

GOLDSCHMIDT 2010

Tue

Oral and Poster Presentations

Tuesday June 15th 2010

Summary & Highlights

08:30	<p>Plenary <i>Ballroom EFG</i> John Parise Stony Brook University <i>'Opportunities at Light Source and Neutron Facilities'</i></p>	
09:15		
09:30	<p>Oral Sessions</p>	
12:30	<p>Lunch (from 11:30) <i>Exhibit Hall A</i> EAG General Assembly <i>Rotunda Room</i></p>	
13:30	<p>Oral Sessions</p>	
16:30	<p>Poster Session <i>Exhibit Hall A</i></p>	<p>Awards <i>Lecture Hall</i> Goldschmidt Award: Minoru Ozima <i>Lecture: 'Xenon: Some Unsolved Problems'</i> Patterson Medal: Bob Anderson Clarke Award: Thorsten Kleine <i>Full details page xx</i></p>
17:30		
18:00		
18:30	<p>Town Hall Meeting <i>Ballroom A</i> <i>Full details page xxi</i></p>	
20:30		

	200-A	200-B	200-C	200-D	200-E	300-A/B	300-C/D
	18h / 18c	17g	16e	15o	20c	01d	07b
09:30	Karki	Scherer	Blum	Fortin	Brenner	McSween	Acosta-Vigil
09:45	Jahn			Swindle	Barling	Magna	Szabo
10:00	Mysen	Wu	Zheng	Morris	Donard	Ustunisik	Appel
10:15	Xue	Pearce	Sonke	Sheng	Liu	Hausrath	Lecumberri Sanchez
10:30	Stebbins	Kersting	Monperrus	Ewing	Louvat	Karunatilake	Goepel
10:45		Thompson	Summers	Powell	Lloyd	McLennan	Moncada
11:00	Henderson	Bligh	Gilmour	Ohnuki	Russo	Hurowitz	Duan
11:15	Calas	Voegelin	Schaefer	Bishop	Zhou	Elwood Madden	
11:30	Rustad	Williams	Holloway	Tsukimura	Wang	Pratt	Anderson
11:45	Coveney	Muller	Brooks	Spycher	Zhu		Esposito
12:00	Greathouse	Franke	Feng	Alessi	Hamester	Des Marais	Lüders
12:15	Ferrage	Elzinga	Amyot	Kikuchi		Johnson	Babu

	301-A	301-B	301-C	301-D/E	Ballroom A	Ballroom B	Ballroom C	Lecture
	05e	11d / 11e	12c / 12d	09m	03b / 03g	04h	04n / 04m	20i
09:30	Reysenbach	Huettel	Pagani	Looney	Gazel	Küsel	Hatcher	Vocke
09:45		Charette			Konter	Sánchez-Román	Tfaily	
10:00	Breier	Magen	Zeebe	Molz	Rooney	Fouke	Swain	Galer
10:15	Santelli	Savidge	Houben	Matisoff	Shimoda		Huguet	Wilson
10:30	Sylvan	Jacob	Beerling	Kaplan	Spandler	Wolthers	Filley	
10:45	Cardman		Singarayer	Tang	Tappe	Loring	Kalbitz	Burnham
11:00	Orcutt	Jaffe	Adkins		Kelley	Zhao	de Leeuw	Meisel
11:15	McCollom	Obrist	Anderson	Ye	Lavina	Wang		Jochum
11:30	Girguis	Selin		Curtis	Lee	Xu	Zhou	
11:45	Emerson	Swartzendruber	Pena	Hay	Plank		Reeder	Klötzli
12:00		Coburn	McManus	Bruggeman	Cottrell		Ruiz-Agudo	Bedard
12:15		Ariya	Hillaire-Marcel	Roger	Ardia		Dove	Wiedenbeck

01d: The New Mars: Geochemistry of a Neighbor Planet

Session chaired by Dave Des Marais & Scott M McLennan

- 09:30** The New Mars: Evolving Perceptions of the Nature of the Igneous Crust and the Mantle
A692 *McSween H*
-
- 09:45** Lithium Isotope Composition of Mars – Corollary of Radial Heterogeneity in the Early Solar System?
A656 *Magna T, Mezger K & Fehr M*
-
- 10:00** The Influence of Magmatism and Magmatic Fluids on the Geochemical Evolution of the Martian Crust
A1068 *Ustunisik G, Nekvasil H & McCubbin F*
-
- 10:15** Fumarolic Alteration and Implications for Mars
A387 *Hausrath E*
-
- 10:30** Correlations of H₂O and S in the Martian Midlatitudes
A497 *Karunatillake S, McLennan S, Squyres S, Gasnault O & Boynton W*
-
- 10:45** Geochemical Perspectives on the Sedimentary Rock Cycle of Mars
A690 *McLennan S*
-
- 11:00** Fe-Redox, Aridification, and Acidic Surface Waters on Early Mars
A439 *Hurowitz J, Fischer W, Tosca N & Milliken R*
-
- 11:15** Diagenesis of Jarosite and Hematite: A Low Temperature Path to Nanophase Iron Oxides and “Specular” C-Axis Aligned Hematite on Mars
A264 *Elwood Madden M, Madden A, Hamilton V, Rimstidt JD, Zahrai S & Miller M*
-
- 11:30** **Keynote:** Seeking Signs of Martian Life and Caching Samples for Potential Return to Earth
A830 *Pratt L*
-
- 12:00** Potentially Habitable Ancient Environments in Gusev Crater, Mars
A227 *Des Marais D & Athena Science Team*
-
- 12:15** Water, Minerals, and the Fate of Organic Matter on Mars
A471 *Johnson A & Pratt L*
-

(Session 01d continues on Tuesday 15th Posters on page 120)

03b: Mantle Reservoirs and their Creation

Session chaired by Matthew G Jackson,
Rajdeep Dasgupta & James Day

- 09:30 **Invited:** The OIB Signature in Central America: Old Lithospheric and Young Asthenospheric Mantle Reservoirs
A322 *Gazel E, Feigenson M, Carr M & Hoernle K*
-
- 09:45 Examining the Cause of Rejuvenated Volcanism in Samoa
A530 *Konter J & Jackson M*
-
- 10:00 Recognition of a HIMU-Like Reservoir beneath Northwest Ethiopia
A881 *Rooney T, Dosso L & Nelson W*
-
- 10:15 Chemical Variation of Adakites: A Clue to the Origin of EM1 and EM2 Reservoirs
A953 *Shimoda G*
-
- 10:30 Experimental Phase and Melting Relations of Metapelite in the Upper Mantle – Implications for the Petrogenesis of Intraplate Magmas
A981 *Spandler C, Yaxley G, Green DH & Scott D*
-
- 10:45 Relative Roles of Cratonic Lithosphere and Asthenosphere in Controlling Kimberlitic Magma Compositions: Sr-Nd-Hf Isotope Evidence from the Greenland-Labrador Diamond Province
A1029 *Tappe S, Pearson DG, Heaman L, Nowell G & Milstead P*
-

Session 03g follows this session in this room.
For details see page 78.

03g: Geochemical Signatures of
Mantle Redox ProcessesSession chaired by Abby Kavner, Andrew
Campbell & Catherine A McCammon

- 11:00** **Invited:** The Influence of Magmatic Differentiation on the Oxidation State of Fe in Arc Magmas
A505 *Kelley K, Cottrell E, Brounce M & Parks B*
-
- 11:15** Pressure Induced Redox Reactions in FeCO₃
A567 *Lavina B, Dera P, Kim E & Downs RT*
-
- 11:30** **Keynote:** Conservative Tracers of Oxygen Fugacity in Basalts and their Mantle Source Regions
A573 *Lee C-T, Luffi P, Le Roux V & Dasgupta R*
-
- 11:45** The Oxidation State of Magmas from Melt Inclusions and Olivine Hosts
A819 *Plank T, Zimmer M, Cottrell E & Kelley K*
-
- 12:00** **Keynote:** Basaltic Glasses as Records of Mantle Oxygen Fugacity
A192 *Cottrell E & Kelley K*
-
- 12:15** P Dependence of V Coordination in Glasses and V Oxybarometry
A32 *Ardia P & Hirschmann MM*
-

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04h: Effect of System Heterogeneity on Carbonation and Carbonate Mineralization

Session chaired by **Huifang Xu, Henry Teng, Mónica Sánchez-Román & Jennifer Roberts**

- 09:30 Diversity Hidden in the Dark – Microbial Communities Involved in Carbonate Mineralization in the Blessberg Cave, Germany
A549 *Küsel K, Ruzsnyak A, Akob DM, Nietzsche S, Neu T & Eusterhues K*
-
- 09:45 Microbial Mediation of Fe-Mg-Ca Carbonates in Acidic Environments (Rio Tinto): Field Studies vs Culture Experiments
A905 *Sánchez-Román M, Fernández-Remolar D, Amils R & Rodriguez N*
-
- 10:00 **Keynote:** Yellowstone Microbes, Heated Corals and their Global Connection
A301 *Fouke B*
-
- 10:30 Calcite Growth Rate and Solution Composition
A1139 *Wolthers M, Nehrke G & Van Cappellen P*
-
- 10:45 Carbonation of Forsterite Exposed to Water-Saturated Supercritical Carbon Dioxide
A631 *Loring J, Wang Z, Thompson C, Joly A, Sklarew D, Rosso K & Felmy A*
-
- 11:00 Heterogeneous Carbonation in the MgO-H₂O-CO₂ System
A1221 *Zhao L, Sang L, Chen J, Ji J & Teng HH*
-
- 11:15 Investigating an Amorphous Precursor Pathway to Calcification: Implications for High Magnesium Carbonates
A1099 *Wang D, Echigo T & Dove P*
-
- 11:30 Dolomite, Dolomitization, and Dolomite Problem: A New Song with Old Tune
A1160 *Xu H*
-

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04m: Physical and Chemical Interactions in Biomineralization

Session chaired by Udo Becker & Henry Teng

- 11:00** **Keynote:** DFT Calculations and Molecular Dynamics Simulations of the Nucleation of Hydroxyapatite at a Collagen Molecule
A220 *de Leeuw NH*
-
- 11:30** Effect of Model Organic Macromolecules on Calcite Mineralization and Implication for Biomineralization
A1226 *Zhou G-T, Guan Y-B, Yao Q-Z & Fu Q-S*
-
- 11:45** Structure Model of Synthetic Amorphous Calcium Carbonate
A855 *Reeder R, Goodwin A, Michel FM, Phillips B, Keen D & Dove M*
-
- 12:00** Effect of Phosphonates on Calcite-Solution Reactions
A891 *Ruiz-Agudo E, Putnis C, Di Tommaso D, de Leeuw N & Putnis A*
-
- 12:15** **Invited:** Extending BCF Theory Through Nanoscale Insights: Kink-Limited Kinetics of Calcite Growth and Inhibition
A245 *Dove P & De Yoreo J*
-

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04n: Exploring Biomolecules in Terrestrial Carbon Sinks – The Organic Biogeochemistry of Peats and Soils

Session chaired by Sylvie Derenne & Geoff Abbott

09:30 **Keynote:** Molecular Characterization of Terrestrial and Aquatic Biomacromolecules that Contribute to Soil and Sediment Carbon Burial

A387 *Hatcher PG, Sleighter RL, Salmon E, Turner JW & Ruhl ID*

09:45 Molecular Characterization of Dissolved Organic Matter (DOM) in Northern Peatlands: Identifying the Chemical Signatures of Climate Change

A1038 *Tfaily M, d'Andrilli J, Corbett JE, Chanton J & Cooper B*

10:00 A Molecular Biogeochemical Study of a Northern Peatland Ecosystem: The Effects of Substrate Source on Phenolic Composition

A1012 *Swain E, Abbott G, Belyea L, Laing C, Cowie G, Filley T & Muhammad A*

10:15 Occurrence and Distribution of Glycerol Dialkyl Glycerol Tetraethers in a French Peat Bog

A436 *Huguet A, Fosse C, Laggoun-Défarge F & Derenne S*

10:30 Factors Controlling the Stabilization of Above and Belowground Plant Biopolymers in Soil

A292 *Filley T, Iversen C & Jastrow J*

10:45 A New Biomarker Approach to Reconstruct Past Vegetation Patterns

A459 *Jansen B, Van Loon E & Kalbitz K*

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Session 04m follows this session in this room.

