

Conference Program

June 1

Room A

16:30 Opening

Chairs: Y.Adachi, K. Kaneko

Room A

16:40 1A01 **Plenary:** Luuk K. KOOPAL
HUMICS, SPECIAL COMPONENTS

17:10 1A02 **Keynote:** Kunimitsu MORISHIGE
Capillary Condensation in Ordered Mesoporous Materials

17:30 1A03 **Keynote:** Jiuhui QU, H. He, M. Yang
Mirco-interface Processes and Application in the Transformation and Control of Environmental Pollutants

June 1

Room E & F

18:00 Welcome Mixer

Room E & F

June 2

Room A

Chairs: H. Kanoh, S. Kataoka, L. K. Koopal

9:00 2A01 **Plenary:** Katsumi KANEKO, T. Ohba, C. Yang, Y. Tao, N. Kojima, Y. Nobuhara, T. Konishi,
T. Fujikawa, M. Yudasaka, S. Iijima, H. Kanoh
Structure of ions and molecules confined in carbon nanospaces

9:30 2A02 **Keynote:** Minoru MIYAHARA
Phase Behavior of Simple Fluid confined in Nanospace
— Finding Phase Diagram and Exploring into MOF Nanospace —

9:50 2A03 **Keynote:** Menachem ELIMELECH
Antibacterial Effects of Carbon Nanotubes

10:10 2A04 **Keynote:** Hajime TAMON
Control of Morphology and Nanostructure of Carbon Cryogels

10:30 2A05 **Keynote:** Takeo YAMAGUCHI
Micro pore filling membranes and their unique performances
~from Bio-inspired materials to polymer electrolyte fuel cells~

June 2

Room A

10:50 Coffee Break

Chairs: J. Qu, A. Satsuma, H. Tamon

Room A

- 11:10 2A06 **Keynote:** Tomohisa YOSHIOKA
Gas permeation properties through ultra microporous inorganic membranes
- 11:30 2A07 **Keynote:** Koichi EGUCHI, S. Suzuki, T. Matsui, R. Kikuchi
Reversible NO_x Sorption-Desorption on Pt/mixed oxides
- 11:50 2A08 **Keynote:** Kei INUMARU
Mesoporous silica-based composite materials as molecular selective photocatalysts for purification of water
- 12:10 2A09 **Keynote:** Robert Stephen BOWMAN
Surfactant-Modified Zeolite and Its Application to Treatment of Oilfield Wastewaters

12:30 Lunch

Room A

Chairs: K. Hori, W. Lv

- 14:00 2A11 **Keynote:** Hisao MORISAKI
Consideration about Bacterial Attachment as Soft Colloidal Particles
- 14:20 2A12 Hiroyuki SHINTO, Y. Aso, J. Tsujimura, Y. Ohta, M. Ito, K. Higashitani
Adhesion, uptake, and cytotoxicity of engineered particles for living cells
- 14:40 2A13 Taisuke OHTSUKA, D. Nakai, Y. Nakamura, H. Morisaki, I. Yoshinaga, I. Imai
Algal assemblages on submerged reed stems and their influence on microbial activities
- 15:00 2A14 Melba Padua ORTEGA, T. Hagiwara, H. Watanabe, T. Sakiyama
Factors affecting adhesion of Staphylococcus epidermidis cells on stainless steel surface

15:20 Coffee Break

Chairs: H. Morisaki, H. Shinto

- 15:40 2A15 Ji-Zheng HE
Interactions of soil macromolecules and microbial DNA isolation
- 16:00 2A16 W. Lv, Y. Zhang, Min YANG
The impact of cell surface properties on the stability of inoculated yeast strains in a biological system used for treating high-strength oil-containing wastewater
- 16:20 2A17 Takehiko TSURUTA, Y. Aiba, T. Hirajima, K. Sasaki
Biosorption of some heavy metals using microorganisms

Room A

June 2

- 16:40 2A18 L. Fang, P. Cai, X. Rong, W. Liang, Qiaoyun HUANG
Determination of Copper and Cadmium Binding on Bacterial Cells by Chemical Modifications and Potentiometric Titration

