

Program schedule (As of August 15, 2018)

Sept. 3	16:00 – 18:00	Registration at Conference Office
	18:00 – 19:30	Welcome Reception

Sept. 4	9:00 – 9:40	Plenary Lecture PL1 (Lecture Hall)		
	9:40 – 10:00	Coffee Break		
		Lecture Hall	Seminar Room 2	
		A. Fundamentals of Adsorption	E1. Adsorption for Energy Related Applications	
	10:00 – 10:20	LA-1	LE1-1	
	10:20 – 10:40	LA-2	LE1-2	
	10:40 – 11:00	LA-3	LE1-3	
	11:00 – 11:20	LA-4	LE1-4	
	11:20 – 11:30	Break		
	11:30 – 12:00	Keynote Lecture KL1 (Lecture Hall)		
	12:00 – 13:20	Lunch		
	13:20 – 13:50	Keynote Lecture KL2 (Lecture Hall)		
	13:50 – 14:00	Break		
		Lecture Hall	Seminar Room 2	
		A. Fundamentals of Adsorption	E1. Adsorption for Energy Related Applications	
	14:00 – 14:20	LA-5	LE1-5	
	14:20 – 14:40	LA-6	LE1-6	
	14:40 – 15:00	LA-7	LE1-7	
	15:00 – 15:20	LA-8	LE1-8	
	15:20 – 15:40	LA-9	LE1-9	
15:40 – 16:00	LA-10	LE1-10		
16:00 – 16:20	Group Photo			
16:20 – 18:00	Poster (Entrance Hall, Seminar Room 1) (16:20-18:00)			

Sept. 5	9:00 – 9:40	Plenary Lecture PL2 (Lecture Hall)		
	9:40 – 10:00	Coffee Break		
		Lecture Hall	Seminar Room 2	
		A. Fundamentals of Adsorption	D. Synthesis and Characterization of Novel Adsorbent Materials	
	10:00 – 10:20	LA-11	LD-1	
	10:20 – 10:40	LA-12	LD-2	
	10:40 – 11:00	LA-13	LD-3	
	11:00 – 11:20	LA-14	LD-4	

Sept. 5	11:20 - 11:30	Break	
	11:30 - 12:00	Keynote Lecture KL3 (Lecture Hall)	
	12:00 - 13:20	Lunch	
	13:20 - 13:50	Keynote Lecture KL4 (Lecture Hall)	
	13:50 - 14:00	Break	
		Lecture Hall	Seminar Room 2
		B. Instrumentation for Adsorption Measurement C. Chemisorption & Catalysis	D. Synthesis and Characterization of Novel Adsorbent Materials
	14:00 - 14:20	LB-1	LD-5
	14:20 - 14:40	LB-2	LD-6
	14:40 - 15:00	LC-1	LD-7
	15:00 - 15:20	LC-2	LD-8
	15:20 - 15:40	Coffee Break	
		Lecture Hall	Seminar Room 2
		E2. Adsorption for Bio-applications	E3. Adsorption for Environment Protection
	15:40 - 16:00	LE2-1	LE3-1
	16:00 - 16:20	LE2-2	LE3-2
	16:20 - 16:40	LE2-3	LE3-3
	16:40 - 17:00	LE2-4	LE3-4
	17:00 - 17:20	LE2-5	
		Banquet	

Sept. 6	9:00 - 9:40	Plenary Lecture PL3 (Lecture Hall)	
	9:40 - 10:00	Coffee Break	
		Lecture Hall	Seminar Room 2
		A. Fundamentals of Adsorption	E3. Adsorption for Environment Protection
	10:00 - 10:20	LA-15	LE3-5
	10:20 - 10:40	LA-16	LE3-6
	10:40 - 11:00	LA-17	LE3-7
	11:00 - 11:10	Break	
	11:10 - 11:40	Keynote Lecture KL5 (Lecture Hall)	
	11:40 - 13:10	Lunch	
	13:10 - 17:00	Excursion	
		Conference Dinner	

