

# FOA10 - SCIENTIFIC PROGRAM

## (Time Schedule)

**SUNDAY: May 23rd, 2010**

**15:00-18:00 Registration**

**17:00 Opening Ceremony (Main Hall)**  
Puppet Theater of Awaji

**18:00-20:00 Welcome Reception (Lobby)**

**MONDAY: May 24th, 2010**

\*Speakers are indicated in boldface type.

| <b>Keynote - 1</b>                             |                                                                       | Page |
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| <i>Room: Main Hall      Chair: G. V. Baron</i> |                                                                       |      |
| 8:40                                           | On the Equilibrium Theory of Chromatography;<br><b>Marco Mazzotti</b> | 1    |

| <b>Plenary M1: Chromatography &amp; Liquid Phase Adsorption</b> |                                                                                                                                                                                                    | Page |
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| <i>Room: Main Hall      Chair: C.-H. Lee</i>                    |                                                                                                                                                                                                    |      |
| 9:20                                                            | Optimization of Simulated Moving Bed Chromatography with Enriched Fractionation and Feedback;<br>Suzhou Li, <b>Yoshiaki Kawajiri</b> , Jörg Raisch and Andreas Seidel-Morgenstern                  | 3    |
| 9:40                                                            | The Intermittent Simulated Moving Bed (I-SMB) Process;<br><b>Shigeharu Katsuo</b> , Christian Langel, Matthäus Bäßler and Marco Mazzotti                                                           | 4    |
| 10:00                                                           | Kinetic Mechanisms for Protein Adsorption in Polymer-Grafted Ion Exchangers;<br><b>Giorgio Carta</b>                                                                                               | 5    |
| 10:20                                                           | Adsorption of Arsenic (V) onto Activated Carbons Produced from Agricultural By-Products: Focus on Sorption Mechanism;<br>Jonatan Torres Perez, Claire Gèrente, Yves Andrès and <b>Gordon McKay</b> | 6    |

**10:40-11:00 Coffee Break (Reception Hall B)**

| <b>Session M1: Separation Process - SMB/Chromatography</b>   |                                                                                                                                                                                                                                                   | Page |
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| <i>Room: Main Hall      Chair: Y. Brun &amp; Y. Kawajiri</i> |                                                                                                                                                                                                                                                   |      |
| 11:00                                                        | Comparison of FeedCol Strategy Performances in Various SMB Processes;<br>Hyeon-Hui Lee, Kyung-Min Kim and <b>Chang-Ha Lee</b>                                                                                                                     | 7    |
| 11:20                                                        | Optimization of Simulated Moving Bed Reactor for Paraxylene Production;<br><b>Ghislain Bergeot</b> , Damien Leinekugel-le-Cocq, Laurence Muhr and Michel Bailly                                                                                   | 8    |
| 11:40                                                        | ‘Cycle to Cycle’ Optimizing Control of Simulated Moving Beds for a Nonlinear Chiral Separation-Experimental Implementation;<br><b>Christian Langel</b> , Cristian Grossmann, Simon Jermann, Marco Mazzotti, Manfred Morari and Massimo Morbidelli | 9    |
| 12:00                                                        | Equilibrium Theory of Chromatography for the Generalized Langmuir Isotherm: From Fundamentals to Process Design;<br><b>Marco Mazzotti</b> and Arvind Rajendran                                                                                    | 10   |

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| 12:20 | Surface Diffusion in Reversed-Phase Liquid Chromatography;<br><b>Kanji Miyabe</b> and Georges Guiochon                                             | 11 |
| 12:40 | Preparative Separation of Ternary Mixtures using Multiple Stationary Phases;<br><b>Balamurali Sreedhar</b> and Andreas Seidel-Morgenstern          | 12 |
| 13:00 | Polymer Chromatography as a Tool for Analyzing Adsorption of Macromolecules and Polymer-Based Nanocomposites in Porous Media;<br><b>Yefim Brun</b> | 13 |

| Session M2: MOFs - Synthesis & Characterization       |                                                                                                                                                                                                                                                                                                       | Page |
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| Room: Event Hall      Chair: T. J. Bandoz & S. Kaskel |                                                                                                                                                                                                                                                                                                       |      |
| 11:00                                                 | A new Mesoporous Metal-Organic Framework: DUT-6;<br>Nicole Klein, Irena Senkovska, Kristina Gedrich, Ulrich Stoeck, Antje Henschel, Uwe Mueller and <b>Stefan Kaskel</b>                                                                                                                              | 14   |
| 11:20                                                 | Type-V Isotherms: Another Example of Unusual Adsorption Behaviour Observed in MOFs;<br><b>David Fairen-Jimenez</b> , Nigel A. Seaton and Tina Düren                                                                                                                                                   | 15   |
| 11:40                                                 | Computational Study of Alkene Adsorption in a Metal-Organic Framework with Open Metal Sites;<br><b>Miguel Jorge</b> , José Richard Gomes and Alirio E. Rodrigues                                                                                                                                      | 16   |
| 12:00                                                 | Thermodynamics of Guest-Induced Structural Transitions in Hybrid Organic-Inorganic Frameworks;<br><b>Alain H. Fuchs</b> , François-Xavier Coudert, Caroline Mellot-Draznieks and Anne Boutin                                                                                                          | 17   |
| 12:20                                                 | MOF Graphene Composites: Exploring the New Concept of Adsorbents and Catalysts;<br><b>Teresa J. Bandoz</b> and Camille Petit                                                                                                                                                                          | 18   |
| 12:40                                                 | Elaboration and Properties of Hierarchically Structured Optical Thin Films of MOFs;<br><b>Aude Demessence</b> , Patricia Horcajada, Christian Serre, Cedric Boissière, David Grosso, Clement Sanchez and Gérard Férey                                                                                 | 19   |
| 13:00                                                 | Using Calorimetry to Characterise Adsorption in Metal-Organic Frameworks;<br><b>Philip L. Llewellyn</b> , Sandrine Bourrelly, Jean Rouquerol, Andrew Wiersum, Guillaume Maurin, Thomas Devic, Vincent Guillermin, Patricia Horcajada, Christian Serre, Stuart Miller, Paul A. Wright and Gérard Férey | 20   |

| Session M3: Diffusion & Separation                           |                                                                                                                                                                                            | Page |
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| Room: Amphitheater      Chair: J. P. B. Mota & A. V. Neimark |                                                                                                                                                                                            |      |
| 11:00                                                        | Adsorption and Diffusion of Polymers in Nanopores;<br><b>Alexander V. Neimark</b> , Shuang Yang, Yang Kan, Aleksey Vishnyakov and Yefim Brun                                               | 21   |
| 11:20                                                        | Modeling Adsorption and Diffusion in Microporous Carbons;<br><b>Jeremy C. Palmer</b> , Joshua D. Moore, John K. Brennan and Keith E. Gubbins                                               | 22   |
| 11:40                                                        | Adsorption and Transport Properties of Humid CO <sub>2</sub> - Methane Mixtures in Nanoporous Carbons and Membranes by Molecular Simulation;<br>Alaaeldin Salih and <b>Erich A. Müller</b> | 23   |
| 12:00                                                        | Molecular Modelling of Transport in Nanoporous Materials: Bridging Theory and Experiment;<br><b>Suresh Kumar Bhatia</b>                                                                    | 24   |
| 12:20                                                        | Anomalous Diffusion in Ordered and Disordered Microporous Carbons;<br><b>Joshua D. Moore</b> , Jeremy C. Palmer, Ying C. Liu, Thomas J. Roussel, John K. Brennan and Keith E. Gubbins      | 25   |