Room B

Chairs: M. Matsukata, A. Sineva

- 14:00 2B11 **Keynote:** Taku IIYAMA, S. Ozeki
The Direct Determination of Intermolecular Structure of Pollutants in Micropore Using *in situ* X-Ray Diffraction
- 14:20 2B12 Mathias FLÖRSHEIMER, K. Kruse, R. Polly, B. Schimmelpfennig, R. Klenze, T. Fanghänel
Speciation and Hydration of Mineral Surfaces Determined at the Molecular Level
- 14:40 2B13 A. Kondo, H. Noguchi, H. Kajiro, A. Tohdoh, Y. Hattori, W. Xu, M. Inoue, T. Sugiura, K. Morita, H. Tanaka, T. Ohba, K. Kaneko, Hirofumi KANO
CH₄ Storage and CO₂ Separation through Expansive Modulation of a Porous Coordination Polymer Sample
- 15:00 2B14 Yan CHENG, A. Kondo, H. Noguchi, H. Kajiro, K. Urita, T. Ohba, H. Kanoh, K. Kaneko
The Change of morphology and CO₂ adsorptivity of a Cu-MOF on Rehydration

15:20 Coffee Break

Chairs: M. Flösheimer, H. Kanda

- 15:40 2B15 Satoshi WATANABE, S. Mizuta, T. Yamamoto, and M. Miyahara
Stripe Pattern Formation on Hydrophilic Surfaces by Convective Self-Assembly
- 16:00 2B16 Koji TSUCHIYA, K. Fujiwara, T. Konno, K. Itani, T. Ito, T. Matsuura, K. Ohkawa, K. Tsubone, K. Sakai, H. Sakai, M. Abe
Ultrasound imaging of antibody-labeled microbubbles
- 16:20 2B17 Alissa V. SINEVA, A. M. Parfenova
Adsorption of Ionic and Non-ionic Surfactants on Shungite
- 16:40 2B18 K. Sawamura, Y. Sekine, E. Kikuchi, Masahiko MATSUKATA
Adsorption of water and methanol on ZSM-5 zeolite

Room E

Chairs: M. Fukushima, M. Ogura

- 14:00 2E11 Hisao HIDAKA, H. Honjo, T. Koike, T. Oyama, N. Serpone
Wastewater treatment: TiO₂ Photoassisted Degradation of the Binary Systems of Cationic/Anionic surfactants and their Components in Aqueous Dispersions

- 14:20 2E12 Xu ZHAO, H. Liu, J. Qu
Photoelectrocatalytic Degradation of Organic Contaminants at Novel Electrodes
- 14:40 2E13 C. Chuang, Ming-Chun LU
Oxidation of trichloroethylene with persulfate in the presence iron oxide-coated sand
- 15:00 2E14 Chun HU, J. Guo, J. Qu, X. Hu
Photocatalytic degradation of pathogenic bacteria with AgI/TiO₂ under visible light irradiation
- 15:20 Coffee Break
- Chairs: R. S. Bowman, K. Eguchi*
- 15:40 2E15 **Keynote:** Masaru OGURA
K-doped Microporous Tectoaluminosilicate for Soot Combustion
- 16:00 2E16 Y. Saito, K. Shimizu, T. Nobukawa, N. Miyoshi, Atsushi SATSUMA
In-situ FT/IR Study on Dynamics of Stored Nitrates on Pt/Ba/MO_x (M=Al, Zr, Si, Mg)
- 16:20 2E17 **Keynote:** Takashiro MUROI
Role of Zeolite for Air Pollution Control
- 16:40 2E18 **Keynote:** Masami FUKUSHIMA
Detoxification of organic pollutant by multi-functionalities of humic substances