Lecture program

Sept. 4, 2018

		Chair: S. Mukai (Hokkaido University)	Lecture Hall
9:00	PL1	New Challenges in Fundamental Adsorption-based Science <u>K. Kaneko</u> (Shinshu University, Japan)	
9:40		Coffee Break	
			A. Fundamentals of Adsorption
		Chair: A. Matsumoto (Toyohashi University of Technology)	Lecture Hall
10:00	LA-1	Selective O ₂ Sorption of Elastic Layer-structured MOFs R. Koyama, M. Togo, H. Kajiro, and <u>H. Kanoh</u> (Chiba University, Japan)	
10:20	LA-2	Thermodynamic and Kinetic Modeling of Capillary Condensation and Evaporation in Open-Ended Nanopores <u>T. Hiratsuka</u> , H. Tanaka, and M. T. Miyahara (Kyoto University, Japan)	
10:40	LA-3	Measuring Adsorption Properties of Fragrance Molecules on Fibres: Importance of Substrate Amorphicity on the Adsorption and Retention Behaviour of Small Molecules by Solid State Materials <u>N. Ali</u> , J. Marsh, G. Rondepierre and D. R. Williams (Imperial College London, United Kingdom)	
11:00	LA-4	Selective Adsorption and Permeation using Graphene Sheet K. Shimizu, Y. Oya, H. Kitayama, M. Ishida, D. Hoshi, and <u>T. Ohba</u> (Chiba University, Japan)	
11:20		Break	
		Chair: I. Moriguchi (Nagasaki University)	Lecture Hall
11:30	KL1	Preparation of Hierarchically Nanoporous Carbon-Based Nanocomposites for the Applications in Electro-Chemical Energy Storage <u>Y. Tao</u> , K. P. Annamalai, L. Liu, M. Zhang, N. A. Fathy, J. Gao, X. Zheng and T. Chen (Chinese Academy of Sciences, China)	
12:00		Lunch	
		Chair: H. Kanoh (Chiba University)	Lecture Hall
13:20	KL2	Compression and High Pressure Effects in Adsorbed Films K. Shi, Y. Long, D. Srivastava, M. Śliwinski-Bartkowiak, E. E. Santiso and <u>K. E. Gubbins</u> (North Carolina State University, U.S.A.)	
13:50		Break	
			A. Fundamentals of Adsorption
		Chair: B. Han (Yonsei University)	Lecture Hall
14:00	LA-5	Characterization of Electrostatic Field Strength in Zeolite Cavities by Adsorption Microcalorimetry of Methane as Probe Molecule <u>A. Matsumoto</u> , S. Mizuno and H. Ito (Toyohashi University of Technology, Japan)	
14:20	LA-6	Adsorption of Carbon Dioxide on Perfect and Defective Surfaces of Porous Silica Glass: Computer Simulation and Experimental Studies C. Boonfung, N. Ketprasoet, C. Tangsathitkulchai and <u>A. Wongkoblap</u> (Suranaree University of Technology, Thailand)	
14:40	LA-7	High-silica Potassium-exchanged LTA Zeolite as a Highly Selective CO ₂ Adsorbent for Post-combustion CO ₂ Capture A. Hanif, <u>J. Shang</u> (City University of Hong Kong, Hong Kong)	
		Chair: T. Horikawa (Tokushima University)	Lecture Hall
15:00	LA-8	On the Microscopic Mechanism of Thin-to-Thick Film Transition for Argon Adsorption on Weak Surfaces – Cluster Growth and Coalescence of Clusters <u>L. Prasetyo</u> , S. (Johnathan) Tan, K. Q. Loi, D. D. Do and D. Nicholson (University of Queensland, Australia)	
15:20	LA-9	Low Temperature Adsorption of CO ₂ in Graphitic Wedge Shaped Pores with GCMC Simulation <u>X. Liu</u> , C. Fan and D. D. Do (Curtin University, Australia)	
15:40	LA-10	Multiscale Nature of Adsorption Deformation of Hierarchical Micro-Mesoporous Materials <u>A. V. Neimark</u> (Rutgers University, USA)	
16:00		Group Photo	
16:20		Poster (16:20-18:00) Entrance Hall & Seminar room 1	