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| 12:40 | Monte Carlo Simulation of Polymer Adsorption;<br><b>Chris Rasmussen</b> , Aleksey Vishnyakov and Alexander V. Neimark                                        | 26 |
| 13:00 | Adsorption Thermodynamics of Light Organics in Single-walled Carbon Nanotube Bundles;<br><b>Fernando J. A. L. Cruz</b> , Erich A. Müller and José P. B. Mota | 27 |

**13:20-15:20 Lunch & Free Time**

**15:20-16:20 IAS Meeting (Main Hall)**

| Keynote - 2                              |                                                                  | Page |
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| Room: Main Hall      Chair: P. A. Monson |                                                                  |      |
| 16:20                                    | Flexible Porous Coordination Polymers;<br><b>Susumu Kitagawa</b> | 2    |

| Plenary M2: MOFs                      |                                                                                                                                                                                                            | Page |
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| Room: Main Hall      Chair: K. Kaneko |                                                                                                                                                                                                            |      |
| 17:00                                 | Insights on Adsorption Characterization of Novel Open Metal Organic Frameworks (MOFs);<br>J. Moellmer, R. Luebke, A. J. Cairns, Dirk Wallacher, R. Staudt, M. Eddaoudi and <b>M. Thommes</b>               | 28   |
| 17:20                                 | Adsorption on Coordination Polymers with Open Metal Sites: Strong Interaction between Sorbate and Metal Cation;<br><b>Pascal D. C. Dietzel</b> and Richard Blom                                            | 29   |
| 17:40                                 | Adsorption of Water in Metal-Organic Frameworks: Insight from Molecular Simulation;<br><b>François-Xavier Coudert</b> , Selvarengan Paranthaman, Anne Boutin, Caroline Mellot-Draznieks and Alain H. Fuchs | 30   |

**18:00-19:00 Dinner**

| <b>Poster Session 1 - with refreshments</b>                        |                                        |
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| <i>At the Connecting Corridor to the Hotel      Chair: N. Sano</i> |                                        |
| 19:00-20:40                                                        | See the separate listing on page xxvi. |

**20:40      Hospitality (JAPAN NIGHT at Room 405)**

**TUESDAY: May 25th, 2010**

\*Speakers are indicated in boldface type.

| Plenary T1: Adsorption Equilibrium & Dynamics<br><i>Room: Main Hall      Chair: S. K. Bhatia</i> |                                                                                                                                                                                                                        | Page |
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| 8:40                                                                                             | A Novel Method for Reporting Adsorption Equilibria: Net Adsorption;<br><b>Orhan Talu</b> and Sasidhar Gumma                                                                                                            | 31   |
| 9:00                                                                                             | Spontaneous Imbibition in Disordered Porous Solids: A Theoretical Study of Helium in Silica Aerogels;<br><b>Martin Luc Rosinberg</b> , Fabio Leoni, Edouard Kierlik and Gilles Tarjus                                  | 32   |
| 9:20                                                                                             | Modulation of Pore Condensation and Hysteresis Behavior in Ordered Mesoporous SBA-15 Silica as a Function of Synthesis Parameters;<br><b>Freddy Kleitz</b> , Rémy Guillet-Nicolas, François Bérubé and Matthias Tommes | 33   |

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| 9:40  | The Role of Cavitation in Adsorption Hysteresis;<br><b>Alexander V. Neimark</b> , Christopher Rasmussen, Aleksey Vishnyakov, Matthias Thommes, Bernd Smarsly and Freddy Kleitz | 34 |
| 10:00 | Modeling Relaxation Processes for Fluids in Porous Materials using Dynamic Mean Field Theory;<br>John R. Edison and <b>Peter A. Monson</b>                                     | 35 |
| 10:20 | Unprecedented Wealth of Information on Guest Dynamics from Transient Concentration Profiles in Nanoporous Materials;<br><b>Jörg Kärger</b>                                     | 36 |

**10:40-11:00 Coffee Break (Reception Hall B)**

| <b>Session T1: MOFs - Flexible Structure</b>                   |                                                                                                                                                                                                                                                                                                                                                                                                                     | Page |
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| <i>Room: Main Hall      Chair: M. Thommes &amp; R. Matsuda</i> |                                                                                                                                                                                                                                                                                                                                                                                                                     |      |
| 11:00                                                          | Multi-step Adsorption of Flexible Porous Coordination Polymers Investigated by Coincident Measurement of Adsorption and X-ray Powder Diffraction;<br><b>Ryotaro Matsuda</b> , Sareeya Bureekaew, Joobeom Seo, Hiroshi Sato and Susumu Kitagawa                                                                                                                                                                      | 37   |
| 11:20                                                          | Organic Functionalization in Flexible MOFs: Effects on the Pore Opening, Flexible Character and Adsorption Properties;<br><b>Thomas Devic</b> , Patricia Horcajada, Christian Serre, Daniela Heurtaux, Fabrice Salles, Guillaume Maurin, Thuy Khuong Trung, Naseem Ramsahye, Philippe Trens, Beatrice Moulin, Guillaume Clet, Alexandre Vimont, Marco Daturi, Sandrine Bourrelly, Philip Llewellyn and Gérard Férey | 38   |
| 11:40                                                          | Adsorption Control of O <sub>2</sub> and N <sub>2</sub> on a LPC via Magnetic-field Induced Gate Shift;<br>Koichi Hashikawa, Shigeru Ogata, Atom Hamasaki and <b>Sumio Ozeki</b>                                                                                                                                                                                                                                    | 39   |
| 12:00                                                          | Microcalorimetric Characterisation of Polar Vapour Adsorption on the Flexible Metal Organic Frameworks MIL-88 and MIL-53;<br><b>Sandrine Bourrelly</b> , Philip L. Llewellyn, Renaud Denoyel, Isabelle Beurroies, Guillaume Maurin, Sabine Devautour-Vinot, Guillaume Clet, Alexandre Vimont, Thomas Devic, Patricia Horcajada, Christian Serre and Gérard Férey                                                    | 40   |
| 12:20                                                          | Flexible Structures and Functions of Elastic Layer-structured MOFs (ELMs);<br><b>Hirofumi Kanoh</b> , Atsushi Kondo, Hiroshi Kajiro, Chi Song, Hiroshi Noguchi, Tomonori Ohba and Katsumi Kaneko                                                                                                                                                                                                                    | 41   |
| 12:40                                                          | Free Energy Analysis for Adsorption-Induced Structural Transition of a Doubly Interpenetrating PCP;<br><b>Hayato Sugiyama</b> , Satoshi Watanabe, Hideki Tanaka and Minoru Miyahara                                                                                                                                                                                                                                 | 42   |

| <b>Session T2: Diffusion</b>                                                |                                                                                                                                                    | Page |
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| <i>Room: Event Hall      Chair: C. L. Cavalcante Jr. &amp; M. Petkovska</i> |                                                                                                                                                    |      |
| 11:00                                                                       | Nonlinear Frequency Response Experiments for Investigation of Adsorption of Pure Gases; Danica Brzic, Frank Poplow and <b>Menka Petkovska</b>      | 43   |
| 11:20                                                                       | Characterization of Gas Diffusion in Nanopores by Frequency Response Method;<br><b>Akihiko Matsumoto</b> and Shigeki Nakano                        | 44   |
| 11:40                                                                       | The Influence of Molecule Size on Its Transport Properties through a Porous Medium;<br>Veronique Wernert, Renaud Bouchet and <b>Renaud Denoyel</b> | 45   |
| 12:00                                                                       | Binary Diffusion of n-Heptane and Toluene in SBA-15 Materials;<br>Qinglin Huang and <b>Mladen Eić</b>                                              | 46   |

