

# CARBON 2008 Conference Program Oral

## Oral Sessions

MONDAY, JULY 14, 2008

### 14AM1 Metropolitan

8:20 – 9:00 Asama B, C OPENING CEREMONY  
Conference Chairs Morinobu Endo (Shinshu Univ., Japan)

Chair: Dr. Noriko Yoshizawa (AIST, Japan)

9:00 – 9:50 Asama B, C PLENARY LECTURE  
Professor Takashi Kyotani (Tohoku Univ., Japan)  
“Templated Carbons - Nanostructure and Functions”

Chair: Prof. L. Radovic (Penn. State University, USA)

9:50 – 10:20 BREAK Metropolitan Lobby 3F, Asama B, Lobby 2F, Sunroute Lobby 3F

### 14AM2 (ORAL SESSION 1)

#### Session A

Metropolitan Room Asama A

#### BIOLOGICAL AND MEDICAL APPLICATIONS

Chairs: Prof. Robert Hurt (Brown Univ., USA)

Prof. Shozo Koyama (Shinshu Univ., Japan)

#### 14A-am-01 10:20 – 10:50 KEYNOTE LECTURE

Biological (Immunological) Responses and Medical Application of Carbon Nanotube

Prof. Shozo Koyama (Shinshu Univ., Japan) 1

#### 14A-am-02 10:50 – 11:10

Chemical Modification of Nanodiamond Surface Aiming at Medicinal and Biological Applications

Naoki Komatsu<sup>1</sup>, Tatsuya Takimoto<sup>1</sup>, Takahide Kimura<sup>1</sup>, Masahito Morita<sup>1</sup>, Toshiro Inubushi<sup>1</sup> (<sup>1</sup>Shiga Univ. of Medical Science, Japan) 1

#### 14A-am-03 11:10 – 11:30

Isolation of Double Walled Carbon Nanotubes via Single Stranded DNA

Jin Hee Kim<sup>1</sup>, Masakatsu Kataoka<sup>1</sup>, Daisuke Shimamoto<sup>1</sup>, Hiroyuki Muramatsu<sup>1</sup>, Yoong Ahm Kim<sup>1</sup>, Takuya Hayashi<sup>1</sup>, Morinobu Endo<sup>1</sup> (<sup>1</sup>Shinshu Univ., Japan) 274

#### 14A-am-04 11:30 – 11:50

Targeted Removal of Bioavailable Metal as a Detoxification Strategy for Carbon Nanotubes

Robert H. Hurt<sup>1</sup>, Xinyuan Liu<sup>1</sup>, Lin Guo<sup>1</sup>, Daniel Morris<sup>1</sup>, Agnes Kane<sup>1</sup> (<sup>1</sup>Brown Univ., USA) 2

#### 14A-am-05 11:50 – 12:10

Application of Granular Carbon Materials on Micro-contaminations Removal: Case Study

Chuan Chi Chien<sup>1</sup>, Chih Ming Kao<sup>2</sup>, Ying Pin Huang<sup>1</sup>, Ching Hui Chang<sup>1</sup> (<sup>1</sup>Industrial Technology Research Institute, Taiwan) (<sup>2</sup>National Sun Yat-Sen Univ., Taiwan) 3

#### 14A-am-06 12:10 – 12:30

Water-dispersible Carbon Nano Test Tubes Including Magnetic Particles ~Towards the Application to Magnetically Targeted Drug Delivery System~

Hironori Oriyama<sup>1</sup>, Somlak Ittisanronnachai<sup>1</sup>, Xiao-Hui Wang<sup>1</sup>, Nobuhiro Inokuma<sup>1</sup>, Takashi Kyotani<sup>1</sup>, Yoshihiro Uozu<sup>2</sup> (<sup>1</sup>Tohoku Univ., Japan) (<sup>2</sup>Mitsubishi Rayon Co., LTD., Japan) 3

#### Session B

Metropolitan Room Azusa

#### ELECTROCHEMISTRY, BATTERIES AND CAPACITORS

Chairs: Dr. Yong Jung Kim (Shinshu Univ., Japan)

Prof. Soshi Shiraishi (Gunma Univ., Japan)

#### 14B-am-01 10:20 – 10:50 FEATURED LECTURE

Nanoporous Carbons for Electric Double Layer Capacitor ~Not Only Capacitance but Also Voltage~

Prof. Soshi Shiraishi (Gunma Univ., Japan) 4

#### 14B-am-02 10:50 – 11:10

Preparation and Characterization of W and Mo Carbides/Carbon Composites with High Specific Surface Area

Yasushi Soneda<sup>1</sup>, Wei Liu<sup>1</sup>, Junya Yamashita<sup>1</sup>, Masaya Kodama<sup>1</sup>, Hiroaki Hatori<sup>1</sup> (<sup>1</sup>National Institute of Advanced Industrial Science and Technology (AIST), Japan) 4

#### 14B-am-03 11:10 – 11:30

Correlations between Chemical Structure, Porosity and High Capacitance of AMN Materials

Olga Drozdova<sup>1</sup>, Jiping Ye<sup>1</sup>, Masayuki Kawaguchi<sup>2</sup> (<sup>1</sup>Nissan Co., Ltd., Japan) (<sup>2</sup>Osaka Electro. Univ., Japan) 5

#### 14B-am-04 11:30 – 11:50

Effect of Nitrogen and Boron Doping on EDLC Characteristics of Ordered Porous Carbon Materials

Taeri Kwon<sup>1</sup>, Hiroto Nishihara<sup>1</sup>, Yu Fukura<sup>1</sup>, Taichi Kogure<sup>1</sup>, Peng-Xiang Hou<sup>1</sup>, Quan-Hong Yang<sup>2</sup>, Takashi Kyotani<sup>1</sup> (<sup>1</sup>Tohoku Univ., Japan) (<sup>2</sup>Tianjin Univ., China) 5

#### 14B-am-05 11:50 – 12:10

EDLC Properties of Novel Type of Phenolic Resin Including Nitrogen Functionality by Using KOH Activation

Yong Jung Kim<sup>1</sup>, Masaaki Kitani<sup>1</sup>, Tsuyoshi Kodama<sup>1</sup>, Keita Higuchi<sup>1</sup>, Naohiro Aoyama<sup>1</sup>, Takayuki Oka<sup>1</sup>, Akane Kobayashi<sup>1</sup>, Morinobu Endo<sup>1</sup> (<sup>1</sup>Shinshu Univ., Japan) 6

#### 12:30 – 13:30 LUNCH

Metropolitan Asama B, C and Chikuma

#### 12:30 – 13:30 LUNCH

Metropolitan Asama B, C and Chikuma

# CARBON 2008 Conference Program Oral

## Oral Sessions MONDAY, JULY 14, 2008

### 14PM1 (ORAL SESSION 2)

#### Session A

Metropolitan Room Asama A

#### **INDUSTRIAL APPLICATIONS**

Chairs: *Mr. Jock W. H. Smith (Dalhousie Univ., Canada)*

*Prof. Toru MAEKAWA (Toyo Univ., Japan)*

#### 14A-pm-01 13:30 – 14:00 FEATURED LECTURE

#### **Carbon Materials for Electromagnetic Interference Shielding**

*Dr. Yasuhiro Yamada*<sup>1-3</sup>, *Deborah Chung*<sup>1</sup> (<sup>1</sup>State Univ. of New York at Buffalo, USA) (<sup>2</sup>Nippon Chemi-Con Corporation) (<sup>3</sup>National Institute of Advanced Industrial Science and Technology (AIST), Japan) 6

#### 14A-pm-02 14:00 – 14:30 FEATURED LECTURE

#### **Bulk Isotropic Pyrolytic Carbon – A High Performance Material for Mechanical Sealing**

*Jun-Feng Wu*<sup>1</sup>, *Shuo Bai*<sup>1</sup>, *Hong-Jun Xu*<sup>1</sup>, *Xu-Ke Zhou*<sup>1</sup>, *Chuan Luo*<sup>1</sup>, *Prof. Hui-Ming Cheng*<sup>1</sup> (<sup>1</sup>Chinese Academy of Sciences, China) 7

#### 14A-pm-03 14:30 – 14:50

#### **The Properties of Basic Copper Carbonate Based Impregnation Recipes for the Optimization of Respirator Carbons**

*Jock W. H. Smith*<sup>1</sup>, *Jeff Dahn*<sup>1</sup>, *Philippe Westreich*<sup>1</sup> (<sup>1</sup>Dalhousie Univ., Canada) 7

#### 14A-pm-04 14:50 – 15:10

#### **Powder Injection Molded Graphite for Tribological Applications**

*Christian A Rottmair*<sup>1</sup>, *Michael Gruhl*<sup>1</sup> (<sup>1</sup>Univ. of Erlangen, Germany) 8

#### 14A-pm-05 15:10 – 15:30

#### **New Graphite Based Composite Materials for Low Emission Combustion Engines**

*Javier Narciso*<sup>1</sup>, *Noelia Calderon*<sup>1</sup>, *Alejandro Rodriguez*<sup>1</sup>, *Segundo Sanchez*<sup>1</sup>, *Francisco Reinoso*<sup>1</sup>, *Rachel Rios*<sup>1</sup>, *Lenneart Ljungberg*<sup>2</sup>, *Enrique Louis*<sup>1</sup> (<sup>1</sup>Alicante Univ., Spain) (<sup>2</sup>Skövde Univ., Sweden) 8

#### 14A-pm-06 15:30 – 15:50

#### **Precise Manipulation of Magnetic Carbon Nanotubes by a Rotational Magnetic Field**

*Toru Maekawa*<sup>1</sup>, *Hisao Morimoto*<sup>1</sup>, *Akitoshi Eto*<sup>1</sup>, *Yutaka Nagaoka*<sup>1</sup>, *Tomofumi Ukai*<sup>1</sup>, *Nicole Grobert*<sup>2</sup> (<sup>1</sup>Toyo Univ., Japan) (<sup>2</sup>Univ. of Oxford, UK) 9

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#### **15:50 – 16:00 Coffee Break**

Metropolitan Lobby 3F, Asama B, Lobby 2F,  
Sunroute Lobby 3F

#### Session B

Metropolitan Room Azusa

#### **ELECTROCHEMISTRY, BATTERIES AND CAPACITORS**

Chairs: *Dr. Hiroaki Hatori (AIST, Japan)*

*Prof. Kap Seung Yang (Chonnam National Univ., Korea)*

#### 14B-pm-01 13:30 – 14:00 FEATURED LECTURE

#### **Pure Single-walled Carbon Nanotube Electrodes for Supercapacitors**

*Dr. Hiroaki Hatori*<sup>1</sup>, *Osamu Kimizuka*<sup>1</sup>, *Osamu Tanaike*<sup>1</sup>, *Junya Yamashita*<sup>1</sup>, *Don Futaba*<sup>1</sup>, *Kenji Hata*<sup>1</sup>, *Susumu Saeki*<sup>2</sup>, *Yoshio Yamada*<sup>2</sup>, *Kenji Mashida*<sup>3</sup>, *Shunzo Suematsu*<sup>3</sup>, *Kenji Tamamitsu*<sup>3</sup> (<sup>1</sup>National Institute of Advanced Industrial Science and Technology (AIST), Japan) (<sup>2</sup>Fukui Univ., Japan) (<sup>3</sup>Nippon Chemi-Con Corporation) 12

#### 14B-pm-02 14:00 – 14:20

#### **Nitrogen-doped Carbons for Supercapacitors**

*Denisa Hulicova Jurcakova*<sup>1</sup>, *Masaya Kodama*<sup>2</sup>, *Teresa Bandoz*<sup>3</sup>, *Max Lu*<sup>1</sup> (<sup>1</sup>Univ. of Queensland, Australia) (<sup>2</sup>National Institute of Advanced Industrial Science and Technology (AIST), Japan) (<sup>3</sup>The City College of New York, USA) 13

#### 14B-pm-03 14:20 – 14:40

#### **Preparation of Ti/O/C/N Materials by Chemical Vapor Deposition Method and Their Photo-electrochemical Characteristics**

*Yuko Taniguchi*<sup>1</sup>, *Daizou Imai*<sup>1</sup>, *Masayuki Kawaguchi*<sup>1</sup> (<sup>1</sup>Osaka Electro-Comm. Univ., Japan) 13

#### 14B-pm-04 14:40 – 15:00

#### **Capacitor Performance of Carbon Fibers Prepared from Commercially Available Meta-aramid Fiber "Conex"**

*Yutaka Kaburagi*<sup>1</sup>, *Akira Inoue*<sup>1</sup> (<sup>1</sup>Musashi Institute of Technology, Japan) 14

#### 14B-pm-05 15:00 – 15:20

#### **Enhanced Electrochemical Capacity Materials for Energy Storage Applications**

*Anthony G. Pandolfo*<sup>1</sup>, *Gregory Wilson*<sup>1</sup> (<sup>1</sup>CSIRO, Australia) 14

#### 14B-pm-06 15:20 – 15:40

#### **Synthesis and Electrochemical Characterizations of MnO<sub>2</sub>-dispersed Carbon Aerogel as Supercapacitor Electrode Material**

*Ruowen Fu*<sup>1</sup>, *Guifen Lv*<sup>1</sup>, *Dingcai Wu*<sup>1</sup> (<sup>1</sup>Sun Yat-sen Univ., China) 15

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#### **15:40 – 16:00 Coffee Break**

Metropolitan Lobby 3F, Asama B, Lobby 2F,  
Sunroute Lobby 3F

# CARBON 2008 Conference Program Oral

## Oral Sessions MONDAY, JULY 14, 2008

### 14PM2 (ORAL SESSION 3)

#### Session A

Metropolitan Room Asama A

#### **NANOFORMS**

Chairs: Prof. Feiyu Kang (Tsinghua Univ., China)

Prof. Masahiro Toyoda (Oita Univ., Japan)

#### 14A-pm-07 16:00 – 16:30 KEYNOTE LECTURE

**Raman Scattering from Graphene and Narrow Graphene Ribbons**

Prof. Peter C. Eklund (Pennsylvania State Univ., USA)

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#### 14A-pm-08 16:30 – 16:50

**Carbon Nanospheres Derived via Sedimentation from Resorcinol-Formaldehyde Solutions**

Christian Scherdel<sup>1</sup>, Tobias Scherb<sup>1</sup>, Gudrun Reichenauer<sup>1</sup>,  
(<sup>1</sup>Bavarian Center for Applied Energy Research, Germany)

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#### 14A-pm-09 16:50 – 17:10

**Comparative Characterization of Porous Carbons Derived from Different Aromatic Compounds**

Arkadi Maisels<sup>1</sup>, Yves Stommel<sup>1</sup>, Frank Stenger<sup>1</sup>, Jutta Zimmermann<sup>1</sup>, Gudrun Reichenauer<sup>2</sup>, Christian Scherdel<sup>2</sup>  
(<sup>1</sup>Evonik Degussa, Germany) (<sup>2</sup>Bavarian Center for Applied Energy Research, Germany)

