

# Program



**Expanding Clay Science**  
*Over the Pacific and Beyond*

**61st Annual Meeting of  
The Clay Minerals Society and  
5th Asian Clay Conference**

3-7 June 2024 • University of Hawaii at Manoa

[clayconferences.org](http://clayconferences.org)







**Expanding Clay Science**  
*Over the Pacific and Beyond*

**61st Annual Meeting of The Clay Minerals Society  
and 5th Asian Clay Conference**

Held jointly on the Campus of the University of Hawai'i at Manoa

**June 3-7, 2024**

**ORGANIZING COMMITTEE**

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Tsutomu Sato

Runliang Zhu

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JEOL, Solutions for Innovation

Thiele, Tailored Mineral Solutions

Kunimine Industries

ThermoFisher Scientific

## THE CLAY MINERALS SOCIETY

### Administration

3635 Concorde Pkwy Suite 500, Chantilly, VA 20151-1110, USA

Mary Gray, Manager

### Executive Committee

*President:* Sabine Petit, University of Poitier

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Geoffrey Bowers

## Past Presidents

**Chairmen** of the Interdivisional Committee on Clay Minerals of the National Academy of Sciences–National Research Council

1952–1956	Ralph E. Grim
1957–1959	Walter D. Keller
1960–1962	A. F. Frederickson
1963	Richards A. Rowland

## Presidents

1963–1964	Richards A. Rowland	1993–1994	Dennis D. Eberl
1964–1965	James W. Earley	1994–1995	Rossman F. Giese, Jr.
1965–1966	Haydn H. Murray	1995–1996	Kenneth M. Towe
1966–1967	Marion L. Jackson	1996–1997	Stephen Guggenheim
1967–1968	Charles E. Weaver	1997–1998	Joseph W. Stucki
1968–1969	Paul G. Nahin	1998–1999	David L. Bish
1969–1970	George W. Brindley, Katherine Mather	1999–2000	Patricia M. Costanzo
1970–1971	John F. Burst	2000–2001	Darrell G. Schultze
1971–1972	Sturges W. Bailey	2001–2002	Blair F. Jones
1972–1973	William F. Bradley	2002–2003	Jessica Elzea Kogel
1973–1974	John W. Jordan	2003–2004	Kathry L. Nagy
1974–1975	John C. Hathaway	2004–2005	Duane M. Moore
1975–1976	Stanley B. McCaleb	2005–2006	Cliff T. Johnston
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1977–1978	John B. Hayes	2007–2008	Ray E. Ferrell, Jr.
1978–1979	Max M. Mortland	2008–2009	Andrew R. Thomas
1979–1980	Finis Turner	2009–2010	Derek C. Bain
1980–1981	R. Torrence Martin	2010–2011	Paul A. Schroeder
1981–1982	Joe B. Dixon	2011–2012	David A. Laird
1982–1983	William D. Johns	2012–2013	Peter Komadel
1983–1984	Wayne Hower	2013–2014	Michael A. Velbel
1984–1985	Wayne M. Bundy	2014–2015	W. Crawford Elliott
1985–1986	Marion G. Reed	2015–2016	Prakash B. Malla
1986–1987	Sam H. Patterson	2016–2017	Jan Środoń
1987–1988	Necip Guven	2017–2018	Douglas K. McCarty
1988–1989	William F. Moll	2019–2020	Lynda B. Williams
1989–1990	Brij L. Sawhney	2020–2021	Bruno Lanson
1990–1991	Thomas J. Pinnavaia	2021–2022	Jeffrey A. Greathouse
1991–1992	Robert C. Reynolds, Jr.	2022–2023	Stephen Hillier
1992–1993	David R. Pevear	2023–2024	Sabine Petit

### **Marilyn and Sturges W. Bailey Distinguished Member Awardees**

1968: Ralph E. Grim	1998: Brij L. Sawhney
1969: Clarence S. Ross	2000: Boris Zvyagin
1970: Paul F. Kerr	2001: Keith Norrish
1971: Walter D. Keller	2002: Gerhard Lagaly
1972: George W. Brindley	2004: Benny K. G. Theng
1975: Sturges W. Bailey	2005: M. Jeff Wilson
1975: William F. Bradley	2006: Frederick J. Wicks
1975: José J. Fripiat	2008: Norbert Clauer
1977: Marion L. Jackson	2009: Joseph W. Stucki
1979: Toshio Sudo	2010: José M. Serratosa
1980–Haydn H. Murray	2011: Sridhar Komarneni
1984: C. Edmund Marshall	2012: Akahiko Yamagishi
1985: Charles E. Weaver	2013: Stephen Guggenheim
1988: Max M. Mortland	2015: R. James Kirkpatrick
1989: Robert C. Reynolds, Jr.	2016: Lisa Heller-Kallai
1990: Joe L. White	2018: G. Jock Churchman
1990: John Hower	2019: Dennis “Denny” Eberl
1991: Joe B. Dixon	2020: Eduardo Ruiz-Hitzky
1992: Philip F. Low	2021: David L. Bish
1993: Thomas J. Pinnavaia	2022: Jin-Ho Choy
1995: William D. Johns	2023: Randal T. Cygan
1996: Victor A. Drits	2024: Jan Środoń
1997: Udo Schwertmann	

### **Marion L. and Chrystie M. Jackson Mid-Career Clay Scientist Awardees**

1992: Joseph W. Stucki	2003: Peter Komadel
1993: Jan Środoń	2004: Fred J. Longstaffe
1994: Stephen Guggenheim	2005: Samuel J. Traina
1995: David L. Bish	2006: J. Theo Klopogge
1996: Darrell G. Schulze	2007: Paul A. Schroeder
1997: Jerry M. Bigham	2008: Hailiang Dong
1998: Murray McBride	2009: Lynda B. Williams
1999: Stephen Boyd	2010: Toshihiro Kogure
2000: Jillian Banfield	2011: Douglas K. McCarty
2001: Cliff T. Johnston	2012: Jeffrey E. Post
2002: Sridhar Komarneni	2013: George E. Christidis

2014: Will P. Gates  
2015: Balwant Singh  
2016: Janice L. Bishop  
2018: Stephen J. Hillier  
2019: Colleen M. Hansel

2020: Eric E. Roden  
2021: Hongping He  
2022: Young Shin Jun  
2023: Christophe 'tournassat  
2024: Eric Ferrage

### **George W. Brindley Lecture Awardees**

1984: Walter D. Keller  
1985: José J. Fripiat  
1986: Ralph E. Grim  
1987: Sturges W. Bailey  
1988: Marion L. Jackson  
1989: William D. Johns  
1990: Alain Baronnet  
1991: Thomas J. Pinnavaia  
1992: Philip F. Low  
1993: Dennis D. Eberl  
1994: Robert C. Reynolds, Jr.  
1995: Gerhard Lagaly  
1996: Samuel M. Savin  
1997: Paul H. Nadeau  
1998: Bruce Velde  
1999: Richard Eggleton  
2000: Duane M. Moore

2001: Robert Schoonheydt  
2002: David L. Bish  
2003: Alain Manceau  
2005: Maria F. Brigatti  
2008: Robert J. Gilkes  
2009: Michael F. Hochella, Jr.  
2010: Randall T. Cygan  
2013: Andrey G. Kalinichev  
2017: Sridhar Komarneni  
2018: Cliff T. Johnston  
2019: Bruno Lanson  
2020: No Award Made  
2021: No Award Made  
2022: Lynda B. Williams  
2023: No Award Made  
2024: Prakash B. Malla

### **Pioneer in Clay Science Awardees**

1987: Marion L. Jackson  
1988: R. M. Barrer  
1989: H. van Olphen  
1990: John W. Jordan  
1991: Charles E. Weaver  
1992: Udo Schwertmann  
1993: Linus Pauling  
1994: Joe L. White  
1995: Rustum Roy  
1996: Max M. Mortland  
1997: Koji Wada

1998: Robert C. Reynolds  
1999: V. Colin Farmer  
2000: William F. Moll  
2001: Don Scafe  
2002: Victor Drits  
2003: Vernon J. Hurst  
2004: Hideomi Kodama  
2005: Jillian Banfield  
2006: Jean-Maurice Cases  
2007: Spencer G. Lucas  
2008: Emilio Galan

2009: Haydn H. Murray  
2011: Glenn A. Waychunas  
2013: Thomas J. Pinnavaia  
2014: Douglas W. Ming  
2015: Reinhard Kleeberg  
2016: Donald L. Sparks  
2017: Fred J. Longstaffe

2018: Jan Środoń  
2019: Laurent J. Michot  
2020: James D. Kubicki  
2021: No Award Made  
2022: Michael Hochella  
2023: Susant Brantly  
2024: Toshihiro Kogure

### **Citation of Special Recognition**

1984: Richards A. Rowland  
1984: Ada Swineford  
1991: Frederick A Mumpton  
1994: Kenneth M. Towe  
1996: Don Scafe  
2003: William D. Johns

2013: Haydn H. Murray  
2014: Warren D. Huff  
2015: Stephen J. Hillier  
2016: J. Reed Glasmann  
2018: Duane M. Moore

### **Editors of *Clays and Clay Minerals***

1952: J. A. Pash and M. D. Turner  
1953: Ada Swineford and Norman Plummer  
1954: W. O. Milligan  
1955–1961: Ada Swineford  
1962–1964: William F. Bradley  
1964–1969: Sturges W. Bailey  
1970–1972: Max M. Mortland  
1973–1974: William T. Granquist  
1975–1978: Richards A. Rowland

1979–1990: Frederick A. Mumpton  
1990–1991: Kenneth M. Towe  
1991–1995: Ray E. Ferrell, Jr.  
1995–1998: Wayne H. Hudnall  
1999–2000: Stephen Guggenheim  
2000–2007: Derek C. Bain  
2008–2014: Joseph W. Stucki  
2014–2015: Michael Velbel  
2016–Present: Joseph W. Stucki

## **THE ASIAN CLAY GROUPS**

- 1st Asian Clay Conference at Nagoya, Japan in 2010 (Chairperson: Dr. Hirohisa Yamada)
- 2nd Asian Clay Conference at Seoul, South Korea in 2012 (Chairperson: Prof. Jin-Ho Choy)
- 3rd Asian Clay Conference at Guangzhou, China in 2016 (Chairperson: Prof. Hongping He)
- 4th Asian Clay Conference at Pattaya, Thailand in 2000 (Chairperson: Prof. Makoto Ogawa)



# Program

**JUNE 3**

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## **COURTYARD**

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8:00 REGISTRATION AND WELCOME RECEPTION

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## **BALLROOM**

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10:00 OPENING CEREMONIES

PLENARY

11:00 INTRODUCTION OF JAN ŚRODOŃ, RECIPIENT OF THE MARILYN AND STURGES  
W. BAILEY DISTINGUISHED MEMBER AWARD

Sabine Petit

11:05 ROLE OF ILLITE IN THE GLOBAL CYCLING OF ELEMENTS

Jan Środoń

12:00 LUNCH

13:30 INTRODUCTION OF PRAKASH B. MALLA, RECIPIENT OF THE GEORGE W.  
BRINDLEY LECTURE AWARD

Joseph W. Stucki

13:35 TRANSITION FROM EXPANDABLE TO NON-EXPANDABLE CLAYS VIA  
NANOPOROUS MATERIALS

Prakash B. Malla

14:30 INTRODUCTION OF AKIRA ONO, REPRESENTING THE CLAY SCIENCE SOCIETY  
OF JAPAN

Takeo Ebina

14:35 STANDARDIZATION OF CLAY NANOPATE MATERIALS FOR QUALITY  
ASSESSMENT AND CERTIFICATION

Akira Ono, Takeo Ebina, Hajime Yoshida, and Tetsuji Itoh

15:30 BREAK

PROGRAM | AT-A-GLANCE

	Monday June 3		Tuesday June 4								
Time/ Room	Ballroom 1&2	Ballroom 3	Ballroom 1&2	Ballroom 3	CC 307	CC 308	CC 309	CC 310	Exec Din	Ballroom 1&2	Ballroom 3
8:00											
8:30											
9:00		Welcome Mixer in Courtyard	Coffee & Danish	Kogure Plenary						Coffee & Danish	Fer Ple
9:20											
9:40											
10:00		Opening Ceremony		Session 13	Session 18	Session 5	Session 8	Session 14			Ses 1
10:20											
10:40			Break							Break	
11:00		Srodon Plenary	Coffee & Danish	Session 13	Session 18	Session 5	Session 8	Session 14		Coffee & Danish	Ses 1
11:20											
11:40											
12:00											
12:20	Lunch 12:00-1:30										
12:40											
13:00			Box Lunch 12:40-2:00						PP & Sustainers 12:40-2:00	Hawaiian Buffet Lunch 12:20-2:00	
13:30											
13:50		Malla Plenary									
14:10					Sess. 18		Session 8	Session 14			
14:30		Ono Plenary		Session 13	Session 23	Session 5		Session 10			Ses 1
14:50											
15:10							Session 2				
15:30											
15:50			Break							Break	
16:10		Poster Session	Coffee & Danish	Session 13	Session 23	Session 5	Session 2	Session 10		Coffee & Danish	Ses 1
16:30	Coffee & Danish										
16:50											
17:10											
17:30											
17:40											
18:00											
18:20		Asian Clay Groups Council— CC-203E							CCM Editorial Board Meeting		
18:40											
19:00											
19:20											
19:40											
20:00											