Sept. 4, 2018

		Chair: S. Mukai (Hokkaido University)	Lecture Hall
9:00	PL1	New Challenges in Fundamental Adsorption-based Science <u>K. Kaneko</u> (Shinshu University, Japan)	
9:40		Coffee Break	
		E1. Adsorption for Energy Related Applications	
		Chair: T. Yamamoto (University of Hyogo)	Seminar room 2
10:00	LE1-1	Ethane-selective Carbon Composites CPDA@A-ACs with High Uptake and Its Enhanced Ethane/Ethylene Adsorption Selectivity <u>J. Xiao</u> , <u>W. Liang</u> , <u>Y. Wu</u> , and <u>Z. Li</u> (South China University of Technology, China)	
10:20	LE1-2	Carbon Dioxide Breakthrough Separation using Elastic-Layer Structured MOF pellet <u>H. Kajiro</u> , <u>T. Nagai</u> , and <u>H. Dohnomae</u> (Nippon Steel & Sumitomo Metal Co., Japan)	
10:40	LE1-3	Performance of Novel Desorbent Swing Adsorption (DSA) Process Using Zeolite for Propane and Propylene Separation <u>J.-J. Kim</u> , <u>S.-H. Hong</u> and <u>C.-H. Lee</u> (Yonsei University, Korea, Republic of)	
11:00	LE1-4	Long-Term Effect of Large Alkanes on Adsorbed Natural Gas Systems <u>J. Romanos</u> , <u>S. Abou Dargham</u> , <u>F. Barakat</u> (Lebanese American University, Lebanon)	
11:20		Break	
		Chair: I. Moriguchi (Nagasaki University)	Lecture Hall
11:30	KL1	Preparation of Hierarchically Nanoporous Carbon-Based Nanocomposites for the Applications in Electro-Chemical Energy Storage <u>Y. Tao</u> , <u>K. P. Annamalai</u> , <u>L. Liu</u> , <u>M. Zhang</u> , <u>N. A. Fathy</u> , <u>J. Gao</u> , <u>X. Zheng</u> and <u>T. Chen</u> (Chinese Academy of Sciences, China)	
12:00		Lunch	
		Chair: H. Kanoh (Chiba University)	Lecture Hall
13:20	KL2	Compression and High Pressure Effects in Adsorbed Films <u>K. Shi</u> , <u>Y. Long</u> , <u>D. Srivastava</u> , <u>M. Śliwinski-Bartkowiak</u> , <u>E. E. Santiso</u> and <u>K. E. Gubbins</u> (North Carolina State University, U.S.A.)	
13:50		Break	
		E1. Adsorption for Energy Related Applications	
		Chair: M. Miyamoto (Gifu University)	Seminar room 2
14:00	LE1-5	Separation of Ternary Gas Mixtures Using Triple Reflux Pressure Swing Adsorption (TR-PSA) <u>G. (Kevin) Li</u> , <u>V. Jusko</u> , <u>G. Xiao</u> , <u>P. A. Webley</u> and <u>E. F. May</u> (The University of Melbourne, Australia)	
14:20	LE1-6	Biogas Upgrading by Vacuum Pressure Swing Adsorption Process Using Commercial Adsorbents <u>Y. Shen</u> , <u>W. Shi</u> and <u>D. Zhang</u> (Tianjin university, China)	
14:40	LE1-7	Determination of Kinetic Parameters of Porous Adsorbents Using a Pressure Jump/Pressure Drop Technique and a Transient Hot Bridge Method <u>O. Kraft</u> , <u>M. Stripf</u> and <u>U. Hesse</u> (University of Applied Sciences Karlsruhe, Germany)	
		Chair: D. Zhang (Tianjin University)	Seminar room 2
15:00	LE1-8	Methane Adsorption on Pitch Derived Activated Carbon Monoliths <u>T. E. Rufford</u> , <u>S. Gao</u> , <u>A. Arami-Niya</u> , <u>B. S. Villacorta</u> , <u>L. Ge</u> , and <u>Z. Zhu</u> (The University of Queensland, Australia)	
15:20	LE1-9	On-site Pilot Demonstration of a Two-stage Deep Desulfation and Decarbonization Pressure and Temperature Swing Adsorption Unit at Elevated Temperature for 3 Nm ³ /h Hydrogen Production at an Ammonia Plant <u>S. Li</u> , <u>P. Hao</u> , <u>X. Zhu</u> , <u>Y. Shi</u> , <u>N. Cai</u> , <u>S. Li</u> , <u>H. Jiang</u> (Tsinghua University, China)	
15:40	LE1-10	Material Selection and Properties for Adsorption Heat Storage <u>F. Mikšić</u> , <u>T. Miyazaki</u> (Kyushu University, Japan)	
16:00		Group Photo	
16:20		Poster (16:20-18:00)	Entrance Hall & Seminar room 1

Sept. 5, 2018

		Chair: T. Ueda (Osaka University)	Lecture Hall
9:00	PL2	Fundamental Mechanism of Transition from Clustering to Molecular Layering in Adsorption of Gases on Carbon Materials D. D. Do (The University of Queensland, Australia)	
9:40		Coffee Break	
		A. Fundamentals of Adsorption	
		Chair: K. Urita (Nagasaki University)	Lecture Hall
10:00	LA-11	Machine Learning Driven Computational Design of High Functional Adsorbents for Hazardous Chemicals H. Jung, B. Han (Yonsei University, Korea, Republic of)	
10:20	LA-12	First-Principles Computational Study of the Adsorption Mechanism of CH ₃ I(g) on Activated Carbon and Transition Metal Surfaces H. Chun, B. Han (Yonsei University, Korea, Republic of)	
10:40	LA-13	Consequences of Heterogeneities for Adsorption on Graphene F. Vallejos-Burgos and K. Kaneko (Shinshu University, Japan)	
11:00	LA-14	Structures of Ice Confined in Nanocarbons; X-ray (WAXS) and Neutrons Diffraction (ND) Studies M. Śliwiska-Bartkowiak, K. Domin, M. Jazdzewska, A. Beskrowny, K. E. Gubbins (A. Mickiewicz University, Poznan, Poland)	
11:20		Break	
		Chair: S. Tanaka (Kansai University)	Lecture Hall
11:30	KL3	Defect Engineering for Manipulating Porosity and Adsorption Behavior of Metal-organic Frameworks Y. Jiao, Y. Liu, G. Zhu, J. T. Hungerford, S. Bhattacharyya, R. P. Lively, D. S. Sholl, and K. S. Walton (Georgia Institute of Technology, U.S.A)	
12:00		Lunch	
		Chair: A. Kondo (Tokyo University of Agriculture and Technology)	Lecture Hall
13:20	KL4	Intrinsic Thermal Management Capabilities of Flexible Metal-organic Frameworks for CO ₂ Separation H. Tanaka, S. Hiraide and M. T. Miyahara (Kyoto University, Japan)	
13:50		Break	
		B. Instrumentation for Adsorption Measurement/C. Chemisorption & Catalysis	
		Chair: F. Y. Yeoh (Universiti Sains Malaysia)	Lecture Hall
14:00	LB-1	Suitable Gas Probe (N ₂ or Ar) for Characterization of Pore Size Distribution K. Nakai, T. Funahashi, T. Shigeoka, H. Tanaka and M. T. Miyahara (MicrotracBEL Corp., Japan)	
14:20	LB-2	Study of Multi-Component Vapor Phase Adsorption Breakthrough of Volatile Organic Compounds (VOCs) at sub-ppm Levels Through Selected Ions Flow Tube Mass Spectrometry T. Virdis, C. Walgraeve, H. Van Langenhove, J. F. M. Denayer (Vrije Universiteit Brussels, Belgium)	
14:40	LC-1	Preparation of Shaped Porous Coordination Polymer Composites by Using Macroporous Solid Materials for Gas Separation M. Matsuoka, S. Mine and Y. Horiuchi (Osaka Prefecture University, Japan)	
15:00	LC-2	Ortho-Para Conversion of Hydrogen Molecule Adsorbed in the Nanospace of Porous Metal Complexes A. Hori, K. Kaneshima, A. Mishima, Y. Ma and R. Matsuda (Nagoya University, Japan)	
15:20		Coffee Break	
		E2. Adsorption for Bio-applications	
		Chair: M. Matsuoka (Osaka Prefecture University)	Lecture Hall
15:40	LE2-1	Small Uremic Toxins Adsorption by Nanoporous Biomaterials F.-Y. Yeoh, C.-H. Ooi, W.-K. Cheah, and Y.-L. Sim (Universiti Sains Malaysia, Malaysia)	
16:00	LE2-2	Acetic Acid Recovery from Fermentation Broth in Layered Beds A. P. Mathews and H. Naidu (Kansas State University, U.S.A)	
16:20	LE2-3	Adsorption Kinetics of Protein for Improved Understanding of Biopharmaceutical Processes S. Hedberg, L. Brown, J. Heng and D. Williams (Imperial College London, United Kingdom)	
16:40	LE2-4	Quantifying Host Cell Protein Interactions with MABs using Interaction Chromatography Tools D. Sethi, S. Hedberg and D. Williams (Imperial College London, United Kingdom)	
17:00	LE2-5	Selective Adsorption and Complexation of Oxalic Acid Metabolite on Aluminosilicate Minerals during Bioleaching X. Xue, I. Pedruzzi, P. Li and J. Yu (East China University of Science and Technology, China)	