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| 12:20 | Intracrystalline Diffusion of Linear and Branched Alkanes in Beta and Silicalite Zeolites;<br>Artemis P. Guimarães, Karen K. N. Ribeiro, Diana C. S. Azevedo and <b>Célio L. Cavalcante Jr.</b> | 47 |
| 12:40 | Modeling of Diffusion in Adsorbents near Saturation;<br><b>Elsa Jolimaitre</b> , Damien Leinekugel-le-Cocq and Melaz Tayakout                                                                   | 48 |

| <b>Session T3: Multicomponent Adsorption</b>                       |                                                                                                                                                                                                                                                                            | Page |
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| <i>Room: Amphitheater      Chair: S. Farooq &amp; C. A. Grande</i> |                                                                                                                                                                                                                                                                            |      |
| 11:00                                                              | Adsorption Measurements for Nitrogen, Carbon Dioxide, Methane at Cryogenic Temperatures and High Pressures by the Volumetric Method;<br>Guillaume C. Y. Watson, E. F. May, <b>N. K. Jensen</b> , P. S. Hofman, M. A. Trebble, R. D. Trengove and K. I. Chan                | 49   |
| 11:20                                                              | Experimental and Theoretical Study of the Adsorption of Pure Molecules and Binary Systems Containing N <sub>2</sub> , CH <sub>4</sub> and CO <sub>2</sub> : Application to the Syngas Generation;<br><b>Nicolas Heymans</b> , Bruno Alban, Serge Moreau and Guy De Weireld | 50   |
| 11:40                                                              | Multicomponent Adsorption Experiments and PSA Testing for Hydrogen Purification Applications;<br><b>Filipe V. S. Lopes</b> , Carlos A. Grande and Alirio E. Rodrigues                                                                                                      | 51   |
| 12:00                                                              | Experimental Evaluation on Post-combustion CO <sub>2</sub> Capture by Electric Swing Adsorption Using Carbonaceous Materials;<br>Hui Liang, <b>Ping Li</b> , Zhen Liu, Xingfu Song and Jianguo Yu                                                                          | 52   |
| 12:20                                                              | Kinetically Controlled CO <sub>2</sub> Capture from Post-Combustion Flue Gas on a Carbon Molecular Sieve;<br>Reza Haghpanah, Arvind Rajendran and <b>Shamsuzzaman Farooq</b>                                                                                               | 53   |
| 12:40                                                              | Dynamic Column Breakthrough Measurements of Nitrogen, Carbon Dioxide and Methane for Improved LNG Processing;<br><b>Paul S. Hofman</b> , E. F. May, G. Watson, B. F. Graham, M. A. Trebble, R. D. Trengove and K. I. Chan                                                  | 54   |

**13:00-16:00 Lunch & Free Time**

| <b>Session T4: Characterization of Porous Materials</b>        |                                                                                                                                                                                                                                                                                   | Page |
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| <i>Room: Main Hall      Chair: A. P. Terzyk &amp; D. D. Do</i> |                                                                                                                                                                                                                                                                                   |      |
| 16:00                                                          | A Novel and Consistent Method to Characterize An Arbitrary Porous Solid for Its Accessible Volume, Accessible Geometrical Surface Area and Accessible Pore Size;<br><b>Duong Dang Do</b> , Luis Herrera, Chunyan Fan, Ha D. Do and David Nicholson                                | 55   |
| 16:20                                                          | Two-Dimensional Models of Adsorption in Finite Pores of Porous Carbons. Density Functional Theory Approach.;<br><b>Jacek Jagiello</b> and James P. Olivier                                                                                                                        | 56   |
| 16:40                                                          | Modeling Adsorption in Complex Structures: Use of Finely-Discretized Lattice-Gas DFT to Study the Effects of Pore Shape and Surface Roughness on Adsorption of Simple Gases;<br><b>Daniel W. Siderius</b> and Lev D. Gelb                                                         | 57   |
| 17:00                                                          | Can Carbon Surface Oxidation Change the Dubinin? Astakhov Porosity Parameters Calculated from CO <sub>2</sub> Adsorption Isotherms? Simulation Results for Realistic Carbon Model;<br><b>Artur Piotr Terzyk</b> , Sylwester Furmaniak, Piotr Antoni Gauden and Peter J. F. Harris | 58   |

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| 17:20 | Problems in the Characterization of Microporous/Mesoporous Materials by Physical Adsorption;<br><b>Francisco Rodríguez-Reinoso</b> , Joaquin Silvestre-Albero and Matthias Thommes | 195 |
| 17:40 | Cancelled                                                                                                                                                                          |     |

| <b>Session T5: Inorganic Porous Materials</b><br><i>Room: Event Hall      Chair: A. S. T. Chiang &amp; T. Ohkubo</i> |                                                                                                                                                                                                                                                                                       | Page |
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| 16:00                                                                                                                | Synthesis and Porous Structure of Synthetic Nitrogen-Containing Carbons on a Basis of Styrene-Divinylbenzene Copolymer;<br>Sergei Viktorovich Zhuravsky and <b>Mykola Tymofiyovych Kartel</b>                                                                                         | 61   |
| 16:20                                                                                                                | Nanopore Characterization of Double-Walled Carbon Nanotubes of Different Bundle Structures Using Gas Adsorption Measurements;<br><b>Yousheng Tao</b> , Hiroyuki Muramatsu, Takuya Hayashi, Yoong Ahm Kim, Morinobu Endo, Mauricio Terrones, Mildred S. Dresselhaus and Katsumi Kaneko | 62   |
| 16:40                                                                                                                | Preparation of Macroporous Carbon Foam Using Emulsion Templating Method;<br><b>Napawon Thongprachan</b> , Takuji Yamamoto, Jintawat Chaichanawong, Takao Ohmori and Akira Endo                                                                                                        | 63   |
| 17:00                                                                                                                | The Preparation of Activated Carbon with Super-High Surface Area from Sucrose and Its Characterization;<br>Jar-hon Shu, <b>Anthony Shiaw-Tseh Chiang</b> , Hsien-Ming Kao and Ming-Sheng Yu                                                                                           | 64   |
| 17:20                                                                                                                | Pore Accessibility of SiC- and Ti <sub>3</sub> SiC <sub>2</sub> -derived Carbons and their Heat-treated Forms;<br><b>Jun-Seok Bae</b> , Thanh Xuan Nguyen and Suresh Kumar Bhatia                                                                                                     | 65   |
| 17:40                                                                                                                | Dynamics of One-Dimensional Water through Nanogates Fabricated on Single Wall Carbon Nanohorn;<br><b>Tomonori Ohba</b> , Hirofumi Kanoh, Masako Yudasaka, Sumio Iijima and Katsumi Kaneko                                                                                             | 66   |