Wednesday June 5					Thursday June 6						Friday June 7	Time/ Room		
Room 3	CC 307	CC 308	CC 309	CC 310	Ballroom 1&2	Ballroom 3	CC 307	CC 308	CC 309	CC 310				
					Registration—Ballroom Foyer							8:00		
						Coffee & Danish	Plenary Choy						8:30	
													9:00	
													9:20	
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													10:20	
						Break							10:40	
													11:00	
													11:20	
						Coffee & Danish	Session 17	Session 4	Session 11	Session 12	Session 6	FIELD TRIP Sherman Laboratory, 1910 East-West Rd	11:40	
													12:00	
													12:20	
													12:40	
						Hot Buffet Lunch 12:40-2:00								13:00
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												15:30		
					Break							15:50		
												16:10		
												16:30		
												16:50		
					Coffee & Danish	Closing Ceremony						17:10		
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												19:20		
												19:40		
												20:00		

Session key on next page

## *Session Titles*

- 1 Role of clays in contaminant fate and transport**
- 2 Sediment transport mechanics, morphologic expressions, depositional patterns, and climate impacts of clay-rich dispersal systems**
- 3 Natural hazards and clays: how determining/understanding their physicochemical properties can aid in modeling and mitigation efforts**
- 4 New insights into the mechanisms of microbe-mineral interactions in geological processes**
- 5 Mineral-organic matter interactions and their regulation of organic carbon stabilization in terrestrial and aquatic environments**
- 6 Biogeochemical evolution of Fe and Mn (oxyhydr)oxide and their environmental impacts**
- 7 Geochemical behaviors and mineralization of rare earth elements in near surface settings**
- 8 Iron redox processes in clays and clay minerals**
- 9 Honoring Dr. Goro Uehara and his work in variable charge clay systems in Hawai'i & beyond**
- 10 Functional soft materials from clays and related compounds topics: colloids, nanocomposite gels and plastics, self-assembly, soft materials**
- 11 Clay as nanomaterials: modification, functionalization, and application**
- 12 Synthetic and natural clays for nanomedicine and nanocosmetics**
- 13 Nanosized or nanostructured tubular and fibrous clay minerals for versatile functionalization and application.**
- 14 Clay-related low dimensional nanoarchitectonics for enhanced electronical and optical properties**
- 15 Clay minerals in building materials**
- 16 Clays and clay minerals for carbon dioxide removal in negative emission technologies**
- 17 Scientific and engineering aspects of clays in nuclear waste disposal**
- 18 Electron microscopy on clay sciences—featuring a special session honoring Dr. Toshihiro Kogure**
- 19 Molecular simulation of clay minerals and related phases**
- 20 Investigation of phyllosilicates on mars through remote sensing, rover instruments, and analog studies**
- 21 Characterization of phyllosilicates and their mineral assemblages in asteroids and meteorites**
- 22 Remote identification of phyllosilicates for critical metals exploration and resource characterisation**
- 23 General session**

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## POSTER SESSION—AUTHORS PRESENT IN GATHER.TOWN

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### SESSION 1

15:30-17:30 LATERITIC ENVIRONMENTAL DUSTS CHARACTERIZATION AND QUANTIFICATION: IS MINING EXPLOITATION PROMOTING TRACE METAL-RICH DUST DISPERSION IN THE ENVIRONMENT? A CASE STUDY FROM EASTERN NEW CALEDONIA.

France Pattier, **Maximilien Mathian**, Peggy Gunkel-Grillon, Sylvie Russet, Kapeliele Gututauava, Mark Patrick Taylor, and Estelle Roth

15:30-17:30 REMOVAL OF EMERGING METALS USING CLAY/IRON-BIOCHAR COMPOSITES  
Ming-Chih Huang and **Kai-Yue Chen**

15:30-17:30 CHROMIUM OXIDATION ON FERRIHYDRITE UNDER ATMOSPHERIC CONDITIONS WITH UV IRRADIATION: TRENDS AND MECHANISMS  
Li-Pang Lin, Yu-Yu Kung, Yu-Ting Liu, and **Liang-Ching Hsu**

### SESSION 2

15:30-17:30 EXAMINING THE IMPACT OF CLAY AND AQUEOUS PROPERTIES ON THE ERODIBILITY OF SMECTITE USING A COMPUTATIONAL FLUID DYNAMICS FRAMEWORK  
**Mitchell D. Jans** and Ian C. Bourg

15:30-17:30 RELATIONSHIP BETWEEN PARTICLE SIZE AND CHARACTERISTICS IN THE SEDIMENT COLLECTED FROM LAKE OKUTAMA, JAPAN  
**Toru Takahashi**, Masanobu Shimizu, Hibiki Shirata, Taiga Kaseda, and Yuya Koike

15:30-17:30 CAN STRONTIUM AND NEODYMIUM ISOTOPES OF THE CLAY MINERAL-RICH COLD-SEEP CARBONATES BE A TRACE TO RECORD THE SOURCE OF THE COLD-SEEP FLUIDS?  
**J.Y. Cao**, S.X. Yang, and J.X. Feng

### SESSION 6

15:30-17:30 MOBILITY OF METALS IN TYPICAL ROCKS FROM ULTRAMAFIC SUBSTRATES IN NEW CALEDONIA  
Chloé Dubernet, Aurélie Barats, Christophe Renac, Peggy Gunkel-Grillon, **Maximilien Mathian**, France Pattier, and Kapeliele Gututauava

### SESSION 8

15:30-17:30 IRON REDOX PROCESSES IN CLAYS AND CLAY MINERALS  
**Hamida Diab**

15:30-17:30 ADVANCING UNDERSTANDING OF BIOTITE WEATHERING REACTIONS: XAFS AND AB INITIO SIMULATION INSIGHTS  
**Akiko Yamaguchi**, Yoshio Takahashi, and Masahiko Okumura

### SESSION 9

15:30-17:30 EVALUATING ORIENTATION OF CLAY MINERALS BY POWDER X-RAY DIFFRACTOMETRY  
**Hibiki Shirata**, Atsushi Ohbuchi, and Yuya Koike

## SESSION 10

- 15:30-17:30 **PARTICLE SIZE EVALUATION OF CLAY-DYE COLLOID BY MEANS OF TWO-PHOTON FLUORESCENCE CORRELATION SPECTROSCOPY**  
**Katsuhiko Ishii**, Yuya Minami, Yasutaka Suzuki, and Jun Kawamata

## SESSION 11

- 15:30-17:30 **ADHESION AND MICROMECHANICAL PROPERTIES OF NANOSTRUCTURAL LAYERED DOUBLE HYDROXIDE COATINGS DEVELOPED ON ZN ALLOY FOR SMART CORROSION PROTECTION**  
**Sławomir Zimowski**, Małgorzata Zimowska, Dzmitry Kharytonau, and Konrad Skowron
- 15:30-17:30 **ESTABLISHMENT OF PEDOTTRANSFER FUNCTIONS FOR SOIL ORGANIC CARBON SATURATION**  
C.H. Syu and **S.H. Jien**
- 15:30-17:30 **INTERACTIONS OF AFLATOXIN B1 WITH BENTONITE—ADSORPTION AND CATALYTIC TRANSFORMATION**  
**Yu-Min Tzou** and Sheng-Yi Chen
- 15:30-17:30 **STRUCTURAL AND SPECTROSCOPIC CHARACTERIZATION OF MONTMORILLONITE MODIFIED WITH POLY(2-N-ALKYL-2-OXAZOLINE)S**  
Marek Pribus, **Luboš Jankovič**, Valéria Kureková, Martin Barlog, and Jana Madejová
- 15:30-17:30 **STABLE DISPERSION METHOD OF K-TYPE MONTMORILLONITE**  
**Shoji Morodome**

## SESSION 12

- 15:30-17:30 **NANO-SPECIFIC AFFINITIES: SELECTIVE ADSORPTION OF DEOXYRIBONUCLEIC ACID STRANDS ON LAYERED DOUBLE HYDROXIDE NANOMATERIALS THROUGH DIMENSIONAL SIMILARITY**  
**Xie Jing**, Kyoung-Min Kim, Tae-il Kim, and Jae-Min Oh
- 15:30-17:30 **ANTIBACTERIAL CAPACITIES OF REDUCED SMECTITE-ILLITE CLAY MINERALS**  
**Dongyi Guo**, Qiang Zeng, and Hailing Dong
- 15:30-17:30 **INTRODUCTION OF DEFECT SITE IN LAYERED DOUBLE HYDROXIDE AND ITS MODIFIED MAGNETIC PROPERTY**  
Taeho Kim, Jing Xie, and **Jae-Min Oh**
- 15:30-17:30 **FACTORS INFLUENCING THE GROWTH OF LAYERED DOUBLE HYDROXIDE LAYERS ON ZN ALLOY FOR SMART CORROSION PROTECTION**  
**Małgorzata Zimowska**, Dzmitry Kharytonau, Konrad Skowron, Grzegorz Mordarski, Sławomir Zimowski
- 15:30-17:30 **HIGHLY ENHANCED BIOCOMPATIBILITY OF DEXAMETHASONE WITH CLAY-BASED DRUG DELIVERY SYSTEM**  
**Sieun Park**, Goeun Choi, and Jin-Ho Choy
- 15:30-17:30 **HYDROTALCITE-NICLOSAMIDE NANOHYBRIDS AS AN ORAL FORMULATION FOR SARS-COV-2: A NOVEL THERAPEUTIC APPROACH**  
**Sieun Park**, N. Sanoj Rejinold, Seungjin Yu, Goeun Choi, and Jin-Ho Choy

15:30-17:30 PH-RESPONSIVE NICOTINIC ACID-LAYERED DOUBLE HYDROXIDE FOR CONTROLLED DRUG DELIVERY

**Seungjin Yu**, N. Sanoj Rejinold, Goeun Choi, and Jin-Ho Choy

15:30-17:30 NONIONIC POLYMER-COATED NICLOSAMIDE-MONTMORILLONITE HYBRIDS: A STRATEGY FOR ENHANCED BIOAVAILABILITY IN COVID-19 TREATMENT

**Seungjin Yu**, N. Sanoj Rejinold, Goeun Choi, and Jin-Ho Choy

### SESSION 13

15:30-17:30 RESEARCH ON THE APPLICATION OF HALLOYSITE IN LOW CARBON-FOOTPRINT BUILDING MATERIALS: GEOPOLYMER AND LIMESTONE CALCINED CLAY CEMENT

**Peng Yuan**, Baifa Zhang, and Ting Yu

15:30-17:30 ENGINEERING DRUG-LOADED HALLOYSITE NANOTUBE AND ITS DRAWBACKS IN THE INTRACENOUS ADMINISTRATION ROUTE

**Yi Zhang**, Zongwang Huang, and Guangjian Tian

### SESSION 14

15:30-17:30 EMISSION FROM HIGHER EXCITED STATE OF MONO-CATIONIC DYE ADSORBED ON SURFACE OF SAPONITE NANOSHEET

**Takuya Fujimura**, Masashi Sugahara, and Ryo Sasai

### SESSION 16

15:30-17:30 EFFECTS OF BASALT APPLICATION AND THE MINERAL COMPOSITION ON SUGAR BEET GROWTH

**Ayaka Wakao**, Hiroshi Uchibayashi, Hayato Maruyama, Toshihiro Watanabe, Tsutomu Sato, Atushi Nakao, and Takuro Shinano

### SESSION 17

15:30-17:30 STABILIZING EFFECT OF RADIOACTIVE CESIUM IN INCINERATED FLY ASH AND SOIL MIXED GEOPOLYMER BY CLAY MINERALS

**Rina Sekino**, Atsushi Ohbuchi, and Yuya Koike

15:30-17:30 LARGE-SCALE MOLECULAR DYNAMICS SIMULATIONS OF CESIUM DIFFUSION IN SYSTEMS WITH CLAY PARTICLES AND WATER MOLECULES

**Atsuki Hiraguchi**, Xiaojin Zheng, Thomas R. Underwood, Keita Kobayashi, Akiko Yamaguchi, Mitsuhiro Itakura, Masahiko Machida, Ian C. Bourg, and Masahiko Okumura

15:30-17:30 THE INFLUENCE OF MINERALOGY AND ORGANIC MATTER CONTENT ON ACTINIDE SORPTION IN A CARBONATE DOMINATED REPOSITORY ENVIRONMENT