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#### 14A-pm-10 17:10 – 17:30

**Catalytic Activity of Carbon Nanofoams Supported Iron**

Michell S Francesconi<sup>1</sup>, Maibelin Rosales<sup>1</sup>, Juan Matos<sup>1</sup>  
(<sup>1</sup>Venezuelan Institute for Scientific Research, Venezuela)

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#### 14A-pm-11 17:30 – 17:50

**Incorporation of Organic Monomers within a Carbon Matrix via One Step Hydrothermal Carbonization**

Rezan Demir-Cakan<sup>1</sup>, Maria Titirici<sup>1</sup>, Markus Antonietti<sup>1</sup>  
(<sup>1</sup>Max-Planck Institute, Germany)

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#### 14A-pm-12 17:50 – 18:10

**Direct Fabrication of Bimodal Mesoporous Carbon by Nanocasting**

Dingcai Wu (Sun Yat-sen Univ., China)

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18:20 – 20:30

POSTER SESSION 1

#### Session B

Metropolitan Room Azusa

#### **ELECTROCHEMISTRY, BATTERIES AND CAPACITORS**

Chairs: Prof. S. M. Oh (Seoul National Univ., Korea)

Prof. Fujio Okino (Shinshu Univ., Japan)

#### 14B-pm-07 16:00 – 16:30 INVITED LECTURE

**Electrochemical Activation Behavior of Graphitic Carbons**

Prof. S. M. Oh (Seoul National Univ., Korea)

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#### 14B-pm-08 16:30 – 17:00 FEATURED LECTURE

**Understanding of the Electrochemical Process in Supercapacitor by Using Zeolite Templated Carbon as a Model Material**

Dr. Hiroto Nishihara<sup>1</sup>, Hiroyuki Itoi<sup>1</sup>, Taichi Kogure<sup>1</sup>, Peng-Xiang Hou<sup>1</sup>, Takashi Kyotani<sup>1</sup>  
(<sup>1</sup>Tohoku Univ., Japan)

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#### 14B-pm-09 17:00 – 17:20

**A Route to Evaluate the Contribution of Each Mechanism of Energy Storage to the Overall Capacitance of Supercapacitors**

Vanesa Ruiz<sup>1</sup>, I. Villar<sup>1</sup>, C. Blanco<sup>1</sup>, M. Granda<sup>1</sup>, R. Menéndez<sup>1</sup>, R. Santamaría<sup>1</sup> (<sup>1</sup>Institute of Nacional Carbon, Spain)

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#### 14B-pm-10 17:20 – 17:40

**Hierarchical Porous Carbon with Localized Graphitic Units for High Rate Electrochemical Capacitive Energy Storage**

Feng Li<sup>1</sup>, Da-Wei Wang<sup>1</sup>, Min Liu<sup>1</sup>, Hui-Ming Cheng<sup>1</sup>  
(<sup>1</sup>Institute of Metal Research, China)

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#### 14B-pm-11 17:40 – 18:00

**Electrochemical Intercalation of Solvated Lithium Ions into Carbon Nanotube Bundles and Their Expansion**

Osamu Tanaike<sup>1</sup>, Osamu Kimizuka<sup>2</sup>, Katane Yamada<sup>1</sup>, Hiroaki Hatori<sup>1</sup> (<sup>1</sup>National Institute of Advanced Industrial Science and Technology (AIST), Japan) (<sup>2</sup>Univ. of Fukui, Japan)

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#### 14B-pm-12

(Withdrawn)

Move to 16P-I-103.

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18:20 – 20:30

POSTER SESSION 1

## Oral Sessions MONDAY, JULY 14, 2008

### 14AM2 (ORAL SESSION 1)

#### Session C

Metropolitan Room Shiga

#### **CARBONIZATION AND GRAPHITIZATION**

Chairs: Prof. P. Thrower (Editor-in-Chief, CARBON, UK)

Prof. T. Kyotani (Tohoku Univ., Japan)

#### 14C-am-01 10:20 – 10:50 INVITED LECTURE

##### **Carbon Material Carbonization in Plastic Phase**

Prof. Sylvie A. Bonnamy (CRMD/CNRS-Univ., France) 18

#### 14C-am-02 10:50 – 11:10

##### **Carbonization Behavior of Iodine Treated Carbonaceous Mesophase**

Eiichi Yasuda<sup>1</sup>, Takashi Nishizawa<sup>1</sup>, Tomohiro Furukawa<sup>1</sup>, Asao Oya<sup>1</sup>, Mitunao Kakuta<sup>1</sup>, Takashi Akatsu<sup>1</sup> (<sup>1</sup>Tokyo Institute of Technology, Japan) 19

#### 14C-am-03 11:10 – 11:30

##### **Temperature-programed Oxidation Study of Carbons from Low Density Polyethylene Pyrolysis**

Noelia Alonso-Morales<sup>1</sup>, Miguel Gilarranz<sup>1</sup>, Semih Eser<sup>2</sup>, Juan Rodríguez<sup>1</sup> (<sup>1</sup>Universidad Autónoma de Madrid, Spain) (<sup>2</sup>Penn. State Univ., USA) 19

#### 14C-am-04 11:30 – 11:50

##### **Microstructures and Porous Structures of Bituminous Coal in Heat-treatment**

Ying Bao<sup>1</sup>, Yun Chuan<sup>1</sup> (<sup>1</sup>Peking Univ., China) 20

#### 14C-am-05 11:50 – 12:10

##### **Highly Crystalline Carbon Films Produced from Benzimidazobenzophenanthroline Ladder-polymer**

Junya Yamashita<sup>1</sup>, Masatoshi Shioya<sup>2</sup>, Hiroaki Hatori<sup>1</sup> (<sup>1</sup>National Institute of Advanced Industrial Science and Technology (AIST), Japan) (<sup>2</sup>Tokyo Institute of Technology, Japan) 20

#### 14C-am-06 12:10 – 12:30

##### **Carbonization and Structure Properties of Film-typed Products Obtained from Cellulose Polymers**

Naoya Miyajima<sup>1</sup>, Naoto Ishikawa<sup>1</sup>, Hideto Sakane<sup>1</sup>, Hiroaki Hatori<sup>2</sup> (<sup>1</sup>Univ. of Yamanashi, Japan) (<sup>2</sup>AIST, Japan) 21

#### 12:30 – 13:30 LUNCH

Metropolitan Asama B, C and Chikuma

#### Session D

Sunroute Room Hiten

#### **ADSORPTION, SURFACES AND POROUS MATERIALS**

Chairs: Prof. Teresa J. Bandosz (City College of New York, USA)

Prof. Katsumi Kaneko (Chiba Univ., Japan)

#### 14D-am-01 10:20 – 10:40

##### **Interaction between Hydrogen and the Surface of Foreign Atoms Doped Carbon.**

Haruo Kumagai<sup>1</sup>, Yosimi Kanematsu<sup>2</sup>, Jun-ichi Ozaki<sup>2</sup> (<sup>1</sup>Hokkaido Univ., Japan) (<sup>2</sup>Gunma Univ., Japan) 21

#### 14D-am-02 10:40 – 11:00

##### **Removal of Ammonia from Air on Molybdenum and Tungsten Oxide Modified Activated Carbons**

Teresa J. Bandosz<sup>1</sup>, Camille Petit<sup>1</sup> (<sup>1</sup>City College of New York, USA) 22

#### 14D-am-03 11:00 – 11:20

##### **TPD Study of Surface Structure of Activated Carbons Oxidized and Loaded with Platinum during Heat Treatment**

Hideyuki Takagi<sup>1</sup>, Hiroaki Hatori<sup>1</sup> (<sup>1</sup>National Institute of Advanced Industrial Science and Technology (AIST), Japan) 22

#### 14D-am-04 11:20 – 11:40

##### **Tailoring Regeneration of GAC for TOC and Benzene Removal**

Weifang Chen<sup>1</sup>, Adam Redding<sup>1</sup>, Tinina Thompson<sup>1</sup>, Fred Cannon<sup>1</sup> (<sup>1</sup>Pennsylvania State Univ., USA) 23

#### 14D-am-05 11:40 – 12:00

##### **Competitive Adsorption of Phenol and Heavy Metals in Aqueous Solution onto Bamboo Type Nitrogen Doped Carbon Nanotubes**

Paola E. Diaz-Flores<sup>1</sup>, J. Rangel-Mendez<sup>1</sup>, M. Terrones<sup>1</sup> (<sup>1</sup>IPICyT, Mexico) 23

#### 14D-am-06 12:00 – 12:20

##### **Influence of the Recovery Procedure of Kraft Lignin over Its Nickel Adsorption Capacity**

Luisa A Delgado<sup>1</sup>, Monica Krauter<sup>1</sup>, Carlos Urbaneja<sup>1</sup>, Ana Nunez<sup>1</sup>, Narciso Perez<sup>1</sup> (<sup>1</sup>Simon Bolivar Univ., Venezuela) 24

#### 12:30 – 13:30 LUNCH

Metropolitan Asama B, C and Chikuma

## Oral Sessions MONDAY, JULY 14, 2008

### 14PM1 (ORAL SESSION 2)

#### Session C

Metropolitan Room Shiga

#### **CARBONIZATION AND GRAPHITIZATION**

Chairs: Prof. Hidetaka Konno (Hokkaido Univ., Japan)

Dr. Junya Yamashita (AIST, Japan)

#### **14C-pm-01 13:30 – 13:50**

**Effect of High Pressure and High Temperature on Detonation Nanodiamond and Microdiamond**

Sergey V. Kidalov<sup>1</sup>, Fedor Shakhov<sup>1</sup>, Alexander Vul<sup>1</sup> (<sup>1</sup>Ioffe Institute, Russia) 24

#### **14C-pm-02 13:50 – 14:10**

**Preparation and Characterization of Mesophase-pitch-based Foam/Natural Graphite Composites**

Cheng-Yang Wang<sup>1</sup>, Mei-xian Wang<sup>1</sup>, Tong-Qi Li<sup>2</sup>, Zi-Jun Hu<sup>2</sup> (<sup>1</sup>Tianjin Univ., China) (<sup>2</sup>Aerospace Research Institute of Materials & Processing Technology, China) 25

#### **14C-pm-03 14:10 – 14:30**

**Synthesis of Functionalized Mesoporous Carbon via a One-pot Hydrothermal Carbonization Method**

Niki Baccile<sup>1</sup>, Maria Magdalena Titirici<sup>1</sup>, Markus Antonietti<sup>1</sup> (<sup>1</sup>Max-Planck Institute, Germany) 25

#### **14C-pm-04 14:30 – 14:50**

**Synthesis and Applications of Carbon Xerogel Microspheres and Fractal like Structures**

Chandra Shekhar Sharma<sup>1</sup>, Manish Kulkarni<sup>1</sup>, Ashutosh Sharma<sup>1</sup> (<sup>1</sup>Indian Institute of Technology, India) 26

#### **14C-pm-05 14:50 – 15:10**

**Preparation of High Surface Area Granular Activated Carbon Using Chemical Activation Techniques**

Mahnaz N. Asl<sup>1</sup>, Majid Abedinzadegan Abdi<sup>2</sup>, Alireza Mirhabibi<sup>3</sup>, Mohammad Mahdyarfar<sup>1</sup>, Roya Aghababazadeh (<sup>1</sup>RPI, Iran) (<sup>2</sup>Memorial Univ. of Newfoundland, Canada) (<sup>3</sup>Iran Univ. of Science and Technology, Iran) (<sup>4</sup>Institute for Colorants, Paint and Coatings, Iran) 26

#### **14C-pm-06 15:10 – 15:30**

**High Temperature Carbons from LPDE Chars**

Juan J. Rodriguez<sup>1</sup>, Noelia Alonso-Morales<sup>1</sup>, Miguel Gilarranz<sup>1</sup>, Semih Eser<sup>2</sup> (<sup>1</sup>Universidad Autonoma de Madrid, Spain) (<sup>2</sup>Pennsylvania State Univ., USA) 27

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**15:30 – 16:00 Coffee Break**

**Metropolitan Lobby 3F, Asama B, Lobby 2F, Sunroute Lobby 3F**

#### Session D

Sunroute Room Hiten

#### **ADSORPTION, SURFACES AND POROUS MATERIALS**

Chairs: Prof. Philippe Westreich (Dalhousie Univ., Canada)

Prof. Haruo Kumagai (Hokkaido Univ., Japan)

#### **14D-pm-01 13:30 – 13:50**

**Transition of ZnCl<sub>2</sub> from Hydrophobic Monolayer to Hydrophilic Aggregate when Impregnated on Activated Carbon and Its Capacity for Ammonia Removal**

Philippe Westreich<sup>1</sup>, Hubert Fortier<sup>1</sup>, Stanley Selig<sup>1</sup>, Caleb Zelenietz<sup>1</sup>, Jeff Dahn<sup>1</sup> (<sup>1</sup>Dalhousie Univ., Canada) 30

#### **14D-pm-02 13:50 – 14:10**

**Reaction Mechanism of Chemical Activation of Phenol Formaldehyde Resin with Potassium Hydroxide for Producing High-surface-area Activated Carbon**

Hiroyuki Nakagawa<sup>1</sup>, Yoh Abe<sup>1</sup>, Itaru Johichi<sup>1</sup>, Kouichi Miura<sup>1</sup> (<sup>1</sup>Kyoto Univ., Japan) 30

#### **14D-pm-03 14:10 – 14:30 INVITED LECTURE**

**Carbon Nanotube and Mesoporous Carbon Catalyzed Hydrogen Chemical Sorption in Nanocrystalline Mg**

G.Q. Max LU<sup>1</sup>, X.D. Yao<sup>1</sup>, Li Li<sup>1</sup>, Z.H. Zhu<sup>1</sup>, H.M. Cheng<sup>1</sup> (<sup>1</sup>Univ. of Queensland, Australia)

#### **14D-pm-04 14:30 – 14:50**

**Synthesis of Aluminium Phosphate and Their Templated Ordered Porous Carbons**

Chunxia Zhao<sup>1</sup>, Yunxia Yang<sup>1</sup>, Wen Chen<sup>2</sup>, Huanting Wang<sup>1</sup>, Dongyuan Zhao<sup>3</sup>, Paul Webley<sup>1</sup> (<sup>1</sup>Monash Univ., Australia) (<sup>2</sup>Wuhan Univ. of Technology, China) (<sup>3</sup>Fudan Univ., China) 31

#### **14D-pm-05 14:50 – 15:10**

**The Controllable Synthesis of Mesoporous Carbon Materials**

Yu Wang<sup>1</sup>, Bin Cai<sup>1</sup>, Li Lin<sup>1</sup>, Yuexiang Zhu<sup>1</sup>, Youchang Xie<sup>1</sup>, Erhard Kemnitz<sup>2</sup> (<sup>1</sup>Peking Univ., China) (<sup>2</sup>Humboldt Univ., Germany) 32