Room F

Chairs: M. Barezak, S. Nagao

- 14:00 2F11 C. Tokoro, Y. Yatsugi, Daisuke HARAGUCHI, A. Otsuki, S. Owada, H. Sasaki
Removal mechanism of dilute As(V) or F(I) in wastewater using Fe(III) or Al(III) hydroxides co-precipitation method
- 14:20 2F12 Keiko SASAKI, H. Nakano, W. Wilopo, T. Hirajima
SPECIATION OF ARSENIC IN TREATMENT OF GROUNDWATERS SPIKED WITH ARSENITE USING PERMEABLE REACTIVE MATERIALS
- 14:40 2F13 Biplob Kumar BISWAS, J. Inoue, K. Inoue, H. Harada, K. Ohto, H. Kawakita
Use of orange waste and pectic acid gel for arsenic removal
- 15:00 2F14 M. Seredych, Teresa J. BANDOSZ
Removal of Ammonia on Graphite Oxides
- 15:20 Coffee Break
- Chairs: K. Sasaki, T. Wajima*
- 15:40 2F15 Olga L. GASKOVA
SURFACE PRECIPITATION MODELS FOR THE SORPTION OF HEAVY METALS ON CALCITE IN DRAINAGE FROM MINING DISTRICTS

Room F	June 2	16:00	2F16	C. Tokoro, S. Owada, A. Otsuki, T. Shiozawa, <u>Sei YUKI</u> Lead removal from a contaminated soil in shooting range by combining surface grinding and acid leaching
		16:20	2F17	<u>Mariusz BARCZAK</u> , A. Dąbrowski, S. Pikus Removal of mercury ions from wastewaters by SBA-15 organosilicas
		16:40	2F18	H. Sakai, <u>Anatoly A. ZINCHENKO</u> , S. Murata Purification of Heavy Metal Ions from Aqueous Solutions by Incorporation into DNA-Surfactant Complexes
Room C & D				
Room C & D		17:30		Poster session

June 3						
Room A						
<i>Chairs: J. F. L. Duval, Mo. Kobayashi, K. Kurihara</i>						
Room A	June 3	9:00	3A01	Plenary: <u>Michal BORKOVEC</u> Colloid Stability: Sixty Years after Verwey and Overbeek		
		9:30	3A02	Keynote: <u>Nataliya MISHCHUK</u> The state of interface and nearest layers of water and its influence on interparticle interaction		
		9:50	3A03	Keynote: <u>William DUCKER</u> , C. Honig Lubrication Forces in Squeeze Films		
		10:10	3A04	Keynote: <u>Ko HIGASHITANI</u> Molecular-scale Structure on Surfaces and their Interaction, Adhesion and Friction in Solutions		
		10:30		Coffee Break		
		<i>Chairs: W. Ducker, M. Elimelech, K. Higashitani</i>				
		10:50	3A05	Keynote: <u>Kazue KURIHARA</u> Polyelectrolytes at Solid-Liquid Interface Studied by Surface Forces Measurement		
		11:10	3A06	Keynote: <u>Katsutoshi HORI</u> Bacterial adhesion and cell surface structure		
		11:30	3A07	Keynote: <u>Kenta OOI</u> Ion-sieve Adsorbents for Selective Removal of Minor Ions from Aqueous Solutions		
		11:50	3A08	Keynote: <u>David WAITE</u> , A. L. Rose, S. Garg, M. Fujii Generation of the superoxide radical anion at biological interfaces and impact on iron acquisition by aquatic organisms		

12:10 Lunch (Syogoin)

Room A

Chairs: M. Ishiguro, K. Hayakawa

- 14:40 3A11 **Keynote:** M. Brigante, G. Zanini, Marcelo AVENA
The dissolution kinetics of humic acid particles
- 15:00 3A12 Dongsheng WANG, M. Yan, J. Qu, C. W.K. Chow
Particle-particle interaction in water treatment: Role of Coagulant Speciation and Hydrolysis Kinetic on NOM removal
- 15:20 3A13 Takumi SAITO, S. Nagasaki, S. Tanaka
Evaluation of the electrostatic potential of a humic acid molecule by a fluorescence quenching technique
- 15:40 3A14 Krisztina KOVACS, A. Gáspár, Ph. Schmitt-Kopplin, E. Tombácz
Acidic functionality of humic and fulvic acids isolated from deep aquifers

16:00 Coffee Break

Chairs: M. Avena, D. Wang

- 16:20 3A15 **Keynote:** Katumitu HAYAKAWA, M. Matsuda, Y. Muroi
Utilization of Surfactant Binding for Characterization of Humic and Fulvic Acids
- 16:40 3A16 Munehide ISHIGURO, L. K. Koopal
Binding of Surfactants to Polystyrene Sulfonate, Humic Substances and High-Humic Soil
- 17:00 3A17 Kenichi NAKASHIMA, S. Xing, T. Miyajima
Interaction between humic substances and heavy metals as studied by two-dimensional correlation fluorescence spectroscopy
- 17:20 3A18 Seiya NAGAO, M. Aoyama, A. Watanabe, T. Tanaka
Complexation of Am with size-fractionated soil humic acids