**Keith D. Morrison**, Gauthier Deblonde, Zachary Murphy, Harris Mason, Annie B. Kersting, Enrica Balboni, Ofra Klein-BenDavid, and Mavrik Zavarin

### SESSION 19

15:30-17:30 MACHINE LEARNING MOLECULAR DYNAMICS STUDY OF HYDRATED KAOLINITE UNDER HIGH PRESSURE

**Keita Kobayashi**, Akiko Yamaguchi, and Masahiko Okumura

15:30-17:30 MOLECULAR DYNAMICS STUDY OF STABILITY OF CS IN INTERLAYER SPACE

**Marek Szczerba**, Michał Skiba, and Mariola Kowalik-Hyla

15:30-17:30 MOLECULAR DYNAMICS STUDY OF ICE IN/ON KAOLINITE UNDER EXTREME CONDITIONS

**Masahiko Okumura** and Keita Kobayashi

## SESSION 20

15:30-17:30 STRUCTURE DETERMINATION OF SMECTITE

**Qi Tao**, Chaogang Xing, Seungyeol Lee, Long Yang, Tianqi Zhang, Qingjin Zeng, Shangying Li, Guanglie Lv, Hongping He, and Sridhar Komarneni

## SESSION 21

15:30-17:30 MICRO-FT-IR HYPERSPECTRAL SURFACE CHARACTERIZATION OF INDIVIDUAL RYUGU GRAINS: MATRIX COMPOSITION AND SPACE-WEATHERING EFFECTS

**Stefano Rubino** et al.

15:30-17:30 SPECTRAL VARIABILITY IN CM CHONDRITE MATRICES

**William M. Lawrence** and Bethany L. Ehlmann

15:30-17:30 MULTI-ANALYTICAL INVESTIGATIONS OF TWO RYUGU PARTICLES

**M. Ferrari** et al.

## SESSION 23

15:30-17:30 CATALYTIC MECHANISM OF COBALT-CONTAINING LAYERED DOUBLE HYDROXIDES FOR CARBON NANOTUBE SYNTHESIS

**Chida Chika**, Kei Yokoyama, Kumagai Riku, Aisawa Sumio, Sang Jing, Hirahara Hidetoshi, Kimura Hiroe, and Don N. Futaba

15:30-17:30 INTERACTIONS OF SMECTITES WITH BITUMEN: RELEVANCE TO NON-AQUEOUS SOLVENT BITUMEN EXTRACTION

**Marek Osacký**, Yuqing Bai, Peter Uhlík, Martin Brček, and Pavol Hudec

15:30-17:30 THE ION-EXCHANGE MECHANISM OF HYDROBIOTITE AND THE BEHAVIOR OF IT'S INTERNAL WATER MOLECULES

**Noriko Suzuki** and Ayami Suzuki

15:30-17:30 LAYERED DOUBLE HYDROXIDES (LDH) PREPARED BY COPRECIPITATION METHOD WITH MICRO FLOW RATES OF RAW SOLUTIONS

**Yoshikazu Kameshima**, Itaru Ishihara, Yuya Sato, and Shunsuke Nishimoto

15:30-17:30 CHEMICAL COMPOSITION ANALYSIS OF WHITE AND CELADON CLAYS USING PORTABLE X-RAY FLUORESCENCE ANALYSIS: A COMPARATIVE STUDY OF CERAMICS EXCAVATED FROM HIRAIZUMI AND CHINA

**Sumio Aisawa**, Jing Sang, Hidetoshi Hirahara, and Daisuke Tokudome

15:30-17:30 CHARACTERIZATION OF KAOLINITE SOURCE CLAYS; COMPARISON OF JCSS-1101 (KANPAKU KAOLIN) WITH KGA-1B (GEORGIA KAOLIN)

**Toshihiro Kogure** and Kazuya Morimoto

15:30-17:30 REMOVAL PERFORMANCE OF ARSENATE AND ARSENITE ANIONS OF LAYERED DOUBLE HYDROXIDE

**Ryo Sasai**, Tomohiro Yoshisue, Kazuya Ujiiie, Takashi Kojima, and Takuya Fujimura

15:30-17:30 EFFECTS OF PCO<sub>2</sub> ON HYDROXYAPATITE FORMATION AND ITS SOLUBILITY

**Yuji Arai**, Shravani Kalita, and Ai Chen



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**ROOM CC-203E**

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17:40-20:00 ASIAN CLAY GROUPS COUNCIL MEETING

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**EXECUTIVE DINING ROOM**

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17:40-20:00 CMS COUNCIL MEETING

**JUNE 4**

8:00-12:00 COFFEE &amp; DANISH—BALLROOM 1&amp;2

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**PLENARY—BALLROOM 3**

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9:00 INTRODUCTION OF TOSHIRO KOGURE, RECIPIENT OF THE PIONEER IN CLAY SCIENCE AWARD  
Jinwook Kim9:05 LAYER-STACKING VARIETY IN KAOLIN GROUP MINERALS OF SEVERAL ORIGINS  
Toshihiro Kogure

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**SESSION 13 BREAKOUT—BALLROOM 3**

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**Nanosized or nanostructured tubular and fibrous clay minerals for versatile functionalization and application***Peng Yuan, Pilar Aranda, Giuseppe Lazzara, Antoine Thill, Lala Setti Belaroui, Wei Yanfu, and Pooria Pasbakhsh*10:00 DIAMETER AND CHIRALITY OF NATURAL AND SYNTHETIC IMOGOLITES  
Pierre Picot, Frédéric Gobeaux, Thibault Charpentier, Luc Belloni, Atsushi Takahara, Shin-ichiro Wada, and **Antoine Thill** ORAL IN PERSON10:20 SEPIOLITE: A POWERFUL CLAY FILLER FOR THE ADVANCED MATERIALS  
**Barbara Di Credico**, Massimiliano D'Arienzo, Silvia Mostoni, and Roberto Scotti ORAL IN PERSON

10:40 BREAK—BALLROOM 1&amp;2

11:00 COMPOSITE MATERIALS BASED ON HALLOYSITE CLAY NANOTUBES: FROM MARINE WASTE TO ADVANCED FILMS AND GEOPOLYMERS  
**Martina Maria Calvino**, Giuseppe Cavallaro, Stefana Milioto, Giuseppe Lazzara ORAL REMOTE11:20 CLAY MINERALS MEET NATURAL PLANTS:VALUE CREATION FOR NATURAL RESOURCE UTILIZATION AND SUSTAINABLE DEVELOPMENT  
**Fangfang Yang**, Yusheng Lu, Bin Mu, and Aiqin Wang ORAL IN PERSON11:40 PLYGORSKITE-INDIGO INTERACTION OF MAYA BLUE PIGMENT  
**Guangzheng Zhuang**, Li Li, Peng Yuan ORAL IN PERSON12:00 THE STABILITY, LOCAL BONDING AND ELECTRONIC PROPERTIES OF SINGLE-WALLED HNTS WITH THEIR INNER DIAMETER UPTO 20 NM  
**Liangjie Fu**, Tianyu Liu, Beibei Shi, and Huaming Yang ORAL IN PERSON

- 12:20            **INFLUENCE OF INDIGO-HYDROXYL INTERACTIONS ON THE PROPERTIES OF SEPIOLITE-BASED MAYA BLUE PIGMENT**  
**Li Li**, Guanzheng Zhuang, and Peng Yuan **ORAL REMOTE**
- 12:40            **LUNCH—BALLROOM 1&2**
- 14:00            **HALLOYSITE CLAY NANOTUBES AS A MULTIFACETED MATERIAL FOR BIOLOGICALLY SELF-HEALING CONCRETE**  
**Mohammad Fahimizadeh**, Pooria Pasbakhsh, Joash B.L. Tan, Raman K.R. Singh, and Peng Yuan **ORAL REMOTE**
- 14:20            **GEPOLYMERIZATION OF ION-ADSORPTION TYPE RARE EARTH TAILINGS FOR HEAVY METALS IMMOBILIZATION AND ITS MECHANISM**  
Baifa Zhang, **Peng Yuan**, and Ting Yu **ORAL REMOTE**
- 14:40            **LIGNIN-SEPIOLITE BIONANOCOMPOSITE FOAMS: PREPARATION AND USE IN REMOVAL OF POLLUTANTS IN WATER**  
Brenda Azharel Jiménez-López, Raquel Martín-Sampedro, Roberto Leyva-Ramos, Margarita Darder, and **Pilar Aranda** **ORAL IN PERSON**
- 15:00            **HALLOYSITE-BASED ADSORPTION MATERIAL WITH ULTRAHIGH LEAD ION ADSORPTION CAPACITY AND STABILITY**  
**Liangjie Fu**, Dikang Fan, Jie Zhang, Yuying Qu, Peiwen Ouyang, and Huaming Yang **ORAL REMOTE**
- 15:20            **ACTIVATION OF NANOSIZED CLAY MINERAL VIA CO-CALCINATION AND MAGNETITE VIA SUBSTITUTION FOR EFFICIENT PHOSPHATE ADSORPTION AND RECYCLING**  
**Yanfu Wei**, Peng Yuan, Zheng Li, and Honghai Wu **ORAL REMOTE**
- 15:40            **BREAK—BALLROOM 1&2**
- 16:00            **PALYGORSKITE-SUPPORTED RUTHENIUM CATALYSTS FOR THE SELECTIVE OXIDATION OF 5-HYDROXYMETHYLFURFURAL TO 2, 5-DIFORMYLFURAN**  
**Xuemin Zhong**, Peng Yuan, Samahe Sadjadi, Dong Liu, and Yanfu Wei **ORAL REMOTE**
- 16:20            **HALLOYSITE-BASED CATALYSTS: COMPUTATIONAL AND EXPERIMENTAL INVESTIGATIONS INTO BIOMASS CONVERSION**  
**Ludovico Guercio**, Marco Bertini, Francesco Ferrante, Lorenzo Lisuzzo, and Dario Duca **ORAL REMOTE**
- 16:40            **INFLUENCE OF HALLOYSITE FROM DIFFERENT DEPOSITS ON ORGANIC MOLECULES DEGRADATION**  
**C. Ferlito**, L. Lisuzzo, G. Lazzara, Palumbo A. Piccionello, and S. Milioto **ORAL REMOTE**
- 17:00            **CHARACTERIZATION OF SYNTHETIC IMOGOLITE AND GERMANIUM SUBSTITUTED IMOGOLITE BY NUCLEAR MAGNETIC RESONANCE SPECTROSCOPY**  
**Masashi Ookawa**, Takuya Noaki, Hiroki Sugisawa, and Moe Yoshikawa **ORAL IN PERSON**
- 17:20            **ADSORPTION KINETICS OF LANTHANIDES IN SILICA NANOPORES**  
**Bidemi T. Fashina** and Anastasia G. Ilgen **ORAL IN PERSON**

**BREAKOUT SESSION 18—ROOM CC-307****Electron Microscopy on Clay Sciences – Featuring a Special Session Honoring Dr. Toshihiro Kogure***Ryosuke Kikuchi and Yuji Arai*

- 10:00            **CRYSTAL CHEMISTRY DURING SAPONITE GROWTH: A STUDY BASED ON FTIR AND HAADF-STEM ANALYSIS**  
**Chaoqun Zhang**, Alain Decarreau, Fabien Baron, Brian Gregoire, Jianxi Zhu, Hongping He, and Sabine Petit **ORAL IN PERSON**
- 10:20            **ATOMIC RESOLUTION OBSERVATIONS FOR BEAM-SENSITIVE MINERAL SAMPLES USING LOW-DOSE SCANNING TRANSMISSION ELECTRON MICROSCOPY**  
**Ichiro Ohnishi** **ORAL IN PERSON**
- 10:40            **BREAK—BALLROOM 1&2**
- 11:00            **TRANSMISSION ELECTRON MICROSCOPY STUDY OF SMECTITE-TO-ILLITE REACTION**  
**Jinwook Kim** **ORAL IN PERSON**
- 11:20            **QUANTITATIVE ANALYSIS OF PETROGRAPHIC TEXTURES OF BENTONITE ORES BY IMAGE PROCESSING**  
**Tobimaru Ishiwata**, Ryosuke Kikuchi, Tsubasa Otake, and Tsutomu Sato **ORAL IN PERSON**
- 11:40            **FORMATION MECHANISM OF FE-RICH CHLORITE FROM HYDROTHERMAL DEPOSIT IN JAPAN REVEALED BY HIGH RESOLUTION SCANNING TRANSMISSION ELECTRON MICROSCOPY**  
**Sayako Inoué** **ORAL IN PERSON**
- 12:00            **NI-BEARING SMECTITE-SERPENTINE FROM THE TAGAUNG TAUNG NI-LATERITE DEPOSIT (MYANMAR): MINERALOGY AND NANOTEXTURES BY FIB-TEM**  
**Ryosuke Kikuchi**, Takahiro Daimon, Tsubasa Otake, and Tsutomu Sato **ORAL IN PERSON**
- 12:20            **CHARACTERIZATION OF SUBMICRON-THICK LAYERED STRUCTURE IN HYDROGENETIC FERROMANGANESE NODULE**  
**Junming Zhou**, Toshihiro Kogure, Peng Yuan, and Shengxiong Yang **ORAL IN PERSON**
- 12:40            **LUNCH—BALLROOM 1&2**
- 12:40            **PAST PRESIDENTS & SUSTAINERS LUNCHEON (BY INVITATION)—EXECUTIVE DINING ROOM**
- 14:00            **ABERRATION CORRECTED SCANNING TRANSMISSION ELECTRON MICROSCOPY AND THE NATURE OF NANOPARTICLE SURFACES**  
**Kenneth JT Livi** **ORAL REMOTE**