| <b>Session T6: Adsorptive Separation</b><br><i>Room: Amphitheater      Chair: G. McKay &amp; C. O. Ania</i> |                                                                                                                                                                                                                                                                                                                                                               | Page |
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| 16:00                                                                                                       | Adsorption Equilibria of Sugars in Single and Multicomponent Liquid Solutions;<br><b>Jadwiga Joanna Nowak</b> , Dorota Antos and Andreas Seidel-Morgenstern                                                                                                                                                                                                   | 67   |
| 16:20                                                                                                       | Adsorption of Aleuritate Ions on Strongly Basic Macroporous Ion Exchange Resin (Tulsion A-27 MP);<br><b>Navdeep Kaur</b> , A. K. Gupta, H. M. Chawla, V. K. Srivastava and Shantanu Roy                                                                                                                                                                       | 68   |
| 16:40                                                                                                       | Understanding Phenol Adsorption Mechanisms on Activated Carbons;<br>Leticia Fernandez Velasco, Jose B. Parra and <b>Conchi O. Ania</b>                                                                                                                                                                                                                        | 69   |
| 17:00                                                                                                       | Equilibrium and Kinetic of Lead Adsorption onto Tyre Char;<br><b>Oi Sum Chan</b> , Wai Hung Cheung and Gordon McKay                                                                                                                                                                                                                                           | 70   |
| 17:20                                                                                                       | Safety of the Adsorbers Used to Remove Volatile Organic Compounds onto Activated Carbons - A Model to Predict the Heat and Mass Transfers;<br><b>Sylvain Giraudet</b> , Pascaline Pré, Olivier Baudouin, Stephane Dechelotte and Pierre Le Cloirec                                                                                                            | 71   |
| 17:40                                                                                                       | Molecular Mechanisms of Adsorption, Desorption and Surface Chemical Reactions of Thiophenes with Deep and Ultradeep Desulfurization Sorbents Based on Doped Metal Oxides, by Multiple Surface and Bulk-Sensitive Temperature-Dependent Spectroscopies;<br><b>Alexander Samokhvalov</b> , Eduardus C. Duin, Ahm S. Hussain, Sachin Nair and Bruce J. Tatarchuk | 72   |

**18:00-19:00 Dinner**

| <b>Poster Session 2 - with refreshments</b>                          |                                         |
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| <i>At the Connecting Corridor to the Hotel      Chair: T. Ohkubo</i> |                                         |
| 19:00-20:40                                                          | See the separate listing on page xxxiv. |

**20:40      Hospitality (MICROMERITICS NIGHT at Room 405)**

**WEDNESDAY: May 26th, 2010**

\*Speakers are indicated in boldface type.

| Session W1: Materials - SiO <sub>2</sub> & Related Materials |                                                                                                                                                                                                                                                                                     | Page |
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| Room: Main Hall      Chair: Y. Kuroda & P. L. Llewellyn      |                                                                                                                                                                                                                                                                                     |      |
| 8:40                                                         | Adsorption of CO and CO <sub>2</sub> Using Microcalorimetry in Au@SiO <sub>2</sub> and Ag@SiO <sub>2</sub> Nanocomposites;<br>Emily Bloch, Virginie Hornebecq and <b>Philip L. Llewellyn</b>                                                                                        | 73   |
| 9:00                                                         | Selectivity Enhancement for Geometrical Isomers of PAHs by Controlled Adsorption in HPLC;<br><b>Abul Khayer Mallik</b> , T. Sawada, M. Takafuji and H. Ihara                                                                                                                        | 74   |
| 9:20                                                         | Studies on the Growth of Ice Crystal Templates during the Synthesis of a Monolithic Silica Microhoneycomb Using the Ice Templating Method;<br>Shin R. Mukai, Kazufusa Onodera and Izumi Yamada                                                                                      | 75   |
| 9:40                                                         | Synthesis-Structure-Property Relationships of Hyperbranched Aminosilica Adsorbents for the Capture of CO <sub>2</sub> from Simulated Flue Gas;<br><b>Jeffrey H. Drese</b> , Sunho Choi, Ryan P. Lively, William J. Koros, Daniel J. Fauth, McMahan L. Gray and Christopher W. Jones | 76   |
| 10:00                                                        | Prominent Surface Properties of MCM-41 Prepared by Template-ion Exchange Method;<br><b>Yasushige Kuroda</b> , Toshinori Mori, Takahiro Ohkubo, Hisayoshi Kobayashi, Shigeharu Kittaka and Masakazu Iwamoto                                                                          | 77   |

| Session W2: Adsorption for Biochemistry                |                                                                                                                                                                                                                                                                           | Page |
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| Room: Event Hall      Chair: A. Jungbauer & R. Denoyel |                                                                                                                                                                                                                                                                           |      |
| 8:40                                                   | Colloidal Microbial Transport in Subsurface Porous Media;<br>Chittaranjan Ray and <b>Tushar Kanti Sen</b>                                                                                                                                                                 | 78   |
| 9:00                                                   | Porous Iron Carboxylates as New Drug Carriers;<br><b>Aude Demessence</b> , Patricia Horcajada, Christian Serre, Ruxandra Gref, Tamim Chalati, Denise Paula da Cunha, Tarek Baati, Guillaume Maurin, Christelle Vagner, Renauld Denoyel, Patrick Couvreur and Gérard Férey | 79   |
| 9:20                                                   | Modeling Protein Binding and Elution Over a Chromatographic Surface Probed by Surface Plasmon Resonance;<br><b>Tiago Vicente</b> , José P.B. Mota, Cristina Peixoto, Paula M. Alves and Manuel J. T . Carrondo                                                            | 80   |
| 9:40                                                   | Adsorption Properties of DNA on Charged Surfaces;<br><b>Alois Jungbauer</b> and Tina Paril                                                                                                                                                                                | 81   |
| 10:00                                                  | The Influence of Surface Chemistry and Pore Size on the Adsorption of Proteins on Nanostructured Carbon Materials;<br><b>Roger Gadiou</b> , Munusamy Vijayaraj, Karine Anselme, Camelia Ghimbeu, Cathie Vix-Guterl, Hironori Orikasa and Takashi Kyotani                  | 82   |