For details see page 80.

05e: Geomicrobiology of Mid-Ocean Ridge Systems: Connections Among Subseafloor, Plume, and Low-Temperature Alteration Environments

Session chaired by **Brandy M Toner,**
Gregory Dick & Jason Sylvan

- 09:30** **Keynote:** Thirty Years of Deep-Sea Hydrothermal Microbiology: Where are We Now?
A866 *Reysenbach A-L*
-
- 10:00** Biotic-Abiotic Interactions in Deep-Sea Hydrothermal Plumes
A120 *Breier J, Anantharaman K, Toner B & Dick G*
-
- 10:15** **Invited:** Geochemical Analysis of Altered Seafloor Lavas Hosting Extensive Microbial Communities
A908 *Santelli C, Toner B, Bach W & Edwards K*
-
- 10:30** Massively Parallel Tag Sequencing of Bacterial Communities on Basalts and Extinct Sulfides Reveals Substrate Endemic Populations
A1016 *Sylvan J, Orcutt B, Toner B & Edwards K*
-
- 10:45** **Invited:** Anaerobic Methane Oxidation in Cool, Warm, and Hot Guaymas Basin Hydrothermal Sediments
A89 *Biddle J, Cardman Z, Mendlovitz H, Albert D, Lloyd K, Boetius A & Teske A*
-
- 11:00** Life in Young Ocean Crust: Insights from Subsurface Microbial Observatories
A778 *Orcutt B, Bach W, Becker K, Fisher A, Hentscher M, Toner B, Wheat CG & Edwards K*
-
- 11:15** Hydrogen Generation for Microbial Activity in Ultramafic-Hosted Hydrothermal Systems
A686 *McCollom T, Bach W & Hoehler T*
-
- 11:30** **Invited:** Evidence for Seismicity Influencing Deep Sea Primary Productivity: A Year-Long Study of Microbial Processes at the Juan de Fuca Ridge Using Biological Osmotic Samplers
A335 *Girguis P, Robidart J, Wheat CG & Frank K*
-
- 11:45** Emerging Patterns in Deep-Sea Microbial Iron Mats
A265 *Emerson D, McAllister S, Chan C, Fleming E & Moyer C*
-

(Session 05e continues on Tuesday 15th Posters on page 126)

07b: Fluid and Melt Inclusions: The State of the Science and Future Prospects

Session chaired by Robert Bodnar & Volker Lüders

- 09:30 Detailed Mechanisms of Melting and Crystal Growth during Crustal Anatexis at El Hoyazo (SE Spain)
A2 *Acosta-Vigil A, Buick I, Hermann J, Cesare B, Rubatto D, London D & Morgan Vi GB*
-
- 09:45 **Invited:** Trace Element Transport by COHS Fluids in the Deep Lithosphere: A Fluid Inclusion Perspective
A1016 *Szabo C, Berkesi M, Hidas K, Guzmics T, Bodnar R & Dubessy J*
-
- 10:00 **Invited:** Tracing Element Enrichment Processes Using Fluid and Melt Inclusions and μ -Fluorescence Spectroscopy
A28 *Appel K*
-
- 10:15 Temporal and Spatial Evolution of Fluids Related to Hydrothermal Alteration and Porphyry Copper Mineralization at Red Mountain, AZ
A572 *Lecumberri Sanchez P, Bodnar RJ & Kamilli R*
-
- 10:30 Buchite Type Glasses in the West Eifel Volcanic Field (Germany)
A341 *Goepel A, Heide K, Merten D & Büchel G*
-
- 10:45 Application of Fluid Inclusions and Mineral Textures in Exploration for Epithermal Precious Metals Deposits
A720 *Moncada D, Bodnar RJ & Fedele L*
-
- 11:00 **Keynote:** The most Updated Equations of State for the Study of Fluid Inclusions
A248 *Duan Z & Mao S*
-
- 11:30 **Invited:** Accurate Phase Volume Ratio Determination of Crystal-Rich Inclusions by Focused Ion Beam Milling and Microanalysis
A19 *Anderson A*
-
- 11:45 Evolution of H₂O and CO₂ Contents in Silicate Melt Inclusions during Post-Entrapment Crystallization
A272 *Esposito R, Steele-MacInnis M, Fedele L & Bodnar RJ*
-
- 12:00 Carbon Isotopic and Noble Gas Compositions of Quartz-Hosted Gas-Rich Fluid Inclusions from the Lower Saxony Basin, Germany
A639 *Lüders V, Plessen B & Niedermann S*
-
- 12:15 Occurrence of Primitive Melt Inclusions in the Olivine Crystallites in Carlsberg Ridge Basaltic Glasses
A38 *Babu EVSSK, Mudholkar A, Bulusu S & Yerraguntla BRJ*
-

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09m: Modeling and the Reality of Radionuclide Transport in the Environment

Session chaired by **Mark Fuhrmann,**
Pierre Glynn & Todd Anderson

- 09:30** **Keynote:** Better Lighting Through Geochem-History
A630 *Looney B & Denham M*
-
- 10:00** Overview of Plutonium (Pu) Transport in the Vadose Zone: Field Experiments, Mathematical Modeling, Soil-Plant Interactions and Future Research Questions
A719 *Molz F, Demirkanli I, Thompson S, Kaplan D & Fjeld R*
-
- 10:15** Solute Transport and Bioturbation Models of the Downward Migration of Radionuclides in Soils
A678 *Matisoff G, Ketterer M, Rosen K, Mietelski W, Vitko L, Persson H & Lokas E*
-
- 10:30** Groundwater ¹²⁹I Speciation and its Causes for Release from a Subsurface Burial Basin
A495 *Kaplan D, Brinkmeyer R, Denham M, Noonkester J, Roberts K, Schwehr K, Vangelas K, Yeager C, Zhang S & Santschi P*
-
- 10:45** Simulating Reactive Transport of Cobalt-EDTA Complexes Through Large Intact Sediment Cores
A1024 *Tang G, Mayes M, Jardine P, Parker J & Brooks S*
-
- 11:15** Assessment of Predictive Uncertainty in Coupled Groundwater Reactive Transport Modeling
A1183 *Ye M, Lu D, Miller G, Curtis G, Meyer P & Yabusaki S*
-
- 11:30** Multimodel Simulations of the Reactive Transport of Uranium in Small Scale Tracer Tests
A200 *Curtis G, Ye M, Kohler M, Fox P & Davis J*
-
- 11:45** Sorption of Uranium on Synthetic Porous Phases as a Model for Understanding Grain-Scale Diffusion Kinetics in Contaminated Sediments
A388 *Hay M, Davis J & Zachara J*
-
- 12:00** Humic Colloid-Associated Migration of Radionuclides in an Argillaceous Formation
A126 *Bruggeman C, Maes N, Salah S, Martens E, Wang L, Van Gompel M & Brassinnes S*
-
- 12:15** Effects of Ionic Strength and Multivalent Cations on Humic Substances
A877 *Roger G, Durand-Vidal S, Bernard O, Meriguet G, Altmann S & Turq P*
-

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11d: Nutrient Cycling in Permeable Marine Sediments

Session chaired by William Savidge & Jay Brandes

- 09:30 **Keynote:** Organic Matter Degradation and Nutrient Remobilization in Permeable Coastal Sands
A435 *Huettel M, Chipman L, Podgorski D, Green S, Magen C, Niggemann J, Ziervogel K, Arnosti C, Berg P, Cooper W, Dittmar T, Kostka J & Hallas K*
-
- 09:45 **Keynote:** Nutrient Biogeochemistry in Permeable Sediments Impacted by Submarine Groundwater Discharge
A162 *Charette M, Breier C, Dulaiova H, Gonneea M, Henderson P, Kroeger K, Mulligan A, Rao A & Slomp C*
-
- 10:00 **Invited:** Anoxia in Coastal Permeable Sediments Induces the Release of Dissolved Organic Matter (DOM)
A655 *Magen C, Huettel M, Podgorski D & William C*
-
- 10:15 **Invited:** Sediment-Water Exchange on the Georgia Mid-Shelf
A915 *Savidge W, Bell R & Short T*
-

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Session 11e follows this session in this room.

For details see page 86.

11e: Atmospheric Oxidation of Mercury by Reactive Halogen Species

Session chaired by **Rainer Volkamer,
Anthony Hynes & Arnout ter Schure**

- 10:30 Keynote:** Global Modeling of Mercury with Br as Atmospheric Oxidant
A452 *Jacob D, Holmes C, Soerensen A, Sturges E & Sunderland E*
-
- 11:00 Invited:** RGM: What Happens When Good Analytical Chemists Breathe Toxic Vapors
A454 *Jaffe D & Lyman S*
-
- 11:15** Efficient Bromine-Induced Mercury Oxidation Observed Under Temperate Conditions at the Dead Sea
A770 *Obrist D, Peleg M, Fain X, Matveev V, Tas E, Asaf D & Luria M*
-
- 11:30** Constraining Mercury Oxidation Using Wet Deposition
A932 *Selin N & Holmes C*
-
- 11:45** Development of a Method to Speciate Gaseous Oxidized Mercury Using Thermal Decomposition
A1014 *Swartzendruber P, Bauer D, Ter Schure A & Hynes A*
-
- 12:00** Measurements of Halogen Oxides and Speciated Mercury at a Coastal Site in Pensacola, FL
A184 *Coburn S, Dix B, Sinreich R, Terschure A, Edgerton E & Volkamer R*
-
- 12:15** Surface Selective Investigation of Adsorption of Mercury: Importance of Surface on Hg Chemical Kinetics
A1003 *Subir M & Ariya P*
-

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12c: The Role of Greenhouse Gases in Phanerozoic Climate Change

Session chaired by Rich Pancost & Andy Ridgwell

- 09:30 **Keynote:** Estimates of Earth System Climate Sensitivity
A784 *Pagani M*
-
- 10:00 Constraints on Transient pCO₂ Variations Based on Oceanic Calcium, CCD, and Terrestrial Weathering
A1197 *Zeebe R & Komar N*
-
- 10:15 Parallel Trends in Middle Eocene Temperatures and Atmospheric Carbon Dioxide Concentration?
A90 *Bijl PK, Houben AJP, Schouten S, Bohaty SM, Sluijs A, Reichart G-J, Sinninghe Damste JS & Brinkhuis H*
-
- 10:30 Elevated Concentrations of Trace Greenhouse Gases during Ancient 'Greenhouse' Climates
A70 *Berling D, Fox A, Stevenson D & Valdes P*
-
- 10:45 **Invited:** Insights from Modelling Holocene and Glacial Cycle Atmospheric Methane
A965 *Singarayer J, Valdes P, Friedlingstein P, Beerling D & Nelson S*

(Session 12c continues on Tuesday 15th Posters on page 133)

Session 12d follows this session in this room.