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**BREAKOUT SESSION 23—ROOM CC-307**

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**General session**

*Yuji Arai and Joseph W. Stucki*

- 14:20            **THE PHYLLOSILICATE STRUCTURE: THE OCTAHEDRAL SHEET DIMENSION**  
**Sabine Petit**, Alain Decarreau, Brian Grégoire, and Eric Ferrage **ORAL-IN-PERSON**
- 14:40            **SLOVAK BENTONITE DEPOSITS – A BRIEF OVERVIEW**  
**Peter Uhlík**, Jaroslav Lexa, Adrián Biroň, Faisal A. Gread, Jana Brčeková, Marek Osacký, and Peter Koděra **ORAL IN PERSON**
- 15:00            **MEASURING ELECTRIC FIELD AND ELECTROSTATIC FORCES OF CLAY MINERALS: THE PRINCIPLES, METHODS, AND APPLICATIONS**  
**Qinyi Li**, Hang Li, and Xinmin Liu **ORAL IN PERSON**
- 15:20            **STANDARDIZATION OF CLAY NANOPATE PRODUCTS FOR BARRIER FILM APPLICATIONS**  
**Takeo Ebina**, Akira Ono, Hajime Yoshida, and Tetsuji Itoh **ORAL IN PERSON**
- 15:40            **BREAK—BALLROOM 1&2**
- 16:00            **RANDOM FORESTS FOR PHASE SELECTION IN X-RAY POWDER DIFFRACTION ANALYSIS OF MINERAL MIXTURES**  
**Barry R. Bickmore**, Rachel E. Drapeau, and Emily J. Evans **ORAL IN PERSON**
- 16:20            **ASSOCIATION RULES FOR IMPROVED QUANTITATIVE PHASE ANALYSIS**  
**Emily J. Evans** and Barry R. Bickmore **ORAL IN PERSON**
- 16:40            **ATR-FTIR SPECTROSCOPY AS A COMPANION TECHNIQUE TO RANDOM-MOUNT XRPD FOR DETERMINING CLAY MINERAL IDENTITIES AND PROPERTIES**  
**Aaron J. Chipman**, Barry R. Bickmore, and Joshua LeMonte **ORAL IN PERSON**
- 17:00            **STUDY OF TRANSMISSION ELECTRON MICROSCOPY OF ILLITE FROM YEONGDONG COUNTY, SOUTH KOREA: CANDIDATE FOR NEW ILLITE SOURCE CLAYS**  
Namgu Lee, Hanbeom Park, **Tae-hee Koo**, Kyungsoon Jung, Wansu Son, Hwa Jin Kim, Toshihiro Kogure, and Jinwook Kim **ORAL IN PERSON**
- 17:20            **COMPREHENSIVE SIMULATION AND ASSESSMENT OF SWELLING BEHAVIOR IN KOREAN BENTONITE BUFFER BLOCKS ACROSS DIVERSE INITIAL DRY DENSITY CONDITIONS**  
**Gyuhyun Go** **ORAL IN PERSON**

**BREAKOUT SESSION 5—ROOM CC-308****Mineral-organic matter interactions and their regulation of organic carbon stabilization in terrestrial and aquatic environments***Mengqiang Zhu, Chunmei Chen, Hailiang Dong, Yuanzhi Tang, and Balwant Singh*

- 10:00            **STABILIZATION OF ORGANIC CARBON IN TOP- AND SUBSOIL BY BIOCHAR APPLICATION INTO CALCAREOUS FARMLAND**  
**Yang Wang** and Jianying Shang **ORAL IN PERSON**
- 10:20            **THE ROLE OF EXTRACTABLE MINERALS ON MINERAL ASSOCIATED SOIL ORGANIC CARBON**  
**Bright E. Amenkhienan** **ORAL IN PERSON**
- 10:40            **BREAK—BALLROOM 1&2**
- 11:00            **ADSORPTION-DESORPTION OF DISSOLVED ORGANIC MATTER FROM DIFFERENT PLANT RESIDUES WITH DIFFERENT CLAY MINERALS**  
**Zongtang Yang**, Feike A. Dijkstra, Georg Guggenberger, and Balwant Singh **ORAL IN PERSON**
- 11:20            **MINERAL CATIONS MEDIATE FOREST SOC STORAGE IN RESPONSE TO N ADDITION THROUGH PLANT-ORGANO-MINERAL INTERACTIONS**  
**Xu Xia**, Xu Chonghua, A. Zhejiang, and F. University **ORAL REMOTE**
- 11:40            **MINERAL-OM INTERACTIONS AT THE MOLECULAR LEVEL: SELECTED KNOWLEDGE GAPS**  
**Markus Kleber** **ORAL IN PERSON**
- 12:00            **THE ORIENTATION OF GLYCEROL INTERCALATED IN SMECTITE AS A FUNCTION OF HUMIDITY**  
**Stanislav Jelavić**, Bruno Lanson, and Marek Szczerba **ORAL IN PERSON**
- 12:20            **APPARENT SATURATION OF SOIL MINERAL-ASSOCIATED ORGANIC CARBON IN THE UNITED STATES**  
Ryan E. Champiny, Katerina Georgiou, and **Yang Lin** **ORAL IN PERSON**
- 12:40            **LUNCH—BALLROOM 1&2**
- 14:00            **MINERALOGICAL CONTROLS ON CLIMATE AND OXYGENATION**  
**Caroline L. Peacock**, Lisa Curti, Oliver W. Moore, Ke-Qing Xiao, Peyman Babakhani, Mingyu Zhao, and Clare Woulds **ORAL REMOTE**
- 14:20            **SUBSTANTIAL AMOUNTS OF REACTIVE FE AND FE-ASSOCIATED ORGANIC CARBON IN COASTAL WETLAND SOILS AT GLOBAL SCALES**  
**Chunmei Chen** and Hua Ma **ORAL REMOTE**
- 14:40            **CONTROLS OF MINERAL SOLUBILITY ON ADSORPTION-INDUCED MOLECULAR FRACTIONATION OF DISSOLVED ORGANIC MATTER REVEALED BY 21 T FOURIER TRANSFORM ION CYCLOTRON RESONANCE MASS SPECTROMETRY**  
**Zhen Hu**, Amy M. McKenna, K. Wen, Bingjun Zhang, Hairuo Mao, Lamia Goual, Xionghan Feng, and Mengqiang Zhu **ORAL REMOTE**
- 15:00            **NANO- AND SUB-NANO SCALE INVESTIGATION ON ORGANIC CARBON DISTRIBUTION IN SOIL MINERALS**  
**Zhenqing Shi** **ORAL REMOTE**

- 15:20 MINERAL-ORGANIC ASSOCIATIONS INFLUENCE THE CAPACITY AND VULNERABILITY OF SOIL CARBON STORAGE  
**Katerina Georgiou** ORAL REMOTE
- 15:40 BREAK—BALLROOM 1&2
- 16:00 INCREASE OF HUMIC ACID BIOAVAILABILITY BY HYDROXYL RADICALS PRODUCED UPON OXYGENATION OF FE(II) IN REDUCED NONTRONITE  
**Qiang Zeng** and Hailiang Dong ORAL REMOTE
- 16:20 IMPORTANCE OF INNER-SPHERE P-O-FE BONDS IN MINERAL-ORGANIC ASSOCIATIONS OF A CREEK SEDIMENT  
**Karin Eusterhues**, Jürgen Thieme, Andreas Haidl, Heinrich Tost, Lars Lühl, Philipp Hönicke, Thomas Wilhein, Birgit Kanngießer, and Kai Uwe Totsche ORAL REMOTE
- 16:40 ASSESSING THE EFFECT OF MINERALS ON THE OXIDATION OF ORGANIC MATTER BY FENTON CHEMISTRY  
**Aleksandar I. Goranov**, Susan J. Carter, Ann Pearson, and Patrick G. Hatcher ORAL REMOTE
- 17:00 INTERACTION BETWEEN PHENOLIC CONTAMINANTS AND DISSOLVED ORGANIC MATTER DURING OXIDATION BY MANGANESE OXIDES  
**Matthew Ginder-Vogel**, Christina K. Remucal, and Jenna T. Swenson ORAL REMOTE
- 17:20 PHOTOCHEMICAL ALTERATIONS OF FE-ORGANIC MATTER COPRECIPITATES PROMOTED THE ORGANIC MATTER PRESERVATION OR DEGRADATION: ROLE OF ORGANIC MATTER FUNCTIONAL GROUPS  
Dawei Cai, **Yandi Hu**, and Suona Zhang ORAL IN PERSON

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## BREAKOUT SESSION 8—ROOM CC-309

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### Iron Redox Processes in Clays and Clay Minerals

*Joseph W. Stucki and Anke Neumann*

- 10:00 REDOX PROCESSES OF CLAY MINERAL-BOUND IRON  
**Anke Neumann** ORAL REMOTE
- 10:20 MULTI-SCALE ELECTRON TRANSFER PROCESSES ASSOCIATED WITH FE-BEARING CLAY MINERALS  
**Songhu Yuan**, Ao Qian, Wenjuan Liao, Xixiang Liu, and Yanting Zhang ORAL IN PERSON
- 10:40 BREAK—BALLROOM 1&2
- 11:00 MOLECULAR H<sub>2</sub> GENERATION VIA OXIDATIVE DEHYDROGENATION IN FE(II)-PHYLLOSILICATES AND THEIR H ISOTOPE SIGNATURE  
**Arkadiusz Derkowski** ORAL IN PERSON
- 11:20 THE CRITICAL ROLE OF MINERAL FE(IV) FORMATION IN LOW HYDROXYL RADICAL YIELDS DURING FE(II)-BEARING CLAY MINERAL OXYGENATION  
**Chenglong Yu**, Wenden Ji, and Shenyang Pu ORAL IN PERSON
- 11:40 FORMATION OF FE- AND MG-RICH 1:1 PHYLLOSILICATES: INFLUENCE OF PH  
Alexandra Jourdain, Patrick Dutournié, Laure Michelin, Jean-Marc Le Meins, Amira Doggaz, Sayako Inoué, Mustapha Abdelmoula, Jocelyne Brendlé, Nicolas Michau, Christelle Martin, and **Liva Dzene** ORAL IN PERSON

- 12:00      **MICROBE AND MINERAL INTERACTION DURING FREEZE-THAW CYCLES**  
**Jinwook Kim**, Young Kyu Park, Tae-hee Koo, Jaewoo Jung, Hanbeom Park, Kitae Kim, Kyu-Cheul Yoo, Brad E. Rosenheim, and Tim M. Conway **ORAL IN PERSON**
- 12:20      **MICROBIAL REDUCTION OF FE(III) IN NONTRONITE: ROLE OF BIOCHAR AS A REDOX MEDIATOR**  
**Hailiang Dong**, Ethan S. Coffin, and Yizhi Sheng **ORAL IN PERSON**
- 12:40      **LUNCH—BALLROOM 1&2**
- 14:00      **FORMATION OF MIXED STRUCTURES OF 2:1 TYPE PHYLLOSILICATES AND LEPIDOCROCITE ( $\Gamma$ -FEOOH) IN PADDY SOIL**  
**Toshihiro Kogure**, Satoh Sakura, Yoshio Takahashi, Yoko Masuda, and Keishi Senoo **ORAL IN PERSON**
- 14:20      **FE(II)-PILLARED MONTMORILLONITE**  
**Joseph W. Stucki**, Martin P. Pentrak, and Linda A. Pentrak **ORAL IN PERSON**

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## **BREAKOUT SESSION 2—ROOM CC-308**

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### **Sediment transport mechanics, morphologic expressions, depositional patterns, and climate impacts of clay-rich dispersal systems**