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		Chair: T. Ueda (Osaka University)	Lecture Hall
9:00	PL2	Fundamental Mechanism of Transition from Clustering to Molecular Layering in Adsorption of Gases on Carbon Materials <u>D. D. Do</u> (The University of Queensland, Australia)	
9:40		Coffee Break	
		D. Synthesis and Characterization of Novel Adsorbent Materials	
		Chair: T. Iiyama (Shinshu University)	Seminar room 2
10:00	LD-1	Photo-induced Post-synthetic Modification of Sulfur Functional Groups in a Microporous Metal Complex <u>S. Kusaka</u> , R. Matsuda, S. Kitagawa (Nagoya University, Japan)	
10:20	LD-2	Prediction of Adsorption-Induced Phase Changes in the Zeolitic Imidazolate Framework ZIF-7 <u>A. Arami-Niya</u> , S. Rahman, G. Li and E. May (The University of Western Australia, Australia)	
10:40	LD-3	Recovery of Helium from Gas Mixtures Using Temperature-Regulated Trapdoor Zeolites <u>Y. Wang</u> , A. Arami-Niya, G. Li and E. May (The University of Western Australia, Australia)	
11:00	LD-4	Dramatic Change in Gate Adsorption Pressure of Soft MOF (ELM-12) with Varied Particle Sizes <u>S. Watanabe</u> , A. Fukuta, S. Hiraide, H. Tanaka, and M. T. Miyahara (Kyoto University, Japan)	
11:20		Break	
		Chair: S. Tanaka (Kansai University)	Lecture Hall
11:30	KL3	Defect Engineering for Manipulating Porosity and Adsorption Behavior of Metal-organic Frameworks Y. Jiao, Y. Liu, G. Zhu, J. T. Hungerford, S. Bhattacharyya, R. P. Lively, D. S. Sholl, and <u>K. S. Walton</u> (Georgia Institute of Technology, U.S.A)	
12:00		Lunch	
		Chair: A. Kondo (Tokyo University of Agriculture and Technology)	Lecture Hall
13:20	KL4	Intrinsic Thermal Management Capabilities of Flexible Metal-organic Frameworks for CO ₂ Separation <u>H. Tanaka</u> , S. Hiraide and M. T. Miyahara (Kyoto University, Japan)	
13:50		Break	
		D. Synthesis and Characterization of Novel Adsorbent Materials	
		Chair: S. Watanabe (Kyoto University)	Seminar room 2
14:00	LD-5	Tools to Characterise Virtual Porous Materials Using a New "Absolute" Accessible Volume <u>L. F. Herrera</u> , L. Prasetyo and D. D. Do (Charles Darwin University, Australia)	
14:20	LD-6	Synthesis and Characterization of Highly Nanoporous Nickel Cobaltite/Graphene Nanocomposite <u>K. P. Annamalai</u> , T. Chen, L. Liu and Y. Tao (Chinese Academy of Sciences, China)	
14:40	LD-7	Rapid Microwave-assisted Synthesis of Metal-organic Framework Having Improved Performance as CO ₂ adsorbent for CCS <u>S. Gaikwad</u> and S. Han (Changwon National University, Korea, Republic of)	
15:00	LD-8	Ultrafast Room Temperature Synthesis of Gly@Cu-BTC with High CO ₂ /CH ₄ /N ₂ Adsorption Selectivity and Improved Stability against Moisture Y. Wu, <u>X. Zhou</u> and Z. Li (South China University of Technology, China)	
15:20		Coffee Break	
		E3. Adsorption for Environment Protection	
		Chair: A. Kodama (Kanazawa University)	Seminar room 2
15:40	LE3-1	Development of Porous Carbon Materials from Petroleum Coke via KOH Activation for CO ₂ capture S. W. Choi, E. Jang, S.-M. Hong, <u>K. B. Lee</u> (Korea University, Korea, Republic of)	
16:00	LE3-2	Temperature Swing Adsorption Processes for CO ₂ Capture from Moist Flue Gas Employing Commercial Zeolites <u>S. E. Zanco</u> , M. Hefti, and M. Mazzotti (ETH Zurich, Switzerland)	
16:20	LE3-3	Characteristics of Activated Carbon in Elevated-temperature Pressure Swing Adsorption Desulfurization <u>P. Hao</u> , Z. Liu, Y. Shi and N. Cai (Tsinghua University, China)	
16:40	LE3-4	Nano-fibrous Silica Supported MgO as an Efficient High-Temperature CO ₂ Adsorbent A. Hanif, <u>J. Shang</u> (City University of Hong Kong, Hong Kong)	
17:00			