For details see page 88.

12d: Past Ocean Circulation and Climate

Session chaired by Katharina Pahnke & Stephen Barker

- 11:00 **Keynote:** Past Ocean Temperature and Radiocarbon Values from Deep-Sea Corals
A3 *Adkins J & Thiagarajan N*
-
- 11:15 **Medal:** The Bipolar Seesaw Versus the Winds
A20 *Anderson R*
-
- 11:45 **Invited:** Meridional Advection of Southern Ocean Intermediate Waters during the Last Deglaciation from Nd Isotopes in Foraminifera
A803 *Pena LD, Jones KM, Goldstein SL, Hemming SR & Cacho I*
-
- 12:00 **Keynote:** Geochemical, Isotopic, and Physical Evidence for Vigorous Meridional Overturning Circulation at Mid-Depth in the Atlantic Ocean at the LGM
A691 *McManus JE, Major C, Mohamed K, Robinson L, Oppo D, Curry W, Yu J, Bradtmiller L & Jaccard S*
-
- 12:15 The AMOC during Pleistocene Interglacials: Clues from Foraminifer Isotope Records at IODP Sites 1305 and 1302/03 (Labrador Sea)
A405 *Hillaire-Marcel C, de Vernal A & McKay J*
-

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150: Transformation of Radionuclides by Microorganisms and Minerals

Session chaired by Toshihiko Ohnuki, Satoshi
Utsunomiya, A.J. Francis & A. Abdelouas

- 09:30 Invited:** Arsenic Mobilization during Microbial Fe(III)-Reduction of Bacteriogenic Iron Oxides
A671 *Marshall S, Gault A, Langley S, Takahashi Y & Fortin D*
- 09:45** Fate of Ferric-Hydroxide Associated U(VI) during Biological Magnetite Formation
A1015 *Swindle A, Madden A, Beazley M, Moon J-W, Ravel B & Phelps T*
- 10:00** The Interactions of Neptunium with Fe(II) Bearing Biogenic Mineral Phases
A727 *Morris K, Law G, Geissler A, Livens F, Denecke M, Burke I & Lloyd J*
- 10:15** The Effects of Uranium Speciation on the Rate of U(VI) Reduction by *Shewanella oneidensis* MR-1
A947 *Sheng L & Fein J*
- 10:30 Keynote:** Critical Processes in the Release and Transport of Radionuclides in the Near-Field
A274 *Ewing R*
- 10:45 Invited:** Modeling Actinide Interactions with Minerals and Microbes
A828 *Powell BA, Bagwell C, Kaplan DI, Kersting AB, Zavarin M & Zimmerman TN*
- 11:00** Importance of Post-Adsorption on the Long-Term Migration of Actinides
A774 *Ohnuki T*
- 11:15** Reactivity of Clay Minerals Towards Technetium Immobilization
A93 *Bishop ME & Dong H*
- 11:30** Behavior of Colloidal Ferrihydrite as Radionuclide Carrier in the Lake Karachai Area
A1059 *Tsukimura K, Suzuki M, Suzuki Y & Murakami T*
- 11:45** Modeling UO_2 Bioprecipitation and Reoxidation by Fe(III) (Hydr)oxides
A984 *Spycher N, Issarangkun M, Stewart B, Sengor S, Ginn T, Sani R & Peyton B*
- 12:00** Method to Estimate the Contribution of Molecular U(IV) to the Product of U(VI) Reduction
A11 *Alessi D, Uster B, Veeramani H, Stubbs J, Lezama-Pacheco J, Bargar J & Bernier-Latmani R*
- 12:15** Noble Gas Isotopic Compositions of Zircons Above the Bangombé Natural Fission Reactor
A514 *Kikuchi M, Nagao K, Bajo K-I & Hidaka H*

16e: Biogeochemical Controls on Mercury Transformation and Global Cycling

Session chaired by Baohua Gu, Kathryn Nagy, Xinbin Feng, Liyuan Liang & Thorjorn Larssen

- 09:30** **Keynote:** New Insight into Mercury Biogeochemistry from Mercury Stable Isotopes
A98 *Blum J*
-
- 10:00** Mass Independent Isotope Fractionation of Mercury during its Photochemical Reduction by Low-Molecular-Weight Organic Compounds
A1224 *Zheng W & Hintelmann H*
-
- 10:15** **Invited:** A 1D Global box Model for Mercury Stable Isotopes
A978 *Sonke J*
-
- 10:30** Focus on Hg Methylation and Demethylation by Sulfate-Reducers at the Cellular Scale: The Use of Isotopic Tracers to Determine Transformation Rates, Uptake and Subcellular Localization
A722 *Monperrus M, Pedrero Z, Bridou R, Mounicou S, Guyoneaud R & Amouroux D*
-
- 10:45** **Invited:** Mercury Toxicity and Mercury Resistance in a Bacterial Model System
A710 *Miller S, Lipton M & Summers A*
-
- 11:00** *Desulfovibrio desulfuricans* ND132 as a Model for Understanding Bacterial Mercury Methylation
A333 *Gilmour C, Elias D, Kucken A, Brown S, Palumbo A & Wall J*
-
- 11:15** Differences in the Availability of Hg-Thiol Complexes to Anaerobic Bacteria
A917 *Schaefer J, Rocks S & Morel F*
-
- 11:30** Microbial Community Structure and Methylmercury Production in a Managed Wetland Ecosystem
A412 *Holloway J, Mills C, Marvin-DiPasquale M, Alpers C, Windham-Meyers L, Fleck J & Goldhaber M*
-
- 11:45** Methylmercury Production by *Desulfovibrio desulfuricans* ND132: Influences of Natural Organic Matter and Growth Stage
A94 *Biswas A, Brooks S, Miller C, Southworth G, Mosher J, Drake M & Yin X*
-
- 12:00** A Preliminary Study on the Mechanism of Methylmercury Accumulation in Rice at Abandoned Mercury Mines in Guizhou, China
A286 *Feng X, Meng B, Qiu G, Zhang H, Li P & Shang L*
-
- 12:15** Stability of Glutathione and Bioavailability of Mercury-Glutathione Complexes in Aquatic Systems
A18 *Amyot M, Poulain A, Moingt M, Bressac M & Bélanger D*
-

17g: Nanomineral Transformations during Biogeochemical Cycles

Session chaired by Benjamin Gilbert & Steven W Singer

- 09:30 **Keynote:** Redox Behavior of Nanoscale Fe Oxides: Stable Isotope Investigations
A921 Scherer M, Handler R, Gorski C, Beard B, Johnson C & Rosso K
-
- 10:00 Equilibrium Iron Isotope Fractionation between Fe(II) and Hydrous Ferric Oxide
A1145 Wu L, Beard B, Roden E & Johnson C
-
- 10:15 Characterization of Reactive Ferrous Iron in Titanomagnetite ($\text{Fe}_{3-x}\text{Ti}_x\text{O}_4$) Nanoparticles for Contaminant Reduction
A800 Pearce C, Qafoku O, Liu J, Arenholz E, Heald S, Felmy A, Henderson M & Rosso K
-
- 10:30 **Invited:** Subsurface Transport of Pu on Nanominerals: Teasing out Biogeochemical Controls in Field Environments
A508 Kersting A, Zavarin M, Dai Z, Felmy A, Kips R, Moser D, Powell B, Tinnacher R & Zaho P
-
- 10:45 Characterization of Nano-Crystalline Fe in Basaltic Soils
A1043 Thompson A, Rancourt D, Chadwick O & Chorover J
-
- 11:00 Impact of Amorphous Ferric Oxide Reactions during the Dissociation of Organically Complexed Fe(III)
A96 Bligh M & Waite TD
-
- 11:15 Formation of Short-Range-Ordered Fe(III)-Precipitates by Fe(II) Oxidation in Water
A1085 Voegelin A, Kaegi R & Hug S
-
- 11:30 **Invited:** Formation of Selenium Nanospheres Accompanying Bioremediation of a Uranium-Contaminated Aquifer
A1133 Williams KH, N'Guessan AL, Wilkins MJ & Long PE
-
- 11:45 Study of Selenium Nanoparticles Dissolution in Environmental and Human Fluids
A736 Muller J, Février L, Charlet L & Martin-Garin A
-
- 12:00 The Growth of Organic Nanoparticles Defined by Boehmite-Resorcinol Complexation
A304 Franke M
-
- 12:15 Adsorption of Mn(II) at the Surface of Birnessite: Characterization of Sorption Products by XRD and EXAFS Analyses
A265 Elzinga E
-

18c: Molecular Properties of Aqueous Solutions at Mineral Surfaces and in Nanopores

Session chaired by **Andrey Kalinichev, Claro Sainz-Diaz & Jeffery A Greathouse**

11:30 Keynote: Iron Isotope Fractionation at the Hematite-Water Interface

A894 *Rustad J & Dixon D*

11:45 Computer Simulation Study of the Interaction of RNA with Montmorillonite Clay

A1012 *Swadling J, Coveney P & Greenwell C*

12:00 Water Structure and Vibrational Properties in Fibrous Clays

A352 *Greathouse J, Cygan R & Ockwig N*

12:15 Water Organization in Na-Saponite. An Experimental Validation of Numerical Data

A289 *Ferrage E, Sakharov BA, Michot LJ, Lanson B, Delville A & Cuello GJ*

(Session 18c continues on Tuesday 15th PM on page 116)

18h: Structure and Properties of Silicate Melts, Glasses and Fluids

Session chaired by Xianyu Xue, Mark Ghiorso & Grant Henderson

- 09:30 **Invited:** First-Principles Simulations of Structural and Transport Properties of Silica Liquid with/out Water
A497 *Karki B & Stixrude L*
-
- 09:45 *Ab Initio* Molecular Dynamics Study of Single Phase SiO₂-H₂O Fluids at Supercritical Conditions
A982 *Spiekermann G & Jahn S*
-
- 10:00 **Keynote:** *In situ* Characterization of Fluid and Melt Structure in H₂O-Saturated Aluminosilicate Systems in the Deep Crust and Upper Mantle
A742 *Mysen B*
-
- 10:15 Water Speciation in Hydrous (Alumino)silicate Melts/glasses and Quasi-Chemical Modeling
A1165 *Xue X, Kanzaki M & Malfait W*
-
- 10:30 **Keynote:** Silicate Melts at High Temperature and Pressure: Structure and Properties
A989 *Stebbins J*
-
- 11:00 First-Principles Simulations of Boron XANES with Implications for Determining B Coordination in Glasses and Melts
A398 *Henderson G, Ferlat G, Cabaret D & Dong S*
-
- 11:15 Structural Role of Zr in Silicate Glasses and Melts
A136 *Calas G, Dargaud O, Galois L, Cormier L, Menguy N, Ferlat G & Newville M*

(Session 18h continues on Tuesday 15th Posters on page 150)

Session 18c follows this session in this room.