Room B

Chairs: K. Nakamura, T. Nashima, D. Waite

- 14:40 3B11 X. Wu, Xiaopeng GE, D. Wang, H. Tang
Distinct mechanisms of particle aggregation induced by alum and PACl: Floc structure and DLVO evaluation
- 15:00 3B12 H. Kudoh, Tohru MIYAJIMA, Y. Adachi
Structures of tideland sediment flocs in Ariake sea

- 15:20 3B13 Jr-Lin LIN, C.-J. M. Chin, C. Huang, J. R. Pan, Dongsheng Wang
Coagulation behavior of Al₁₃ aggregates
- 15:40 3B14 Warmadewanthi, C.-J. Chang, J. C. LIU
Precipitation Flotation of Phosphate from Water
- 16:00 3B15 Qingchun YUAN, R. A. Williams, S. Biggs
Manufacturing Microcapsules for Controlled Release
- 16:20 3B16 Akira OTSUKI, D. Gjergj, T. Fujita
Effects of particle size and its distribution on size measurements of fine particles by means of interactive force apparatus

Room E

Chairs: T. Kunitake, T. Muroi

- 14:40 3E11 S. Wei, Huijuan LIU, J. Qu
Preparation and characterization of a novel silica aerogel as adsorbent of toxic organic compounds
- 15:00 3E12 Hai ZHANG, G. Pan, K. Kurumada
Hybrid Glass for Removal of Phenol in Wastewater
- 15:20 3E13 M. D. G. de Luna, WARMADEWANTHI, J. C. Liu
Combined treatment of polishing wastewater and fluoride-containing wastewater from a semiconductor manufacturer
- 15:40 3E14 Hiroshi SAKAGUCHI, A. Kawai
Essentials for Designing Recovering Materials of Oil in Water

16:00 Coffee Break

Chairs: H. Hidaka, K. Inumaru

- 16:20 3E15 Gordon C. C. YANG, S.W. Chan, T.C. Peng
REMOVAL OF CHLORINATED HYDROCARBONS BY NANOSCALE [Fe₃O₄]MgO
- 16:40 3E16 Seung-Woo LEE, N. Takahara, T. Kunitake
Sensitive binding of bisphenol A in TiO₂ ultrathin films: a combination of molecular imprinting and host-guest interaction
- 17:00 3E17 Takuji YAMAMOTO, Y. H. Kim, T. Ohmori
Synthesis of monodisperse carbon microspheres as adsorbents for detecting aqueous organic pollutants
- 17:20 3E18 Sho KATAOKA, T. Yamamoto, A. Endo, M. Nakaiwa, T. Ohmori
Synthesis of Mesoporous Carbon Thin Films

Room F

Chairs: T. Kawanishi, Y. Mori

- 14:40 3F11 Chih-Hsiang LIAO, J. Anotai, C. Ruangchanikom
Evaluation of complete nitrate removal by Fe⁰/CO₂, air/water lifted fluidized sand bed reactor, and air stripping in series
- 15:00 3F12 Abul Hasnat Md. SHAMIM, H. R. Khan, T. Akae
Potentiality of Basic Slag for the Remediation of Soil Acidity and Changes in Exchangeable Cations in Acid Sulfate Soils under Various Moisture Regimes
- 15:20 3F13 Harunor Rashid KHAN, S. A. Lipi
Assessment, Purification and Phytoremediation Strategies for the Pollution Arising from Lead, Zinc and Cadmium Released through Industrial Effluents
- 15:40 3F14 Delphine CHARRIÈRE, Z. Pokryszka, P. Behra
Thermodynamic and kinetic processes at coal interface for CO₂ geological storage