| <b>Session W3: Separation Process - PSA/TSA</b><br><i>Room: Amphitheater      Chair: A. Sakoda &amp; L. Zhou</i> |                                                                                                                                                                                        | Page |
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| 8:40                                                                                                             | An Experimental Study of a Two-Step Ultra-Rapid Cycle Pulsed Pressure-Swing Adsorption Oxygen Concentrator;<br><b>Vemula Rama Rao</b> , Shamsuzzaman Farooq and William Bernard Krantz | 83   |
| 9:00                                                                                                             | Enrichment of Coalbed Methane by PSA with CO <sub>2</sub> Replacement;<br>Congmin Liu, Yaping Zhou, Wei Su, Yan Sun and <b>Li Zhou</b>                                                 | 84   |
| 9:20                                                                                                             | CO <sub>2</sub> Capture from Flue Gas with Layered Vacuum Swing Adsorption;<br><b>Dong Xu</b> , Jun Zhang, Penny Xiao, Gang Li, Paul A. Webley and Yuchun Zhai                         | 85   |
| 9:40                                                                                                             | Pre-combustion CO <sub>2</sub> Capture by PSA for IGCC Plants;<br><b>Nathalie Casas</b> , Johanna Schell and Marco Mazzotti                                                            | 86   |
| 10:00                                                                                                            | Improvement of the Recycle Technologies for C5/C6 Isomerization by Layered PSA;<br><b>Patrick S. Bárcia</b> , José A. C. Silva and Alirio E. Rodrigues                                 | 87   |
| 10:20                                                                                                            | Experimental Investigation on VTSA Cycle for CO <sub>2</sub> Capture;<br><b>Marc Clausse</b> , Francois Guilhamasse and Francis Meunier                                                | 88   |

**10:20-11:00 Coffee Break (Reception Hall B)**

| <b>Plenary W1: Materials</b><br><i>Room: Main Hall      Chair: H. Kanoh</i> |                                                                                                                                                                                                                           | Page |
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| 11:00                                                                       | MFI Zeolite Nanosheets of Single-Unit-Cell Thickness Pillared to a Uniform and Tunable Interlayer Spacing;<br><b>Kyungsu Na</b> , Minkee Choi, Changbum Jo, Woojin Park, Yasuhiro Sakamoto, Osamu Terasaki and Ryong Ryoo | 89   |
| 11:20                                                                       | Amplified Metal Ion Detection by Periodic Mesoporous Organosilica Chemosensor;<br>M. Waki, N. Mizoshita, Y. Maegawa, T. Hasegawa, T. Tani, T. Shimada and <b>S. Inagaki</b>                                               | 90   |
| 11:40                                                                       | Direct Capture of CO <sub>2</sub> from Ambient Air: A Carbon Negative Approach;<br><b>Christopher W. Jones</b> , Sunho Choi, Wen Li, Jeffrey H. Drese and Peter M. Eisenberger                                            | 91   |
| 12:00                                                                       | Adsorption of Hydrogen in Boron Substituted Carbon-Based Porous Materials;<br><b>Lucyna Firlej</b> , Bogdan Kuchta, Peter Pfeifer and Carlos Wexler                                                                       | 92   |

**12:20      Announcement of FOA11 by P. A. Monson (Main Hall)**

**12:30      Conference-Photo Shoot (Main Hall)**

**13:15-22:00 Conference Excursion (Boxed sandwich lunches served,  
Dinner at Kobe at your own expence)**

**22:00      Hospitality (Another JAPAN NIGHT at Room 405)**

**THURSDAY: May 27th, 2010**

\*Speakers are indicated in boldface type.

| <b>Plenary Th1: Molecular Modeling</b><br><i>Room: Main Hall      Chair: K. E. Gubbins</i> |                                                                                                                                                                                                                                                                                                                 | Page |
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| 8:40                                                                                       | Comparison of Nanoporous Structure of Activated Carbons and C-Faujasite Using Small Angle Neutron Scattering and Empirical Potential Structure Refinement;<br>Guillaume Huchet, <b>Pascaline Pré</b> , Dominique Jeulin, Jean-Noël Rouzaud, Alain Thorel, Mohammed Sennour, Matthieu Faessel, and Daniel Bowron | 93   |



|      |                                                                                                                                                                                                                                            |    |
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| 9:00 | X-Ray-Aided Structural Analysis of Capacitor-Related Electrolytic Solution Confined in Carbon Nanopores;<br>Akimi Tanaka, Taku Iiyama, Sumio Ozeki, Tomonori Ohba, Julie Segalini, Patrice Simon, Hirofumi Kanoh and <b>Katsumi Kaneko</b> | 94 |
| 9:20 | Modelling Selective Gas Adsorption Mechanisms in Metal-Organic Frameworks;<br><b>Brad A. Wells</b> and Alan L. Chaffee                                                                                                                     | 95 |
| 9:40 | Dynamics of H <sub>2</sub> Molecules on Graphite by Molecular Dynamics Simulation and Quasi-Elastic Neutron Scattering;<br>Ole-Erich Haas, <b>Jean-Marc Simon</b> and Signe Kjelstrup                                                      | 96 |

**10:00-10:20 Coffee Break (Reception Hall B)**

| <b>Session Th1: Zeolites &amp; Related Materials</b><br><i>Room: Main Hall      Chair: J. -P. Bellat &amp; S. Calero</i> |                                                                                                                                                                                                                                                                                          | Page |
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| 10:20                                                                                                                    | Aluminum Siting in Cationic Zeolites: A New Molecular Simulation Method to Predict Both Aluminum and Cation Location.;<br><b>Marie Jeffroy</b> , Carlos Nieto-Draghi and Anne Boutin                                                                                                     | 97   |
| 10:40                                                                                                                    | Enantioselective Adsorption Characteristics of Aluminum Substituted MFI Zeolites;<br>T. P. Caremans, T. S. van Erp, D. Dubbeldam, J. M. Castillo, J. Martens and <b>S. Calero</b>                                                                                                        | 98   |
| 11:00                                                                                                                    | Adsorption and Activation of C <sub>2</sub> H <sub>2</sub> by Cu <sup>+</sup> in CuMFI at 300 K;<br><b>Atsushi Itadani</b> , Kengo Takahara, Takashi Yumura, Takahiro Ohkubo, Hisayoshi Kobayashi and Yasushige Kuroda                                                                   | 99   |
| 11:20                                                                                                                    | Statistical Analysis and Partial Least Square Regression as New Tools for Modelling and Understanding the Adsorption Properties of Zeolites;<br>Philibert Leflaive, Gerhard Pirngruber, <b>Catherine Laroche</b> , Abdelaziz Faraj, Pierre Martin, Gino V. Baron and Joeri F. M. Denayer | 100  |
| 11:40                                                                                                                    | Purification of Saccharides by Adsorption on BEA-Zeolites and Extrudates - Properties, Kinetics and Process Concepts -;<br><b>Manuel Holtkamp</b> and Stephan Erich Scholl                                                                                                               | 101  |
| 12:00                                                                                                                    | In Situ FTIR Spectroscopy Study of Ethylene or Trichlorethylene on Silicalite-1 at 298 K;<br>Anthony Ballandras, <b>Guy Weber</b> , Maud Rotger and Jean Pierre Bellat                                                                                                                   | 103  |
| 12:20                                                                                                                    | Cancelled                                                                                                                                                                                                                                                                                |      |