#### **14D-pm-06 15:10 – 15:30**

**Synthesis of Hollow Carbon Spheres**

Xuejun Zhang<sup>1</sup>, Zhiyong Zhang<sup>1</sup> (<sup>1</sup>Beijing Univ. of Chem. Technol., China) 32

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**15:30 – 16:00 Coffee Break**

**Metropolitan Lobby 3F, Asama B, Lobby 2F, Sunroute Lobby 3F**

# CARBON 2008 Conference Program Oral

## Oral Sessions MONDAY, JULY 14, 2008

### 14PM2 (ORAL SESSION 3)

#### Session C

Metropolitan Room Shiga

#### **CARBONIZATION AND GRAPHITIZATION**

Chairs: Prof. Eiichi Yasuda (Tokyo Institute of Technology, Japan)

Prof. Sylvie A. Bonnamy (CNRS, France)

#### 14C-pm-07 16:00 – 16:30 INVITED LECTURE

#### **Pathways of Tar Formation and Tar Degradation**

Prof. Wolfgang A. Klose<sup>1</sup>, Arndt-Peter Schinke<sup>1</sup> (<sup>1</sup>Univ. of Kasse, Germany) 27

#### 14C-pm-08 16:30 – 16:50

#### **Kinetic Study of Controlled Oxidation of PVC and Pitch Chars**

Francisco G. Emmerich<sup>1</sup>, Gisele Altoe<sup>1</sup>, Jair Freitas<sup>1</sup>, Alfredo Cunha<sup>1</sup> (<sup>1</sup>Universidade Federal do Espirito Santo, Brazil) 28

#### 14C-pm-09 16:50 – 17:10

#### **Temperature-programmed Oxidation Studies of High Temperature Carbons Prepared from Low Density Polyethylene**

Miguel A. Gilarranz<sup>1</sup>, Noelia Alonso-Morales<sup>1</sup>, Semih Eser<sup>2</sup>, Juan Rodríguez<sup>1</sup> (<sup>1</sup>Universidad Autónoma de Madrid, Spain) (<sup>2</sup>Pennsylvania State Univ., USA) 28

#### 14C-pm-10 17:10 – 17:30

#### **Agave Bagasse as a Precursor to Produce Highly Microporous Activated Carbons**

César Nieto Delgado<sup>1</sup>, Jose Rangel-Mendez<sup>1</sup>, Mauricio Terrones<sup>1</sup> (<sup>1</sup>IPICT, Mexico) 29

#### 14C-pm-11 17:30 – 17:50

#### **Creation of Carbon Nano/Micro Structures via the Interaction between UV Photons and Fluid Molecules under Near-critical Conditions**

Toru Maekawa<sup>1</sup>, Takahiro Fukuda<sup>1</sup>, Takashi Hasumura<sup>1</sup>, Nami Watabe<sup>1</sup>, Nyrki Rantonen<sup>1</sup>, Raymond Whitby<sup>2</sup> (<sup>1</sup>Toyo Univ., Japan) (<sup>2</sup>Univ. of Brighton, UK) 29

18:20 – 20:30

POSTER SESSION 1

#### Session D

Sunroute Room Hiten

#### **ADSORPTION, SURFACES AND POROUS MATERIALS**

Chairs: Prof. Paul A. Webley (Monash Univ., Australia)

Prof. Taku Iiyama (Shinshu Univ., Japan)

#### 14D-pm-07 16:00 – 16:30 KEYNOTE LECTURE

#### **Nanopore Structure and Clean Gas Storage of C<sub>60</sub>-Pillared Single Wall Carbon Nanotube Bundles**

Prof. Katsumi Kaneko (Chiba Univ., Japan) 33

#### 14D-pm-08 16:30 – 16:50

#### **Attribution of Microporous Structure in Activated Carbons to Methane Storage**

Yoshiteru Nakagawa<sup>1</sup>, Joaquin Silvestre-Albero<sup>1</sup>, Miguel Molina-Sabio<sup>1</sup>, Francisco Rodríguez-Reinoso<sup>1</sup> (<sup>1</sup>Univ. of Alicante, Spain) 33

#### 14D-pm-09 16:50 – 17:10

#### **Nano-porous Carbon Produced by CDC (Carbide-derived Carbon) Method**

Nadejda Popovska<sup>1</sup>, Martina Kormann<sup>1</sup> (<sup>1</sup>Univ. of Erlangen-Nuremberg, Germany) 34

#### 14D-pm-10 17:10 – 17:30

#### **Accessibility of the Microporosity of Filtrasorb 400 Activated Carbon to the Herbicide Imazamox and P-nitrophenol Molecules**

Catherine Morlay<sup>1</sup>, Michaela Pilshofer<sup>1</sup>, Etienne Quivet<sup>1</sup>, Insaf Zidi-Dhouieb<sup>1</sup>, Rene Faure<sup>1</sup>, Jean-Pierre Joly<sup>1</sup> (<sup>1</sup>Univ. of Lyon, France) 35

#### 14D-pm-11 17:30 – 17:50

#### **Modelling Breakthrough Curves with the Dubinin-Astakhov isotherm and the Linear Driving Force Approximation**

Jean-Pierre Joly<sup>1</sup>, Alain Perrard<sup>1</sup>, Agnès Joly<sup>1</sup> (<sup>1</sup>Univ. of Lyon, France) 36

18:20 – 20:30

POSTER SESSION 1

## Oral Sessions

**TUESDAY, JULY 15, 2008**

### 15AM1 Metropolitan

8:00 - 8:30 Asama B, C INFORMATION

8:30 - 9:20 Asama B, C PLENARY LECTURE

Professor François Béguin (CNRS, France)

“Applications of Carbon Materials in Electrochemical Energy Storage Systems”

Chair: Prof. Noboru Akuzawa (Tokyo National College of Technology)

9:20 – 9:50 BREAK Metropolitan Lobby 3F, Asama B, Lobby 2F, Sunroute Lobby 3F

### 15AM2 (ORAL SESSION 4)

#### Session A

Metropolitan Room Asama A

#### **NANOFORMS**

Chairs: Dr. Hui-Ming Cheng (Institute of Metal Research, China)

Dr. Hiroshi Shioyama (AIST, Japan)

#### 15A-am-01 9:50 – 10:20 KEYNOTE LECTURE

**Geometry of Nanographene and Its Unconventional Magnetic Properties**

Prof. Toshiaki. Enoki (Tokyo Institute of Technology, Japan) 37

#### 15A-am-02 10:20 – 10:40

**Fine Nanostructure Analysis of Single-Wall Carbon Nanohorns by Surface Enhanced Raman Scattering**

Toshihiko Fujimori<sup>1</sup>, Koki Urita<sup>1</sup>, Yuusuke Aoki<sup>1</sup>, Hirofumi Kanoh<sup>1</sup>, Tomonori Ohba<sup>1</sup>, Masako Yudasaka<sup>2</sup>, Sumio Iijima<sup>2</sup>, Katsumi Kaneko<sup>1</sup> (<sup>1</sup>Chiba Univ., Japan) (<sup>2</sup>NEC Corporation, Japan) 37

#### 15A-am-03 10:40 – 11:00

**Structure and Productivity of Graphenes from Different Raw Graphite by a Chemical Exfoliation Method**

Hui-Ming Cheng<sup>1</sup>, Zhong-Shuai<sup>1</sup> Wu<sup>1</sup>, Wen-Cai Ren<sup>1</sup>, Li-Bo Gao<sup>1</sup> (<sup>1</sup>Institute of Metal Research, CAS, China) 38

#### 15A-am-04 11:00 – 11:20

**Oxidative Conversion of TiC-Coated MWCNTs, Produced in a Molten Salt Reaction Medium, into TiO<sub>2</sub>-Coated MWCNTs**

Aidan V K Westwood<sup>1</sup>, Graham Cooke<sup>1</sup>, Nicole Hondow<sup>1</sup>, Rik Brydson<sup>1</sup>, Richard Douthwaite<sup>2</sup>, Xuanke Li<sup>3</sup> (<sup>1</sup>Univ. of Leeds, UK) (<sup>2</sup>Univ. of York, UK) (<sup>3</sup>High Temperature Ceramic & Refractory Key Laboratory of Hubei Province, Wuhan Univ. of Science & Technology, China) 38

#### 15A-am-05 11:20 – 11:40

**Growth Process and Structures of Carbon Nanowalls by Plasma-Enhanced Chemical Vapor Deposition**

Hirofumi Yoshimura<sup>1</sup>, Hironori Kitada<sup>1</sup>, Ikuo Kinoshita<sup>1</sup>, Ken-ichi Kobayashi<sup>2</sup>, Hiroshi Nakai<sup>3</sup>, Kenichi Kojima<sup>1</sup>, Masaru Tachibana<sup>1</sup> (<sup>1</sup>Yokohama City Univ., Japan) 39

#### Session B

Metropolitan Room Azusa

#### **ELECTROCHEMISTRY, BATTERIES AND CAPACITORS**

Chairs: Prof. François Béguin (CNRS, France)

Dr. Yasushi Soneda (AIST, Japan)

#### 15B-am-01 9:50 – 10:20 FEATURED LECTURE

**Effect of Nitrogen on Pseudocapacitor Characteristics**

Prof. Elzbieta Frackowiak<sup>1</sup>, Grzegorz Lota<sup>1</sup> (<sup>1</sup>Poznan Univ., Poland) 40

#### 15B-am-02 10:20 – 10:40

**Electrochemical Properties of Natural Graphite Fluorinated by ClF<sub>3</sub> and NF<sub>3</sub> in Propylene Carbonate – Containing Solvent**

Tsuyoshi Nakajima<sup>1</sup>, Xinqun Cheng<sup>1</sup>, Jianling Li<sup>1</sup>, Takashi Achiha<sup>1</sup>, Yoshimi Ohzawa<sup>1</sup>, Zoran Mazej<sup>2</sup>, Boris Zemva<sup>2</sup> (<sup>1</sup>Aichi Institute of Technology, Japan) (<sup>2</sup>Jozef Stefan Institute, Slovenia) 40

#### 15B-am-03 10:40 – 11:00

**Influence of the Oxygen Functional Groups at the Graphite Surface on the Course of the First Intercalation of Lithium**

Cathie Vix-Guterl<sup>1</sup>, Roger Gadiou<sup>1</sup>, Philippe Bernardo<sup>1</sup>, Petr Novak<sup>2</sup>, S.H. Ng<sup>2</sup>, Michael. E Spahr<sup>3</sup>, Dietrich Goers<sup>3</sup> (<sup>1</sup>ICSI-CNRS, France) (<sup>2</sup>PSI Villigen, Switzerland) (<sup>3</sup>TIMACAL, Switzerland) 41

#### 15B-am-04 11:00 – 11:20

**Pyrocarbon Coating on Carbonized Paper for Anode of Lithium-Ion Secondary Battery and Its Electrochemical Properties in Propylene Carbonate Base Electrolyte**

Yoshimi Ohzawa<sup>1</sup>, Tomohiro Suzuki<sup>1</sup>, Tsuyoshi Nakajima<sup>1</sup> (<sup>1</sup>Aichi Institute of Technology, Japan) 42

#### 15B-am-05 11:20 – 11:40

**Decreasing Irreversible Capacity of Silicon-CNF Composites in Li-Secondary Battery**

Sang-min Jang<sup>1</sup>, Masaharu Tsuji<sup>1</sup>, Isao Mochida<sup>1</sup>, Seong-Ho Yoon<sup>1</sup> (<sup>1</sup>Kyushu Univ., Japan) (<sup>2</sup>NISSAN ARC, LTD, Japan) (<sup>3</sup>IHI Corporation, Japan) 42

# CARBON 2008 Conference Program Oral

15A-am-06 11:40 – 12:00

**Formation of Fluorinated Carbon Nanoparticles Using Atmospheric-pressure Plasma**

Tomohiro Kobayashi<sup>1</sup>, Kastunori Suzuki<sup>2</sup> (<sup>1</sup>Riken, Japan)  
(<sup>2</sup>Saitama Univ., Japan) 39

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12:00 – 13:10 LUNCH

**Metropolitan Asama B, C and Chikuma**

15B-am-06 11:40 – 12:00

**Coating of Pre-Formed Si Nanoparticles with Hydrothermal Carbon as Novel Anode Material for Lithium-Ion Batteries**

Rezan Demir-Cakan<sup>1</sup>, Yong-Sheng Hu<sup>2</sup>, Maria Magdalena Titirici<sup>1</sup>, Jens O. Muller<sup>3</sup>, Robert Schlogl<sup>3</sup>, Markus Antonietti<sup>1</sup>, Joachim Maier<sup>2</sup> (<sup>1</sup>Max-Planck Institute, Germany) (<sup>2</sup>Max-Planck Institute for Solid State Research, Germany) (<sup>3</sup>Fritz Haber Institute of the Max-Planck Society, Germany) 43

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12:00 – 13:10 LUNCH

**Metropolitan Asama B, C and Chikuma**



## Oral Sessions TUESDAY, JULY 15, 2008

### 15PM1 (ORAL SESSION 5)

#### Session A

Metropolitan Room Asama A

#### **NANOFORMS**

Chairs: Prof. Peter C. Eklund (Penn. State Univ. USA)

Dr. Tomohiro Kobayashi (Riken, Japan)

#### 15A-pm-01 13:10 – 13:40 INVITED LECTURE

#### **Synthesis of Ferromagnetic Nanowires Filling Thin-Walled Carbon Nanotubes and Their Properties**

Prof. Feiyu Kang<sup>1</sup>, Ruitao Lv<sup>1</sup>, Xuchun Gui<sup>1</sup>, Wenxiang Wang<sup>1</sup>, Jialin Gu<sup>1</sup>, Kunlin Wang<sup>1</sup>, Dehai Wu<sup>1</sup> (<sup>1</sup>Tsinghua Univ., China) 43

#### 15A-pm-02 13:40 – 14:00

#### **Effect of Growth Conditions on Carbon Nanofibers Grown on Fused Silica Substrates Using Nickel Thin-Film Catalyst**

Digvijay B. Thakur<sup>1</sup>, R. M. Tiggelaar<sup>1</sup>, K. Seshan<sup>1</sup>, J. G. E. Gardeniers<sup>1</sup>, L. Lefferts<sup>1</sup> (<sup>1</sup>Univ. of Twente, Netherlands) 44

#### 15A-pm-03 14:00 – 14:20

#### **Fluorination of Carbon Nanocones and Nanodiscs**

Marc Dubois<sup>1</sup>, Wei Zhang<sup>1</sup>, Katia Guérin<sup>1</sup>, André Hamwi<sup>1</sup>, Jérôme Giraudet<sup>2</sup>, Francis Masin<sup>2</sup> (<sup>1</sup>Clermont Univ., France) (<sup>2</sup>Univ. Pierre, France) 44