16:00 Coffee Break

Chairs: D. Charrière, H. Liu

- 16:20 3F15 Ken-ichi KURUMADA, H. Okubo, K. Egusa
Nanofoaming in silica glass matrix by instantaneous heating
- 16:40 3F16 Takeshi UMETSUBO, T. Hayakawa, K. Kurumada
Optimum conditions for hybridization of epoxy resin and silica
- 17:00 3F17 Toshio SAKAI, H. Enomoto, H. Sakai, M. Abe
Surfactant- and reducer-free metal nanoparticle synthesis in aqueous solutions:
Particle size, shape and colloidal stability
- 17:20 3F18 Yoshihiro KAMIMURA, K. Kurumada, G. Pan
Å-scale droplets of extractant in glass matrix
- 18:00 Cultural Event (Room A)
- 18:30 Banquet (Room B & C & D)

June 4

Room A

Chairs: M. Borkovec, H. Ohshima, T. Yamaguchi

- 9:00 4A01 **Plenary: Masao DOI**
Electrokinetic Boundary Condition Compatible with the Onsager Reciprocal Relation in the Thin Double Layer Approximation

- 9:30 4A02 **Keynote:** Ryoichi YAMAMOTO, S. Yamamori, Y. Nakayama, K. Kim
Direct Numerical Simulations for Electrokinetics of Colloids
- 9:50 4A03 **Keynote:** Jérôme F. L. DUVAL
Monitoring the electrochemical reactivity of pyrite/humics/electrolyte solution interface by electrokinetics of the second kind
- 10:10 4A04 **Keynote:** Toshinori TSURU
Permeation and diffusion through nanoporous inorganic membranes

10:30 Coffee Break

Chairs: M. Doi, E. R. Graber, Y. Takata

- 10:50 4A05 **Keynote:** Akihiko TANIOKA
TRANSPORT PHENOMENA ACROSS MEMBRANES IN SOLUTION
- 11:10 4A06 Hiroyuki OHSHIMA
Effective viscosity of a suspension of soft particles
- 11:30 4A07 **Keynote:** Kaoru TSUJII
Fractal Materials and Their Functional Properties
- 11:50 4A08 **Keynote:** Arie de KEIZER
Antifouling surfaces obtained by adsorption of complex coacervate core micelles
- 12:10 4A09 **Keynote:** Kenichi SAKAI
Sugar-Based Gemini Surfactants

12:30 Lunch

Room A

Chairs: A. Tanioka, T. Tsuru

- 14:00 4A11 **Keynote:** Isamu MORIGUCHI, H. Yamada
High-rate Ion-transportable Nanoporous Carbons as a High Performance Electric Double-layer Capacitor Material
- 14:20 4A12 Yasushi MORI, N. Higashi
Controlling Solute Transport Process in Soils using Dual-Characteristics of Soil Pore System
- 14:40 4A13 **Keynote:** Kiyoharu NAKATANI
Diffusion in nanometer-sized pores studied by single microparticle injection and absorption microspectroscopy
- 15:00 4A14 Syuntaro HIRADATE, H. Murano, A. Furubayashi, T. Otani
Adsorption of phenoxyacetates on colloids of a humus-rich Andosol
- 15:20 Coffee Break

Chairs: T. Terao, T. Yoshioka

Room A

- 15:40 4A15 **Keynote:** Mitsuhiro FUKUDA
Interaction of a small molecule with polyisoprene surface studied by molecular simulations
- 16:00 4A16 Elise ROTUREAU, J. F. L. Duval, H. P. van Leeuwen
Dynamic metal sorption by charged polysaccharides
- 16:20 4A17 Kazuho NAKAMURA, S. Fukada, K. Matsumoto
Fouling monitoring during Microfiltration of surface water and humic acid suspension by streaming potential measurement

Room B

Chairs: S. A. Bradford, K. Suto

Room B

- 14:00 4B11 Michikazu TAKAHASHI, D. Kawasaki, T. Saito, I. Shimizu, S. Nagasaki, S. Tanaka
Studies on matrix diffusion of colloid in a fractured medium
- 14:20 4B12 Philippe LE COUSTUMER, B. Eloifi, F. Huneau, F.v.d. Kammer, M. Baalousha
Physical speciation of mobile trace elements by natural colloids
- 14:40 4B13 **Keynote:** Erwin KLUMPP
Transport und deposition of *Pseudomonas fluorescens* in porous media: Role of the cell concentration and morphology
- 15:00 4B14 Yuki SHIMOJO, Y. Inoue, A. Katayama
Development of Two-Region, Three-Site Model for Bacterial Transport in Saturated Porous Media
- 15:20 Coffee Break