| <b>Session Th2: MOFs - Storage &amp; Separation</b><br><i>Room: Event Hall      Chair: J. F. M. Denayer &amp; H. Jobic</i> |                                                                                                                                                                                                                                                                                                                        | Page |
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| 10:20                                                                                                                      | Coadsorption of CO <sub>2</sub> and H <sub>2</sub> O on MOFs: Adsorption Equilibrium, Rates of CO <sub>2</sub> Adsorption, and Comparisons with Zeolites;<br><b>Jian Liu</b> , Yu Wang, M. Douglas LeVan, Annabelle I. Benin, Paulina Jakubczak and Richard R. Willis                                                  | 104  |
| 10:40                                                                                                                      | Effect of Lithium Doping into Porous Materials on Hydrogen Adsorption Properties;<br><b>Masaru Kubo</b> , Keisuke Ishiyama, Hiroshi Ushiyama, Atsushi Shimojima and Tatsuya Okubo                                                                                                                                      | 105  |
| 11:00                                                                                                                      | Diffusion of H <sub>2</sub> , Alkanes and CO <sub>2</sub> in Rigid and Flexible Metal-Organic Framework Materials Using a Combination of Molecular Dynamics and Neutron Scattering Measurements;<br>Fabrice Salles, <b>Herve Jobic</b> , Aziz Ghoufi, Thomas Devic, Christian Serre, Gérard Férey and Guillaume Maurin | 106  |

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| 11:20 | The Use of Metal-Organic Frameworks as Sorbents for Gas Separations: Study of CO <sub>2</sub> /CH <sub>4</sub> Separation for PSA Applications;<br>Lomig Hamon, <b>Elsa Jolimaître</b> and Gerhard Pirngruber                                  | 107 |
| 11:40 | Molecular Modeling of Enantioselective Adsorption in Homochiral Metal-Organic Frameworks;<br><b>Xiaoying Bao</b> , Linda J. Broadbelt and Randall Q. Snurr                                                                                     | 108 |
| 12:00 | Effect of Framework Breathing on Column Breakthrough Separations using Flexible Metal Organic Frameworks;<br>Sarah Couck, Tom Remy, Luc Alaerts, Michael Maes, Christine Kirschhock, Dirk De Vos, Gino V. Baron and <b>Joeri F. M. Denayer</b> | 109 |
| 12:20 | Liquid Phase Separations on MOFs: Unsaturated vs Saturated Alkylaromatics;<br><b>Michael Maes</b> , Luc Alaerts and Dirk E. De Vos                                                                                                             | 110 |

| <b>Session Th3: Characterization of Adsorption Phenomena</b><br><i>Room: Amphitheater      Chair: R. Valiullin &amp; K. Morishige</i> |                                                                                                                                                                                            | Page |
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| 10:20                                                                                                                                 | Effect of Confinement on the Phase Diagram of NaCl-Water System;<br><b>Shigeharu Kittaka</b> , Yasutaka Fujii and Tsukasa Kataoka                                                          | 111  |
| 10:40                                                                                                                                 | Hydration Structure of Zinc Ion Restricted in Hydrophobic Nanospaces;<br><b>Takahiro Ohkubo</b> and Yasushige Kuroda                                                                       | 112  |
| 11:00                                                                                                                                 | Neck Size of Ordered Cage-Type Mesoporous Silica FDU-12 Determined by Successive Adsorption of Water and Nitrogen;<br><b>Kunimitsu Morishige</b> , Kenzi Yoshida and Tsubasa Yasuki        | 113  |
| 11:20                                                                                                                                 | Adsorption and Dynamics of Cyclohexane in Native and Silanized Controlled Pore Glasses;<br><b>Muslim Dvoyashkin</b> , R. Valiullin, E. Romanova, J. Kärger, W.-D. Einicke and Roger Gläser | 114  |
| 11:40                                                                                                                                 | Disorder Effects during Freezing in Linear Pores;<br><b>Daria Kondrashova</b> and Rustem Valiullin                                                                                         | 115  |
| 12:00                                                                                                                                 | Fluid Behavior in Macroscopically Long Hierarchical Porous Materials;<br><b>Rustem Valiullin</b> , Daria Kondrashova, Jörg Kärger, Peter A. Monson and Matthias Thommes                    | 116  |
| 12:20                                                                                                                                 | High Pressure Calorimetry of Water Intrusion in Silicalite-1;<br>Thomas Karbowiak, Christian Paulin, Anthony Ballandras, Guy Weber and <b>Jean Pierre Bellat</b>                           | 117  |

**12:40-14:00 Lunch (Boxed lunches served at the entrance lobby)**

| <b>Session Th4: Molecular Modeling for Micro &amp; Meso Porous Materials</b><br><i>Room: Main Hall      Chair: L. D. Gelb &amp; R. J.-M. Pellenq</i> |                                                                                                                                                                                                                        | Page |
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| 14:00                                                                                                                                                | Adsorption of CO <sub>2</sub> and CO <sub>2</sub> /CH <sub>4</sub> in 3D-Covalent Organic Framework - A Molecular Simulation Study;<br>Yujun Zhu, Shengchi Zhuo, Yongmin Huang, Jun Hu and <b>Honglai Liu</b>          | 118  |
| 14:20                                                                                                                                                | Computer Simulations and Experiments of Normal and Branched Alkane Adsorption in Complex Carbonaceous Materials;<br>Jose M. C. Pinto da Costa, Roger Cracknell, Nigel A. Seaton and <b>Lev Sarkisov</b>                | 119  |
| 14:40                                                                                                                                                | Adsorption Induced Swelling of Coal - Importance of Micropores and Extension of Usual Poromechanics to Microporous Adsorption;<br><b>Laurent Brochard</b> , Matthieu Vandamme, Olivier Coussy and Roland J.-M. Pellenq | 120  |
| 15:00                                                                                                                                                | Competitive Adsorption of Carbon Dioxide and Propane in Porous Silica: a Molecular Simulation Study;<br><b>Sergey M. Melnikov</b> and Andreas Seidel-Morgenstern                                                       | 121  |

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| 15:20 | Freezing of Simple Fluids in Regular and Disordered Carbon Nanotubes;<br><b>Benoit Coasne</b> , Keith E. Gubbins and Malgorzata Sliwinska-Bartkowiak   | 122 |
| 15:40 | Understanding the Structure of Functional Mesoporous Materials Through Simulations;<br>Alessandro Patti, Allan D. Mackie and <b>Flor R. Siperstein</b> | 123 |
| 16:00 | Computational Studies of Capillary Phenomena: The Effects of Aerogel Compliance on Adsorptive Behavior;<br><b>Lev D. Gelb</b>                          | 124 |

