] Invited

[Gradient Elasticity] Numerical Simulation Of The Size Effects In Nanostructured Li-ion Batteries Using The Isogeometric Analysis

K. Aifantis¹ ;**S. Natarajan**² ;¹University of Arizona, Tucson, United States; ²Indian Institute of Technology Madras, Chennai, India;

02:20 PM: [MultiscaleThuPM6]

[Size effects in plasticity: from Small to Meso Scale] Gradiend Plasticity Application For Modeling Size Effects At Various Scales

A. Konstantinidis¹ ;¹Aristotle University of Thessaloniki, Thessaloniki, Greece;

02:40 PM: [MultiscaleThuPM7]

Towards A Consistent Internal State Variable Theory Of Inelasticity

D. Bammann¹ ;¹Mississippi State University, Mississippi State, United States;

03:00 PM: [MultiscaleThuPM8]

[Size effects in plasticity: from Small to Meso Scale] Exploring The Size-induced

Brittle-to-ductile Transition In Small-scale Metallic Glasses With Gradient Plasticity Models

D. Toennies¹; C. Volkert¹; R. Maass¹; ¹Institute of Materials Physics, University of Goettingen, Goettingen, Germany (Deutschland);

03:20 PM: [MultiscaleThuPM9]

[Multiscale Computational Mechanics] **Structural Model Of Mechanical Twinning And Its Application For Modeling Of Plate Collisions Problem And Dynamical Taylor Anvil On Rod Tests**

E. Borodin¹; A. Mayer¹; ¹Chelyabinsk State University, Chelyabinsk, Russian Federation;

04:00 PM Organized Activities

Friday:

SESSION: **Ferro-alloysFriAM**

2nd Intl. Symp. on Sustainable Production of Ferro-alloys

Fri Oct, 09 2015

Room: **Citrine II**

Session Chairs: Christine **Wenzl**;

08:00 AM: [Ferro-alloysFriAM0]

Advanced Oxygen Lances For Furnace Tapping Operations

P. Sylven¹ ;¹Envicom AB, uddevalla, Sweden;

08:20 AM: [Ferro-alloysFriAM1]

Optimization Of Refractory Linings In Ferroalloy Production

C. Wenzl¹ ;A. Spanring¹ ;B. Drew² ;¹RHI AG, Vienna, Austria; ²RHI AG, Pleasley, United Kingdom (Great Britain);

08:40 AM: [Ferro-alloysFriAM2]

Phase Diagrams With Allotropies And System Fe-Co-S

V. Lutsyk¹ ;V. Vorob'eva¹ ;E. Nasrulin¹ ;O. Sumkina¹ ;¹Institute of Physical Materials Science SB RAS, Ulan-Ude, Russian Federation;

SESSION: **EnvironmentalFriAM**

4th Intl. Symp. on Environmental, Health, Policy, Legal, Management and Social Issues Related to Metals, Materials and Mineral Processing

Fri Oct, 09 2015

Room: **Citrine III**

Session Chairs: TBA

08:00 AM: [EnvironmentalFriAM0]

Environmental And Health Impact Of Hazardous Mining Waste

J. Djokic¹ ;M. Kerolli Mustafa¹ ;A. Djikic¹ ;¹International Business College Mitrovica, Mitrovica, Kosovo;

08:20 AM: [EnvironmentalFriAM1] Plenary

Financial Instruments Co-developed With New Technologies

A. De Haan¹ ;¹Carbon Rooster Advisory Services BV, Hoorn, Netherlands;

08:40 AM: [EnvironmentalFriAM2]

Bioaccessibility Study Of As, Cd And Pb In Impacted Soils With Mining Waste: An Evaluation Of The Mexican Standard Method

M. Gutierrez Ruiz¹ ;T. Garcia Rodriguez² ;A. Cenicer¹ ;F. Romero¹ ;¹UNAM, Mexico, Mexico; ²Chemistry School, UNAM, Mexico, Mexico;

09:00 AM: [EnvironmentalFriAM3] Plenary

Regulatory Trends And Waste Management Practices In The Chilean Copper

Industry

A. Valenzuela¹; ¹AL Prospecta Consultores Ltda., Santiago, Chile;

09:20 AM: [EnvironmentalFriAM4]