#### 15A-pm-04 14:20 – 14:40

#### **On the Influence of Pore Size and Surface Properties on Proteins Adsorption in the Cavities of MWCNTs Prepared by the Template Method.**

Cathie Vix-Guterl<sup>1</sup>, Vijay Munusamy<sup>1</sup>, Karine Anselme<sup>1</sup>, Roger Gadiou<sup>1</sup>, Takashi Kyotani<sup>2</sup>, Hironori Orikasa<sup>1</sup> (<sup>1</sup>ICSI-CNRS, France) (<sup>2</sup>IMRAM – Tohoku, Japan) 45

#### 15A-pm-05 14:40 – 15:00

#### **Templated Nanoporous Carbon as an Electrode Material for Electrochemical Double Layered Capacitor (EDLC)**

Qiang Xu<sup>1</sup>, Bo Liu<sup>1</sup>, Hiroshi Shioyama<sup>1</sup> (<sup>1</sup>National Institute of Advanced Industrial Science and Technology (AIST), Japan) 45

#### 15A-pm-06 15:00 – 15:20

#### **Electroconductive Plastics Using Electroconductivity of Nanometer Sized Exfoliated Carbon Fibers**

Masahiro Toyoda<sup>1</sup>, Satoshi Yoshinaga<sup>1</sup>, Tomoki Tsumura<sup>1</sup> (<sup>1</sup>Oita Univ., Japan) 46

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#### **15:20 – 15:40 Coffee Break**

Metropolitan Lobby 3F, Asama B, Lobby 2F, Sunroute Lobby 3F

#### Session B

Metropolitan Room Azusa

#### **ELECTROCHEMISTRY, BATTERIES AND CAPACITORS**

Chairs: Dr. Denisa Hulicova Jurcakova (Univ. of Queensland, Australia)

Prof. Tsuyoshi Nakajima (Aichi Institute of Technology, Japan)

#### 15B-pm-01 13:10 – 13:40 INVITED LECTURE

#### **Lithium-Ion Kinetics at Graphite Electrode**

Prof. Takeshi Abe (Kyoto Univ., Japan) 50

#### 15B-pm-02 13:40 – 14:00

#### **Cyclic Performance of Silicon-Containing Materials for Lithium Ion Batteries**

Wenming Qiao<sup>1</sup>, Hong Peng Liu<sup>1</sup>, Rui Zhang<sup>1</sup>, Wenming Qiao<sup>1</sup>, Li Cheng Ling<sup>1</sup> (<sup>1</sup>East China Univ., China) 50

#### 15B-pm-03 14:00 – 14:20

#### **Influence of the Electrolyte Composition and Graphite Particle Size on the Electrochemical Intercalation of Hexafluorophosphate Anions**

Wolfgang Maerke<sup>1</sup>, Nicolas Tran<sup>1</sup>, Petr Novák<sup>1</sup>, Dietrich Goers<sup>2</sup>, Michael E. Spahr<sup>2</sup>, Eusebio Grivei<sup>2</sup>, (<sup>1</sup>Paul Scherrer Institute, Switzerland) (<sup>2</sup>TIMCAL SA, Switzerland) 51

#### 15B-pm-04 14:20 – 14:40

#### **Electrochemical Characterization of Fluorinated Carbon Thin Films Prepared by Electron Cyclotron Resonance (ECR) Sputtering**

Akio Ueda<sup>1</sup>, Tomoyuki Kamata<sup>2</sup>, Dai Kato<sup>3</sup>, Naoyuki Sekioka<sup>4</sup>, Ryoji Kurita<sup>5</sup>, Shigeru Hirono<sup>6</sup>, Shigeru Umemura<sup>2</sup>, Fujio Okino<sup>7</sup>, Hidekazu Tohara<sup>7</sup>, Osamu Niwa<sup>4</sup> (<sup>1</sup>Tokyo Institute of Technology, Japan) (<sup>2</sup>Chiba Institute of Technology, Japan) (<sup>3</sup>JST-CREST, Japan) (<sup>4</sup>Univ. of Tsukuba, Japan) (<sup>5</sup>National Institute of Advanced Industrial Science and Technology (AIST), Japan) (<sup>6</sup>MES AFTY Corporation, Japan) (<sup>7</sup>Shinshu Univ., Japan) 52

#### 15B-pm-05 14:40 – 15:00

#### **Metal Tracing Performance of Nitrogenated Diamond-like Carbon Films**

Nay Win Khun<sup>1</sup>, Nay Win Khun<sup>1</sup> (<sup>1</sup>Nanyang Technical Univ., Singapore) 52

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#### **15:20 – 15:40 Coffee Break**

Metropolitan Lobby 3F, Asama B, Lobby 2F, Sunroute Lobby 3F

# CARBON 2008 Conference Program Oral

## Oral Sessions TUESDAY, JULY 15, 2008

### 15PM2 (ORAL SESSION 6)

#### Session A

Metropolitan Room Asama A

#### **NANOTUBES**

Chairs: Prof. M. S. Strano (MIT, USA)

Dr. Satoshi Ishii (NIMS, Japan)

#### 15A-pm-07 15:40 – 16:10 KEYNOTE LECTURE

**Nanocarbons: Highly Active Catalysts for Chemical Reactions**

Dr. Dangsheng Su (Fritz Haber Institute, Germany) 46

#### 15A-pm-08 16:10 – 16:40 INVITED LECTURE

**Selective Optical Property Modification of Double Walled Carbon Nanotubes by Fluorination**

Prof. Takuya Hayashi<sup>1</sup>, Daisuke Shimamoto<sup>1</sup>, Yoong Ahm Kim<sup>1</sup>, Hiroyuki Muramatsu<sup>1</sup>, Fujio Okino<sup>1</sup>, Hidekazu Touhara<sup>1</sup>, Takashi Shimada<sup>2</sup>, Yuhei Miyauchi<sup>2</sup>, Shigeo Maruyama<sup>2</sup>, Mauricio Terrones<sup>3</sup>, Mildred Dresselhaus<sup>4</sup>, Morinobu Endo<sup>1</sup> (<sup>1</sup>Shinshu Univ., Japan) (<sup>2</sup>Univ. of Tokyo, Japan) (<sup>3</sup>IPICYT, Mexico) (<sup>4</sup>MIT, USA) 47

#### 15A-pm-09 16:40 – 17:00

**Thermal and Electrical Transport Properties of 1-mm-Thick Vertically Aligned Carbon Nanotubes**

Atsuto Okamoto<sup>1</sup>, Itaru Gunjishima<sup>1</sup>, Takashi Inoue<sup>1</sup>, Megumi Akoshima<sup>2</sup>, Hidenori Miyagawa<sup>3</sup>, Tetsuya Baba<sup>2</sup>, Gendo Oomi<sup>3</sup> (<sup>1</sup>Toyota Central R&D Labs, Inc., Japan) (<sup>2</sup>AIST, Japan) (<sup>3</sup>Kyushu Univ., Japan) 47

#### 15A-pm-10 17:00 – 17:20

**Resistivity Reduction of Boron-doped Multi-Walled Carbon Nanotube**

Satoshi Ishii<sup>1</sup>, Tohru Watanabe<sup>1</sup>, Shunsuke Tsuda<sup>1</sup>, Takahide Yamaguchi<sup>1</sup>, Yoshihiko Takano<sup>1</sup> (<sup>1</sup>NIMS, Japan) 48

#### 15A-pm-11 17:20 – 17:40

**First-Principles Characterisation of the Stability of Carbon Nanotubes: Structural Effects on Stability and Radial Breathing Mode**

Gemma L. Haffenden<sup>1</sup>, Malcolm I. Heggie<sup>1</sup>, Irene Suarez Martinez<sup>2</sup>, Gianluca Savini<sup>1</sup> (<sup>1</sup>Univ. of Sussex, UK) (<sup>2</sup>IMN, Nantes, UK) 48

#### 15A-pm-12 17:40 – 18:00

**Electronic Superstructures in Double-Walled Carbon Nanotubes**

Yann Tison<sup>1</sup>, Cristina E Giusca<sup>2</sup>, Jeremy Sloan<sup>2</sup>, Yasuhiko Hayashi<sup>3</sup>, S. Ravi P. Silva<sup>2</sup> (<sup>1</sup>Technical Univ. of Denmark, Denmark) (<sup>2</sup>Univ. of Surrey, UK) (<sup>3</sup>Nagoya Institute of Technology, Japan) 49

#### 15A-pm-13 18:00 – 18:20

**Preparation of Macro-porous Solid Foam from CNTs Using Ice-crystal Templates**

Napawon Thongprachan<sup>1</sup>, Kyuya Nakagawa<sup>2</sup>, Noriaki Sano<sup>2</sup>, Mitsutaka Kitamura<sup>2</sup>, Tawatchai Charinpanitkul<sup>1</sup>, Wiwut Tanthapanichakoon<sup>3</sup> (<sup>1</sup>Chulalongkorn Univ., Thailand) (<sup>2</sup>Univ. of Hyogo, Japan) (<sup>3</sup>National Nanotechnology Center, Thailand) 49

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#### 18:20-20:30

#### POSTER SESSION 2

#### Session B

Metropolitan Room Azusa

#### **ELECTROCHEMISTRY, BATTERIES AND CAPACITORS**

Chairs: Prof. Elzbieta Frackowiak (Poznan Univ., Poland)

Prof. Takeshi Abe (Kyoto Univ., Japan)

#### 15B-pm-06 15:40 – 16:10 KEYNOTE LECTURE

**PAN/Pitch Blend Fibers from Electrospinning for EDLC Applications**

Nhu-Ngoc Bui<sup>1</sup>, Chan Kim<sup>2</sup>, Bo-Hye Kim<sup>1</sup>, Jeong Hyeon Yun<sup>1</sup>, John P. Ferraris<sup>3</sup>, Prof. Kap-Seung Yang<sup>1</sup> (<sup>1</sup>Chonnam National Univ., Korea) (<sup>2</sup>AMOMEDI Co. Ltd., Korea) (<sup>3</sup>Univ. of Texas at Dallas, USA) 53

#### 15B-pm-07 16:10 – 16:40 FEATURED LECTURE

**Effects of Surface Treatments on the Electrochemical Oxygen Reduction Activity of Nanoshell Carbon Electrode Catalysts**

Prof. Jun-ichi Ozaki<sup>1</sup>, Jun Yamazaki<sup>1</sup>, Masaaki Takei<sup>1</sup>, Susumu Sasaoka<sup>1</sup>, Keita Takakusaki<sup>1</sup>, (<sup>1</sup>Gunma Univ., Japan) 53

#### 15B-pm-08 16:40 – 17:00

**Electrochemical Oxidation Reaction of Highly Oriented Pyrolytic Graphite in Sulfuric Acid Solution**

Taro Kinumoto<sup>1</sup>, Masahiro Toyoda<sup>1</sup>, Hyun-Suk Choo<sup>2</sup>, Masafumi Nose<sup>2</sup>, Yasutoshi Iriyama<sup>2</sup>, Takeshi Abe<sup>2</sup>, Zempachi Ogumi<sup>2</sup> (<sup>1</sup>Oita Univ., Japan) (<sup>2</sup>Kyoto Univ., Japan) 54

#### 15B-pm-09 17:00 – 17:20

**Nanostructured Si/C Composites Based on Pitch Derived Carbons for Li-ion Batteries**

Krzysztof Kierzek<sup>1</sup>, Yasin Eker<sup>2</sup>, Jacek Machnikowski<sup>1</sup>, Encarnation Raymundo-Pinero<sup>2</sup>, François Beguin<sup>2</sup> (<sup>1</sup>Wroclaw Univ. of Technology, Poland) (<sup>2</sup>CRMD, CNRS-Univ., France) 54

#### 15B-pm-10 17:20 – 17:40

**Preparation of PEFC Electrodes from Vertically Aligned Carbon Nanopillars with Tunable Sizes**

Hironori Orikasa<sup>1</sup>, Michiyasu Okada<sup>1</sup>, Takashi Kyotani<sup>1</sup>, Tatsuya Hatanaka<sup>2</sup>, Yoshiaki Fukushima<sup>2</sup> (<sup>1</sup>Tohoku Univ., Japan) (<sup>2</sup>Toyota Central R&D Labs., Inc., Japan) 55

#### 15B-pm-11 17:40 – 18:00

**Preparation and Characterization of Graphite Nanosheets as Catalyst Support for Fuel Cells**

Lin Gan<sup>1</sup>, Hongda Du<sup>1</sup>, Baohua Li<sup>2</sup>, Feiyu Kang<sup>1</sup> (<sup>1</sup>Tsinghua Univ., China) (<sup>2</sup>Institute of Advance, China) 55

#### 15B-pm-12 18:00 – 18:20

**Hierarchical Porous Carbon Synthesized by Liquid Inorganic Template Approach**

Feng Li<sup>1</sup>, Da-Wei Wang<sup>1</sup>, Min Liu<sup>1</sup>, Hui-Ming Cheng<sup>1</sup> (<sup>1</sup>Institute of Metal Research, CAS, China) 56

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#### 18:20-20:30

#### POSTER SESSION 2

# CARBON 2008 Conference Program Oral

**Oral Sessions TUESDAY, JULY 15, 2008**

## 15AM2 (ORAL SESSION 4)

### Session C

Metropolitan Room Shiga

#### DIAMONDS AND GICs

Chairs: Prof. Hisashi Nakamura (RIST, Japan)

Dr. Alexander Ya Vul' (Ioffe Physico-Technical Institute, Russia)

#### 15C-am-01 9:50 – 10:20 INVITED LECTURE

**Detonation Nanodiamonds as a New Nanocarbon Material for Nanotechnology**

Dr. Alexander Ya Vul' (Ioffe Physico-Technical Institute, Russia) 56

#### 15C-am-02 10:20 – 10:40

**Simulation for Evaluating Superconductivity of Boron-doped Diamond**

Satoshi Nakamura<sup>1</sup>, Syogo Tejima<sup>1</sup>, Masashi Tachiki<sup>1,2</sup>, David Tomanek<sup>3</sup>, Hisashi Nakamura<sup>1</sup> (<sup>1</sup>RIST, Japan) (<sup>2</sup>Univ. of Tokyo, Japan) (<sup>3</sup>Michigan State Univ., USA) 57

#### 15C-am-03 10:40 – 11:00

**Direct Fabrication of Adherent and Oriented Diamond Nanostructures on Steel Substrate**

Yuanshi Li (Univ. of Saskatchewan, Canada) 57

#### 15C-am-04 11:00 – 11:20

**Surface Characterization of Diamond to Be Used in Electronic Devices**

Noelia Rojo-Calderon<sup>1</sup>, Jose M Molina<sup>1</sup>, Richard Prieto<sup>1</sup>, Javier Narciso<sup>1</sup>, Enrique Louis<sup>1</sup> (<sup>1</sup>Univ. of Alicante, Spain) 58