| <b>Session Th5: Adsorption/Separation for Bioenergy</b>      |                                                                                                                                                                                                                             | Page |
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| <i>Room: Event Hall      Chair: F. H. Tezel &amp; P. Pré</i> |                                                                                                                                                                                                                             |      |
| 14:00                                                        | Molecular Simulations for Adsorption and Separation of Natural Gas in IRMOF-1 and Cu-BTC Metal-Organic Frameworks;<br><b>Ana Martín-Calvo</b> , Elena García-Pérez, Juan Manuel Castillo and Sofía Calero Diaz              | 125  |
| 14:20                                                        | Upgrading of Synthetic Natural Gas (bio-SNG) by a Pressure Swing Adsorption Process for Injection into Natural Gas Grid;<br><b>Thangavelu Jayabalan</b> , Agnès Rochereau, Pascaline Pré, Olivier Guerrini and Agathe Jarry | 126  |
| 14:40                                                        | The Added Value of ACFC to Reach High-Grade Methane from Biogas;<br><b>Benoit Boulinguez</b> and Pierre Le Cloirec                                                                                                          | 127  |
| 15:00                                                        | Reducing Heat Effects in PSA Processes for CO <sub>2</sub> Removal;<br>Mónica P. Santos, <b>Carlos A. Grande</b> and Alirio E. Rodrigues                                                                                    | 128  |
| 15:20                                                        | Sorbents with Bronsted Acid Centers as Desulfurization Agents for Liquid Hydrocarbon Fuels at Ambient Conditions;<br>Sachin Nair and <b>Bruce J. Tatarchuk</b>                                                              | 129  |
| 15:40                                                        | Separation of Bioethanol from Fermentation Broth by Liquid-phase Adsorption;<br><b>Qingrong Qian</b> , Hirotaka Fujita, Takao Fujii, Kazuhiro Mochidzuki and Akiyoshi Sakoda                                                | 130  |
| 16:00                                                        | Enhanced Production of Bio-ethanol Using <i>E.Coli KO11</i> with Online Ethanol Extraction by Adsorption;<br>Rudy A. Jones, Julie-Anne Gandier, Jules Thibault and F. Handan Tezel                                          | 131  |

| <b>Session Th6: Water &amp; Ion Adsorption</b>                 |                                                                                                                                                                                                                                                        | Page |
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| <i>Room: Amphitheater      Chair: L. Zhong &amp; T. Iiyama</i> |                                                                                                                                                                                                                                                        |      |
| 14:00                                                          | Hydrogen-Bonding Structure of Water Assemblies in Hydrophobic Space: Experimental Investigation by X-ray and Neutron Diffractions;<br><b>Taku Iiyama</b> , Fumika Fujisaki, Ryusuke Futamura, Atom Hamasaki, Sumio Ozeki, A. Hoshikawa and T. Ishigaki | 132  |
| 14:20                                                          | Hydration Structure of Ca <sup>2+</sup> Ions Confined in Carbon Slit-Pores;<br><b>Natsuko Kojima</b> , Tomonori Ohba, Hirofumi Kanoh and Katsumi Kaneko                                                                                                | 133  |
| 14:40                                                          | Thermodynamics of Water Intrusion in Nanoporous Hydrophobic Zeolites;<br>Alain H. Fuchs, Fabien Caillez, <b>François-Xavier Coudert</b> , Thomas Karbowski, Jean-Pierre Bellat, Michel Soulard, Joel Patarin and Anne Boutin                           | 134  |
| 15:00                                                          | Investigation of Multi-component Adsorption in Nano-space by Large Angle and Small Angle X-ray Scattering Methods;<br><b>Ryusuke Futamura</b> , Taku Iiyama, Atom Hamasaki and Sumio Ozeki                                                             | 135  |
| 15:20                                                          | Characterisation and Improvement of Sorption Materials with Molecular Modeling for the Use in Heat Transformation Applications;<br><b>Stefan Kai Henninger</b> , Ferdinand Paul Schmidt and Hans-Martin Henning                                        | 136  |

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| 15:40 | Molecular Dynamics Simulation of Organic Adsorption from Aqueous Solutions in Carbon Slit-Like Pores;<br><b>Piotr A. Gauden</b> , Artur P. Terzyk, Sylwester Furmaniak and Radoslaw P. Wesolowski | 137 |
| 16:00 | Thermodynamic and Structural Properties of Water Film Adsorbed on MgO (100) Ionic Surface.;<br><b>Jean Paul Coulomb</b> , Benjamin Demirdjian, Daniel Ferry and Moshen Trabelsi                   | 138 |

**16:20-16:40 Coffee Break (Reception Hall B)**

| <b>Session Th7: Adsorption on Carbons</b>                             |                                                                                                                                                                                                                                               | Page |
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| <i>Room: Main Hall      Chair: S. Deng &amp; F. Rodríguez-Reinoso</i> |                                                                                                                                                                                                                                               |      |
| 16:40                                                                 | High Surface Area Carbon Molecular Sieves Prepared from Mesophase Pitch;<br>Jose Manuel Ramos-Fernández, Anass Wahby, Joaquin Silvestre-Albero, Manuel Martínez-Escandell, Antonio Sepúlveda-Escribano and <b>Francisco Rodríguez-Reinoso</b> | 139  |
| 17:00                                                                 | Adsorption of CO <sub>2</sub> and Water Vapor in Carbon Molecular Sieves (CMS 3K);<br><b>Rui P. P. L. Ribeiro</b> , Carlos A. Grande and Alirio E. Rodrigues                                                                                  | 140  |
| 17:20                                                                 | Moved to P24-121                                                                                                                                                                                                                              |      |
| 17:40                                                                 | Novel Properties of Methylene Blue Adsorption-Functionalized Single Wall Carbon Nanotubulites;<br><b>Fitri Khoerunnisa</b> , T. Ohba, H. Kanoh, M. Yudasaka, S. Iijima and Katsumi Kaneko                                                     | 142  |
| 18:00                                                                 | Hydrogen Adsorption on Partially Truncated C <sub>60</sub> Fullerene Molecules;<br>Dipendu Saha and <b>Shuguang Deng</b>                                                                                                                      | 143  |

| <b>Session Th8: Separation Technology - PSA</b>                   |                                                                                                                                                                                          | Page |
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| <i>Room: Event Hall      Chair: P. A. Webley &amp; K. Chihara</i> |                                                                                                                                                                                          |      |
| 16:40                                                             | Cancelled                                                                                                                                                                                |      |
| 17:00                                                             | Development of PSA System for the Recovery of Carbon Dioxide and Carbon Monoxide from Blast Furnace Gas in Steel Works;<br><b>Hitoshi Saima</b> , Y. Mogi, T. Haraoka and K. Hayashi     | 145  |
| 17:20                                                             | Process Intensification in PSA processes;<br><b>Spoorthi Gadde</b> , Anup Issac, Raghwendra Singh Thakur, Nitin Kaistha and D. P. Rao                                                    | 146  |
| 17:40                                                             | Development of Adsorbents for High Temperature CO <sub>2</sub> Separation from Real Coal Gasification Syngas;<br><b>Gongkui Xiao</b> , Ranjeet Singh, Alan L. Chaffee and Paul A. Webley | 147  |
| 18:00                                                             | Cancelled                                                                                                                                                                                |      |

| <b>Session Th9: New Apparatus/Methods</b><br><i>Room: Amphitheater      Chair: K. Hellgardt &amp; A. Bourgeois</i> |                                                                                                                                                                         | Page |
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| 16:40                                                                                                              | Ellipsometric Porosimetry: Fast and Non Destructive Characterization Method of Porous Thin Films;<br><b>Alexis Bourgeois</b> , Ch. Walsh, Ch. Defranoux and J. Ph. Piel | 149  |
| 17:00                                                                                                              | A Semi-Automated ZLC System for Rapid Screening of Adsorbents for Carbon Capture;<br><b>Stefano Brandani</b> , Xiayi Hu, Annabelle I. Benin and Richard R. Willis       | 150  |
| 17:20                                                                                                              | ESIEX-Electrical Swing Ion Exchange;<br>Wei Lu, Laurence Muhr and <b>Georges Grévilot</b>                                                                               | 151  |
| 17:40                                                                                                              | Magnetic Suspension Balance for Nanogram Resolution Adsorption Measurements;<br><b>Frieder Dreisbach</b> , Hans W. Losch, Reza Seif, Heinrich Baur and Bernard Bourdon  | 152  |
| 18:00                                                                                                              | FRT: A New in situ Technique for Total Molar Balances: Ammonia Adsorption on Zeolites;<br>Candice Palmer and <b>Klaus Hellgardt</b>                                     | 153  |