Chairs: K. Kawamoto, E. Klumpp

- 15:40 4B15 **Keynote:** Scott A. BRADFORD, S. Torkzaban, F. Leij, N. Toride, J. Simunek, M. Th. van Genuchten
A New Paradigm for Colloid and Colloid-Facilitated Transport and Retention in Porous Media
- 16:00 4B16 Y. Kamio, K. Tabata, Yuko HATANO
A CTRW Approach to Column Adsorption Tests
- 16:20 4B17 Ursula ALONSO, T. Missana, A. Patelli, D. Ceccato, N. Albarran, M. García-Gutiérrez, T. López - Torrubia, V. Rigato
Quantification of heterogeneous colloid retention on the granite surface under varying chemical conditions

June 4

Room E

Chairs: J. K. Lee, A. de Keizer

- 14:00 4E11 Marta SZEKERES, T. Körtvélyesi, I. Dékány, E. Tombácz, R. Schoonheydt
Investigation of the adsorption of cationic proteins on smectite clays
- 14:20 4E12 Kazuya MORIMOTO, T. Sato, T. Yoneda
Complexation reactions of inorganic anions on layered double hydroxide surfaces
- 14:40 4E13 Atsushi NAKAO, S. Funakawa, T. Kosaki
¹³⁷Cs adsorption on soil clays blocked by hydroxy-Al polymers in acidic forest soils of southwestern Japan
- 15:00 4E14 Etelka TOMBÁ CZ, M. Szekeres
Surface charge heterogeneity of 1:1 and 2:1 type clay particles in aqueous suspension

15:20 Coffee Break

Chairs: T. Saito, E. Tombá cz

- 15:40 4E15 Yu ZHANG, X. Dou, M. Yang, H. He
Arsenate Adsorption on an Fe-Ce Bimetal Oxide Adsorbent: Role of Surface Properties and Surface Complexation
- 16:00 4E16 Wen-Feng TAN, F. Liu, Y. Wang, L. K. Koopal
Effect of electrolyte on adsorption/desorption of Cu²⁺ on Mn oxide
- 16:20 4E17 K. Sasaki, Hitoshi TAKAMORI, H. Yoshizaka, T. Hirajima
SORPTION OF BORIC ACID ON MAGNESIUM OXIDE IN PERMEABLE REACTIVE BARRIERS

Room F

Chairs: N. Mishchuk, T. Ohtsuka

- 14:00 4F11 Reni DESMIARTI, F. Li, C. Yoshimura, Y. Suzuki
SORPTION AND BIODEGRADATION OF NATURAL ESTROGENS IN SEDIMENT MUD CORES
- 14:20 4F12 Saule B. AIDAROVA, A. Babayev, A. Sharipova, A. Makhambetova
THE EFFICIENT PURIFICATION OF OIL-CONTAMINATED SOIL BY SURFACTANT
- 14:40 4F13 Wawan BUDIANTA, C. Salim, H. Hinode, H. Ohta
In situ Washing by Sedimentation Method of Organics-Contaminated Sandy Soil
- 15:00 4F14 S. Anraku, K. Morimoto, Tsutomu SATO, T. Yoneda
Sorption of Anions and Formation of Minerals at Naturally-occurring Hyperalkaline Condition
- 15:20 Coffee Break

Chairs: K. Sakai, K. Tsujii

Room F

15:40 4F15 Ellen R. GRABER, S. Tagger, R. Wallach

The Role of Divalent Fatty Acids Soaps at Soil Particle Interfaces in Controlling
Wetting Kinetics of Water Repellent Soils

16:00 4F16 Anurudda K. KARUNARATHNA, K. Kawamoto, P. Moldrup, T. Komatsu, L.W. de Jonge

Characterizing Soil Water Repellency Properties by Soil Organic Carbon Content, Soil Texture
and Sieved-size Fractions

16:20 4F17 Kotaro FUKADA, S. Kawashima, K. Nakamura

A new methodology for measuring continuous soil air content using sound resonance

June 4

Room A

Room A

16:45 Farewell