Sept. 6, 2018

	Chair: A. Endo (AIST)	Lecture Hall
9:00	PL3 Contribution of Adsorption Technology to High Techno-Economic Performance and Carbon Assessment in Integrated Coal-Syngas Process: H ₂ PSA and Pre-combustion CO ₂ Capture C.-H. Lee (Yonsei University, Korea)	
9:40	Coffee Break	
	A. Fundamentals of Adsorption	
	Chair: S. Inagaki (Yokohama National University)	Lecture Hall
10:00	LA-15 Cluster-mediated Diffusion of Light and Heavy Water in Hydrophobic Carbon Pore H. Ito, Y. Ono, F. Vallejos-Burgos, M. Yoshimoto, R. Futamura, K. Kaneko, T. Iiyama and A. Matsumoto (Toyohashi University of Technology, Japan)	
10:20	LA-16 Methanol Film on Oxygenated Graphite at Low Temperatures: Transition from a Ring to String Configurations W. Dilokekunakul, N. Klomklang, S. Supasitmongkol and D. D. Do (Mahidol University, Thailand)	
10:40	LA-17 Co-ion Association Structure of Ionic Liquids in Monolayer Sized Carbon Nanopores R. Futamura, T. Iiyama, Y. Gogotsi, M. J. Biggs, M. Salanne, P. Simon, and K. Kaneko (Shinshu University, Japan)	
11:00	Break	
	Chair: T. Ohba (Chiba University)	Lecture Hall
11:10	KL5 Structure and Gas Transport at the Polymer-Zeolite Interface: Insights from Molecular Dynamics Simulations R. C. Dutta and S. K. Bhatia (The University of Queensland, Australia)	
11:40	Lunch	
13:10	Excursion	



Sept. 6, 2018

	Chair: A. Endo (AIST)	Lecture Hall
9:00	PL3 Contribution of Adsorption Technology to High Techno-Economic Performance and Carbon Assessment in Integrated Coal-Syngas Process: H ₂ PSA and Pre-combustion CO ₂ Capture C.-H. Lee (Yonsei University, Korea)	
9:40	Coffee Break	
	E3. Adsorption for Environment Protection	
	Chair: K. B. Lee (Korea University)	Seminar room 2
10:00	LE3-5 Separation of Guaifenesin Enantiomers by Simulated Moving Bed Process with Four Operation Modes R. Gong, Y. Yang, J. Wang, P. Li and J. Yu (East China University of Science and Technology, China)	
10:20	LE3-6 Adsorption Capacity of TEDA-Impregnated Activated Carbons for Removal of Radioactive Methyl Iodide K. Ho, H. C. Lee, Y. K. Hwang, C.-H. Lee (Yonsei University, Korea, Republic of)	
10:40	LE3-7 Adsorption Interactions between Volatile Organic Compounds and Natural and Synthetic Fibres: Impact of Relative Humidity M. Guo, L. Cao, E. Hunter-Sellars, N. Ali, D. Williams (Imperial College London, United Kingdom)	
11:00	Break for Changing the Lecture Room	
	Chair: T. Ohba (Chiba University)	Lecture Hall
11:10	KL5 Structure and Gas Transport at the Polymer-Zeolite Interface: Insights from Molecular Dynamics Simulations R. C. Dutta and S. K. Bhatia (The University of Queensland, Australia)	
11:40	Lunch	
13:10	Excursion	



Poster program (Tuesday, Sept. 4, 4:20 p.m. to 6:00 p.m.)