#### 15C-am-05 11:20 – 11:40

**Photoelectron Spectroscopic Analysis of Chemical Structure of Diamondlike Carbon with Different Electrical Resistivities**

Susumu Takabayashi<sup>1</sup>, Keishi Okamoto<sup>2</sup>, Kenya Shimada<sup>1</sup>, Kunihiko Motomitsu<sup>1</sup>, Hiroaki Motoyama<sup>1</sup>, Tatsuyuki Nakatani<sup>2</sup>, Hiroyuki Sakaue<sup>1</sup>, Hitoshi Suzuki<sup>1</sup>, Takayuki Takahagi<sup>1</sup> (<sup>1</sup>Hiroshima Univ., Japan) (<sup>2</sup>Toyo Advanced Technologies Co., Ltd., Japan) 58

#### 15C-am-06 11:40 – 12:00

**Sp-linear Chains and Photoexcited Trans- polyacetylene in Diamond-like Carbon**

Maksym Rybachuk<sup>1</sup>, John M Bell<sup>1</sup>, Anming Hu<sup>2</sup> (<sup>1</sup>Queensland Univ. of Technology, Australia) (<sup>2</sup>Univ. of Waterloo, Canada) 59

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#### 12:00 – 13:10 LUNCH

Metropolitan Asama B, C and Chikuma

### Session D

Sunroute Room Hiten

#### ADSORPTION, SURFACES AND POROUS MATERIALS

Chairs: Prof. Duong D. Do (Univ. of Queensland, Australia)

Dr. Yoshiyuki Hattori (Shinshu Univ., Japan)

#### 15D-am-01 9:50 – 10:10

**Re-Evaluation of the Pore Size Distribution in Microporous Carbons by Quenched Solid Density Functional Theory**

Alexander V. Neimark<sup>1</sup>, Matthias Thommes<sup>2</sup> (<sup>1</sup>Rutgers Univ., USA) (<sup>2</sup>Quantachrome Instruments, USA) 123

#### 15D-am-02 10:10 – 10:30

**Hydrogen Dimer Formation on the Graphite (0001) Surface Due to Preferential Sticking.**

Liv Hornekaer<sup>1</sup>, Eva Rauls<sup>2</sup>, Zeljko Slijivancanin<sup>1</sup>, Wei Xu<sup>1</sup>, Roberto Ortero<sup>3</sup>, Bjoerk Hammer<sup>1</sup>, Flemming Besenbacher<sup>1</sup> (<sup>1</sup>Univ. of Aarhus, Denmark) (<sup>2</sup>Univ. of Paderborn, Germany) (<sup>3</sup>Univ. of Madrid, Spain) 60

#### 15D-am-03 10:30 – 10:50

**Hydrogen Storage on Ordered Microporous Carbon Molecular Sieves Containing Dispersed Platinum Nano-particles**

Yunxia Yang<sup>1</sup>, Chunxia Zhao<sup>1</sup>, Dongyuan Zhao<sup>1</sup>, Paul A. Webley<sup>1</sup> (<sup>1</sup>Monash Univ., Australia) 60

#### 15D-am-04 10:50 – 11:10

**Preparation and Hydrogen Storage of High Surface Rayon Based Activated Carbon Fibers**

Dong-Lin Zhao<sup>1</sup>, Zeng-Min Shen<sup>1</sup> (<sup>1</sup>Beijing Univ. of Chemical Technology, China) 61

#### 15D-am-05 11:10 – 11:30

**Enhanced Hydrogen Storage Capacity at Room Temperature of CNT/MOF-5 Hybrid Composites**

Seung Jae Yang<sup>1</sup>, Chong Rae Park<sup>1</sup> (<sup>1</sup>Seoul National Univ., Korea) 61

#### 15D-am-06 11:30 – 11:50

**The Adsorption of Copper Acetate onto Pretreated Activated Carbons over a Wide Concentration Range**

Amjad Farooq<sup>1</sup>, Philippe Westreich<sup>2</sup>, Naseem Irfan<sup>1</sup>, Jeff Dahn<sup>2</sup> (<sup>1</sup>Pakistan Institute of Engineering and Applied Sciences, Pakistan) (<sup>2</sup>Department of Physics and Atmospheric Science, Dalhousie Univ., Halifax, NS, Canada) 62

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#### 12:00 – 13:10 LUNCH

Metropolitan Asama B, C and Chikuma

## Oral Sessions TUESDAY, JULY 15, 2008

### 15PM1 (ORAL SESSION 5)

#### Session C

##### Metropolitan Room Shiga

##### **GICs AND CHEMICAL PROPERTIES**

Chairs: Prof. M. M. Lerner (Oregon State Univ., USA)

Prof. M. Kawaguchi (Osaka Electro-Communication Univ., Japan)

#### 15C-pm-01 13:10 – 13:40 INVITED LECTURE

##### **Lithium Metal: an Efficient Vector of Intercalation into Graphite**

Prof. Claire Hérold<sup>1</sup>, Nicolas Emery<sup>2</sup>, Jean-François Mareche<sup>2</sup>, Philippe Lagrange<sup>2</sup> (<sup>1</sup>Univ. of Henri Poincaré, France) (<sup>2</sup>LCSM, France) 62

#### 15C-pm-02 13:40 – 14:00

##### **Spins of Conduction Electrons as a Probe of Physical and Chemical Transformations in Graphite and Its Compounds**

Albert M. Ziatdinov (Russian Academy of Sciences, Russia) 63

#### 15C-pm-03 14:00 – 14:20

##### **Characterization and Properties of Ternary System RbC<sub>24</sub> (C<sub>4</sub>H<sub>6</sub>)<sub>x</sub>**

Noboru Akuzawa<sup>1</sup>, Morio Chiwata<sup>1</sup>, Rika Matsumoto<sup>2</sup>, Yasushi Soneda<sup>3</sup> (<sup>1</sup>Tokyo National College of Technology, Japan) (<sup>2</sup>Tokyo Polytechnic Univ., Japan) (<sup>3</sup>National Institute of Advanced Industrial Science and Technology (AIST), Japan) 63

#### 15C-pm-04 14:20 – 14:40

##### **Air-stable Alkali Metal-Graphite Intercalation Compounds**

Rika Matsumoto<sup>1</sup>, Kazuto Tatebayashi<sup>1</sup>, Kazunobu Tsurumi<sup>1</sup>, Noboru Akuzawa<sup>2</sup> (<sup>1</sup>Tokyo Polytechnic Univ., Japan) (<sup>2</sup>Tokyo National College of Technology, Japan) 64

#### 15C-pm-05 14:40 – 15:00

##### **Plasma-chemical Functionalization of Expanded Graphite**

Asmus Meyer-Plath<sup>1</sup> (<sup>1</sup>Federal Institute for Materials Research and Testing, Germany) 64

#### 15C-pm-06 15:00 – 15:20

##### **Modification of Carbon Microspheres in Different Acids**

Xuguang Liu<sup>1</sup>, Hongyan Liu<sup>1</sup>, Yongzhen Yang<sup>1</sup>, Mingcong Guo<sup>1</sup>, Bingshe Xu<sup>1</sup> (<sup>1</sup>Taiyuan Univ. of Technology, China) 65

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#### **15:20 – 15:40 Coffee Break**

**Metropolitan Lobby 3F, Asama B, Lobby 2F,  
Sunroute Lobby 3F**

#### Session D

##### Sunroute Room Hiten

##### **ADSORPTION, SURFACES AND POROUS MATERIALS**

Chairs: Prof. Hirofumi Kanoh (Chiba Univ., Japan)

Prof. Krisztina Laszlo (Budapest Univ. of Technology and Economics., Hungary)

#### 15D-pm-01 13:10 – 13:40 INVITED LECTURE

##### **Surface Chemistry of Graphene: Implications for Electrochemical Properties and Behavior of Carbons**

Prof. Ljubisa Radovic (Penn. State Univ., USA) 68

#### 15D-pm-02 13:40 – 14:00

##### **Adsorbed Water Vapour in High Surface Area Carbons**

Krisztina Laszlo<sup>1</sup>, Erik Geissler<sup>2</sup> (<sup>1</sup>Budapest Univ. Technol. Econ., Hungary) (<sup>2</sup>Univ. J. Fourier de Grenoble, France) 69

#### 15D-pm-03 14:00 – 14:20

##### **Water Isotherms of Structurally Identical Carbons with Different Amounts of Surface Oxygen Groups.**

Peter Lodewyckx<sup>1</sup>, Encarnation Raymundo-Pinero<sup>2</sup>, Hilda Wullens<sup>3</sup>, Miroslava Vaclavikova<sup>1</sup>, François Béguin<sup>2</sup> (<sup>1</sup>Royal Mil. Acad., Belgium) (<sup>2</sup>CNRS Orléans, France) (<sup>3</sup>Belgian Defense – DLD, Belgium) 69

#### 15D-pm-04 14:20 – 14:40

##### **Nanoporous Carbon Films for Capacitance-Storage**

Yousheng Tao<sup>1</sup>, Morinobu Endo<sup>1</sup>, Hirofumi Kanoh<sup>2</sup>, Katsumi Kaneko<sup>2</sup> (<sup>1</sup>Shinshu Univ., Japan) (<sup>2</sup>Chiba Univ., Japan) 70

#### 15D-pm-05 14:40 – 15:00

##### **Adsorption and Transport Properties of Carbon Dioxide Methane Water Mixtures in Coal-like Structures by Molecular Simulation**

Alaaeldin Salih<sup>1</sup>, Erich A. Muller<sup>1</sup> (<sup>1</sup>Imperial College London, UK) 214

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#### **15:20 – 15:40 Coffee Break**

**Metropolitan Lobby 3F, Asama B, Lobby 2F,  
Sunroute Lobby 3F**

## Oral Sessions TUESDAY, JULY 15, 2008

### 15PM2 (ORAL SESSION 6)

#### Session C

Metropolitan Room Shiga

#### **GICs AND CHEMICAL PROPERTIES**

*Chairs: Prof. C. Herold (Univ. Henri Poincare, France)*

*Prof. Yoshiaki Matsuo (Univ. of Hyogo, Japan)*

#### 15C-pm-07 15:40 – 16:10 INVITED LECTURE

**Graphite Intercalation with Perfluoroalkyl anions**  
Prof. M. M. Lerner<sup>1</sup> (Oregon State Univ., USA) 65

#### 15C-pm-08 16:10 – 16:30

**The High Temperature Reaction of Ammonia with Carbon Materials and SiC+C Compounds**

*Georges Chollon<sup>1</sup>, Maeva Lalanne<sup>1</sup>, Nicolas Capelle<sup>1</sup>, Maud Placide<sup>1</sup>, Herve Plaisantin<sup>1</sup>, Francis Langlais<sup>1</sup>, Georges Chollon<sup>1</sup> (Laboratoire des Composites Thermostructuraux (LCTS), France) 66*

#### 15C-pm-09 16:30 – 16:50

**Semi-Hydrogenation of Phenylacetylene Catalyzed by Palladium Nanoparticles Supported on Carbon Materials**

*Sonia Domínguez-Domínguez<sup>1</sup>, Angel Berenguer-Murcia<sup>1</sup>, Bhabendra K. Pradhan<sup>2</sup>, Angel Linares-Solano<sup>1</sup>, Diego Cazorla-Amorós<sup>1</sup> (Univ. of Alicante, Spain) (Columbian Chemicals Company, USA) 66*

#### 15C-pm-10 16:50 – 17:10

**The Role of Oxidation in Obtaining Nitrogen Enriched Active Carbons**

*Robert Pietrzak<sup>1</sup>, Piotr Nowicki<sup>1</sup>, Helena Wachowska<sup>1</sup> (Adam Mickiewicz Univ. in Poznan, Poland) 67*

#### 15C-pm-11 17:10 – 17:30

**Investigation of Tribochemical Reactions between Graphite and the Gas Atmosphere during Milling**

*Jean-Christophe Rietsch<sup>1</sup>, Cathie Vix-Guterl<sup>1</sup>, Joseph Dentzer<sup>1</sup>, Roger Gadiou<sup>1</sup> (ICSI-CNRS, France) 67*

#### 15C-pm-12 17:30 – 17:50

**Magnetic and Conductive Carbon-based Nanocomposites and Nanolayers Prepared from Graphite Oxide**

*Tamas Szabo<sup>1</sup>, Imre Dékány<sup>1</sup> (Univ. of Szeged, Hungary) 68*

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#### **18:20 – 20:30**

#### **POSTER SESSION 2**

#### Session D

Sunroute Room Hiten

#### **ADSORPTION, SURFACES AND POROUS MATERIALS ; ENVIRONMENT AND ENERGY**

*Chairs: Dr. Sarra Gaspard (Univ. of Antilles et de la Guyane, France)*

*Dr. Zheng-Ming Wang (AIST, Japan)*

#### 15D-pm-06 15:40 – 16:00

**A New Method for Calculating the Specific Surface Area of Activated Carbons**

*Sarra Gaspard<sup>1</sup>, Nady Passé-Coutrin<sup>1</sup>, Sandro Altenor<sup>1</sup>, Daniel Cossement<sup>2</sup>, Corine Jean-Marius<sup>1</sup>, Alex Ouensanga<sup>1</sup> (Univ. of Antilles et de la Guyane, France) (Univ. du Québec, Canada) 71*

#### 15D-pm-07 16:00 – 16:20

**Surfactant Self-assembly to Form Mesoporous Carbons with Controlled Mesostructure**

*Wenming Qiao<sup>1</sup>, Donghui Long<sup>1</sup>, Hongpeng Liu<sup>1</sup>, Rui Zhang<sup>1</sup>, Liang Zhan<sup>1</sup>, Licheng Ling<sup>1</sup> (East China Univ. of Science and Technology, China) 71*

#### 15D-pm-08 16:20 – 16:40

**Preparation and Characterization of Carbon Aerogel Spheres**

*Qing-han Meng<sup>1</sup>, Qing-han Meng<sup>1</sup>, Xiao-hong Xu<sup>1</sup>, Bing Cao<sup>1</sup> (Beijing Univ. of Chemical Technology, China) 72*

#### 15D-pm-09 16:40 – 17:00

**Correlations between Activated Carbon Properties and Photocatalytic Activity of TiO<sub>2</sub> in 4-chlorophenol Degradation**

*Juan Matos<sup>1</sup>, Tulyan Cordero<sup>1</sup>, Jean-Marc Chovelon<sup>2</sup>, Corinne Ferronato<sup>2</sup> (Venezuelan Institute for Scientific Research, Venezuela) (IRCELYON, France) 72*

#### 15D-pm-10 17:00 – 17:20

**Decoration of Multi-Walled Carbon Nanotube with Well Dispersion TiO<sub>2</sub>**

*Shuo Wang<sup>1</sup>, Ji Liang<sup>1</sup>, Qian Ming Gong<sup>1</sup> (Tsinghua Univ., China) 73*