*Judy Yang, Hongbo Ma, and Ian Bourg*

- 15:00      **QUANTITATIVE X-RAY DIFFRACTION ANALYSIS OF CLAY MINERALS IN MINING APPLICATIONS**  
**Rong Fan**, Mark D. Raven, Nathan A.S Webster, Nicholas D. Owen, Peter G Self, Rodrigo Gomez-Camacho, and Shu Huang **ORAL IN PERSON**
- 15:20      **PEDOGENIC-WEATHERING EVOLUTION AND SOIL DISCRIMINATION BY SENSOR FUSION COMBINED WITH MACHINE-LEARNING-BASED SPECTRAL MODELING**  
**Lulu Zhao**, Hanlie Hong, and Qian Fang **ORAL IN PERSON**
- 15:40      **BREAK—BALLROOM 1&2**
- 16:00      **IMPACT OF SALINITY ON THE EROSION THRESHOLD, YIELD STRESS, AND GELATINOUS STATE OF A COHESIVE CLAY**  
Jorge San Juan, Guanju Wei, and **Judy Yang** **ORAL IN PERSON**
- 16:20      **DIFFERENCES IN TRANSPORT REGIMES BETWEEN SILT-RICH BEDDED AND SAND-BEDDED RIVER SYSTEMS**  
**Hongbo Ma** **ORAL IN PERSON**
- 16:40      **DO MICROBES SHAPE LANDSCAPES? BIOPOLYMERS, CLAYS, AND CRUSTS IN MARS ANALOG ENVIRONMENTS**  
**Natalie A. Jones**, Kayla P. Blair, Embrey G. Saville, Keven S. Griffin, Elizabeth B. Rampe, Lauren A. Edgar, Kristen A. Bennett, Christopher S. Edwards, and Alicia M. Rutledge **ORAL IN PERSON**
- 17:00      **MICROPLASTIC PARTICLES IN CLAY-SAND SEDIMENT MIXTURES: UNVEILING THEIR CONTRIBUTION TO EROSION**  
**M. Ponce**, S. Wieprecht, and S. Haun **ORAL IN PERSON**

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**BREAKOUT SESSION 14—ROOM CC-310**

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**Clay-related low dimensional nanoarchitectonics for enhanced electrical and optical properties**

*Yusuke Ide, Miharuru Eguchi, and Yusuke Yamauchi*

- 10:00            **END-TO-END PIERCED CARBON NANOSHEETS WITH MESO-HOLES DERIVED FROM MONTMORILLONITE CLAY**  
**Minjun Kim**, Miharuru Eguchi, and Yusuke Yamauchi **ORAL REMOTE**
- 10:20            **SAPONITE CLAY NANOSHEETS FOR PROTEIN ADSORPTION**  
**Yusuf Valentino Kaneti**, Ping Cheng, Yusuke Yamauchi, and Miharuru Eguchi **ORAL IN PERSON**
- 10:40            **BREAK—BALLROOM 1&2**
- 11:00            **CORRELATION BETWEEN SYNTHETIC TEMPERATURE AND CATION-EXCHANGE PROPERTY OF A LAYERED LITHIUM POTASSIUM TITANATE**  
**Kanji Saito**, Shuhei Yamagauchi, Makoto Ogawa, Masataka Ogasawara, and Sumio Kato **ORAL REMOTE**
- 11:20            **FORMATION OF MOTH-EYE-LIKE STRUCTURES ON SILICON THROUGH IN SITU CRYSTALLIZATION OF HECTORITE-LIKE LAYERED SILICATE**  
Nakauchi Yuki and **Tomohiko Okada** **ORAL IN PERSON**
- 11:40            **2D-TO-1D CONVERSION OF LAYERED TITANATES**  
Esraa Moustafa, Mohamed Esmat, Rafat Tahawy, and **Yusuke Ide** **ORAL IN PERSON**
- 12:00            **LAYERED INORGANIC–ORGANIC COVALENTLY BONDED HYBRID/RU-BASED METALLO-SUPRAMOLECULAR POLYMER COMPOSITE FOR IMPROVED ELECTROCHROMIC PROPERTIES**  
**Kazuko Fujii**, Dines C. Santra, Manas K. Bera, Takatsugu Wakahara, Ritsuko Nagahata, and Masayoshi Higuchi **ORAL IN PERSON**
- 12:20            **MXENES VS. CLAY MINERALS: 2D SOLIDS FOR THE DEVELOPMENT OF HYBRID MATERIALS AND NANOCOMPOSITES**  
**Eduardo Ruiz-Hitzky**, Cristina Ruiz-García, and Xiaoying Wang **ORAL IN PERSON**
- 12:40            **LUNCH—BALLROOM 1&2**
- 12:40            **PAST PRESIDENTS & SUSTAINERS LUNCHEON (BY INVITATION)—EXECUTIVE DINING ROOM**
- 14:00            **CATALYST DESIGN USING LAYERED SILICATES HUSs**  
**Tsunoji Nao** and Sadakane Masahiro **ORAL REMOTE**
- 14:20            **STABILIZATION OF IRON OXO OLIGOMERS IN SMECTITE CLAY-DERIVED SILICA GELS**  
**Hamza El-Hosainy** and Yusuke Ide **ORAL REMOTE**



**BREAKOUT SESSION 10—ROOM CC-310****Functional soft materials from clays and related compounds Topics: Colloids, Nanocomposite gels and plastics, Self-assembly, Soft materials***Nobuyoshi Miyamoto, Yasutaka Suzuki, and Fengxia Geng*

- 14:40            **CONTROL OF ADSORPTION REACTION OF AN ORGANIC COMPOUND TO SMECTITE BY OPTICAL MANIPULATION TECHNIQUE**  
**Yasutaka Suzuki**, Takumi Harada, Masahiro Yahara, Seiji Tani, and Jun Kawamata **ORAL IN PERSON**
- 15:00            **OPTICAL MANIPULATION AND MICROSCOPE OBSERVATION OF DELAMINATED CLAY LAYERS DISPERSED IN WATER**  
**Jun Kawamata**, Takumi Harada, Mahito Shintaku, Toshiaki Iwai, and Yasutaka Suzuki **ORAL IN PERSON**
- 15:20            **DYNAMIC SELF-ASSEMBLY OF MONODISPERSE NANOSHEETS**  
**Nobuyoshi Miyamoto**, Naoya Nonaka, Hiroyuki Iwano, Matsuo Takumi, Yasushi Okumura, and Hirotsugu Kikuchi **ORAL IN PERSON**
- 15:40            **BREAK—BALLROOM 1&2**
- 16:00            **SPECTROSCOPIC BEHAVIOR OF AN ANIONIC PORPHYRIN INFLUENCED BY COLLOIDAL CLAY PARTICLES**  
**Teruyuki Nakato**, Rio Sonoyama, and Emiko Mouri **ORAL IN PERSON**
- 16:20            **UV PROTECTIVE CLAY FILM WITH TUNABLE GAS/MOISTURE TRANSPARENCY CONSISTING OF LIGNIN, A PLANT AROMATIC POLYMER**  
**Kazuhiro Shikinaka** and Yuichiro Otsuka **ORAL REMOTE**
- 16:40            **IONIC CONDUCTIVITY OF ION DEFECT INTRODUCED LAYERED DOUBLE HYDROXIDE**  
**Noriyuki Sonoyama**, Hirohito Kasuya, Syunsuke Uchimura, and Genki Yamaguchi **ORAL REMOTE**
- 17:40            **CCM EDITORIAL BOARD MEETING— EXECUTIVE DINING ROOM**

**JUNE 5**8:00-12:00      **COFFEE & DANISH—BALLROOM 1&2****PLENARY— BALLROOM 3**

- 9:00            **INTRODUCTION OF ERIC FERRAGE, RECIPIENT OF THE MARION L. AND CHRYSTIE M. JACKSON MID-CAREER CLAY SCIENTIST AWARD**  
**Sabine Petit**
- 9:05            **WATER AT CLAY INTERFACES: STRUCTURE, DYNAMICS, AND UPSCALING STRATEGIES**  
**Eric Ferrage**

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## BREAKOUT SESSION 17—BALLROOM 3

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### Scientific and engineering aspects of clays in nuclear waste disposal

*Jeffery Greathouse, Patricia Fox, Tsutomu Sato, Satoru Suzuki, and Cristophe Tournassat*

- 10:00            **STUDY THE EVOLUTION OF BENTONITE BUFFER UNDER HIGH TEMPERATURE HEATING USING LARGE SCALE FIELD TEST AND THE CORRESPONDING MODELING**  
**Liange Zheng** and Radhavi A. Samarakoon **ORAL REMOTE**
- 10:20            **PHYSICAL DEFORMATION OF ROCHESTER SHALE AND OPALINUS CLAY— IMPACTS ON ISOTOPIC SIGNATURES OF CLAY MINERALS**  
**Horst Zwingmann**, Alfons Berger, Andrew Todd, Niwa Masakazu, and Meinert Rahn **ORAL REMOTE**
- 10:40            **BREAK—BALLROOM 1&2**
- 11:00            **PHYSICAL ADSORPTION OF OH<sup>-</sup> IONS CAUSES CHARGING AT MINERAL-WATER INTERFACE**  
**Xiandong Liu** **ORAL REMOTE**
- 11:20            **EXPERIMENTAL DETERMINATION OF PR(III) SORPTION ONTO SAPONITE AND CA-RICH MONTMORILLONITE TO 700C**  
**Yongliang Xiong**, Yifeng Wang, and Vanessa Mercado **ORAL IN PERSON**
- 11:40            **EFFECT OF CS<sup>+</sup> ON TRANSFORMATION OF SMECTITE TO ILLITE (ILLITIZATION)**  
**Amanda C. Sanchez**, Melissa M. Mills, Lydia Boisvert, Clay B. Payne, Tuan A. Ho, and Yifeng Wang **ORAL IN PERSON**
- 12:00            **ADSORPTION OF IODINE ANIONS BY CHRYSOTILE AND HALLOYSITE: THE EFFECT OF NANOPORE STRUCTURE**  
**Wenbin Yu**, Quan Wan, and Zonghua Qin **ORAL IN PERSON**
- 12:20            **CONFERENCE BANQUET LUNCH—BALLROOM 1&2**
- 12:40            **LUNCH—BALLROOM 1&2**
- 14:00            **IRON/BENTONITE INTERACTION—WHAT CAN WE LEARN FROM EUDIOMETER TESTS?**  
**Stephan Kaufhold** **ORAL IN PERSON**
- 14:20            **RESEARCH STATUS ON DEVELOPMENT OF HIGH-PERFORMANCE BENTONITE BUFFER MATERIALS**  
**Seok Yoon**, Gi-Jun Lee, Deuk-Hwan Lee, Min-Hyung Lee, and Seeun Chang **ORAL IN PERSON**
- 14:40            **BENCH-SCALE COLUMN TESTS ON BENTONITE BUFFER AND COUPLED THMC PROCESSES FOR GEOLOGIC DISPOSAL OF HIGH-LEVEL RADIOACTIVE WASTE**  
**Chun Chang**, Sharon Borglin, Chunwei Chou, Liange Zheng, Yuxin Wu, Timothy J. Kneafsey, Seiji Nakagawa, Toshiyuki Bandai, and Jens T Birkholzer **ORAL IN PERSON**
- 15:00            **EVALUATION OF NOVEL MATERIALS FOR ANIONIC SORPTION**  
**Jessica Kruichak-Duhigg**, Nelson Bell, Jeffery Greathouse, Philippe Weck, Ben Juba, Mark Rodriguez, Edward Matteo, and Yifeng Wang **ORAL IN PERSON**

- 15:40            **BREAK—BALLROOM 1&2**
- 16:00            **CHEMICAL AND HYDRATION TIME CONTROLS ON MICROSTRUCTURE AND SWELLING PRESSURE OF COMPACTED MONTMORILLONITE**  
**Wenming Dong**, Carl I. Steefel, Christophe Tournassat, Ayumi Koishi, Michael Whittaker, Benjamin Gilbert, Chenhui Zhu, Yunfei Wang, Stéphane Gaboreau, and Liange Zheng **ORAL IN PERSON**
- 16:20            **SWELLING PRESSURE BEHAVIOR OF COMPACTED BENTONITE UPON WETTING WITH VARIOUS SALINE SOLUTIONS**  
**Marcelo Sanchez**, Roa'a Al-Masri, Camilo Sanchez, Jeffery Greathouse, Youjun Deng, and Leonardo Guimaraes **ORAL IN PERSON**
- 16:40            **EFFECT OF PORE FLUIDS, EXCHANGEABLE CATION, AND TEMPERATURE ON THE SWELLING PROPERTIES OF BENTONITE**  
**Camilo Sanchez-Avellaneda**, Roa'a Al-Masri, Jeffery Greathouse, Edward Matteo, Youjun Deng, and Marcelo Sanchez **ORAL IN PERSON**
- 17:00            **FULL PORE SIZE DISTRIBUTION OF SHALE BY COMBINATION OF INNOVATIVE GAS ADSORPTION ISOTHERMS, MERCURY INTRUSION POROSIMETRY AND LABORATORY NANO-X RAY TOMOGRAPHY**  
**D. Pret**, Evarist S. Rogers, A. Mazurier, M. Faivre, and R. Giot **ORAL IN PERSON**
- 17:20            **MICROSTRUCTURAL EVOLUTION OF BINARY BENTONITE BARRIERS DURING SATURATION**  
**M. Victoria Villar**, Rubén J. Iglesias, Carlos Gutiérrez-Álvarez, Elena Real, and Luis Gutiérrez-Nebot **ORAL REMOTE**