For details see page 92.

20c: Advances in Plasma Based Spectrometer in Geoanalysis

Session chaired by Isaac Brenner

- 09:30** Inductively Coupled Plasma Mass Spectrometry in Geoanalysis and Environmental Studies – Setting the Scene
A121 *Brenner I*
-
- 09:45** Mass Dependent Fractionation of Pb and Tl Isotopes in an Inductively Coupled Argon Plasma
A53 *Barling J & Weis D*
-
- 10:00** The Role of Speciation in Geo- and Environmental Analysis: Crossing Boundaries
A240 *Donard O*
-
- 10:15** Application of Laser Ablation-ICP-MS in Environmental Fate and Transport Studies
A619 *Liu X-G & Hu Q*
-
- 10:30** Towards $\delta^{11}\text{B}$ External Reproducibility of 0.1‰ (2 σ) for MC-ICP-MS Measurements with Direct Injection as Introduction System
A632 *Louvat P, Paris G, Bouchez J, Moureau J & Gaillardet J*
-
- 10:45** New Strategies for Precise & Accurate Isotope Ratio Determination from Very Small Analyte Quantities Using the NEPTUNE Plus MC-ICP-MS
A627 *Lloyd N, Schwieters J & Bouman C*
-
- 11:00** Applications of LA-ICP-MS in Geoanalysis – New Technologies and Future Perspectives
A893 *Russo RE & Gonzalez J*
-
- 11:15** Study on Determination of Rare Earth Elements in Multi-Mineral Phase Soil by Inductively Coupled Plasma Mass Spectrometry
A1230 *Zhou Y & Zheng PX*
-
- 11:30** Determination of Rare Elements in Rock Samples by Inductively Coupled Plasma Mass Spectrometry
A1106 *Wang TE, Zheng PX & Zhou Y*
-
- 11:45** Simultaneous Analyses of Major and Trace Elements in Fused Rock Powders Using Hermetic Vessel Heater and LA-ICP-MS
A1233 *Zhu L, Liu Y, Hu Z & Gao S*
-
- 12:00** Breakthrough in Sensitivity for Elemental and Isotopic Analysis
A374 *Hamester M, Lindemann T, Wills J & Rottmann L*
-

(Session 20c continues on Tuesday 15th PM on page 117)

20i: Addressing Reference Material Needs for Whole Rock, Micro-Analysis and Stable Isotope Analysis

Session chaired by Paul Bedard, Michael Wiedenbeck & Tyler B Coplen

- 09:30 Keynote:** Isotopic Reference Materials: New Frontiers Leading to New Opportunities
A1084 *Vocke R & Mann J*
-
- 10:00** In Search of a Common Reference Material for Cadmium Isotope Studies
A2 *Abouchami W, Rehkämper M, Galer SJG, Horner TJ, Xue Z, Henderson GM, Wombacher F, Schonbachler M, Gault-Ringold M & Stirling C*
-
- 10:15 Keynote:** Development of Geochemical Reference Materials: USGS Experiences and Future Directions
A1136 *Wilson S*
-
- 10:45** OKUM and MUH-1: Two New IAG-Certified Ultramafic Rock Reference Materials
A129 *Burnham M, Meisel T & Kriete C*
-
- 11:00** Comparability of Major, Trace Element, and PGE Data of Ultramafic Rock Certified Reference Materials
A696 *Meisel T, Burnham M & Kriete C*
-
- 11:15 Keynote:** Reference Materials for *in situ* Microanalysis: Successes and Needs
A470 *Jochum KP*
-
- 11:45** Characterization of a New Laser Ablation Xenotime U-Pb Age Standard
A524 *Klötzli U, Klötzli E & Kosler J*
-
- 12:00** Sulfide and Oxide Reference Materials for LA-ICP-MS
A67 *Bedard LP, Barnes S-J & Savard D*
-
- 12:15** Challenges Facing the Production of RMs for Geochemical Microanalyses
A1130 *Wiedenbeck M*
-

(Session 20i continues on Tuesday 15th Posters on page 153)

	200-A	200-B	200-C	200-D	200-E	300-A/B	300-C/D
	18c / 18b	17c	16e	15o / 15h	20c	01g / 01a	08b
13:30	de Leeuw	Parise	Sakamoto	Takahashi	Hernandez-Mendiola	Habicht	Janots
13:45		Lanzirotti	Luengen	Zimmerman	Tuttas	Pearson	
14:00	Kubicki	Marcus	Andrews	Macaskie	Brenner	Crowe	Dumond
14:15	Cummings	Suchomel	Myneni	Jiang		Macalady	Muhling
14:30	Casey	Hummer	Gu	Bonneville		Zerkle	Daniel
14:45		Thieme	Gerbig				Harlov
15:00	Dixon	Gilles	Zhang	Gorbushina		Bosak	Möller
15:15		von der Kammer	Krabbenhof	Romero-Gonzalez		Talbot	Dunkley
15:30	Sainz-Diaz	Unrine	Larssen	Chorover		Crespo-Medina	
15:45	Stack	Benning	Ulrich	Salas		Carlson	Sajeev
16:00	Ufimtsev	Fitts	Horvat	Ngwenya		Dauphas	Mojzsis
16:15	Zhang	Quazi	Faganeli	Kemner		Mezger	Balintoni

	301-A	301-B	301-C	301-D/E	Ballroom A	Ballroom B	Ballroom C	Lecture
	05d	13a / 13b	12f / 12e	09j / 09k	03c	04j	04l	20g / 20h
13:30	Foustoukos	Al	Thomas	Belkin	Le Roux	Abdel-Fattah	Vinograd	Schmitt
13:45	Shipp	Gandhi		Lefticariu	Hoefs			
14:00	McCollom	Huettel	Carlson	Goodarzi	Rehfeldt	Kulik	Wang	Shirai
14:15		Jaiswar	O'Leary	Huggins	Hunt	Tertre	Dubacq	Ickert
14:30	Glein	Bigalke	de Boer	Bustin	Smart	Jordan	Angel	Kita
14:45	Yang	Wall	Adams	Gentzis	Navon	Levitz	Ross	Williams
15:00	Tremaine	Bullen	Sageman	Hower	Xu		Hovis	Hecht
15:15	Canovas	Sturchio	Ludvigson	Rogers	Rudnick	Liang	Parthasarathy	
15:30		Larese-Casanova	Yapp	Kutcherov		Michot	Geiger	Anderson
15:45		Lawson	Sheldon		Dale	Clark	Arafin	White
16:00		Vinson	Misra	Spanu	Barnes	Marshall	Telsiz	Bell
16:15		Darrah	Douglas	Chudetskiy	Bénard	Schindler	Saikia	Becker

01a: Isotopic Heterogeneity Among Planetary Precursors and its Implications for Planetary Evolution

Session chaired by Fred Moynier & Justin Simon

15:45 **Invited:** The Consequences of Isotopic Variability in the Early Solar Nebula

A142 *Carlson R, Qin L & Alexander C*

16:00 **Keynote:** Isotopic Anomalies in Meteorites: A Link between Stars and Planets

A210 *Dauphas N*

16:15 Multiple Neutron-Rich Stellar Sources to the Solar System – An Isotope Synthesis

A704 *Mezger K, Sprung P & Scherer EE*

(Session 01a continues on Tuesday 15th Posters on page 120)

01g: Geomicrobiology of Redox Stratified Ecosystems

Session chaired by David Fowle & Jennifer Macalady

- 13:30 **Invited:** The Effect of High Concentrations of Green Sulfur Bacteria on the Biogeochemical Carbon Cycle of Lago di Cadagno
A369 *Habicht K, Frigaard NU, Johnson B, Andersen J, Falkenby L & Miller M*
-
- 13:45 **Invited:** Microbial Community Diversity Under Extreme Euxinia: Mahoney Lake, Canada
A800 *Pearson A, Klepac-Ceraj V & Hayes C*
-
- 14:00 **Invited:** Biogeochemistry and Microbial Ecology of a Modern, Ferruginous Chemocline
A196 *Crowe S, Canfield D, Fowle D, Jones C, Sturm A, Katsev S, Mucci A, Sundby B, Nomosatryo S & Haffner D*
-
- 14:15 Microbial Biogeochemistry of a Meromictic Blue Hole
A651 *Macalady J, Schaperdoth I, Fulton J, Freeman K & Hanson T*
-
- 14:30 **Keynote:** Phototrophic S Oxidation in Modern and Ancient Redox Stratified Ecosystems: A Multiple S Isotope Perspective
A1200 *Zerke A & Farquhar J*
-
- 15:00 **Invited:** Quantitative and Qualitative Morphological Signatures of Photosynthesis on Early Earth
A107 *Bosak T, Petroff A, Sim MS, Liang B, Templar S & Rothman D*
-
- 15:15 **Invited:** Biomarker Evidence for Intense Aerobic Methane Oxidation during Sapropel Conditions
A1023 *Talbot H, Handley L, de Lange G & Wagner T*
-
- 15:30 Spatial Patterns in Sediment Microbial Diversity Around Gulf of Mexico Brine Lakes
A194 *Crespo-Medina M, Bowles M, Samarkin V & Joye S*
-

(Session 01g continues on Tuesday 15th Posters on page 121)

Session 01a follows this session in this room.

For details see page 98.