Nanowaste - Interaction Of Nanoparticles With Environment

M. Halama¹; ¹Technical University of Kosice, Faculty of Metallurgy, Corrosion Control Lab, Kosice, Slovakia (Slovak Republic);

09:40 AM Break

SESSION: **EnvironmentalFriAM**

4th Intl. Symp. on Environmental, Health, Policy, Legal, Management and Social Issues Related to Metals, Materials and Mineral Processing

Fri Oct, 09 2015

Room: **Citrine III**

Session Chairs: TBA

10:00 AM: [EnvironmentalFriAM5]

Lean Manufacturing Adoption And Implementation In Nigeria Manufacturing Industries

C. Aigbavboa¹; ¹I. Ohiomah¹; ¹University of Johannesburg, Johannesburg, South Africa (zuid Afrika);

SESSION: **EnergyFriAM**

2nd Intl. Symp. on Sustainable Energy Production: Gas/Oil/Shale; Coal; Nuclear; Waste/Bioprocessing and renewables: wind/waves

Fri Oct, 09 2015

Room: **Garnet**

Session Chairs: TBA

08:00 AM: [EnergyFriAM0]

Multiple Hydraulic Fractured Vertical Wells In Gas Condensate Reservoirs

A. Esmaeili¹; ¹Khazar University - Azerbaijan, Omiodieh, Iran (Islamic Republic of Iran);

08:20 AM: [EnergyFriAM1]

Sand Production Mechanisms In An Oil Reservoir

A. Esmaeili¹; ¹Khazar University - Azerbaijan, Omiodieh, Iran (Islamic Republic of Iran);

08:40 AM: [EnergyFriAM2]

Challenges And Prospects Of Coal Preparation In Russia

Y. Rubinstein¹; ¹Solid Fuel Preparation Institute, Lubertsy, Russian Federation;

SESSION: **CompositeFriAM**

3rd Intl. Symp. on Composite, Ceramic and Nano Materials Processing, Characterization and Applications

Fri Oct, 09 2015

Room: **Lokanta**

Session Chairs: TBA

08:00 AM: [CompositeFriAM0]

Sintering And Dielectric Properties Of Zinc Titanate Ceramics

S. Indrakanti¹; ¹Hyderabad, India;

08:20 AM: [CompositeFriAM1]

Fabrication Of C/c Composite By Using Activated Carbon Solid Inert Carburizing Atmosphere

H. Yesilyurt¹; **M. Kelestemur**¹; **E. Turedi**²; ¹Meliksah University, Kayseri, Turkey; ²Kocaeli University, Kocaeli, Turkey;

08:40 AM: [CompositeFriAM2]

[Boron-related materials, preparation, structure and application] **Multilayer Thermal Neutron Detectors Based On Boron Nitride Ceramics**

M. Roth¹; ¹The Hebrew University of Jerusalem, Jerusalem, Israel;

09:00 AM: [CompositeFriAM3]

[Boron-related materials, preparation, structure and application] **Fabrication Of Nanocrystalline Boron Carbide Powder**

M. Antadze¹; **T. Batsikadze**¹; **A. Kandelaki**¹; **R. Kharati**¹; **B. Margiev**¹; **A. Mikeladze**¹; **O. Tsagareishvili**¹; ¹Ferdinand Tavadze Institute of Metallurgy and Materials Science, Tbilisi, Georgia;

Aifantis International Symposium

SESSION: MultiscaleFriAM (2nd Intl. symp. on Multiscale Material Mechanics in the 21st Century)

Fri Oct, 09 2015

Room: **Theater 2**

Session Chairs: Victor **Berdichevsky**;

08:00 AM: [MultiscaleFriAM0] Plenary

[Experimental Nanomechanics] **Ultra-sonic Emissions From Unstable Local (useful) Phenomena**

A. Carpinteri¹; ¹Politecnico di Torino, Torino, Italy;

08:20 AM: [MultiscaleFriAM1]

[Size effects in plasticity: from Small to Meso Scale] **The Walgraef-Aifantis Dislocation Dynamics: From Discrete To Continuous Analysis**

K. Spiliotis¹; **C. Siettos**²; **L. Russo**³; ¹Laboratory of Mechanics and Materials, Aristotle University of Thessaloniki, ATHENS, Greece; ²National Technical University of Athens, Athens, Greece; ³Istituto di Ricerche sulla Combustione, CNR, Naples, 80125, Italy., Naples, Italy;

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