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## **BREAKOUT SESSION 15—ROOM CC-307**

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### **Clay minerals in building materials**

*Ana Guerrero, Yunfei Xi, and Pilar Aranda*

- 10:00            **STRENGTH IMPROVEMENT OF STEEL-SLAG DREDGED SOIL MIXTURES BY SOIL ORGANIC MATTER REMOVAL WITH CALCINATION**  
**Kanako Toda**, Takumi Saito, Yuzo Akashi, and Tsutomu Sato **ORAL IN PERSON**
- 10:20            **EXPLORING THE USE OF MICA IN TRIBOELECTRIC NANOGENERATORS FOR BUILDING APPLICATIONS**  
David Jiménez-Merino, Maxim Ivanov, Harvey Amorín, Bernd Wicklein, and **Pilar Aranda** **ORAL IN PERSON**
- 10:40            **BREAK—BALLROOM 1&2**
- 11:00            **LIGHTWEIGHT GYPSUM BOARD WITH CLAY MINERAL AND GLASS FIBRE ADDITION TO ENHANCE FIRE RESISTANCE**  
**Sen Wang**, Mahen Mahendran, and Yunfei Xi **ORAL IN PERSON**
- 11:20            **CRITICAL EFFECTS OF KAOLINITE/ILLITE ON COMPRESSIVE STRENGTH OF FIRED BRICKS**  
Sen Wang, Lloyd Gainey, and **Yunfei Xi** **ORAL IN PERSON**

- 11:40            **LOW EMBODIED CARBON CEMENT BLENDS FROM AUSTRALIAN CLAY MINERAL RESOURCES**  
**Will P. Gates**, Prateek Sharma, Rehman Munib Ul, Oluwatosin Babatola, Alastair J.N. MacLeod, Chathuranga Gallage, Laurie P. Aldridge, and Frank Collins **ORAL REMOTE**
- 12:20            **CONFERENCE BANQUET LUNCH—BALLROOM 1&2**

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**BREAKOUT SESSION 7—ROOM CC-307**

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**Geochemical behaviors and mineralization of rare earth elements in near surface settings**

*Hongping He, W. Crawford Elliott, Yoshio Takahashi, Yuanzhi Tang, and Xiaoliang Liang*

- 14:00            **ENRICHMENT AND FRACTIONATION OF RARE EARTH ELEMENTS (REES) IN ION-ADSORPTION-TYPE REE DEPOSITS: CONSTRAINTS OF AN IRON (HYDR) OXIDE-CLAY MINERAL COMPOSITE**  
Puqiu Wu and **Xiaoliang Liang** **ORAL IN PERSON**
- 14:20            **EVALUATION OF CLAYS AND CLAY-RICH SEDIMENTS IN THE SOUTHEASTERN UNITED STATES AS POTENTIAL RARE EARTH ELEMENT LITHIUM FEEDSTOCK MATERIALS**  
**Ibrahim G. Okunlola** and Rona J. Donahoe **ORAL IN PERSON**
- 14:40            **ADSORPTION OF RARE EARTH ELEMENTS ON DISTINCT PLANES OF KAOLINITE**  
**Gaofeng Wang**, Lingyu Ran, Xiaoliang Liang, Jianxi Zhu, and Hongping He **ORAL IN PERSON**
- 15:00            **REE DISTRIBUTION IN GNEISSIC REGOLITHS OF THE SOUTH CAROLINA PIEDMONT: EVIDENCE FOR CERIUM AND EUROPIUM REDOX MOBILITY IN THE CRITICAL ZONE**  
**Paul A. Schroeder** **ORAL IN PERSON**
- 15:20            **RARE EARTH ELEMENTS IN THE GEORGIA KAOLIN DEPOSITS**  
**W. Crawford Elliott**, Yuanzhi Tang, Joell Ashcraft, Prakash Malla, and Ed Riley **ORAL IN PERSON**
- 15:40            **BREAK—BALLROOM 1&2**
- 16:00            **EFFECTS OF PHOSPHATE ON RARE EARTH ELEMENT (REE) UPTAKE BY KAOLINITE**  
Hang Xu, Johannes Leisen, Alicia Robang, Anant Paravastu, Yinghao Wen, and **Yuanzhi Tang** **ORAL IN PERSON**
- 16:20            **CRITICAL MINERALS IN COLD-CLIMATE CLAYS: REGOLITH-HOSTED RARE EARTH ELEMENTS IN POLAR DESERT BASINS (DRY VALLEYS, ANTARCTICA)**  
**Zachary F. M. Burton**, Janice L. Bishop, Christian Koeberl, Peter A.J. Englert, Andrew B. Foerder, and Everett K. Gibson **ORAL REMOTE**

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**BREAKOUT SESSION 21—ROOM CC-308**


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**Characterization of Phyllosilicates and Their Mineral Assemblages in Asteroids and Meteorites**

*Marco Ferrari, Toru Yada, Damien Loizeau, Slavka Andrejkovicová, and Janice Bishop*

- 10:00            **IMPORTANCE OF INFRARED SPECTROSCOPY ON SAMPLES RETURNED FROM EXTRATERRESTRIAL BODIES AS THEIR INITIAL DESCRIPTIONS**  
**T. Yada** et al. **ORAL IN PERSON**
- 10:20            **MULTI-TECHNIQUE STUDY OF THE COEVOLUTION OF PHYLLOSILICATE, CARBON, SULFIDE, AND APATITE IN RYUGU'S PARENT BODY**  
**Gerardo Dominguez** et al. **ORAL IN PERSON**
- 10:40            **BREAK—BALLROOM 1&2**
- 11:00            **CHARACTERIZATION OF NH<sub>4</sub><sup>+</sup>-SMECTITES TO SUPPORT THEIR DETECTION ON CERES AND OTHER BODIES**  
**Janice L. Bishop**, Slavka Andrejkovičová, Alessandro Maturilli, Kierra Wilk, Helena Pálková, and Fernando Rocha **ORAL IN PERSON**

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**BREAKOUT SESSION 20—ROOM CC-308**


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**Investigation of Phyllosilicates on Mars through Remote Sensing, Rover Instruments, and Analog Studies.**

*Janice Bishop and Joseph Michalski*

- 11:40            **HYDROLYSIS PRODUCTS OF FE(III)-SI SYSTEMS WITH DIFFERENT SI/(SI+FE) MOLAR RATIOS: IMPLICATIONS TO DETECTION OF FERRIHYDRITE ON MARS**  
**Peixin Du**, Xinyi Xiang, Binlong Ye, Hongling Bu, Dong Liu, Jiacheng Liu, Jian Hua, and Xiaolong Guo **ORAL IN PERSON**
- 12:00            **SEARCH FOR POSSIBLE AMMONIUM-SMECTITES, IMPLICATIONS FROM CURIOSITY ROVER ON MARS**  
**Slavka Andrejkovičová**, Amy McAdam, Jennifer Stern, Christine Knudson, Maëva Millan, Fernando Rocha, and Paul Mahaffy **ORAL IN PERSON**
- 12:20            **CONFERENCE BANQUET LUNCH—BALLROOM 1&2**
- 14:00            **ALTERATION OF SUBAERIAL VOLCANICLASTICS COMPRISING BASALTIC LITHICS AND DACITIC ASH IN SUBAQUEOUS ENVIRONMENTS IN THE SOUTHERN WASHINGTON STATE**  
**Rui-Lin Cheng**, Joseph R. Michalski, and Martin Jutzeler **ORAL IN PERSON**
- 14:20            **MARS LABORATORY ANALOG SEDIMENT FLOWS: INVESTIGATING THE EFFECTS OF PRESSURE AND WATER-ROCK RATIO**  
**Sharissa Y. Thompson**, Frances Rivera-Hernández, Jacob B. Adler, Matthew E. Sylvest, Petr Brož, and Manish Patel **ORAL IN PERSON**
- 14:40            **COMPLEX PHYLLOSILICATE - SULFATE ASSEMBLAGES AT MAWRTH VALLIS AS INDICATORS OF THE ANCIENT CLIMATE ON MARS**  
**Janice L. Bishop**, Mario Parente, Arun M. Saranathan, Christoph Gross, Yuki Itoh, and Megan E. Elwood Madden **ORAL IN PERSON**

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## BREAKOUT SESSION 22—ROOM CC-308

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### Remote Identification of Phyllosilicates for Critical Metals Exploration and Resource Characterization.

*Carsten Laukamp, Ian Lau, Rui Wang, and Janice Bishop*

- 15:00 PRELIMINARY RESULTS OF USING NEAR-INFRARED SPECTROSCOPY FOR SMECTITE QUANTIFICATION IN NATURAL MIXTURE  
**Faisal A. Gread**, Peter Uhlík, and Ángel Santamaría-López **ORAL IN PERSON**
- 15:20 GEOSCIENCE FEATURE-GUIDED BAND MATH APPROACH FOR EMIT AND ENMAP HYPERSPECTRAL SATELLITE IMAGERY  
**A. Jo Miles**, Carsten Laukamp, Heta Lampinen, and Ian Lau **ORAL IN PERSON**
- 15:40 BREAK—BALLROOM 1&2
- 16:00 USING AIRBORNE AND ORBITAL IMAGING SPECTROSCOPY TO DIFFERENTIATE LITHIUM BEARING HECTORITE FROM SPECTRALLY SIMILAR PHYLLOSILICATES AND CARBONATES  
**John M. Meyer**, Gregg A. Swayze, Raymond F. Kokaly, Lisa L. Stillings, Todd M. Hoefen, and Evan Cox **ORAL IN PERSON**
- 16:20 REGIONAL-SCALE MAPPING OF PHYLLOSILICATES USING THE NEW GENERATION OF VNIR-SWIR HYPERSPECTRAL SATELLITE SENSORS  
**Carsten Laukamp**, Ian C. Lau, Heta M. Lampinen, M. Williams, and Fang Huang **ORAL IN PERSON**
- 16:40 DISCUSSION

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## BREAKOUT SESSION 16—ROOM CC-309

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### Clays and clay minerals for carbon dioxide removal in negative emission technologies

*Tsutomu Sato, Takao Nakagaki, Yuji Arai, and Corey Myers*

- 10:00 NANO-CONFINEMENT EFFECT ON H<sub>2</sub> AND CO<sub>2</sub> CLUSTER FORMATION  
**Tuan A. Ho** and Aditya Choudhary **ORAL IN PERSON**
- 10:20 EFFICIENCY AND FACTORS AFFECTING BASE PROPERTIES OF SMECTITE-DERIVED POROUS COMPOSITES  
**Małgorzata Zimowska**, Michał Śliwa, Helena Pálková, Jacek Gurgul, Robert P. Socha, Piotr Niemiec, and Eva Scholtzova **ORAL IN PERSON**
- 10:40 BREAK—BALLROOM 1&2
- 11:00 THE VITAL ROLE OF CLAYS DURING GEOLOGIC CARBON SEQUESTRATION IN BASALT RESERVOIRS  
**Nabajit Lahiri**, Quin R.S. Miller, Emily T. Nienhuis, and H. Todd Schaef **ORAL IN PERSON**
- 11:20 CLAY-MEDIATED RAPID CARBON MINERALIZATION DYNAMICS IN BASALTS: INSIGHTS FROM WALLULA PILOT PROJECT  
**Tianxiao Shen**, Shaina A. Kelly, Quin R.S. Miller, Nabajit Lahiri, Olivia Terry, and H. Todd Schaef **ORAL IN PERSON**