03c: Peridotites and Eclogites: Compositions, Textures and Microscale Mineralogy

Session chaired by Ambre Luguet, Dorrit Jacob & Dmitri Ionov

- 13:30 Invited:** First Series Transition Metals (Zn, Fe, Mn, Co, Sc, V) as Tracers of Mineralogic Heterogeneities in the Mantle
A582 *Le Roux V, Dasgupta R & Lee C-TA*
-
- 13:45** The Stable Isotope Composition of the Mantle – Revisited
A408 *Hoefs J*
-
- 14:00** Trace Elements in Mantle Olivine and Orthopyroxene from the North Atlantic and Kaapvaal Cratons
A857 *Rehfeldt T, Foley SF, Jacob DE & Pearson DG*
-
- 14:15** Evolution of SCLM beneath the Renard Kimberlites, SE Superior Craton: An Integrated Study of Diamonds, Xenoliths and Xenocrysts
A439 *Hunt L, Stachel T & Armstrong J*
-
- 14:30** ¹³C Depleted Diamonds in Jericho Eclogites: Diamond Formation from Ancient Subducted Organic Matter
A972 *Smart K, Chacko T, Heaman L, Stachel T & Muehlenbachs K*
-
- 14:45** Sources of Diamond-Forming Fluids
A749 *Navon O, Weiss Y & Griffin WL*
-
- 15:00** Evidence from Pyroxenite Xenoliths for Subducted Lower Oceanic Crust in Subcontinental Lithospheric Mantle
A1164 *Xu Y, Song S & Zheng Y-F*
-
- 15:15 Keynote:** Melting and Refertilization in Peridotites: What Happens to Os?
A889 *Rudnick R & Walker R*
-
- 15:45 Invited:** Os Isotopes in Witwatersrand Platinum-Group Alloys: Implications for Ancient Mantle Melting Events and the Timing of Gold Formation
A203 *Dale CW, Pearson DG, Nowell GM, Parman SW, Oberthür T & Malitch KN*
-
- 16:00** PGE in Mantle Nodules from the Newer Volcanics, Victoria: Sulfide Control during Mantle Melting
A501 *Keays R, Barnes S, Godel B & Ryan C*
-
- 16:15** PGE and Trace Elements in Veined Sub-Arc Mantle Xenoliths, Avachinsky Volcano, Kamchatka
A76 *Bénard A & Ionov DA*
-

(Session 03c continues on Tuesday 15th Posters on page 121)

04j: Interfacial Processes in the Environment

Session chaired by Laurent J. Michot, Fabien Thomas & Jérôme F.L. Duval

- 13:30 **Keynote:** Transport of Plutonium Association and Intrinsic Colloids in Saturated Porous Media
A1 *Abdel-Fattah A*
-
- 14:00 Consistent Treatment of “Denticity” in Surface Complexation Models
A544 *Kulik D, Lützenkirchen J & Payne T*
-
- 14:15 Transport and Ion Exchange between Na⁺ and Ca²⁺ in Vermiculite: Modeling of Experimental Data Obtained for Static and Stirred Flow-Through Reactor Methods
A1038 *Tertre E, Pacreau M, Bruzac S, Ferrage E & Prêt D*
-
- 14:30 Studying the Interactions of Trivalent Metal Ions with the Silica/Water Interface Using Second Harmonic Generation
A481 *Jordan D, Malin J & Geiger F*
-
- 14:45 **Keynote:** Water Intermittent Dynamics over a Colloidal Interface: Probing Adsorption and Relocation Statistics in Confinement
A585 *Levitz P*
-
- 15:15 Self-Accumulation of Aromatics at Oil-Water Interface. A Molecular Dynamics Study
A547 *Kunieda M, Nakaoka K, Liang Y, Miranda C, Ueda A & Matsuoka T*
-
- 15:30 Sol-Gel and Isotropic/Nematic Transitions in Aqueous Suspensions of Swelling Clay Minerals: A Structural and Rheological Study on Size-Selected Particles
A706 *Michot L, Paineau E, Bihannic I, Maddi S, Duval J, Baravian C, Davidson P & Levitz P*
-
- 15:45 Aqueous Surface Chemistry of α-Uranophane
A182 *Clark A, Wander M & Kuta J*
-
- 16:00 YREE Sorption on HFO in 0.5 M NaCl
A670 *Marshall K & Schijf J*
-
- 16:15 Uptake of Metals and Metal-Bearing Particulates by Silica-Rich Coatings
A922 *Schindler M, Mantha N & Durocher J*
-

(Session 04j continues on Tuesday 15th Posters on page 124)

041: Earth Materials: Thermodynamic and Energetic Properties

Session chaired by Charles A. Geiger & Artur Benisek

- 13:30 Keynote:** Thermodynamics of Minerals: From Bragg-Williams to Connolly-Williams
A1083 *Vinograd V*
-
- 14:00** Structure and Energetics of the Orientational Ordering of Carbonate in Vaterite Calcium Carbonate by Molecular Modeling
A1103 *Wang J & Becker U*
-
- 14:15** The Pyrophyllitic Substitution: Atomistic Investigation, Implications on the Stability of Micas and Clays, and Why Interlayer Water Matters
A249 *Dubacq B, Vidal O & Lewin E*
-
- 14:30** Of Tilts and Tetrahedra in Feldspars: From Structure to Thermodynamic Properties
A24 *Angel R, Sochalski-Kolbus L, Tribaudino M & Walker A*
-
- 14:45** Influence of Adsorbed Water on Energetics of Cassiterite Nanoparticles
A884 *Ross N, Spencer E, Parker S, Kolesnikov A, Boerio-Goates J, Woodfield B & Navrotsky A*
-
- 15:00 Keynote:** Thermodynamic and Phase Behavior of Alkali-Bearing Framework Silicates
A421 *Hovis G*
-
- 15:15** High-Pressure Phase Transition in Microwave Synthesised (CuFe₂S₃): Resistivity Studies up to 9 GPa
A159 *Chandra U, Sharma P & Parthasarathy G*
-
- 15:30 Invited:** Thermodynamic Properties of Spessartine
A202 *Dachs E, Geiger CA, Withers AC & Essene EJ*
-
- 15:45** Thermal Conductivity of Oxide and Silicate Minerals, and Harzburgite
A30 *Arafin S, Singh R & George A*
-
- 16:00** Thermometers of Eskisehir Volcanic Rocks (NW Anatolia, Turkey) by Using Mineral Chemistry
A1035 *Telsiz S, Temel A & Gourgaud A*
-
- 16:15** FTIR Estimation of Geometrical Structure Variations in Natural SiO₂ Crystal
A898 *Saikia BJ*
-

(Session 041 continues on Tuesday 15th Posters on page 124)

05d: Hydrothermal Organic Geochemistry

Session chaired by Everett Shock & Mitchell Schulte

- 13:30 Oxidation of Organics Under Hydrothermal Conditions: Implications for the Evolution of Methane on Mars
A302 *Foustoukos D & Stern J*
-
- 13:45 Minerals Affect the Interconversion between Alkanes and Alkenes in Hydrothermal Systems
A954 *Shipp J, Hartnett H, Gould I, Shock E & Williams L*
-
- 14:00 **Keynote:** Investigations of the Roles of Minerals in Hydrothermal Organic Geochemistry
A686 *McCullom T*
-
- 14:30 Mechanistic Organic Geochemistry of Carboxylic Acids
A338 *Glein C, Gould I, Williams L, Hartnett H & Shock E*
-
- 14:45 Reversible Functional Group Interconversion in Organic Hydrothermal Reactions – The Central Role of Ketones
A1179 *Yang Z, Gould I, Williams L, Hartnett H & Shock E*
-
- 15:00 Nucleic Acid Bases Under Hydrothermal Conditions by Densimetry, Calorimetry and UV-Visible Spectroscopy
A664 *Mann V & Tremaine P*
-
- 15:15 Bioenergetics in Hydrothermal Systems
A138 *Canovas P & Shock E*
-

(Session 05d continues on Tuesday 15th Posters on page 125)

08b: Advances in Monazite, Xenotime, and Zircon Geochronology: Utilizing Alteration and Deformation to Date Multiple Events

Session chaired by Daniel Harlov, Michael Williams & Gregory Dumond

13:30 **Keynote:** REE-Minerals Petrochronology in Metamorphic Rocks

A458 *Janots E*

14:00 Monazite as a Monitor of Melting, Garnet Growth, and Feldspar Recrystallization in Continental Lower Crust

A251 *Dumond G, Williams M, Goncalves P & Jercinovic M*

14:15 What Controls the Composition of Low-Temperature Monazite?

A734 *Muhling J, Rasmussen B, Fletcher I & Wilde S*

14:30 Integrating Monazite and Xenotime Thermochronology to Determine the Timing and Nature of the Al_2SiO_5 Triple-Point Metamorphism in the Picuris Mountains, New Mexico, USA

A206 *Daniel C & Pyle J*

14:45 Th and U Incorporation into Xenotime during Partial Alteration by Alkali-Bearing Fluids

A382 *Harlov D*

15:00 **Invited:** Bane or Boon of Mineral Alteration: Petrochronology of Fluid- and Deformation-Related Events

A719 *Möller A*

15:15 **Keynote:** Textural Diagnosis of Zircon Re-equilibration by Fluids and Melts during high-T Metamorphism

A252 *Dunkley DJ*

15:45 One Migmatite, Three Ages: Metamorphic Zircon Growth during and after Partial Melting?

A900 *Sajeev K & Dunkley DJ*

16:00 **Invited:** Petrogenetic Inferences from Zircon/ Whole Rock Minor and Trace Element Partitioning in Ancient Gneisses

A718 *Mojzsis S*

16:15 The High U Zircons, Recorders of the Post-Crystallization Thermotectonic Events

A44 *Balintoni I & Balica C*

(Session 08b continues on Tuesday 15th Posters on page 130)

09j: New Horizons in Coal Science: Organic Petrology, Geochemistry, and Environmental Effects

Session chaired by Leslie Ruppert, Shifeng Dai & Hamed Sanei

- 13:30 **Invited:** Halogen (F, Cl, Br, and I) Systematics in Mineralized and Non-Mineralized Upper Permian Longtan Formation Coal from China
A73 *Belkin H & Tewalt S*
-
- 13:45 **Invited:** Mercury Isotopes in Illinois Basin Coal: Organic and Inorganic Constituents
A577 *Lefticariu L, Blum JD & Gleason JD*
-
- 14:00 **Keynote:** The Environmental Aspect of Mercury Emission from Coal Fired- Power Plants – An Example from Western Canada
A347 *Goodarzi F & Sanei H*
-
- 14:15 **Keynote:** Changes in Element Speciation during Coal Combustion
A436 *Huggins F & Huffman G*
-
- 14:30 **Keynote:** Carbon Dioxide Sequestration in Coal: Geological Challenges and Philosophical Hurdles
A133 *Bustin R, Bustin A & Chalmers G*
-
- 14:45 **Invited:** Stability Analysis of a Horizontal Coalbed Methane Borehole in the San Juan Basin, USA
A323 *Gentzis T*
-
- 15:00 **Invited:** Time Series Analysis of CO Emissions from a Coal Fire, Eastern Kentucky
A422 *Hower J, Rangwala A, O'Keefe J, Henke K & Engle M*
-
- 15:15 **Invited:** Kingston Fossil Plant Ash Release – Assessment at One Year
A878 *Rogers W, Carriker N & Vitale R*
-

(Session 09j continues on Tuesday 15th Posters on page 131)

Session 09k follows this session in this room.

For details see page 106.