A. Fundamentals of Adsorption

PA-1	On the Origin of Hysteresis in Water Adsorption on Graphitized Carbon Black <u>T. Horikawa</u> , N. Takashima, D. D. Do, K. Sotowa, and J. R. Alcántara-Avila (The University of Tokushima, Japan)
PA-2	NMR Study of Dynamic Hydration Structure of Ions Confined in Nanospace <u>R. Ogura</u> , T. Ueda (Osaka University, Japan)
PA-3	Anomalously Restricted and Enhanced Hydration Shell Formation in 1– 3 nm Nanopores of Carbon Nanotubes <u>Y. Oya</u> , T. Ohba (Chiba University, Japan)
PA-4	Simulation of Phase Diagram of Ethylene Adsorption on Graphite at Low Temperatures – The Importance of Energetic Corrugation and Anisotropy in Polarizability of Carbon Atom <u>C. Fan</u> , X. Liu, D. D. Do and D. Nicholson (Curtin University, Australia)
PA-5	Characterization of Surface Structure on Functional Group Removal Carbons <u>K. Urita</u> , C. Urita, T. Araki, K. Horio, M. Yoshida and I. Moriguchi (Nagasaki University, Japan)
PA-6	Investigation of Phase Transition Phenomena of Spherical Molecules in Carbon Micropores by Diffraction Techniques M. Yoshimoto, <u>T. Iiyama</u> , T. Ota, R. Futamura, A. Hoshikawa, and T. Ishigaki (Shinshu University, Japan)
PA-7	Fundamental Study on Adsorptive Separation of Oxygen Isotope <u>Y. Matsuda</u> , Y. Osaka, T. Tsujiguchi, A. Kodama (Kanazawa University, Japan)
PA-8	Intracrystalline Diffusivity of Methylanthalene within Si-beta in Methanol and Cyclohexane Solution <u>Y. Nakasaka</u> , R. Nakano, S. Inagaki, Y. Kubota, T. Yoshikawa, T. Masuda (Hokkaido University, Japan)
PA-9	On the Microscopic Mechanism of Growth of a Localised Cluster Adsorbing on a Weak Surface Decorated with Strong Patches <u>S. (Johnathan) Tan</u> , L. Prasetyo, K. Q. Loi, D. D. Do and D. Nicholson (University of Queensland, Australia)

B. Instrumentation for Adsorption Measurement/C. Chemisorption & Catalysis

PB-1	Surface Characterization of Non-Porous Polymers Using Small Molecule Adsorption Techniques <u>J. Ramadani</u> , D. Williams, M. Caputi and I. Ambrogio (Imperial University, United Kingdom)
PC-1	Alkaline-Treated ZSM-5 Zeolites for the Applications in Hydrolysis of Cellulose <u>T. Chen</u> and Y. Tao (Chinese Academy of Sciences, China)
PC-2	Improvement of the Efficiency of Gas-liquid-solid Three-phase Reactions Using Microhoneycomb-shaped Monolithic Catalysts <u>H. Mega</u> , T. Aihara, S. Takahashi, S. Yoshida, S. Iwamura, I. Ogino, S. R. Mukai (Hokkaido University, Japan)
PC-3	Characterization of Potassium-based Solid Sorbents Using Ca-series Materials as an Additive Material for CO ₂ Capture at Low Temperatures <u>M. S. Cho</u> , S. C. Lee, H. J. Chae, Y. M. Kwon, M. Y. Ryu, C. H. Lee, H. J. Kim, J. B. Lee and J. C. Kim (Kyungpook National University, Korea, Republic of)
PC-4	Evaluation of Hydrophilicity in the Micropores of MSE-type Titanosilicates, Ti-YNU-2 and Ti-MCM-68 <u>S. Inagaki</u> , M. Kaneda, M. Takeyama, A. Endo, and Y. Kubota (Yokohama National University, Japan)

D. Synthesis and Characterization of Novel Adsorbent Materials

PD-1	Comparison of CO ₂ Capture Performance between Powder and Spherical Aggregates of the Salt-promoted MgO at the Intermediate Temperature S. Jin, <u>K. Ko</u> and C.-H. Lee (Yonsei University, Korea, Republic of)
PD-2	Synthesis and Characterization of Cu(I)-loaded MIL-100(Fe) Adsorbents for CO/CO ₂ Separation T. K. Vo, <u>J. Kim</u> , W.-S. Kim, C. K. Yoo (Kyung Hee University, Korea, Republic of)
PD-3	Fabrication of Dimensionally Controlled Nanoceramics using Single-Walled Carbon Nanohorns <u>D. Hoshi</u> , T. Watanabe and T. Ohba (Chiba University, Japan)
PD-4	Role of Anionic Molecules in 1D Flexible Metal-Organic Frameworks on Adsorption <u>A. Kondo</u> , M. Kakinuma, T. Suzuki, K. Maeda (Tokyo University of Agriculture and Technology, Japan)
PD-5	Separation of Cesium Ions from a Continuous Flow Using Ammonium Molybdophosphate Immobilized in a Silica Microhoneycomb (AMP-SMH) <u>S. Yoshida</u> , S. Iwamura, I. Ogino and S. R. Mukai (Hokkaido Industrial Research Institute, Japan)
PD-6	Synthesis of Humidity Control Materials with a Hierarchical Pore System of Meso- and Macropores <u>T. Mori</u> , T. Shigyo, T. Nomura, S. R. Mukai (Hokkaido Research Organization, Japan)