#### 15D-pm-11 17:20 – 17:40

**Field Emission Property of the Needle-shaped Carbons by Cold Plasma Improvement**

*Masaaki Katoh<sup>1</sup>, Takeo Ohte<sup>1</sup>, Michiya Ota<sup>1</sup>, Eiichi Yasuda<sup>2</sup> (Gunma National College of Technology, Japan) (Tokyo Institute of Technology, Japan) 73*

#### 15D-pm-12 17:40 – 18:00

**Advanced Physical Adsorption Characterization of Nanoporous Carbon Materials**

*Matthias Thommes (Quantachrome Instruments, USA) 74*

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#### **18:20 – 20:30**

#### **POSTER SESSION 2**

# CARBON 2008 Conference Program Oral

## Oral Sessions

**WEDNESDAY, JULY 16, 2008**

### 16AM1 Metropolitan

8:00 - 8:30 Asama B, C INFORMATION

8:30 - 9:20 Asama B, C PLENARY LECTURE

Professor David Tomanek (Michigan State Univ., USA)

“When Carbon Stops Being Carbon”

Chair: Prof. Toshiaki Enoki (Tokyo Institute of Technology, Japan)

9:20 – 9:50 BREAK Metropolitan Lobby 3F, Asama B, Lobby 2F, Sunroute Lobby 3F

### 16AM2 (ORAL SESSION 7)

#### Session A

Metropolitan Room Asama A

#### **NANOTUBES**

Chairs: Dr. Marc Monthieux (CNRS, France)

Prof. Feng WANG (Beijing Univ., China)

#### 16A-am-01 09:50 – 10:20 KEYNOTE LECTURE

**Optical Modulation of Single Walled Carbon Nanotubes for Biomedical Applications**

Prof. M. S. Strano (MIT, USA) 75

#### 16A-am-02 10:20 – 10:40

**Synthesis of Molybdenum Atomic Wires Incorporated within Double-Walled Carbon Nanotubes**

Hiroyuki Muramatsu<sup>1</sup>, Takuya Hayashi<sup>1</sup>, Yoong Ahm Kim<sup>1</sup>, Daisuke Shimamoto<sup>1</sup>, Morinobu Endo<sup>1</sup>, Mauricio Terrones<sup>2</sup>, Mildred S Dresselhaus<sup>3</sup> (<sup>1</sup>Shinshu Univ., Japan), (<sup>2</sup>IPICYT, Mexico) (<sup>3</sup>MIT, USA) 76

#### 16A-am-03 10:40 – 11:00

**Surface Modification and Polymeric Composites of BN Nanotubes**

Chunyi Zhi<sup>1</sup>, Bando Yoshio<sup>2</sup>, Chengchun Tang<sup>2</sup>, Dmitri Golberg<sup>2</sup> (<sup>1</sup>National Institute for Materials Science, Japan) (<sup>2</sup>NIMS, Japan) 76

#### 16A-am-04 11:00 – 11:20

**Nanofabrication of Single-wall Carbon Nanotubes Using a Metal Nitrate**

Katsuyuki Murata<sup>1</sup>, Tatsuaki Ataka<sup>1</sup> (<sup>1</sup>Olympus Co., Japan) 77

#### 16A-am-05 11:20 – 11:40

**Evaluation of Residual Iron Compound in Isothermally Treated Catalytic Chemical Vapor Deposited MWNT**

Jin Chen<sup>1</sup>, Takayuki Tsukada<sup>1</sup>, Akihito Kuno<sup>2</sup>, Motoyuki Matsuo<sup>2</sup>, Yoong Ahm Kim<sup>3</sup>, Takuya Hayashi<sup>3</sup>, Morinobu Endo<sup>3</sup> (<sup>1</sup>Nano Carbon Technologies Co., Japan) (<sup>2</sup>The Univ. of Tokyo, Japan) (<sup>3</sup>Shinshu Univ., Japan) 77

#### 16A-am-06 11:40 – 12:00

**Purification and Assessment of Multi-walled Carbon Nanotubes Produced via Metal-catalysed CVD Synthesis**

Aidan V K Westwood<sup>1</sup>, Vinay Ranganathan<sup>1</sup>, Andy Brown<sup>1</sup>, Ali-Reza Mirhabibi<sup>2</sup>, Xuanke Li<sup>3</sup> (<sup>1</sup>Univ. of Leeds, UK) (<sup>2</sup>Iran Univ. of Science and Technology, Iran) (<sup>3</sup>Wuhan Univ. of Science and Technology, P. R. China) 78

12:00 – 13:10 LUNCH

Metropolitan Asama B, C and Chikuma

#### Session B

Metropolitan Room Azusa

#### **CARBON FIBERS AND COMPOSITES**

Chairs: Prof. Shin R Mukai (Hokkaido Univ., Japan)

Prof. Ling-Jun Guo (Northwestern Poy. Univ., China)

#### 16B-am-01 9:50– 10:10

**Kinetics of Chemical Vapor Infiltration and Mechanical Properties of Carbon Nanofiber Reinforced Carbon/Carbon Composites**

Jin Song Li<sup>1</sup>, Rui Ying Luo<sup>1</sup> (<sup>1</sup>Beijing Univ. of Aeronautics and Astronautics, China) 78

#### 16B-am-02 10:10 – 10:30

**Contact Deformations of Graphite Particulate Composites Applied to Sliding Components**

Takatoshi Futami<sup>1</sup>, Eiichiro Ugumori<sup>1</sup>, Hiroyuki Muto<sup>1</sup>, Masahiko Ohira<sup>2</sup>, Mototsugu Sakai<sup>1</sup> (<sup>1</sup>Toyohashi Univ. of Tech., Japan) (<sup>2</sup>Fuji Carbon Manufacturing Co., Japan) 79

#### 16B-am-03 10:30 – 10:50

**Friction and Wear of Carbon/Carbon Composites: the Role of Mechanic and Physico-chemistry**

Sylvie Alice Bonnamy<sup>1</sup>, Haytam Kasem<sup>1</sup>, Bernard Rousseau<sup>1</sup>, Henriette Estrade-Szwarckopf<sup>1</sup>, Yves Berthier<sup>2</sup>, Pascale Jacquemard<sup>3</sup> (<sup>1</sup>CRMD/CNRS-Univ., France) (<sup>2</sup>CNRS-INSa, France), (<sup>3</sup>Messier-Bugatti, USA) 79

#### 16B-am-04 10:50 – 11:10

**Carbon Coating on the Surface of SiC-based Fibers**

Adrien Delcamp<sup>1</sup>, Rene Pailler<sup>1</sup>, Herve Plaisantin<sup>2</sup>, Laurence Maille<sup>1</sup> (<sup>1</sup>Laboratoire des Composites Thermostructuraux (LCTS), France) (<sup>2</sup>SPS, France) 80

#### 16B-am-05 11:10 – 11:30

**A Generalized Synthesis of Carbon / Metal or Metal Oxide Nanocomposites and Their Corresponding Metal Oxide Hollow or Mesoporous Spheres Using a Hydrothermal Approach**

Maria M Titirici<sup>1</sup>, Rezan Demir-Cakan<sup>1</sup>, Philippe Makowski<sup>1</sup>, Frederic Goettman<sup>1</sup>, Yong Sheng Hu<sup>2</sup> (<sup>1</sup>Max-Planck Institute, Germany) (<sup>2</sup>Max-Planck Institute for Solid State Research, Germany) 80

#### 16B-am-06 11:30 – 11:50

**Purification and Modification of Carbon Nanocapsules as a Magnetic Carrier for Drug Delivery System**

Sung Hoon Kim (Tohoku Univ., Japan) 81

12:00 – 13:10 LUNCH

Metropolitan Asama B, C and Chikuma

## Oral Sessions WEDNESDAY, JULY 16, 2008

### 16PM1 (ORAL SESSION 8)

#### Session A

Metropolitan Room Asama A

#### **NANOTUBES**

Chairs: Dr. Sivaram Arepalli (NASA, USA)

Prof. Tatsuhiro Takahashi (Yamagata Univ., Japan)

#### 16A-pm-01 13:10 – 13:40 KEYNOTE LECTURE

##### **Self-Retracting Motion of Graphite Microflakes**

Prof. Quan-shui Zheng<sup>1</sup>, Bo Jiang<sup>1</sup>, Shou-peng Liu<sup>2</sup>, Jing Zhu<sup>1</sup>, Qing Jiang,<sup>3</sup> Yu-xiang Weng<sup>2</sup>, Li Lu<sup>2</sup>, Sheng Wang<sup>4</sup>, Qi-kun Xue<sup>2</sup>, Lian-mao Peng<sup>4</sup> (<sup>1</sup>Tsinghua Univ., China) (<sup>2</sup>Institute of Physics, Chinese Academy of Science, China) (<sup>3</sup>Univ. of California, USA) (<sup>4</sup>Peking Univ., China) 81

#### 16A-pm-02 13:40 – 14:00

##### **Alignment of Vapor-Grown Carbon Fibers in Polymer by Magnetic or Electric Field and Its Application**

Tatsuhiro Takahashi<sup>1</sup>, Hiroshi Awano<sup>1</sup>, Koichiro Yonetake<sup>1</sup>, Morinobu Endo<sup>2</sup> (<sup>1</sup>Yamagata Univ., Japan) (<sup>2</sup>Shinshu Univ., Japan) 82

#### 16A-pm-03 14:00 – 14:20

##### **Synthesis and Application of Fe-filled Carbon Nanotubes Coated with FeCo Nanoparticles**

Chen Wang<sup>1</sup>, Feiyu Kang<sup>1</sup>, Ruitao Lv<sup>1</sup>, Jialin Gu<sup>1</sup>, Xuchun Gui<sup>1</sup>, Dehai Wu<sup>1</sup> (<sup>1</sup>Tsinghua Univ., China) 82

#### 16A-pm-04 14:20 – 14:40

##### **Synthesis and Characterization of Carbon Nanotube/Magnesium Alloy Composites Well Dispersed by Using a Block Copolymer**

Qianqian Li<sup>1</sup>, Christian A. Rottmair<sup>1</sup>, Robert F. Singer<sup>1</sup> (<sup>1</sup>Univ. of Erlangen-Nuremberg, Germany) 83

#### 16A-pm-05 14:40 – 15:00

##### **Fluorine Storage in Single-wall Carbon Nanohorns**

Hidekazu Touhara<sup>1</sup>, Ken Denuma<sup>1</sup>, Yoshio Nojima<sup>1</sup>, Yoshiyuki Hattori<sup>1</sup>, Fujio Okino<sup>1</sup>, Jun Sonobe<sup>2</sup>, Tomohiro Isogai<sup>3</sup>, Masako Yudasaka<sup>4</sup>, Sumio Iijima<sup>4,5</sup> (<sup>1</sup>Shinshu Univ., Japan) (<sup>2</sup>Air Liquide Labs., Japan) (<sup>3</sup>Daikin Industries, Japan) (<sup>4</sup>NEC Corp., Japan) (<sup>5</sup>Meijo Univ., Japan) 84

#### 16A-pm-06 15:00 – 15:20

##### **Gigas Growth of Carbon Nanotubes from Camphor: A Step toward Green Nanotechnology**

Mukul Kumar<sup>1</sup>, Kaushik Ghosh<sup>1</sup>, Yoshinori Ando<sup>1</sup> (<sup>1</sup>Meijo Univ., Japan) 85

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#### 15:20 – 15:40 Coffee Break

Metropolitan Lobby 3F, Asama B, Lobby 2F, Sunroute Lobby 3F

#### Session B

Metropolitan Room Azusa

#### **CARBON FIBERS AND COMPOSITES**

Chairs: Prof. Takeshi Fukuda (Kyoto Univ., Japan)

Prof. Maria M Titirici (Max-Planck Institute, Germany)

#### 16B-pm-01 13:10 – 13:30

##### **CN<sub>x</sub> Based Nanocomposite as Adsorbent of Heavy Metals (Cd, Pb) Present in Aqueous Solution**

Nancy V Pérez-Aguilar<sup>1</sup>, Jose R. Rangel-Mendez<sup>1</sup>, Vladimir A. Escobar-Barrios<sup>2</sup>, Humberto Terrones<sup>1</sup>, Emilio Muñoz-Sandoval<sup>1</sup> (<sup>1</sup>IPICT, Mexico) (<sup>2</sup>3M México S.A. de C.V., Mexico) 91

#### 16B-pm-02 13:30 – 13:50

##### **Polymer Coatings Hybridized with Highly Dispersive, Polymer-Grafted Carbon Nanotubes: Their Excellent Mechanical and Anti-corrosive Properties**

Takeshi Fukuda<sup>1</sup>, Shoji Kuroyama<sup>2</sup>, Takuma Nakao<sup>2</sup>, Senta Tojo<sup>2</sup>, Kohji Ohno<sup>1</sup> (<sup>1</sup>Kyoto Univ., Japan) (<sup>2</sup>Takenaka Seisakusho Co., Japan) 92

#### 16B-pm-03 13:50 – 14:10

##### **Effects of Carbon Nano-Fibers on Cell Morphology, Crush Strength, and Thermal Conductivity of Carbon Foam**

William E. Fawcett<sup>1</sup>, Dinesh Shetty<sup>1</sup> (<sup>1</sup>Univ. of Utah, USA) 92

#### 16B-pm-04 14:10 – 14:30

##### **Effects of the Carrier Gas in the Production of Carbon Nanofibers Using the Liquid Pulse Injection Technique**

Shin R. Mukai<sup>1</sup>, Yoshihiko Hayashida<sup>1</sup>, Atsushi Ikeshita<sup>1</sup> (<sup>1</sup>Hokkaido Univ., Japan) 93

#### 16B-pm-05 14:30 – 14:50

##### **Effect of the Molding Pressure on Compressive Strength of Pitch-based Carbon Materials**

Ling-jun Guo<sup>1</sup>, He-jun Li<sup>1</sup>, Ke-zhi Li<sup>1</sup>, Zheng-hai Shi<sup>1</sup>, Chuang Wang<sup>1</sup> (<sup>1</sup>Northwestern Polytechnical Univ., China) 93

#### 16B-pm-06 14:50 – 15:10

##### **Novel Tactile/Proximity Sensing Properties of Carbon Microcoils**

Xiuqin Chen<sup>1</sup>, Shaoming Yang<sup>2</sup>, Izumi Ozeki<sup>2</sup>, Seiji Motojima<sup>2</sup>, Hideki Sakai<sup>1</sup>, Masahiko Abe<sup>1</sup> (<sup>1</sup>Tokyo Univ. of Science, Japan) (<sup>2</sup>Gifu Univ., Japan) 94

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#### 15:20 – 15:40 Coffee Break

Metropolitan Lobby 3F, Asama B, Lobby 2F, Sunroute Lobby 3F

# CARBON 2008 Conference Program Oral

## Oral Sessions WEDNESDAY, JULY 16, 2008

### 16PM2 (ORAL SESSION 9)

#### Session A

Metropolitan Room Asama A

#### NANOTUBES

Chairs: Prof. Quanshui Zheng (Tsinghua Univ., China)