09k: Abyssal Abiogenic Origin of Petroleum: From Geological Assessment to Physical Theory

Session chaired by Vladimir Kutcherov & Anatoly Zolotukhin

15:30 **Keynote:** Abyssal Abiogenic Origin of Petroleum: Updated Milestones

A551 *Kutcherov V*

16:00 Methane Under Pressure: Dissociation Reactions from *ab Initio* Simulation

A982 *Spanu L, Donadio D, Schwegler E, Hohl D & Galli G*

16:15 Microbial Transformations of Deep Hydrocarbon-Water Flows

A180 *Chudetskiy M*

(Session 09k continues on Tuesday 15th Posters on page 131)

12e: Marine-Terrestrial Archives of 'Deep-Time' Climate Change

Session chaired by Isabel Montanez & Adrian Immenhauser

- 14:45 **Keynote:** Volcanic Activation of Biogeochemical Cascade
Regulates Oceanic Anoxic Event 2
A3 *Adams D, Hurtgen M & Sageman B*
-
- 15:00 **Invited:** Linkage of Terrestrial & Marine Records during
OAE2 (94Ma)
A51 *Barclay R, McElwain J & Sageman B*
-
- 15:15 **Invited:** Marine-Terrestrial Linkages Associated with Early
Cretaceous (Aptian-Albian) Global Change
A640 *Ludvigson G, Gonzalez L, Gulbranson E, Rasbury T, Hunt G,
Joeckel M, Murphy L & Kirkland J*
-
- 15:30 Latest Miocene-Pliocene Arctic Environmental Conditions
Recorded in the Stable Isotope Composition of (U-Th)/He-
Dated Goethite from Axel Heiberg Island
A1181 *Yapp C & Shuster D*
-
- 15:45 Mass Extinctions, Climate Change, and Enhanced
Terrestrial Weathering?: The End-Permian and End-
Guadalupian Events Compared
A944 *Sheldon N & Chakrabarti R*
-
- 16:00 Seawater Lithium Isotope Evolution during the Cenozoic
A713 *Misra S & Froelich P*
-
- 16:15 Eocene Clumped Isotope Temperature Estimates from
Seymour Island, Antarctica
A245 *Douglas P, Affek H & Ivany L*

(Session 12e continues on Tuesday 15th Posters on page 134)

12f: Paleo-Sea Level and Paleo-Ice Volume: Reconstructions and Implications

Session chaired by Eelco Rohling, William
G. Thompson & Peter Clark

- 13:30** **Keynote:** New Sea-Level Constraints from IODP Sampling on Tahiti, and Clues to the Process of Deglaciation
A1039 *Thomas A, Henderson G, Deschamps P, Yokoyama Y, Mason A, Bard E, Hamelin B & Camoin G*
-
- 14:00** Surface Mass Balance and Geochemical Constraints on the Laurentide Ice Sheet Contribution to Meltwater Pulse 1A
A141 *Carlson A, Ullman D, Anslow F, He F, Clark P, Liu Z & Otto-Bliesner B*
-
- 14:15** U-Series Evidence for a Brief but Widespread Interval of Coral Reef Development during MIS 5e, Cape Range, Western Australia
A768 *O'Leary M & Thompson W*
-
- 14:30** A Reconstruction of Temperature, Sea Level and CO₂ over the Past 20 Million Years
A215 *de Boer B, Van de Wal R, Bintanja R & Lourens L*
-

(Session 12f continues on Tuesday 15th Posters on page 135)

Session 12e follows this session in this room.
For details see page 107.

13a: Impact of Seasons on the Nutrient Dynamics (Natural and Anthropogenic) in the Tropical Aquatic Ecosystems

Session chaired by Ramanathan Alagappan,
M. Bala Krishna Prasad & tbc tbc

- 13:30 Seasonal Nutrient Dynamics in Bhitarkanika Mangroves, East Coast of India
A9 *ALR & Chauhan R*
-
- 13:45 Nitrogen Sources for New Production in the NE Arabian Sea during Winter
A315 *Gandhi N, Ramesh R, Prakash S & Kumar S*
-
- 14:00 Recycling of Matter in Tropical and Subtropical Coastal Sands
A435 *Huettel M, Chipman L, Hallas K & Laschet M*
-
- 14:15 Enhanced Phytoplankton Productivity Induced by Anthropogenic Nutrient Enrichment and Iron Fluxes in the Coastal Water of Alang, Gujarat
A456 *Jaiswar JR, Jaiswar AR, Rokade MA, Karangutkar S & Phadake S*
-

(Session 13a continues on Tuesday 15th Posters on page 137)

Session 13b follows this session in this room.

For details see page 110.

13b: Application of Isotopic Approaches to Tracing Contaminant Sources, Transport and Transformations

Session chaired by **Thomas Johnson & Avner Vengosh**

- 14:30** Stable Cu and Zn Isotope Ratios as Tracers of Sources and Transport of Cu and Zn in Contaminated Soil
 A90 *Bigalke M, Weyer S, Kobza J & Wilcke W*
-
- 14:45** Cu Isotope Systematics of the Butte Mining District, Montana
 A1093 *Wall A, Heaney P, Mathur R, Gammons C & Brantley S*
-
- 15:00** Stable Isotope Signals of Metal Contaminants in the Environment: The Search Continues
 A127 *Bullen T & Widory D*
-
- 15:15** Isotopic Tracing of the Origin and Transport of Perchlorate
 A1001 *Sturchio N, Beloso A, Bohlke J, Caffee M, Gu B, Hatzinger P, Heraty L & Jackson A*
-
- 15:30** Stable Oxygen Isotope Measurements of Arsenic and Selenium Oxyanions
 A561 *Larese-Casanova P & Blake R*
-
- 15:45** Provenancing Arsenic Release and Organic Matter in Shallow Groundwaters of South and South East Asia
 A569 *Lawson M, Ballentine C, Polya D, Bryant C & Boyce A*
-
- 16:00** Sr Isotope Constraints on Natural Oxy-Anionic Contaminants in a Basin-Fill Aquifer (Arizona, USA)
 A1083 *Vinson D, McIntosh J & Vengosh A*
-
- 16:15** Evaluating the Source and Pathway of Pb Incorporation in Human Bone and White-Tailed Deer Through the Use of Pb Isotopes
 A209 *Darrah T, Poreda R, Prutsman-Pfeiffer J & Hannigan R*
-

(Session 13b continues on Tuesday 15th Posters on page 137)

15h: Cell-Mineral Interactions: Biological and Geochemical Implications

Session chaired by Maria Dittrich & Philippe Van Cappellen

14:30 **Keynote:** Fungi on the Rocks!

A103 *Bonneville S, Morgan D, Bray A, Brown A, Duran A, Schmalenberger A & Benning LG*

15:00 Fungal Growth on Bare Rock Surfaces – Where Does the Carbon Come from?

A349 *Gorbushina A*

15:15 **Invited:** Interactions at the Cell-Mineral Interface

A880 *Romero-Gonzalez M, Andrews J, Zhang Z, Geoghegan M, Swanson L, Scholes J & Banwart S*

15:30 Molecular Adhesion Mechanisms of Cell-(oxyhydr)oxide Interaction

A177 *Chorover J*

15:45 Quantitative Studies on the Relationship between Surface Roughness and Bacterial Adhesion

A902 *Salas E, Fischer C, Arvidson R & Luttge A*

16:00 **Invited:** Survival Strategies during Bacterial Biomineralisation: Evidence from Cyanobacterial Precipitation of Hydrozincite in Sardinia, Italy

A756 *Ngwenya B, Magennis M & Podda F*

16:15 Redox Transformations of Uranium Near the Mineral-Microbe Interface

A505 *Kemner K, Boyanov M, O'Loughlin E, Sholto-Douglas D, Skinner K, Lai B, Kelly S, Cook R, Carpenter E & Neilson K*

(Session 15h continues on Tuesday 15th Posters on page 143)

15o: Transformation of Radionuclides by Microorganisms and Minerals

Session chaired by **Toshihiko Ohnuki, Satoshi Utsunomiya, A.J. Francis & A. Abdelouas**

13:30 Invited: Enrichment of Heavy Rare Earth Elements on Bacterial Cell Surfaces

A1021 *Takahashi Y*

13:45 Plutonium-Humic Acid Stability Constant Determination and Subsequent Surface Complexation Studies

A1237 *Zimmerman T & Powell B*

14:00 Keynote: Biogenic Hydroxyapatite: New Nanophase Material for Radionuclide Removal

A651 *Macaskie L, Yong P, Handley-Sidhu S, Moriyama S, Sasaki K & Renshaw J*

14:15 Biological Nano-Mineralization of Yb Phosphate by *Saccharomyces cerevisiae*

A465 *Jiang M, Ohnuki T, Kamiishi E, Tanaka K, Kozai N, Suzuki Y & Utsunomiya S*

(Session 15o continues on Tuesday 15th Posters on page 144)

Session 15h follows this session in this room.

For details see page 111.

16e: Biogeochemical Controls on Mercury Transformation and Global Cycling

Session chaired by Baohua Gu, Kathryn Nagy, Xinbin Feng, Liyuan Liang & Thorjorn Larssen

- 13:30 **Invited:** Health Risks of Methylmercury with Special Reference to Fetus
A901 *Sakamoto M*
-
- 13:45 Trophic Transfer of Methylmercury in a Simple Food Chain
A641 *Luengen A, Fisher N & Bergamaschi B*
-
- 14:00 Using Transmission X-ray Microscopy, XAS, and μ -XRF to Study Hg Accumulation and Transformation in *Spartina foliosa* and *Medicago sativa*
A23 *Andrews J, Carrasco S, LeDuc D, Patty C, Millan R & Hernandez L*
-
- 14:15 Hg(II) Adsorption and Speciation on Bacterial Surfaces
A713 *Mishra B, Fein J, Yee N, Beveridge T & Myneni S*
-
- 14:30 The Reduction of Hg(II) and Complexation of Hg(0) with Natural Dissolved Organic Matter in Aquatic Environments
A87 *Bian Y, Miller C, Jiang X, Dong W, Liang L & Gu B*
-
- 14:45 Identification of Metacinnabar in Mixed Mercury, Sulfide, and Dissolved Organic Matter Solutions Through Chromatographic Concentration and EXAFS
A324 *Gerbig C, Ryan J, Aiken G, Kim C, Stegemeier J & Moreau J*
-
- 15:00 Photodegradation of Methylmercury is Enhanced by Complexation with Thiol-Containing Natural Organics
A1213 *Zhang T & Hsu-Kim H*
-
- 15:15 **Invited:** Mapping Mercury Vulnerability of Aquatic Ecosystems Across The Contiguous United States
A536 *Krabbenhoft D, Booth N, Fienen M & Lutz M*
-
- 15:30 An Integrated Survey on Mercury Pollution and its Impacts in Guizhou Province, China
A563 *Larssen T, Zhang H & Feng X*
-
- 15:45 Decrease in Net Methylmercury Production Following an Iron Amendment to Tidal Wetland Sediments
A1064 *Ulrich P & Sedlak D*
-
- 16:00 **Invited:** Indicators of Mercury Reactivity and Bioavailability in a Torrential River System Impacted by Former Mercury Mining
A419 *Horvat M, Žižek S, Toman MJ, Ogrinc N, Kanduč T & Kocman D*
-
- 16:15 Interaction of Hg and Other Metals with Marine Macroaggregates
A533 *Koron N, Faganeli J, Falnoga I, Šlejkovec Z, Kovač N & Mazej D*
-