PD-7	Design of Transformable Nanoporous Metal Complexes Showing Selective Gas Adsorption R. Matsuda, A. Hori and <u>Y. Ma</u> (Nagoya University, Japan)
PD-8	Simple Aqueous Synthesis of Large Pore RHO-topology Zeolitic Imidazolate Framework <u>M. Yamaguchi</u> and S. Tanaka (Kansai University, Japan)
PD-9	OSDA-free Synthesis of CHA Zeolite from FAU Zeolite <u>S. Miyagawa</u> , S. Tanaka (Kansai University, Japan)
PD-10	Cu(I)-chelated Nitrogen-rich Porous Organic Polymer for Adsorptive CO/CO ₂ Separation <u>J. H. Kang</u> , J. W. Yoon, A.-R. Kim, T.-U. Yoon, and Y.-S. Bae (Yonsei University, Korea, Republic of)
PD-11	Preparation of Cu(I)-loaded Metal-organic Framework with Reversible CO Binding and High CO/CO ₂ Selectivity A.-R. Kim, <u>J. H. Kang</u> , T.-U. Yoon, and Y.-S. Bae (Yonsei University, Korea, Republic of)
PD-12	On the Role of Interfaces in Gate Adsorption Properties of Core-shell Soft MOF Particles <u>A. Fujiwara</u> , S. Watanabe and M. Miyahara (Kyoto University, Japan)
PD-13	Adsorptive Xe/Kr Separation Using a Zr-based MOF with Electron-rich Ligands S.-J. Lee, <u>J.-Y. Lee</u> , W.-S. Ju, Y.-C. Kim and Y.-S. Bae (Yonsei University, Korea, Republic of)
PD-14	Adsorptive Separation of SF ₆ over N ₂ Using a Bromine-functionalized Metal-Organic Framework M.-B. Kim, <u>J.-Y. Lee</u> , T.-H. Kim, T.-U. Yoon, J. H. Kim, and Y.-S. Bae (Yonsei University, Korea, Republic of)
PD-15	Porous Carbon Nanosheets Prepared from Cellulose Nanofibers <u>K. Ito</u> , K. Sagisaka, M. Kimura and Y. Hattori (Shinshu University, Japan)
PD-16	Pore Structure of sp ³ Carbon Frills-fabricated Carbon Sheets <u>M. Yamada</u> , K. Sagisaka, R. Futamura, F. Vallejos-Burgos, K. Kaneko and Y. Hattori (Shibshu University, Japan)
PD-17	Pore Structure Analysis of SWCNT Films and Xerogels <u>Y. Kamijou</u> , D. Stević, R. Kukobat, F. Vallejos-Burgos, R. Futamura, T. Sakai, K. Kaneko (Shinshu University, Japan)
PD-18	Seed-Assisted Synthesis of KFI-Type Zeolite and Its CO ₂ Adsorption/Desorption Property <u>Y. Kamimura</u> and A. Endo (AIST, Japan)
PD-19	Kinetic Modelling of Electroless Nickel-Phosphorus Plating under High Pressure H. Yokohama, M. Tayakout-Fayolle, N. Fukumuro, S. Yae, K. Itoh, K. Maeda, T. Yamamoto (University of Hyogo, Japan)
PD-20	Effect of High Pressure on Growth of Colloidal Particles during Sol-Gel Phase Transition of Resorcinol-Formaldehyde Solution <u>T. Yamamoto</u> , M. Tayakout-Fayolle, T. Kakibe, H. Satone, K. Iimura, K. Itoh, K. Maeda (University of Hyogo, Japan)
E1. Adsorption for Energy Related Applications	
PE1-1	Combined Pressure Swing Adsorption Process with Membrane Process for High Purity CO from N ₂ /CO/CO ₂ Mixture <u>J.-H. Kang</u> and C.-H. Lee (Yonsei University, Korea, Republic of)
PE1-2	Comparison of Adsorption Mechanism Between Zeolite 13X and CMS-4K for Propane/Propylene Separation <u>S.-H. Hong</u> , J.-J. Kim, S.-J. Lim, and C.-H. Lee (Yonsei University, Korea, Republic of)
PE1-3	Effect of Anions on Ion Exchange for Cu-containing Zeolite Adsorbent and Its Application to Desulfurization in Natural Gas <u>Y.-H. Cha</u> , K. B. Lee (Korea University, Korea, Republic of)
PE1-4	N ₂ Rejection from N ₂ /CH ₄ Mixtures by Dual Reflux Pressure Swing Adsorption with Activated Carbon W. Lu, <u>G. Xiao</u> , G. Li, and E. May (The University of Western Australia, Australia)
PE1-5	Synthesis of CMS for Propylene / Propane Separation <u>Y. Yamane</u> , H. Tanaka, H. Tamura, and M. T. Miyahara (Kyoto University, Japan)
PE1-6	Vacuum Pressure Swing Adsorption System for N ₂ /CH ₄ Separation under Uncertainty Z. Han, Y. Shen and <u>D. Zhang</u> (Tianjin University, China)
PE1-7	TiO ₂ /Porous Carbon Nanocomposites Produced through the Vacuum Liquid Pulse CVD Technique for Supercapacitor Electrodes <u>S. Motohashi</u> , S. Iwamura and S. R. Mukai (Hokkaido University, Japan)