- 11:40      **CONSTRAINING THE ROLE OF AUTHIGENIC MAGNESIUM RICH CLAYS ON CARBONATE PRECIPITATION IN ALKALINE LACUSTRINE ENVIRONMENTS**  
**Maria L. Arizaleta**, Maija J. Raudsepp, Nina Zeyen, Janice Kenney, and Sasha Wilson **ORAL IN PERSON**
- 12:00      **MG CARBONATE HYDRATE FORMATION IN ENHANCED WEATHERING EXPERIMENTS USING MGO**  
**Yuto Nishiki**, Masao Sorai, and Naoki Nishiyama **ORAL IN PERSON**
- 12:20      **CONFERENCE BANQUET LUNCH—BALLROOM 1&2**
- 14:00      **PREDICTION METHOD FOR QUANTIFICATION OF CO<sub>2</sub> MINERALIZATION BY GAS-SOLID CONTACTOR USED AS INDUSTRIAL ENHANCED ROCK WEATHERING**  
**Takao Nakagaki** and Yudai Takase **ORAL REMOTE**
- 14:20      **APPLICATION OF ENHANCED ROCK WEATHERING IN ACID MINE DRAINAGE WITH ITS PASSIVE TREATMENT**  
**Htut San Hkaung**, Nono Kimotsuki, Naito Yamashita, Fugo Nakamura, Frances Chikanda, Ryosuke Kikuchi, Yoko Ohtomo, Tsubasa Otake, and Tsutomu Sato **ORAL REMOTE**
- 14:40      **APPLICABILITY OF STEELMAKING SLAGS IN CARBON DIOXIDE REMOVAL FROM ATMOSPHERE BY THEIR ENHANCED WEATHERING**  
**Nono Kimotsuki**, Naito Yamashita, Htut San Hkaung, Ryosuke Kikuchi, Yoko Ohtomo, Tsubasa Otake, and Tsutomu Sato **ORAL IN PERSON**
- 15:00      **THE IMPACT OF ONE YEAR BASALT POWDER APPLICATION ON SOYBEAN GROWTH AND SOIL CARBON IN A FIELD IN HOKKAIDO, JAPAN**  
**Hiroshi Uchibayashi**, Ayaka Wakao, Yilin Yang, Gen Kosaka, Yan Zhu, Mona Hironaka, Yo Toma, Shoichiro Hamamoto, Tsutomu Sato, Atsushi Nakao, Hayato Maruyama, Toshihiro Watanabe, and Takuro Shinano **ORAL IN PERSON**
- 15:20      **BASIC STUDY ON ANION EXCHANGE PROPERTIES AND ALGAE GROWTH OF POROUS CONCRETE CONTAINING LAYERED DOUBLE HYDROXIDES IN SEAWATER**  
**Satoko Tezuka**, Rinako Shimada, and Minami Aikyo **ORAL IN PERSON**

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### **BREAKOUT SESSION 3—ROOM CC-310**

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#### **Natural Hazards and Clays: How determining/understanding their physicochemical properties can aid in modeling and mitigation efforts**

*Hiroshi Sakuma and Diane Moore*

- 10:00      **ROLES OF CLAY MINERALS IN SEISMOGENESIS IN SHALLOW SUBDUCTION ZONES INVESTIGATED BY LABORATORY FRICTION EXPERIMENTS**  
**Hanaya Okuda** **ORAL IN PERSON**
- 10:20      **NATURAL AND EXPERIMENTAL SEISMIC SLIP ON CLAY GOUGE: IN THE CASE OF THE TAIWAN CHELUNGPU FAULT DRILLING PROJECT**  
**Li-Wei Kuo**, Thi Trinh Nguyen, Szu-Ting Kuo, Wen-Jie Wu, and Hsiu-Ching Hsiao **ORAL IN PERSON**

- 10:40            **BREAK—BALLROOM 1&2**
- 11:00            **TEMPERATURE DEPENDENT FRICTIONAL PROPERTIES OF SINGLE-CRYSTAL MUSCOVITE**  
**Hiroshi Sakuma**, Diane Moore, David Lockner, and Toshihiro Kogure **ORAL IN PERSON**
- 11:20            **MINERALOGY AND PHYSICAL PROPERTIES OF CORE FROM SERPENTINITE MUD VOLCANOES, NORTHERN MARIANA SUBDUCTION ZONE**  
**Diane E. Moore**, Carolyn A. Morrow, David A. Lockner, and Barbara A. Bekins **ORAL IN PERSON**
- 12:20            **CONFERENCE BANQUET LUNCH—BALLROOM 1&2**

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**BREAKOUT SESSION 1—ROOM CC-310**

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**Role of Clays in Contaminant Fate and Transport**

*Marcus Flury, Jianying Shang, Maximilien Mathian, and Yingxue Yu*

- 14:00            **IMPACT OF COUPLED PHYSICAL AND CHEMICAL HETEROGENEITY ON COLLOIDAL TRANSPORT IN UNSATURATED POROUS MEDIA**  
**Jianying Shang** and Kang Zhao **ORAL REMOTE**
- 14:20            **A MODEL TO PREDICT THE INFLUENCE OF PHYSICOCHEMICAL CONDITIONS ON COLLOID TRANSPORT AND RETENTION IN POROUS MEDIA**  
**Scott A. Bradford** **ORAL IN PERSON**
- 14:40            **THE ROLE OF THE AIR-WATER INTERFACE ON COLLOID TRANSPORT IN THE VADOSE ZONE**  
**Markus Flury** **ORAL IN PERSON**
- 15:00            **AGGREGATION KINETICS AND STABILITY OF BIODEGRADABLE NANOPLASTICS: EFFECTS OF WEATHERING AND PROTEINS**  
**Yingxue Yu** and Markus Flury **ORAL IN PERSON**
- 15:20            **THE ROLES OF •OH AND MINERAL FE(IV) FOR PHENOL DEGRADATION DURING FE(II)-BEARING CLAY MINERAL OXYGENATION**  
**Pu Shenyang**, Chenglong Yua, and Wenden Jia **ORAL IN PERSON**
- 15:40            **BREAK—BALLROOM 1&2**
- 16:00            **FATE AND TRANSPORT OF VIRAL PATHOGENS THROUGH CLAYS**  
Himanshu Yadav, Deepa Mehta, **Tadikonda Venkata Bharat**, and Sachin Kumar **ORAL IN PERSON**



**JUNE 6**

8:00-9:00 COFFEE &amp; DANISH—BALLROOM 1&amp;2

**BALLROOM 3**

9:00 CMS BUSINESS MEETING

**BREAKOUT SESSION 17—BALLROOM 3****Scientific and engineering aspects of clays in nuclear waste disposal***Jeffery Greathouse, Patricia Fox, Tsutomu Sato, Satoru Suzuki, and Cristophe Tournassat*

- 10:00 **SWELLING CLAYS AND THE NUCLEAR 137-CS THREAT**  
**Michal Skiba**, Sylwester Smoleń, Katarzyna Maj-Szeliga, Marek Szczerba, and Ryosuke Kikuchi **ORAL IN PERSON**
- 10:20 **TEMPERATURE EFFECTS ON URANIUM ADSORPTION TO MONTMORILLONITE**  
**Jasmine K. Rattanpal**, Ben Urick, Christophe Tournassat, and Ruth M. Tinnacher **ORAL IN PERSON**
- 10:40 **BREAK—BALLROOM 1&2**
- 11:00 **THE ROLE OF MINERAL IMPURITIES FOR THE ADSORPTION OF URANIUM(VI) ONTO BENTONITE**  
**Ruth M. Tinnacher**, LaQuynh Diem, Kanishka Fnu, Patricia M. Fox, Edward Pizzini, Marlena Rock, Kirsten Sauer, Florie Caporuscio, and Christoph Tournassat **ORAL IN PERSON**
- 11:20 **STUDY OF MICROBIAL VIABILITY IN KUNIGEL V1Å BENTONITE AND IMPACT ON THE METAL CORROSION**  
**Satoru Suzuki**, Takahiro Goto, Toru Nagaoka, Shin-ichi Hirano, and Yoshito Kitagawa **ORAL IN PERSON**
- 11:40 **TRACKING SUBTLE MINERALOGICAL CHANGES IN THE BUFFER MATERIALS TO MODEL THEIR LONG-TERM ALTERATIONS IN NUCLEAR WASTE REPOSITORIES** **Arkadiusz Derkowski** and The ClayLab Team **ORAL IN PERSON**
- 12:00 **THERMO-HYDRO-MECHANICAL BEHAVIOR OF A CLAY-PELLETS MIXTURE INTENDED FOR BARRIER SYSTEMS**  
Abdulvahi Sahin and **Marcel Sanchez** **ORAL IN PERSON**

**BREAKOUT SESSION 19—BALLROOM 3****Molecular Simulation of Clay Minerals and Related Phases***Ian C. Bourg, Kideok D. Kwon, and Christophe Tournassat*

- 12:20 **DISJOINING PRESSURE IN ADSORBED WATER FILMS ON SMECTITE CLAY PARTICLES**  
**Xiaochan Li** and Ian C. Bourg **ORAL IN PERSON**

- 12:40 LUNCH—BALLROOM 1&2
- 14:00 QUANTIFYING THERMO-OSMOTIC FLOW MECHANISMS IN NA-MONTMORILLONITE NANOPORES USING MOLECULAR DYNAMICS SIMULATIONS  
**Jackson C. Stewart** ORAL IN PERSON
- 14:20 INTERLAYER WATER STRUCTURES AND FRICTIONAL PROPERTIES OF SUPER-HYDRATED KAOLINITE AND TALC  
**Juhyeok Kim** and Kideok D, Kwon ORAL IN PERSON
- 14:40 EFFECT OF LAYER BENDING ON MONTMORILLONITE HYDRATION AND STRUCTURE FROM MOLECULAR SIMULATION  
**Jeffery A. Greathouse**, Tuan A. Ho, and Carlos F. Jové-Colón ORAL IN PERSON
- 15:00 CHARGING THE MINERAL/WATER INTERFACE: MOLECULAR DYNAMICS SIMULATIONS OF THE ELECTRIC DOUBLE LAYER UNDER APPLIED ELECTRIC FIELDS  
**Thomas R. Underwood**, Sebastien N. Kerisit, and Kevin M. Rosso ORAL IN PERSON
- 15:20 ANGLING FOR A NEW (CLAY-)MINERAL FORCEFIELD  
**Michael Holmboe** ORAL IN PERSON
- 15:40 BREAK—BALLROOM 1&2
- 16:00 MOLECULAR DYNAMICS STUDY ON NANOCRYSTALLINE VERNADITE STRUCTURE  
**Gerica Joie P. Castro** and Kideok D. Kwon ORAL REMOTE
- 16:20 FACET-DEPENDENT DISPERSION AND AGGREGATION OF AQUEOUS HEMATITE NANOPARTICLES  
Jianbin Zhou, Duo Song, Sebastian T. Mergelsberg, Yining Wang, Narendra M. Adhikari, Nabajit Lahiri, Yatong Zhao, Ping Chen, Zheming Wang, Xin Zhang, **Kevin M. Rosso** ORAL IN PERSON

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## BREAKOUT SESSION 4—ROOM CC-307

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### New insights into the mechanisms of microbe-mineral interactions in geological processes

*Jinwook Kim, Eric Roden, Juan Liu, and Tae-hee Koo*

- 10:00 MANGANESE NANOCLUSTERS IN ROCK VARNISH ANALOGOUS TO PHOTOSYNTHETIC OXYGEN-EVOLVING COMPLEXES  
**Qian Fang**, Yan Li, Anhuai Lu ORAL IN PERSON
- 10:20 MICROBIAL COMMUNITY STRUCTURE AND FUNCTIONAL POTENTIALS IN THE QUATERNARY AS-BEARING CLAY LAYERS AT JIANGHAN PLAIN, CHINA  
Zhou Jiang, Dandan Song, and **Liang Shi** ORAL IN PERSON
- 10:40 BREAK—BALLROOM 1&2
- 11:00 MICROBIAL FE-REDUCTION IN NONTRONITE AT 4 Å: EVIDENCE OF PSYCHROPHILIC REDUCTIVE DISSOLUTION OF FE  
**Tae-hee Koo** and Jinwook Kim ORAL IN PERSON

- 11:20 INVESTIGATION OF MICROBIALLY MEDIATED TRANSFORMATION OF FE-RICH SMECTITE TO ILLITE  
**Jessica Kruichak-Duhigg**, Amanda Sanchez, Carlos Lopez, George Bachand, and Yifeng Wang **ORAL IN PERSON**
- 11:40 SYNERGY OF SEMICONDUCTING MINERALS AND ELECTROACTIVE BACTERIA IN ELEMENT CYCLING AND ENERGY CONVERSION  
**Juan Liu**, Chao Zhong, and Yongheng Jiang **ORAL REMOTE**
- 12:00 EFFECT OF FE(III)-CONTAINING CLAY MINERALS ON THE METABOLIC ACTIVITY OF METHANOGENS  
**Shanshan Yang** and Deng Liu **ORAL REMOTE**

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### BREAKOUT SESSION 9—ROOM CC-307

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#### Honoring Dr. Goro Uehara and his work in variable charge clay systems in Hawai'i & beyond

*Jonathan L. Deenik, Susan E. Crow, Tai McClellan Maaz, Luiz F. Pires, , and Kristy I. Lam*