17c: Looking into the Nanoworld Using X-Rays

Session chaired by Juergen Thieme & Jeffrey Fitts

- 13:30 Keynote:** Understanding the Composition and Structure of Ferrihydrite
A793 *Parise J, Harrington R, Xu W, Michel M, Hausner D, Dabnath S & Strongin D*
-
- 13:45 Invited:** Prospects for Nanoscale, Hard X-Ray Studies of Extraterrestrial Materials
A559 *Lanzirotti A, Sutton S & Flynn G*
-
- 14:00 Invited:** Going Deep: Elemental Distribution, Speciation and Redox States in a Marine Ferromanganese Nodule
A668 *Marcus MA, Fakra SC, Toner BM, Horn G & Edwards KJ*
-
- 14:15 Invited:** Synchrotron Powder Diffraction Simplified: The High-Resolution Diffractometer 11-BM at the Advanced Photon Source
A1003 *Suchomel M, Ribaud L, Von Dreele R & Toby B*
-
- 14:30 Invited:** Probing the Aqueous Nucleation and Growth of TiO₂ with High Time-Resolution Small-Angle and Wide-Angle X-Ray Scattering
A438 *Hummer D, Heaney P & Post J*
-
- 14:45 Invited:** X-Ray Microscopy – A Tool to Study the Nanoworld
A1039 *Thieme J, Sedlmair J, Gleber S-C, Rieger J, Niemeyer J & Coates J*
-
- 15:00 Invited:** Spectro-Microscopy of Carbonaceous Particulates
A332 *Gilles M, Moffet R & Laskin A*
-
- 15:15 Keynote:** Environmental Nanoparticles: Distribution and Behaviour of Main and Trace Elements at the Nanoscale
A1087 *von der Kammer F, Hofmann T, Plathe K, Legros S, Neubauer E, Hochella M, Le Coustumer P & Hassellöv M*
-
- 15:30 Invited:** Using μ -XRF and XAS to Characterize the Fate and Bioavailability of Manufactured Nanoparticles in Soil
A1066 *Unrine J, Shoultz-Wilson A, Reinsch B, Tsyusko O, Lowry G & Bertsch P*
-
- 15:45 Invited:** The Mechanism of ACC Nanoparticle Transformation to Vaterite
A876 *Rodriguez-Blanco JD, Bots P, Terrill NJ, Shaw S & Benning LG*
-
- 16:00 Invited:** Structure-Catalytic Activity Relationship of Biogenic Pd Nanoparticles
A296 *Fitts JP, Chidambaram D, Hennebel T, Taghavi S, Boon N, Verstraete W & van der Leile D*
-
- 16:15 Invited:** The Fate of Phosphorus in Biosolids Treated Soils: Speciation, Transport and Accumulation
A841 *Quazi S, Toner B & Bloom P*
-

18b: Elementary Reaction Mechanisms in Geochemistry

Session chaired by James Rustad, William H. Casey & Andrew Stack

- 14:30 **Medal:** How Do Oxides React? A Look at Isotope-Exchange Dynamics in Nanometer-Size Structures in Water
A147 *Casey W, Villa E & Ohlin A*
-
- 15:00 **Keynote:** Computational Studies of Geochemical Processes: CO₂ Sequestration, Metal Ion Solvation, and Isotope Fractionation Factors
A237 *Dixon D, Jackson V, Duke J, Corbin J & Rustad J*
-
- 15:30 Water Diffusion in the Dehydroxylation Reactions in Dioctahedral Phyllosilicates by *ab Initio* Molecular Dynamics Simulations
A899 *Sainz-Diaz I, Molina-Montes E, Donadio D, Mañas E & Hernandez-Laguna A*
-
- 15:45 Crystal Growth in Terms of the Rates of Attachment of Ions from Solution and their Detachment
A987 *Stack A*
-
- 16:00 Reactive Solvation and Transport Simulations of OH⁻ Ions in Aqueous Environment: A Multistate Empirical Valence Bond (MS-EVB) Approach
A1063 *Ufimtsev I, Kalinichev A, Martinez T & Kirkpatrick RJ*
-
- 16:15 The Molecular Level Mechanisms of Quartz Dissolution at Coupled Electrolyte-Ph Conditions
A1213 *Zhang S & Liu Y*
-

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18c: Molecular Properties of Aqueous Solutions at Mineral Surfaces and in Nanopores

Session chaired by **Andrey Kalinichev, Claro Sainz-Diaz & Jeffery A Greathouse**

13:30 Keynote: The Effect of Mineral Surface Geometries on the Structure of Interfacial Water

A219 *de Leeuw NH*

14:00 Density Functional Theory Simulation of Acid Hydrolysis of an SiOSi Linkage on the (101) Surface of Quartz

A543 *Kubicki J*

14:15 Complex Dynamics of Water Adsorbed on Metal Oxide Surfaces

A200 *Cummings PT, Vlcek L, Mamontov E & Wesolowski DJ*

(Session 18c continues on Tuesday 15th Posters on page 150)

Session 18b follows this session in this room.

For details see page 115.

20c: Advances in Plasma Based Spectrometer in Geoanalysis

Session chaired by Isaac Brenner

- 13:30 Carbonate U-Series Dating Using Quadrupole-ICPMS
A401 *Hernandez-Mendiola E, Bernal J-P & Lounejeva E*
-
- 13:45 Low Noise Faraday Cup Measurements Using Multicollector Mass Spectrometers
A1061 *Tuttas D, Schwieters J & Lloyd N*
-
- 14:00 The Awakening of a Sleeping Beauty – Application of a New CID Based DC Arc Atomic Emission Spectrometer For Multielement Geoanalysis
A121 *Brenner I & Brown P*
-

(Session 20c continues on Tuesday 15th Posters on page 151)

20g: High Precision and High Resolution SIMS Analyses: New Applications to Earth and Planetary Science

Session chaired by Noriko Kita, Mostafa Fayek & Lee Riciputi

- 13:30** **Keynote:** High Precision and High Resolution SIMS – Having the Cake and Eating it Too?
A924 *Schmitt A*
-
- 14:00** **Invited:** Eel Larvae may Hatch in the Surface Layer Near the West Mariana Ridge: Ion Microprobe $\delta^{18}\text{O}$ Analysis with 7 μm Spatial Resolution in Glass Eel Otoliths
A955 *Shirai K, Otake T, Kuroki M, Ushikubo T, Kita N, Amano Y, Tsukamoto K & Valley J*
-
- 14:15** MC-HR-SIMS Oxygen Isotope Analysis of Ferropericlasite Inclusions in Diamond
A442 *Ickert R, Stern R & Stachel T*
-
- 14:30** Improvement of SIMS Oxygen Isotope Analyses on Magnetite
A521 *Kita NT, Huberty JM & Valley JW*
-
- 14:45** *Ex situ* Studies of Nanominerals by Secondary Ion Mass Spectrometry
A1134 *Williams L, Hervig R & Srodon J*
-

(Session 20g continues on Tuesday 15th Posters on page 152)

Session 20h follows this session in this room.

For details see page 119.

20h: In situ Chemical Detection in Extreme and Extra-Terrestrial Environments

Session chaired by Jennifer Stern & Friso van Amerom

15:00 **Keynote:** Aqueous Chemistry on Mars

A393 Hecht M & Kounaves S

15:30 LDRIMS Rb-Sr Geochronometry

A20 Anderson FS & Nowicki K

15:45 **Invited:** Laser Raman Spectroscopy as a Tool for *in situ* Bio-Geo-Chemical Analyses in the Deep Ocean

A1129 White S

16:00 *In situ* Chemical Analyses by Underwater Mass Spectrometry

A74 Bell R, Toler S & Short T

16:15 MOMA: Mars Organic Molecule Analyzer: Instrument Concept and Results

A67 Becker L, Richardson C, Chaicharoen K, Cornish T, Antione M, VanAmerom F, Pinnick V, Cotter R, Goesmann F, Raulin F & Ehrenfreund P

(Session 20h continues on Tuesday 15th Posters on page 152)

01a: Isotopic Heterogeneity Among Planetary Precursors and its Implications for Planetary Evolution

- 11 The Geochemistry of the Brent Impact Structure, Ontario, Canada
- A340 *Goderis S, Vlemminckx B, Paquay F, Chakrabarti R, Renson V, Debaille V, Sluyts W, Vanhaecke F, Spray J, Jacobsen S & Claeys P*
-
- 12 ^{84}Sr Anomalies in Meteorites?
- A732 *Moynier F, Day J, Bouvier A, Podosek F & Walker R*
-
- 13 Zinc Isotopic Variations in HED Meteorites
- A789 *Paniello R, Moynier F, Beck P & Podosek F*
-
- 14 Molybdenum Content and Isotopic Composition of the Buzzard Coulee Meteorite
- A833 *Proemse B & Wieser M*

01b: Early Accretion and Differentiation Processes on Planets and Planetesimals

- 15 Mineralogical and Petrological Analyses of Three Chondrite Meteorites Recovered from the Istfane Strewnfield (Morocco)
- A7 *Ait Touchnt A, Ibhi A, Marrocchino E & Vaccaro C*
-
- 16 Divisions Among Ultramafic Cumulates from a Differentiated Asteroid
- A66 *Beck A & McSween HY*
-
- 17 Cosmic-Ray Exposure History of Pallasite Metal
- A188 *Cook D, Herzog G, Huber L & Leya I*
-
- 18 The Petrology of Extrasolar Chondrites
- A655 *Magee C*

(Session 01b continues on Wednesday 16th AM on page 158)

01d: The New Mars: Geochemistry of a Neighbor Planet

- 19 Martian Analogs: Synthesis, Characterization, and Oxidation of Ferrous Iron Phyllosilicates
- A69 *Beehr A & Catalano J*
-
- 20 The Hematite-Pyrite Tandem Cell: Avenue to Understanding Mars Photochemical Water Oxidation?
- A261 *Eggleston C, Parkinson B & Bramlett E*
-
- 21 Surface Alteration of Fe-Ni Meteorites Analyzed by the Opportunity Mars Exploration Rover
- A473 *Johnson J, Ashley J, Bell Iii J, Farrand W, Fleischer I, Jolliff B, Herkenhoff K & Yen A*

- 22 Acid-Sulfate Weathering Pathways at Cerro Negro,
Nicaragua

A668 *Marcucci E, Hynek B & McCollom T*

01g: Geomicrobiology of Redox Stratified Ecosystems

- 23 The Potential Feasibility of Chlorinic Photosynthesis on
Extrasolar Planets

A368 *Haas J*

- 24 Cyanobacterial Diversity and Activity in Modern Hot Spring
Conical Stromatolites