PE1-8	Capacitor Performance Dependence on Substrate Pore Size of MnO ₂ /Porous-carbon Nanocomposites R. Umedu, S. Iwamura, <u>K. Itsuki</u> , K. Onishi, I. Ogino, S. R. Mukai (Hokkaido University, Japan)
PE1-9	Biogas Separation by Adsorbent Packed Bed Heat Exchanger Driven with Temperature Swing <u>N. I. Zainol</u> , Y. Osaka, T. Tsujiguchi and A. Kodama (Kanazawa University, Japan)
PE1-10	Effect of Core-shell Structuring of Chabazite Zeolite on Vapor Phase Separation of Acetone-butanol-ethanol Mixtures in Humid Conditions <u>M. Miyamoto</u> , H. Iwatsuka, Y. Oumi, S. Uemiya, S. Van der Perre, G. V. Baron, J. F. M. Denayer (Gifu University, Japan)
PE1-11	Electrophoretic Deposition of Mesoporous Silica Powder Coatings on Honeycomb Aluminum Substrates and Properties of Cyclic Adsorption and Desorption of Water Vapor on their Surface <u>H. Negishi</u> and A. Endo (AIST, Japan)
PE1-12	Design of SnO ₂ -embedded Carbon Nanospace for Effective Li-ion Reactions in All-solid-state Battery Electrode <u>H. Notohara</u> , K. Urita, I. Moriguchi (Nagasaki University, Japan)
PE1-13	Influence of Carbon Pores on Electrochemical Performance on Phosphorous/Porous Carbon Composite Electrodes <u>Y. Komine</u> , K. Urita, I. Moriguchi (Nagasaki University, Japan)
E3. Adsorption for Environment Protection	
PE3-1	Humidity Control Ability of Banana Peel Char <u>J. Hayashi</u> , S. Fukuda, N. Kageura and I. Hasegawa (Kansai University, Japan)
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PE3-3	Effect of Double-layer Structure of Adsorbent Impregnated with Modified Polyethyleneimine on CO ₂ Capture <u>S. Jeon</u> , H. Jung, S. H. Kim, and K. B. Lee (Korea University, Korea, Republic of)
PE3-4	Chemically Bonded ZrO ₂ on CaO-based High-temperature CO ₂ Sorbent for Enhancement of Cyclic Sorption Performance <u>H. J. Yoon</u> , K. B. Lee (Korea university, Korea, Republic of)
PE3-5	Effect of Calcination Temperature to Adsorption and Photocatalytic Properties of TiO ₂ -SiO ₂ Microhoneycombs <u>K. Urkasame</u> , S. Yoshida, S. Iwamura, I. Ogino, S. R. Mukai (Hokkaido University, Japan)
PE3-6	Carbon Gel Monoliths with Introduced Straight Microchannels for Phenol Adsorption K. Takahashi, S. Yoshida, <u>K. Urkasame</u> , S. Iwamura, I. Ogino, S. R. Mukai (Hokkaido University, Japan)
PE3-7	Applications of Boron-Rich Boron Nitride Nanotube (B _N -BNNT) for Nitrogen Oxide Adsorptions: A Theoretical Study <u>H. Choi</u> , and H. Bae (National Fusion Research Institute, Korea, Republic of)
PE3-8	Adsorption Mechanism of Metal Ions on Activated Carbon <u>A. Kuroki</u> , Y. Urushihara, T. Horikawa, K. Sotowa, J. R. Alcántara-Avila (The University of Tokushima, Japan)
PE3-9	Preparation of Spherical RF Magnetic Adsorbent with Prussian Blue and Its Cesium Ion Adsorption Property D. Shirai, <u>N. Takashima</u> , T. Horikawa, K. Sotowa, J. R. Alcántara-Avila (The University of Tokushima, Japan)
PE3-10	Adsorption Characteristics of Nitrate on Chitosan and Cross-linked Chitosan Beads <u>S. J. Lee</u> , S. D. Yoon, J. W. Lee, J. W. Nah, and W. G. Shim (Suncheon National University, Korea, Republic of)
PE3-11	SnO ₂ Nanowire Gas Sensors for Detection of ppb Levels NO _x Gas <u>H. J. Kim</u> , S. C. Lee, B. W. Hwang, H. J. Chae, M. Y. Ryu, C. H. Lee and J. C. Kim (Kyungpook National University, Korea, Republic of)
PE3-12	Stability Analysis on Amine Functionalized Bimetallic Metal Organic Frameworks (MOFs) under Humid Air and Acid Gas <u>S. Gaikwad</u> , K. Patil and S. Han (Changwon National University, Korea, Republic of)
PE3-13	Inexpensive Amine Impregnation of Acid-activated Sepiolite for CO ₂ capture L. Liu, G. Zhang, E. Shiko, X. Fan, Y. Zhou, H. Chen, X. Luo, <u>X. (Eric) Hu</u> (Xiangtan University, University of Edinburgh)