Prof. Hidekazu Touhara (Shinshu Univ., Japan)

#### 16A-pm-07 15:40 – 16:10 KEYNOTE LECTURE

Carbon Nanotube Growth Mechanisms- “*In-situ* and *Ex-situ*” Studies

Dr. Sivaram Arepalli (NASA, USA) 85

#### 16A-pm-08 16:10 – 16:40 INVITED LECTURE

Meta-nanotubes: The New Generation of Carbon Nanotubes

Dr. Marc Monthieux<sup>1</sup>, Dmitri Golberg<sup>2</sup>, Alain Pénicaut<sup>1</sup>, Maurizio Prato<sup>3</sup>, Philippe Serp<sup>4</sup>, Jeremy Sloan<sup>5</sup> (<sup>1</sup>CNRS, France) (<sup>2</sup>National Institute for Materials Science, Japan) (<sup>3</sup>Univ. of Trieste, France) (<sup>4</sup>LCC- CNRS, Toulouse, France) (<sup>5</sup>Queen Mary Univ. of London, UK) 86

#### 16A-pm-09 16:40 – 17:00

New Concepts in Organic Solar Cells Using Carbon Nanomaterials

Prakash R. Somani<sup>1</sup>, Savita P. Somani<sup>1</sup>, M. Umeno<sup>1</sup> (<sup>1</sup>Chubu Univ., Japan) 86

#### 16A-pm-10 17:00 – 17:20

Lithium Ion Storage Property of Organic Molecules Encapsulated Single-walled Carbon Nanotubes

Shinji Kawasaki<sup>1</sup>, Yuki Iwai<sup>1</sup>, Masahito Hirose<sup>1</sup> (<sup>1</sup>Nagoya Institute of Technology, Japan) 87

#### 16A-pm-11 17:20 – 17:40

In-situ Raman Spectroelectrochemistry of Single-walled Carbon Nanotubes: Investigation of Materials Enriched with the (6,5) Tubes

Ladislav Kavan<sup>1</sup>, Otakar Frank<sup>1</sup>, Alexander A. Green<sup>2</sup>, Mark C. Hersam<sup>2</sup>, János Koltai<sup>3</sup>, Viktor Zólyomi<sup>4</sup>, Jenő Kürti<sup>3</sup>, Lothar Dunsch<sup>5</sup> (<sup>1</sup>J. Heyrovsky Institute of Physical Chemistry, Czech Republic) (<sup>2</sup>Northwestern Univ., USA) (<sup>3</sup>Eötvös Univ., Republic of Hungary) (<sup>4</sup>Research Institute for Solid State Physics and Optics of the Hungarian Academy of Sciences, Republic of Hungary) (<sup>5</sup>Leibniz Institute of Solid State and Materials Research, Germany) 87

#### 16A-pm-12 17:40 – 18:00

Catalytic Graphitization Occurring at High Temperature in Multi-walled Carbon Nanotubes Prepared with a CVD Method

Yoshihiro Hishiyama<sup>1</sup>, Akira Yoshida<sup>1</sup>, Emi Shindou<sup>1</sup>, Yutaka Kaburagi<sup>1</sup>, Yoshio Yamasa<sup>2</sup>, Noriko Yoshizawa<sup>3</sup>, Hiroaki Hatori<sup>3</sup> (<sup>1</sup>Musashi Institute of Technology, Japan) (<sup>2</sup>Univ. of Fukui, Japan) (<sup>3</sup>National Institute of Advanced Industrial Science and Technology (AIST), Japan) 88

#### Session B

Metropolitan Room Azusa

#### CARBON FIBERS AND COMPOSITES

Chairs: Prof. Takashi Nishizawa (Tokyo Institute of Tech., Japan)

Prof. Lalit M. Manocha (Sardar Patel Univ., India)

#### 16B-pm-07 15:40 – 16:00

Enhancing the Through-thickness Thermal Conductivity of Carbon Fiber Polymer-matrix Composites by Nanostructuring the Interlaminar Interface

Seungjin Han<sup>1</sup>, Jan T. Lin<sup>1</sup>, Yasuhiro Yamada<sup>1-3</sup>, Deborah D.L. Chung<sup>1</sup> (<sup>1</sup>State Univ. of New York at Buffalo, USA) (<sup>2</sup>Nippon Chemi-Con Corporation) (<sup>3</sup>AIST, Japan) 94

#### 16B-pm-08 16:00 – 16:20

The Effect of Chemical Modified PAN Precursor on the Preparation of Carbon Fiber

Jie Liu<sup>1</sup>, Dayan Du<sup>1</sup>, Jieying Liang<sup>1</sup> (<sup>1</sup>Beijing Univ. of Chemical Technology, China) 95

#### 16B-pm-09 16:20 – 16:40

Flexible EL Device with CNTs Composites

Mun Ja Kim<sup>1</sup>, Sung Min Park<sup>1</sup>, Dong-wook Shin<sup>1</sup>, Sang Hyun Park<sup>2</sup>, Jin Yong Kim<sup>1</sup>, Ji-beom Yoo<sup>1</sup> (<sup>1</sup>Sungkyunkwan Univ., Korea) (<sup>2</sup>Samsung Advanced Institute of Technology, Korea) 95

#### 16B-pm-10 16:40 – 17:00

Effects of Carbon Nanotubes Addition on Synthesis of Mesocarbon Microbeads

Bin Wu<sup>1</sup>, Qianming Gong<sup>1</sup>, Ji Liang<sup>1</sup> (<sup>1</sup>Tsinghua Univ., China) 96

#### 16B-pm-11 17:00 – 17:20

Characterization of 2D-C/C Composite for Application to In-core Structure of Very High Temperature Reactor (VHTR)

Taiju Shibata<sup>1</sup>, Junya Sumita<sup>1</sup>, Eiji Kunimoto<sup>1</sup>, Kazuhiro Sawa<sup>1</sup> (<sup>1</sup>JAEA, Japan) 96

#### 16B-pm-12 17:20 – 17:40

Damage Fractography of Ceramic Fibre Composite at Elevated Temperature under Loads

Vijay Kumar Srivastava<sup>1</sup>, Shraddha Singh<sup>1</sup> (<sup>1</sup>Institute of Technology, BHU, India) 97

#### 16B-pm-13 17:40 – 18:00

Research on Oxidation Protection of Carbon/Carbon Composites above 1750°C

Zhongwei Zhang<sup>1</sup>, Zhenghui Xu<sup>1</sup>, Junshan Wang<sup>1</sup> (<sup>1</sup>Aerospace Research Institute of Materials and Processing Technology Beijing, China) 97

#### 18:20 – 20:30

#### POSTER SESSION 3



**16A-pm-13 18:00 - 18:20**

**Multiscale Modelling of Nanomaterials: Fundamentals and Applications for Molecular Manufacturing**

Elena Bichoutskaia (Univ. of Nottingham, UK) 89

**16A-pm-14 18:20 - 18:40**

**Catalytic Growth of Carbon Nanotubes on Zeolites**

Nadejda Popovska<sup>1</sup>, Katva Danova<sup>1</sup>, Nazret Telemicael<sup>1</sup>, Helmut Gerhard<sup>1</sup>, Wilhelm Schwieger<sup>1</sup> (<sup>1</sup>Univ. of Erlangen-Nuremberg, Germany) 89

**16A-pm-15 18:40 - 19:00**

**Molecular-level-dispersed Carbon-nanotubes as Dyes for Dyeing-printing of Fibers: A Novel Approach for Mass-production of Electrical-conductive Multifilament Yarns**

Bunshi Fugetsu<sup>1</sup>, Eiji Akiba<sup>2</sup>, Masaaki Hachiya<sup>3</sup>, Morinobu Endo<sup>4</sup> (<sup>1</sup>Hokkaido Univ., Japan) (<sup>2</sup>Kurary Living Co., LTD., Japan) (<sup>3</sup>Chakyu Dyeing Co., LTD., Japan) (<sup>4</sup>Shinshu Univ., Japan) 90

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**18:20 – 20:30**

**POSTER SESSION 3**

# CARBON 2008 Conference Program Oral

## Oral Sessions WEDNESDAY, JULY 16, 2008

### 16AM2 (ORAL SESSION 7)

#### Session C

##### Metropolitan Room Shiga **CHEMICAL PROPERTIES**

*Chairs: Prof. Diego Cazorla-Amoros (Alicante Univ., Spain)*

*Prof. Masashi Kijima (Tsukuba Univ., Japan)*

#### 16C-am-01 9:50 – 10:20 FEATURED LECTURE

##### **Intercalation Chemistry and Electronic Structure of Graphite-like Layered Material with Composition BC<sub>2</sub>N**

*Prof. Masayuki Kawaguchi<sup>1</sup>, Katsuya Ohnishi<sup>1</sup>, Shinya Kuroda<sup>1</sup>, Yasuji Muramatsu<sup>2</sup> (<sup>1</sup>Osaka Electro Communication Univ., Japan) (<sup>2</sup>Univ. of Hyogo, Japan)*

98

#### 16C-am-02 10:20 – 10:50 FEATURED LECTURE

##### **Characterization and Reactions of Silylated Graphite Oxides**

*Prof. Yoshiaki Matsuo<sup>1</sup>, Yoshimasa Sakai<sup>1</sup>, Tomokazu Fukutsuka<sup>2</sup>, Yosohiro Sugie<sup>1</sup> (<sup>1</sup>Univ. of Hyogo, Japan) (<sup>2</sup>Kyoto Univ., Japan)*

98

#### 16C-am-03 10:50 – 11:10

##### **Electronic Structure and Features of the Arene Molecules Oxidation in Elementary Textural Nanofragments of the Carbon Materials**

*Victor P. Berveno<sup>1</sup>, Lev I. Shchukin<sup>1</sup>, Margarita V. Kornievich<sup>1</sup>, Sergey Yu. Lyrshchikov<sup>1</sup>, Vitaliy M. Grigoriev<sup>1</sup> (<sup>1</sup>Institute of Solid State Chemistry and Mechanochemistry, Russia)*

99

#### 16C-am-04 11:10 – 11:30

##### **Study of Activated Carbon Oxygen Groups by a New Fast Intermittent TPD Technique**

*Jean-Pierre Joly<sup>1</sup>, François Gaillard<sup>1</sup>, Claude Descorme<sup>1</sup>, Michèle Besson<sup>1</sup>, Elena Polyanskaya<sup>2</sup>, Oxana Pestunova<sup>2</sup> (<sup>1</sup>Univ. of Lyon, France) (<sup>2</sup>Boreskov Institute of Catalysis, Russia)*

99

#### 16C-am-05 11:30 – 11:50

##### **Oxidation Resistance of Advanced Carbon Based Materials**

*Baerbel Schloegl<sup>1</sup>, Hans K. Hinssen<sup>1</sup>, Rainer Moormann<sup>1</sup> (<sup>1</sup>Research Center Juelich, Germany)*

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#### 16C-am-06 11:50 – 12:10

##### **Carbon Growth by the Atomic Carbon Insertion Reactions: The Simplest Carbon Reaction.**

*Teruhiko Ogata<sup>1</sup>, Yoshio Tatamitani<sup>1</sup>, Yutaka Shibi<sup>1</sup> (Shizuoka Univ., Japan)*

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#### **12:10 – 13:10 LUNCH**

**Metropolitan Asama B, C and Chikuma**

#### Session D

##### Sunroute Nagano Room Hiten **ENVIRONMENT AND ENERGY**

*Chairs: Dr. Noriko Yoshizawa (AIST, Japan)*

*Prof. Wolfgang A Klose (Univ. of Kassel, Germany)*

#### 16D-am-01 9:50 – 10:20 INVITED LECTURE

##### **Ozone Treated Carbon Surfaces for Enhanced Adsorption of Mercury Vapor**

*Indrek Kulaots<sup>1</sup>, Shawn Manchester<sup>1</sup>, Chris Wang<sup>1</sup>, Robert H. Hurt<sup>1</sup> (<sup>1</sup>Brown Univ., USA)*

101

#### 16D-am-02 10:20 – 10:40

##### **Adsorption of VOCs Using Binderless-monolithic Activated Carbons Prepared from Petroleum Mesophase Pitch**

*Joaquin Silvestre-Albero<sup>1</sup>, Ana Maria Silvestre-Albero<sup>1</sup>, Jose Manuel Ramos-Fernández<sup>1</sup>, Manuel Martínez -Escandell<sup>1</sup>, Antonio Sepúlveda-Escribano<sup>1</sup>, Francisco Rodríguez-Reinoso<sup>1</sup> (<sup>1</sup>Univ. of Alicante, Spain)*

101

#### 16D-am-03 10:40 – 11:00

##### **Diminish VOC Emission in Iron Foundries by a Cost Effective In-situ Pyrolyzed Carbon**

*He Huang<sup>1</sup>, Yujue Wang<sup>1</sup>, Fred S Cannon<sup>1</sup> (<sup>1</sup>Pennsylvania State Univ., USA)*

102

#### 16D-am-04 11:00 – 11:20

##### **Hydrogen Evolution from Decalin over Precious Metal Catalysts Supported on Carbon Nanofibers and Their Structured Composite**

*Ping Li<sup>1</sup>, Yi-Li Huang<sup>1</sup>, De Chen<sup>2</sup>, Xing-Gui Zhou<sup>1</sup>, Tie-Jun Zhao<sup>2</sup>, Wei-Kang Yuan<sup>1</sup> (<sup>1</sup>East China Univ. of Science and Technology, China) (<sup>2</sup>Norwegian Univ. of Science and Technology, Norway)*

102

#### 16D-am-05 11:20 – 11:40

##### **Preparation and Properties of PET-based Porous Carbon**

*Jacek Przepiorski<sup>1</sup>, Antoni W. Morawski<sup>1</sup>, Koichiro Tsumori<sup>2</sup>, Tomoki Tsumura<sup>2</sup>, Beata Tryba<sup>1</sup>, Masahiro Toyoda<sup>2</sup> (<sup>1</sup>Szczecin Univ. of Technology, Poland) (<sup>2</sup>Oita Univ., Japan)*

103

#### 16D-am-06 11:40 – 12:00

##### **Development of Charcoal for Castings by Using Biomass Resources**

*Kouhei Hasegawa<sup>1</sup>, Yuuichi Shinoda<sup>1</sup>, Kazuki Shiba<sup>1</sup>, Yasunori Doi<sup>2</sup>, Toyoshi Manabe<sup>3</sup>, Mitsuhiro Sakawa<sup>1</sup> (<sup>1</sup>Kochi Univ. of Technology, Japan) (<sup>2</sup>Tokushu Steelworks Company, Japan) (<sup>3</sup>Kochi Prefecture Industrial Technology Center, Japan)*

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#### **12:00 – 13:10 LUNCH**