A1036 *Templer SP, Liang B, Vali H, Wu T-D, Guerquin-Kern J-L,
Sim M-S & Bosak T*

- 25 Metabolically Versatile Cyanobacterial Mats in Great Lakes
Sinkholes: Analogs of the Proterozoic

A1089 *Voorhies A, Biddanda B, Horne N, Kendall S, Nold S,
Ruberg S & Dick G*

03c: Peridotites and Eclogites: Compositions, Textures and Microscale Mineralogy

- 26 *In situ* Geochemistry of Garnet Peridotites of Lashaine,
Tanzania Craton: Re-fertilization in Sub-Cratonic
Lithospheric Mantle

A58 *Basu Sarbadhikari A, Tsujimori T, Moriguti T, Kunihiro T
& Nakamura E*

- 27 Phase Transition from Spinel Lherzolite to Garnet Lherzolite
in Upper Mantle of Eastern China and its Significance

A277 *Fan Q, Sui J & Han B*

- 28 Oxygen Isotope Ratios in Mantle Xenoliths (Mt. Carmel,
Israel): Implications for Thermometry and Sources of
Alkaline Mafic Magmas

A492 *Kaminchik J, Katzir Y, Spicuzza MJ, Valley JW & Segev A*

- 29 Lithium Isotopic Fractionation in the Spinel Lherzolite
Xenoliths from Boeun, Korea

A514 *Kil Y, Jung H & Shin HJ*

- 30 Compilations of Cratonic Peridotite Xenoliths: Constraints
on Continental Lithospheric Mantle Compositions

A625 *Liu Y & Kelemen P*

- 31 Origin of Sulfides and Pyroxenites in the Hawaiian Mantle:
Insights from PGE and Re-Os Isotopes

A933 *Sen I, Bizimis M & Sen G*

- 32 Thermobarometry of Hawaiian Spinel Peridotite Xenoliths

A1094 *Wallace S, Bizimis M & Tibbetts N*

03e: Reading the Mantle Signal
in Basalt Compositions

- 33 Geochemistry of the Basic Volcanic Rocks from the Late Triassic Volcano-Sedimentary Sequences in the Kocali Complex, SE Turkey
A68 *Bedi Y, Varol E, Tekin UK & Uzuncimen S*
-
- 34 Geochemical Variability of the Mantle beneath São Tomé Island (Cameroon Volcanic Line)
A137 *Caldeira R, Munhá J, Mata J & Madeira J*
-
- 35 Plume-Influenced Melting of a Two-Component Source beneath Iceland
A530 *Koornneef J, Stracke A, Meier M-A, Bourdon B, Grönvold K, Jochum K-P & Stoll B*
-
- 36 Geochemistry of Lavas from Barren Island Volcano, Andaman Sea
A544 *Kumar A & Ray JS*
-
- 37 Geochemistry Characters of Cenozoic Tuoyun Alkaline Basalts, Southwest Tian Shan, Northwest China
A604 *Liang T, Luo Z & Lu R*
-
- 38 The Dupal Isotope Anomaly in the Paleo-Asian Sub-Oceanic Mantle: Nd-Sr-Pb Isotope Evidence from Ophiolites in Northern China
A622 *Liu X, Castillo P, Xu J & Hou Q*
-
- 39 New $^{40}\text{Ar}/^{39}\text{Ar}$ and Geochemical Constraints on São Jorge Island, Azores
A867 *Ribeiro LP, Calvert A, França Z, Rodrigues B & Abreu MP*
-
- 40 Spreading Ridge Geometry Controls the Symmetry of Plume-Ridge Interaction
A956 *Shorttle O & Maclennan J*
-
- 41 Geochemical and Petrological Characteristics of The Carnian Basic Volcanic Rocks from The Alakircay Nappe of The Antalya Nappes, SW Turkey
A1075 *Varol E, Tekin UK & Temel A*
-
- 42 Partial and Biased Preservation of the Mantle Signal in Icelandic Phenocryst Compositions
A1137 *Winpenny B & Maclennan J*
-
- 43 Permian Basalts and Mafic-Ultramafic Intrusions in the Northeastern of Tarim Plate (NW China): Insights into a Large Igneous Province
A1151 *Xia Z, Jiang C, Xia M & Lu R*
-
- 44 Fluid-Mobile Components in Lavas from Eastern Manus Basin, Papua New Guinea: Implication for Magma Generation in Subduction Zone
A1205 *Zhang G & Zeng Z*
-

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03g: Geochemical Signatures of Mantle Redox Processes

- 45 Nanocrystalline SnO₂ at Earth's Mantle Pressures up to 9 GPa
A984 *Sreedhar B & Parthasarathy G*
-
- 46 Apparent Oxygen Fugacity Structure beneath O'ahu, Hawai'i
A1045 *Tibbetts NJ, Bizimis M, Longo M, Keshav S, Salters VJM & McCammon CA*
-

04d: Uranium in the Environment

- 47 The Experimental Study on the Uranium Migration Process of Sandstone-Type Uranium Mineralization
A595 *Li W & Zhang W*
-
- 48 Suitable Hydrogeochemical Conditions for *in situ* Uranium Leaching in the Shihongtan Deposit
A614 *Liu J, Zhou Y, Sun Z & Hu B*
-
- 49 Cathodoluminescence of Albite Activated by Alpha-Particle Induced Luminescence Centers
A762 *Nishido H, Kayama M, Toyoda S, Komuro K & Ninagawa K*
-
- 50 Diffusion Retardation due to Decreasing Micro-Channel Width in a 2-D Micromodel
A874 *Rod K, Wellman D & Flury M*
-
- 51 Uranium and Other Elements in Residual Clays of Dolerites, Granites and Aplite-Pegmatites from Central Portugal
A1056 *Trindade MJE, Dias MIM, Prudêncio MIG & Rocha FJT*
-
- 52 Uranium Recovery from Waste Ores by an Indigenous *Acidithiobacillus ferrooxidans* in Laboratory
A1109 *Wang XG, Liu J, Sun ZX, Liu Y & Zheng ZH*
-
- 53 Mathematical Model and Factors of Source and Sink of Uranium Migration
A1215 *Zhang W*
-

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04h: Effect of System Heterogeneity on Carbonation and Carbonate Mineralization

- 54 Formation and Stability of Monohydrocalcite
A738 *Munemoto T & Fukushi K*
-
- 55 Amorphous Magnesium Stabilized Calcium Carbonate
A895 *Ryan C, Yaccato K, Ginder-Vogel M & Constantz B*
-
- 56 Abiotic Synthesis of Disordered Dolomite in Agar Gel Medium
A1203 *Zhang F, Xu H, Konishi H, Shelobolina E & Roden E*
-

04j: Interfacial Processes in the Environment

- 57 Weathering Textures and Chemical Changes of Cr-Bearing Spinels, California
 A231 *Diehl S, Morrison J, Goldhaber M & Holloway J*
-
- 58 Acid-Base Properties of 2:1 Clays. The Role of Electrostatics
 A1040 *Thomas F, Labbez C, Delhorme M & Caillet C*
-

04l: Earth Materials: Thermodynamic and Energetic Properties

- 59 Potential-Ph Diagram for the Vanadium-Water System at High Vanadium Concentration
 A19 *An L, Ma M, Wu J & Zeng Y*
-
- 60 New Calorimetric Data: Implications for Ternary Feldspar Modelling
 A78 *Benisek A, Dachs E & Kroll H*
-
- 61 Petrological Cooling Rates from Central Ribeira Belt (SE Brazil): New Breakthroughs and Developments
 A80 *Bento dos Santos T, Munhá J, Fonseca P & Tassinari C*
-
- 62 Electrical Resistivity of a Precambrian Native Iron Sample At High-Pressures up to 9.0GPa
 A158 *Chandra U, Sharma P & Parthasarathy G*
-
- 63 Effect of Ionic Strength on the Kinetics of Pyrite Oxidation
 A176 *Chirita P*
-
- 64 High Temperature Cooling History of Two Variscan Late- to Post-Kinematic Granitic Plutons from Aguiar da Beira (NE Portugal)
 A191 *Costa M, Neiva AM, Azevedo MDR & Corfu F*
-
- 65 Genesis of the Huize Zinc-Lead Deposit from an Infrared Microthermometric Study of Fluid Inclusions in Sphalerite, Yunnan, China
 A377 *Han R, Li B & Ni P*
-
- 66 Skarn Mineralization in Damak Cu-Porphyry Deposit (Shir-Kuh), Central Iran
 A653 *Mackizadeh MA & Taghipour B*
-
- 67 Geochronology and P-T-T Paths of the Berlengas Archipelago Rocks, W Portugal
 A1070 *Valverde Vaquero P, Bento dos Santos T, Clavijo E, Díez Montes A, Ribeiro L & Solá R*
-
- 68 Metastable Phase Equilibria for the Aqueous System Containing Sodium, Carbonate and Sulfate at 273 K
 A1192 *Yu XD, Feng S, Zheng Z, Lin X, Peng Y & Zeng Y*
-
- 69 Metastable Phase Equilibria of the Quaternary System KCl + K₂CO₃ + K₂B₄O₇ + H₂O at 273 K
 A1199 *Zeng Y, Wang R, Peng Y & Feng S*
-

04m: Physical and Chemical Interactions in Biomineralization

- 70 The Influence of Muscovite and Orthoclase on the Precipitation of CaCO_3 Polymorphs
 A424 *Hu Q, Zhang J, Teng H, Ewing R & Becker U*
-
- 71 Chemical Basis of Microbe – Carbonate Interactions
 A602 *Lian B & Teng H*
-
- 72 Soil Microbial Processes of Coexisting Atrazine and Dichlobenil in the Presence of a Biochar
 A946 *Sheng D, Zhou Z & Qiu Y*
-

04n: Exploring Biomolecules in Terrestrial Carbon Sinks – The Organic Biogeochemistry of Peats and Soils

- 73 Elevated Atmospheric Carbon Dioxide Alters Soil Biochemical Stocks
 A408 *Hockaday W, Gallagher M, Masiello C, Baldock J, Iversen C & Norby R*
-
- 74 Comparability of Commonly Used Methods to Study Lignin Degradation in Decomposing Foliar Litter
 A524 *Klotzbücher T, Kaiser K, Filley T & Kalbitz K*
-
- 75 Distribution and Carbon Isotopes of PLFAs in Soil Profile and its Implication
 A666 *Mao S & Sun Y*
-
- 76 Lignin Phenols and Cutin- and Suberin-Derived Aliphatic Monomers as Biomarkers for Stand History, SOM Source, and Turnover
 A983 *Spielvogel S, Prietzel J & Kogel-Knabner I*
-

05d: Hydrothermal Organic Geochemistry

- 77 Fluid Inclusions and Stable Isotope in Calcite of Trostyanets Volcanogenous Complex (Ukrainian Carpathians)
 A103 *Bondar R, Naumko I & Zagnitko V*
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