- 12:20 DR. GORO UEHARA: FROM CLAY MINERALS TO GLOBAL SOLUTIONS  
**Jonathan L. Deenik** **ORAL IN PERSON**
- 12:40 LUNCH—BALLROOM 1&2
- 14:00 X-RAY COMPUTED TOMOGRAPHY FOR SOIL PORE CHARACTERIZATION  
**Luiz F. Pires**, Fabio A.M. Cássaro, A.M. Brinatti, Sergio C. Saab **ORAL REMOTE**
- 14:20 MINERALOGICAL AND MANAGEMENT EFFECTS ON SOIL PORE SIZE DISTRIBUTION OF AN ALLOPHANIC ANDISOL AND HALLOYSITIC MOLLISOL  
**Kristy I. Lam**, Luiz F. Pires, Jonathan L. Deenik, Sayed Bateni, and Yinphan Tsang **ORAL IN PERSON**
- 14:40 SOIL MINERAL AND CHEMICAL GRADIENTS STRUCTURE MICROBIAL COMMUNITIES IN AN HAWAIIAN VOLCANIC ASH SOIL ACROSS DEPTH AND SPACE  
**Tai McClellan Maaz**, Casey McGrath, Christian Fullmer, Caitlin Pries Hicks, Susan Crow, and Nhu Nguyen **ORAL IN PERSON**
- 15:00 FROM VOLCANIC ASH TO ABUNDANT EARTH: UNDERSTANDING ANDISOL ORGANIC MATTER DYNAMICS AND SOIL HEALTH IN TWO MINERALOGICALLY DISTINCT MOISTURE REGIMES ON HAWAII ISLAND  
**Tanner B. Beckstrom**, Tai M. Maaz, Jonathan L. Deenik, Hayley Peter-Contesse, Amy Koch, Christine Tallamy Glazer, Johanie Rivera-Zayas, and Susan E. Crow **ORAL IN PERSON**
- 15:20 MODELING PEDOGENIC THRESHOLD OCCURRENCE IN HAWAIIAN VOLCANIC SOILS ACROSS A CHRONOSEQUENCE FROM ~5 KY TO ~4 MY OLD  
**Thomas P. Haensel** and Noa K. Lincoln **ORAL IN PERSON**
- 15:40 BREAK—BALLROOM 1&2
- 16:00 WHAT IS ISOTIC ANYWAY? A SOIL TAXONOMY MINERALOGY CLASS REVISTED  
**Ryan C. Hodges**, Dylan E. Beaudette, and Joey N. Shaw **ORAL REMOTE**

- 16:20**            **DIGGING DEEP: AGGREGATE STABILITY ACROSS SOIL DEPTHS IN A FERRIHYDRITIC ANDISOL**  
**Christian Fullmer**, Susan E. Crow, Jonathan Deenik, Tai Maaz, and Nhu H. Nguyen **ORAL IN PERSON**

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**BREAKOUT SESSION 11—ROOM CC-308**

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**Clay as nanomaterials: modification, functionalization, and application**

*Chunhui Zhou, Runliang Zhu, Xiaofeng Guo, Yu-Ting Liu, and Hongping He*

- 10:00**            **REVERSE EXCHANGE OF FELDSPATHOIDS FORMED IN CARBONATE-RICH ALKALINE SOLUTION**  
**Chiawei Lin**, Markus Graefe, Julie A. Howe, and Youjun Deng **ORAL IN PERSON**
- 10:20**            **CHARACTERIZATION OF SMECTITE-CLAY POLYMER HYBRIDS BY DENSITY FUNCTIONAL THEORY METHOD**  
Sanam Bashir, Daniel Tunega, and **Eva Scholtzová** **ORAL IN PERSON**
- 10:40**            **BREAK—BALLROOM 1&2**
- 11:00**            **EFFECT OF ORGANIC ACID LEACHING ON THE STRUCTURE OF MIXED-DIMENSIONAL ATTAPULGITE CLAY**  
**Yushen Lu**, Bin Mu, Yuru Kang, Qin Wang, and Aiqin Wang **ORAL IN PERSON**
- 11:20**            **EFFECTIVENESS OF NANOMATERIALS AND THEIR COUNTERPARTS IN IMPROVING RICE GROWTH AND YIELD UNDER ARSENIC CONTAMINATION**  
**Fugen Dou**, Xiufen Li, Xiaoxuan Wang, Xingmao Ma, Wenjie Sun, and Kun Chen **ORAL IN PERSON**
- 11:40**            **ENHANCING PHOSPHORUS FERTILIZATION EFFICIENCY AND SOIL ORGANIC CARBON SEQUESTRATION WITH MG-FE LAYERED DOUBLE HYDROXIDES**  
**Yu-Ting Liu**, Wen-Hui Li, Liang-Ching Hsu, and Han-Yu Chen **ORAL IN PERSON**
- 12:00**            **HYBRID LDHS ADVANCING FOOD SECURITY AND CLIMATE ACTION THROUGH SLOW-RELEASE FERTILIZATION AND CARBON CAPTURE**  
**Wen-Hui Li** **ORAL IN PERSON**
- 12:20**            **HYBRID MATERIALS PREPARED BY INTERCALATION OF ALKYL-AMMONIUM AND -PHOSPHONIUM SURFACTANTS INTO MONTMORILLONITE**  
**Jana Madejová**, Martin Barlog, Michal Slaný, Helena Pálková, and Ľuboš Jankovič **ORAL IN PERSON**
- 12:40**            **LUNCH—BALLROOM 1&2**
- 14:00**            **INFRARED SPECTROSCOPIC DETECTION OF LUMINOPHORE COMPONENTS IN ORGANOCLAY PIGMENTS**  
**Helena Pálková**, Martin Barlog, and Juraj Bujdák **ORAL IN PERSON**
- 14:20**            **NANOSILICON DERIVED FROM CLAY MINERALS AS HIGH PERFORMANCE LITHIUM-ION BATTERY ANODE**  
**Runliang Zhu**, Qingze Chen, Jing Du, Jieyang Xie, and Hongping He **ORAL IN PERSON**

- 14:40 UPTAKE BEHAVIOR OF TWO HEAVY METALS AND AN DIMETHYLATED POLYCYCLIC AROMATIC HYDROCARBON ON RAW AND ALUMINUM PILLARED QUICK CLAYS  
**Alexandre Coulombe**, Youssouf Djibril Soubaneh, Émilien Pelletier, Zhe Lu, and Jean-Sébastien L'Heureux **ORAL IN PERSON**

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## BREAKOUT SESSION 12—ROOM CC-309

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### Synthetic and Natural Clays for Nanomedicine and Nanocosmetics

*Jae-Min Oh, Goeun Choi, Keith Morrison, and Youjun Deng*

- 10:00 NATURAL TO SYNTHETIC: HOW ANTIBACTERIAL CLAYS CAN HELP FIGHT ANTIBIOTIC RESISTANCE  
**Keith D. Morrison**, Meghan B. Reiss, Tanya D. Tanner, and Travis R. Gollott **ORAL IN PERSON**
- 10:20 STRUCTURAL FACTORS IN DETERMINING THE EFFICIENCY OF NATURAL AND SYNTHETIC CLAYS IN BINDING BIOLOGICAL TOXINS  
**Youjun Deng**
- 10:40 BREAK—BALLROOM 1&2
- 11:00 CLAYS FOR COMBINED PELOOTHERAPY AND ELECTROTHERAPY  
**Fernando Rocha** and Carla Bastos **ORAL IN PERSON**
- 11:20 CLAYS AND ZEOLITES AS ROBUST FRAMEWORK FOR PHOTODYNAMIC REACTION: BIOLOGICAL APPLICATIONS OF LIGHT SENSITIZING MATERIALS  
Jae-Min Oh and **Kang-Kyun Wang** **ORAL IN PERSON**
- 11:40 BORON NEUTRON CAPTURE THERAPY ASSISTED BY CLAY-BASED DRUG DELIVERY SYSTEM  
**Goeun Choi** **ORAL IN PERSON**
- 12:00 CONTROLLED MOLECULAR ARRANGEMENT OF CINNAMIC ACID IN LAYERED DOUBLE HYDROXIDE THROUGH PI-PI INTERACTION FOR CONTROLLED RELEASE  
Taeho Kim, Jaeseong Kim, Kang-Kyun Wang, and **Jae-Min Oh** **ORAL IN PERSON**
- 12:20 THERANOSTIC ANIONIC CLAYS THROUGH TOPOTACTIC LATTICE ENGINEERING AND DRUG INTERCALATION  
**Jae-Min Oh** **ORAL IN PERSON**
- 12:40 LUNCH—BALLROOM 1&2
- 14:00 CONCENTRATED COLLOIDAL NANOCRYSTALS OF METAL HYDROXIDES FOR BIOMEDICAL CONTRASTING AGENTS  
**Yasuaki Tokudome**, Yosuke Ando, Katsuki Yoneda, Hidenobu Murata, and Atsushi Nakahira **ORAL IN PERSON**
- 14:20 INSIGHTS INTO THE BONDING MECHANISMS OF PYOCYANIN AND MONTMORILLONITE  
**Bidemi T. Fashina** and Youjun Deng **ORAL IN PERSON**

- 14:40 EFFECT OF MONO-AND POLYSACCHARIDE ON PYOCYANIN ADSORPTION BY SMECTITE AND SEPIOLITE  
**Wasek Foysal** and Youjun Deng **ORAL IN PERSON**

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### **BREAKOUT SESSION 6—ROOM CC-310**

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#### **Biogeochemical evolution of Fe and Mn (oxyhydr)oxide and their environmental impacts**

*Tongxu Liu, Xionghan Feng, Zimeng Wang, and Wei Li*

- 10:00 ADSORPTION MECHANISMS OF GLYPHOSATE ON FERRIHYDRITE: EFFECTS OF AL SUBSTITUTION AND AGGREGATION STATE  
**Xiaoming Wang**, Xuewen Li, Xionghan Feng, and Wenfeng Tan **ORAL REMOTE**
- 10:20 EVALUATION THE REMOVAL OF GLYPHOSATE BY TWO DIFFERENT COLLOIDAL MNO<sub>2</sub>  
**Caixiang Zhang**, Ruihan Xiong, Shuxin Huang, and Bin Liu **ORAL IN PERSON**
- 10:40 BREAK—BALLROOM 1&2
- 11:00 MINERAL SURFACE-CATALYZED FORMATION OF MN OXIDES ON MARS  
**Ke Wen** and Mengqiang Zhu **ORAL IN PERSON**
- 11:20 AUTHIGENIC TITANIA ALTERED FROM VOLCANIC GLASSES IN MODERN DEEP OCEAN: IMPLICATION FOR TI MIGRATION DURING DIAGENETIC PROCESSES  
**Jing Liu** and Junming Zhou **ORAL IN PERSON**
- 11:40 A NOVEL USE OF ZINC ISOTOPE AS AN ATOMIC TRACER TO REVEAL MOLECULAR-LEVEL INSIGHT INTO ZINC SORPTION MECHANISM ON CALCITE  
**Yiren Duan**, Hongtao He, and Wei Li **ORAL IN PERSON**
- 12:00 HEMATITE-MEDIATED MN(II) ABIOTIC OXIDATION UNDER OXIC CONDITIONS: EFFECTS OF PH AND MODEL QUINONE COMPOUND  
**Shiwen Hu**, Tongxu Liu, and Chongxuan Liu **ORAL IN PERSON**
- 12:20 COPRECIPITATION OF CR(III)/FE(III) HYDROXIDE IN SOLUTION AND ON MINERAL/ORGANIC SURFACES  
**Yandi Hu** **ORAL IN PERSON**
- 12:40 LUNCH—BALLROOM 1&2
- 14:00 POST-OBDUCTION HISTORY OF NEW CALEDONIA: NEW TEMPORAL CONSTRAINTS FROM GOETHITE (U-TH)/HE DATING OF DURICRUSTS IN REWORKED LATERITES  
**Maximilien Mathian**, Martin Danišík, France Pattier, Pierre Maurizot, Jean-Baptiste Parmentier, Ludovic Delbes, Dominique Cluzel, Rosella Pina-Jamme, Willy Foulcher, Benoit Baptiste, Frédérique Haurine, Cécile Gautheron **ORAL IN PERSON**
- 14:20 INVESTIGATING NATURAL MINERAL TRANSFORMATION PROCESS USING ELECTROCHEMICAL METHODS AND IN SITU CHARACTERIZATIONS  
Haesung Jung, Martial Taillefert, Lufeng Yang, **Hailong Chen**, and Tang Yuanzhi **ORAL IN PERSON**

- 14:40      **CARBONATE-ENHANCED TRANSFORMATION OF FERRIHYDRITE TO HEMATITE IN ALKALINE MEDIA**  
**Ying Li** and Arai Yuji **ORAL IN PERSON**
- 15:00      **THE EFFECT OF CRITIC ACID ON THE CATALYTIC OXIDATION OF MN(II) ON FERRIHYDRITE**  
**Xionghan Feng**, Feng Zhang, Yanting Pan, Xiaoming Wang, Hui Yin, Zimeng Wang, and Wenfeng Tan **ORAL REMOTE**

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**BALLROOM 3**

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- 16:40-18:00      **CLOSING CEREMONY**

**JUNE 7**

- 8:30      **DEPART FOR FIELD TRIP—SHERMAN LABORATORY**  
**(1910 EAST-WEST RD, HONOLULU, HI 96822)**
- 16:30      **RETURN FROM FIELD TRIP—SHERMAN LABORATORY**  
**(1910 EAST-WEST RD, HONOLULU, HI 96822)**