**19:00-22:00 Banquet (Grand Ballroom “Stella” in Westin Hotel)**  
**Student Banquet (Reception Hall B)**

**22:00      Hospitality (Final JAPAN NIGHT at Room 405)**

**FRIDAY: May 28th, 2010**

\*Speakers are indicated in boldface type.

| <b>Plenary F1: Adsorption for Environment Protection</b><br><i>Room: Main Hall      Chair: M. Mazzotti</i> |                                                                                                                                                                                                                                                                           | Page |
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| 8:40                                                                                                       | Enhanced CO <sub>2</sub> Solubility in Solvents Confined within Porous Solid Materials;<br><b>Ho Ngoc Linh</b> , Fabien Porcheron, Benoit Coasne and Roland Pellenq                                                                                                       | 154  |
| 9:00                                                                                                       | Assessment of CO <sub>2</sub> Capture by Moving Bed TSA;<br><b>Kent S. Knaebel</b>                                                                                                                                                                                        | 155  |
| 9:20                                                                                                       | Adsorption Technology for Direct Recovery of Compressed, Pure CO <sub>2</sub> from a Flue Gas without Pre-compression or Pre-drying;<br><b>Michael G. Beaver</b> and Shivaji Sircar                                                                                       | 156  |
| 9:40                                                                                                       | Optimization of a VSA Process for CO <sub>2</sub> Capture and Concentration;<br>M. M. F. Hasan, M. I. Hossain, <b>S. Farooq</b> , I. A. Karimi, M. Amanullah and A. Rajendran                                                                                             | 157  |
| 10:00                                                                                                      | CO <sub>2</sub> Capture from Flue Gas by Adsorption- Demonstration Project in Australia;<br><b>Jun Zhang</b> , Penny Xiao and Paul A. Webley                                                                                                                              | 158  |
| 10:20                                                                                                      | Development of NO <sub>x</sub> Recycle System using PSA Method : Verification Test of Practical Use at the Rokkasho Reprocessing Plant;<br>Nobuyuki Arai, Naoya Sakagami, Hiroaki Anekawa, Hidenari Yamatoya, Itsuo Akazawa, Yoshihiko Tsuchiyama and <b>Toshio Nishi</b> | 159  |

**10:40-11:00 Coffee Break (Reception Hall B)**

| <b>Plenary F2: Industrial</b><br><i>Room: Main Hall      Chair: K. S. Knaebel</i> |                                                                                                                                                                                       | Page |
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| 11:00                                                                             | Thermally Enhanced PSA (TEPSA) Adsorption System Air Purification System for New Designs & Debottlenecking of Cryogenic Air Separation (ASU) Systems;<br><b>Mohammad Ali Kalbassi</b> | 160  |

|       |                                                                                                                  |     |
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| 11:20 | The Activity of TOSOH Zeolite Adsorbents, ZEOLUM;<br><b>Shigeru Hirano</b> , Atsushi Harada, and Satoshi Yoshida | 161 |
| 11:40 | Recent Development in Adsorption Technique BEL JAPAN, INC.;<br><b>J. Sonoda</b>                                  | 162 |
| 12:00 | On Free Energy, Enthalpy, and Entropy to Assess Surface Area;<br><b>Jeffrey Kenvin</b>                           | 163 |

**12:20–12:40**

***Closing***

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**Save the date!**

**FOA11**

**11th International Conference on Fundamentals on Adsorption**

**May 19th – May 24th, 2013**

*Location will be announced at this meeting*

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**Poster Session 1 (May 24, Mon)**  
**At the Connecting Corridor to the Hotel Chair: N. Sano**

| <b>Adsorption on MOFs &amp; Flexible Porous Body</b> |                                                                                                                                                                                                                                                                       | <b>Page</b> |
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| P24-1                                                | Ellipsometric Porosimetry: A Characterization Method to Assess the Flexibility of Porous Thin Films;<br><b>Alexis Bourgeois</b> , Ch. Walsh, Ch. Defranoux and J. Ph. Piel                                                                                            | 164         |
| P24-2                                                | Solvent Treatment-induced Restoration of CO <sub>2</sub> Adsorptivity of a Flexible Cu-MOF;<br>Yan Cheng, Hiroshi Kajiro, <b>Atsushi Kondo</b> , Hiroshi Noguchi , Tomononi Ohba, Yoshiyuki Hattori, Katsumi Kaneko and Hirofumi Kanoh                                | 165         |
| P24-3                                                | Reducible MOFs for Improved Gas Separation;<br>Jong-San Chang, <b>Christian Serre</b> , Young Kyu Hwang, Alexandre Vimont, Philip L. Llewellyn, Patricia Horcajada, Jean Marc Grenèche, Marco Daturi and Gérard Férey                                                 | 166         |
| P24-4                                                | Identification of Adsorption Sites in Cu-BTC by Experimentation and Molecular Simulation;<br><b>Elena García-Pérez</b> , Jorge Gascón, Victor Morales-Flórez, Juan Manuel Castillo, Freek Kapteijn and Sofia Calero                                                   | 167         |
| P24-5                                                | Cancelled                                                                                                                                                                                                                                                             |             |
| P24-6                                                | Cancelled                                                                                                                                                                                                                                                             |             |
| P24-7                                                | Adsorptivity Regulation of Soft Porous Coordination Polymers through Fine Tuning of Ionic Components;<br><b>H. Kajiro</b> , A. Kondo, A. Chinen, T. Nakagawa, H. Noguchi, A. Tohdoh, Y. Hattori, W.-C. Xu, T. Ohba, K. Kaneko and H. Kanoh                            | 170         |
| P24-8                                                | Liquid-Phase Adsorption on Metal-Organic Frameworks;<br>Antje Henschel, <b>Irena Senkovska</b> and Stefan Kaskel                                                                                                                                                      | 171         |
| P24-9                                                | Adsorption Measurements of Pure Gas- and Mixed Gas Isotherms of Light Hydrocarbons on Metal Organic Framework HKUST-1;<br><b>Jens Möllmer</b> , Markus Borth, Andreas Möller and Reiner Staudt                                                                        | 172         |
| P24-10                                               | Sorption Properties of Mesoporous Chromium(III) Terephthalate MIL-101;<br>Ji Woong Yoon, Do-Young Hong, Young Kyu Hwang, Dong Won Hwang, Jong-San Chang, Christian Serre, Philip L. Llewellyn and Gérard Férey                                                        | 173         |
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**At the Connecting Corridor to the Hotel    Chair: T. Ohkubo**

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