**Metropolitan Asama B, C and Chikuma**

# CARBON 2008 Conference Program Oral

## Oral Sessions WEDNESDAY, JULY 16, 2008

### 16PM1 (ORAL SESSION 8)

#### Session C

Metropolitan Room Shiga

#### PHYSICAL PROPERTIES

Chairs: Dr. Vladimir Yu Osipov (Ioffe Fisucio-Technical Institute, Russia)

Dr. Stephan Roche (MINATEC, France)

#### 16C-pm-01 13:10 – 13:40 INVITED LECTURE

Charge Transport in Chemically-Doped Carbon based Materials

Dr. Stephan Roche (MINATEC, France) 104

#### 16C-pm-02 13:40 – 14:00

Novel Physisorption-induced Magnetic Switching Phenomenon in Activated Carbon Fibers

Toshiaki Enoki<sup>1</sup>, Katsunori Takahara<sup>1</sup>, Naoki Kawatsu<sup>1</sup>, Kazuyuki Takai<sup>1</sup>, Hirohiko Sato<sup>1</sup> (<sup>1</sup>Tokyo Institute of Technology, Japan) 104

#### 16C-pm-03 14:00 – 14:20

Thermal Properties and Tribological Properties of Tetrahedral Amorphous Carbon (Ta-C) Films

Seiichi Miyai<sup>1</sup>, Tomohiro Kobayashi<sup>2</sup>, Takayuki Terai<sup>1</sup> (<sup>1</sup>Univ. of Tokyo, Japan) (<sup>2</sup>RIKEN, Japan) 105

#### 16C-pm-04 14:20 – 14:40

The Ballistic Phonon Drag of Electrons as a Cause of High Thermoelectric Effect in Nanocarbon

Evgeny D. Eydelman<sup>1</sup>, Alexander Y. Vul<sup>1</sup> (<sup>1</sup>Ioffe Fisucio-Technical Institute, Russia) 105

#### 16C-pm-05 14:40 – 15:00

Magnetic Studies of Ultrananocrystalline Diamonds Intercalated by Copper

Vladimir Yu. Osipov<sup>1</sup>, Alexander I. Shames<sup>2</sup>, Alexander E. Aleksenskiy<sup>1</sup>, Alexander M. Panich<sup>2</sup>, Toshiaki Enoki<sup>3</sup>, Kazuyuki Takai<sup>3</sup>, Alexander Ya. Vul<sup>1</sup> (<sup>1</sup>Ioffe Physico-Technical Institute, Russia) (<sup>2</sup>Ben-Gurion Univ. of the Negev, Israel) (<sup>3</sup>Tokyo Institute of Technology, Japan) 106

#### 16C-pm-06 15:00 – 15:20

Modelling the Fracture of Nuclear Graphites with Scale

Gareth B Neighbour<sup>1</sup>, Chris Lynch<sup>1</sup>, Matt J. Holt<sup>1</sup> (<sup>1</sup>Univ. of Hull, UK) 106

15:20 – 15:40 Coffee Break

Metropolitan Lobby 3F, Asama B, Lobby 2F,  
Sunroute Lobby 3F

#### Session D

Sunroute Nagano Room Hiten

#### ENVIRONMENT AND ENERGY

Chairs: Prof. Jun-ichi Ozaki (Gunma Univ., Japan)

Prof. Antoni Morawski (Szczecin Univ., Poland)

#### 16D-pm-01 13:10 – 13:40 FEATURED LECTURE

Application of Nitrogen-Rich Amino Acids to Active Site Generation in Oxygen Reduction Catalyst

Dr. Jun Maruyama<sup>1</sup>, Nobutaka Fukui<sup>2</sup>, Masayuki Kawaguchi<sup>2</sup>, Ikuo Abe<sup>1</sup> (<sup>1</sup>Osaka MTRI, Japan) (<sup>2</sup>Osaka Electro-Communication Univ., Japan) 110

#### 16D-pm-02 13:40 – 14:00

Development of a Zero-Emission Carbon Fuel Cell Using Hydrothermally Carbonized Biomass as Fuel

Jens Peter Paraknowitsch<sup>1</sup>, Arne Thomas<sup>1</sup>, Markus Antonietti<sup>1</sup> (<sup>1</sup>Max-Planck Institute of Colloids and Interfaces, Germany) 111

#### 16D-pm-03 14:00 – 14:20

Kinetics of Cellulose Pyrolysis under Mechanical Pressure

Mingbo Wu<sup>1</sup>, Gabor Varhegyi<sup>2</sup>, Zsuzsanna Novák Czégény<sup>2</sup>, Kouichi Miura<sup>3</sup>, Ryuichi Ashida<sup>3</sup>, Zhonghao Hu<sup>4</sup>, Qingfang Zha<sup>1</sup>, Jian Zhang<sup>4</sup> (<sup>1</sup>China Univ. of Petroleum, China), (<sup>2</sup>Central Research Institute for Chemistry of the Hungarian Academy of Sciences, Hungary) (<sup>3</sup>Kyoto Univ., Japan), (<sup>4</sup>Shengli Oilfield, P. R. China) 111

#### 16D-pm-04 14:20 – 14:40

Hydrothermal Carbonization of Plant Material: A Route to Nanostructured Carbonaceous Materials and an Efficient Chemical Process to Treat the CO<sub>2</sub> Problem

Maria M. Titirici<sup>1</sup>, Arne Thomas<sup>1</sup>, Markus Antonietti<sup>1</sup> (<sup>1</sup>Max-Planck Institute of Colloids and Interfaces, Germany) 112

#### 16D-pm-05 14:40 – 15:00

Development of Plant Cultivation Floor of Charcoal Produced from Used Paper Mixed with Unused Woody Resources

Yasuhiro Shimase<sup>1</sup>, Tomoyuki Amano<sup>1</sup>, Syota Ishikawa<sup>1</sup>, Michiyasu Motoike<sup>1</sup>, Hiroko Yamamoto<sup>1</sup>, Mitsuhiro Sakawa<sup>1</sup> (<sup>1</sup>Kochi Univ. of Technology, Japan) 112

#### 16D-pm-06 15:00 – 15:20

A Chemical Microsystem for Selective Detection of Air Polluting Gases

Marc Dubois<sup>1,2</sup>, Vicente Parra<sup>2</sup>, Alain Pauly<sup>2</sup>, Christelle Varenne<sup>2</sup>, Bernard Lauron<sup>2</sup>, Marcel Bouvet<sup>3</sup>, Katia Guérin<sup>2</sup>, André Hamwi<sup>2</sup>, Jérôme Brunet<sup>2</sup> (<sup>1</sup>Univ. Blaise Pascal, France) (<sup>2</sup>Clermont Univ., France) (<sup>3</sup>Univ. Pierre, France) 113

15:20 – 15:40 Coffee Break

Metropolitan Lobby 3F, Asama B, Lobby 2F,  
Sunroute Lobby 3F

# CARBON 2008 Conference Program Oral

**Oral Sessions WEDNESDAY, JULY 16, 2008**

## **16PM2 (ORAL SESSION 9)**

### **Session C**

**Metropolitan Room Shiga**

#### **CHARACTERIZATION**

*Chairs: Prof. A. Oberlin (CNRS, France)*

*Dr. N. Iwashita (AIST, Japan)*

#### **16C-pm-07 15:40 – 16:10 INVITED LECTURE**

**Adsorption of Argon, Nitrogen and Water in Carbon Nanotube Bundles: Computer Simulation and Experiment Studies**

Prof. Duong D Do<sup>1</sup>, Atichat Wongkoblap<sup>1</sup> (<sup>1</sup>Univ., of Queensland, Australia) 107

#### **16C-pm-08 16:10 – 16:40 FEATURED LECTURE**

**TEM Observation and Microanalysis of the Surface Coating Films Formed on Carbon Nanospheres in the Negative Electrodes of Li Ion Batteries**

Dr. Noriko Yoshizawa<sup>1</sup>, Yasushi Soneda<sup>1</sup>, Hiroaki Hatori<sup>1</sup>, Kazuo Yoshikawa<sup>2</sup>, Koji Miura<sup>2</sup>, Takeshi Abe<sup>3</sup> (<sup>1</sup>National Institute of Advanced Industrial Science and Technology (AIST), Japan) (<sup>2</sup>Tokai Carbon Co., Japan) (<sup>3</sup>Kyoto Univ., Japan) 107

#### **16C-pm-09 16:40 – 17:00**

**Characterization of Catalyst Particles for Carbon Nanotube Synthesis by Time-resolved Laser-induced Incandescence**

Alfred Leipertz<sup>1</sup>, Roland Sommer<sup>1</sup>, Katya Danova<sup>1</sup>, Nadejda Popovska<sup>1</sup> (<sup>1</sup>Univ. of Erlangen-Nuremberg, Germany) 108

#### **16C-pm-10 17:00 – 17:20**

**Dense-Gas Fractionation and MALDI-TOF Characterization of Petroleum Pitches**

Eduardo G. Cervo<sup>1</sup>, Mark C. Thies<sup>1</sup>, Bahram Fathollahi<sup>2</sup> (<sup>1</sup>Clemson Univ., USA) (<sup>2</sup>Univ. of California, USA) 108

#### **16C-pm-11 17:20 – 17:40**

**Structure of Glucose-derived Hydrothermal Carbon: an Advanced Solid-state MAS 13C NMR Study**

Niki Baccile<sup>1</sup>, Niki Baccile<sup>1</sup>, Guillaume Laurent<sup>2</sup>, Florence Babonneau<sup>2</sup>, Maria-Magdalena Titirici<sup>1</sup>, Markus Antonietti<sup>1</sup> (<sup>1</sup>Max-Planck Institute, Germany) (<sup>2</sup>LCMCP-UMPC, France) 109

#### **16C-pm-12 17:40 – 18:00**

**Amorphous Carbon Thin Films: Synthesis and Characterizations**

Hare Ram Aryal<sup>1</sup>, Sudip Adhikari<sup>1</sup>, Dilip Chandra Ghimire<sup>1</sup>, Golap Kalita<sup>1</sup>, Ishwor Khatri<sup>2</sup>, Hideo Uchida<sup>1</sup>, Tetsuo Soga<sup>2</sup>, Masayoshi Umeno<sup>1</sup> (<sup>1</sup>Chubu Univ., Japan) (<sup>2</sup>Nagoya Institute of Technology, Japan) 109

#### **16C-pm-13 18:00 – 18:20**

**Interstellar Dust Grains Composition: the Hydrogenated Amorphous Carbon Contribution**

Emmanuel Dartois<sup>1</sup>, Guillermo M. Munoz-Caro<sup>2</sup> (<sup>1</sup>CNRS, France) (<sup>2</sup>INTA-CSIC, Spain) 110

**18:20 – 20:30**

### **POSTER SESSION 3**

#### **Session D**

**Sunroute Nagano Room Hiten**

#### **ENVIRONMENT AND ENERGY**

*Chairs: Dr. Zheng-Ming Wang (AIST, Japan)*

*Dr. Cathie Vix-Guterl (ISIC/CNRS, France)*

#### **16D-pm-07 15:40 – 16:00**

**Improvement in Crystallinity and Photocatalytic Activity of Titania by Carbon-Coating**

Tomoki Tsumura<sup>1</sup>, Kazuo Sogabe<sup>1</sup>, Michio Inagaki<sup>2</sup>, Masahiro Toyoda<sup>1</sup> (<sup>1</sup>Oita Univ., Japan) (<sup>2</sup>Aichi Institute of Technology, Japan) 113

#### **16D-pm-08 16:00 – 16:20**

**The Use of Fossil Hydrocarbons to Promote Renewable Energy and Carbon Sequestration**

Jorge Laine (IVIC, Venezuela) 114

#### **16D-pm-09**

**(Withdrawn)**

#### **16D-pm-10 16:20 – 16:40**

**Removal of Nickel (II) by Adsorption Using Treated Granular Activated Carbon: Batch and Column Studies**

Ulker Gurbuz Beker<sup>1</sup>, Dilek Duranoglu Gulbayir<sup>1</sup>, Semih Murat<sup>1</sup> (<sup>1</sup>Yildiz Technical Univ., Turkey) 115

#### **16D-pm-11 16:40 – 17:00**

**Elucidating the Adsorption of Trace Endocrine Disruptors and Pharmaceuticals on Tailored Activated Carbons Using a Quantitative Structure-Activity Relationship**

Adam M. Redding<sup>1</sup>, Fred S. Cannon<sup>1</sup>, Shane A. Snyder<sup>2</sup>, Brett J. Vanderford<sup>2</sup> (<sup>1</sup>Pennsylvania State Univ., USA) (<sup>2</sup>Southern Nevada Water Authority, USA) 115

#### **16D-pm-12 17:00 – 17:20**

**Characterization of Lithium-ion Cell Based on Carbonized Wood Sintered under High Pressure**

Toshimitsu Hata<sup>1</sup>, Yasin Eker<sup>2</sup>, Sylvie Bonnamy<sup>2</sup>, François Béguin<sup>2</sup> (<sup>1</sup>Kyoto Univ., Japan) (<sup>2</sup>CNRS-Univ., France) 116

**18:20 – 20:30**

### **POSTER SESSION 3**

# CARBON 2008 Conference Program Oral

## Oral Sessions

**THURSDAY, JULY 17, 2008**

### 17AM1 Metropolitan

8:00 - 8:30 Asama B, C **INFORMATION** (Announcement of coming international conferences)

8:30 - 9:20 Asama B, C **PLENARY LECTURE**

Professor Mauricio Terrones (IPICyT, Mexico)

“Defect Detection and Defect Engineering in Nano carbons: An Alternative Route to Novel Devices”

*Chair: Prof. Takuya. Hayashi (Shinshu University, Japan)*

9:20 – 9:50 BREAK Metropolitan Lobby 3F, Asama B, Lobby 2F, Sunroute Lobby 3F

### 17AM2 (ORAL SESSION 10)

#### Session A

Hotel Metropolitan Room Asama A

#### **NANOTUBES**

*Chairs: Prof. D. Tomanek (Michigan St. Univ., USA)*

*Prof. Riichiro Saito (Tohoku Univ., Japan)*

#### 17A-am-01 9:50 – 10:20 KEYNOTE LECTURE

Recent Advances in Carbon Nanotube Research

Prof. Mildred S. Dresselhaus<sup>1</sup>, Prof. Gene Dresselhaus<sup>1</sup>  
(<sup>1</sup>MIT, USA) 117

#### 17A-am-02 10:20 – 10:50 FEATURED LECTURE

Manipulating the Current Conductivity of Halide-filled Multi-walled Carbon Nanotubes

Dr. Pedro MFJ Costa<sup>1</sup>, Dmitri Golberg<sup>1</sup>, Masanori Mitome<sup>1</sup>, Yoshio Bando<sup>1</sup> (<sup>1</sup>NIMS, Japan) 117

17A-am-03

**(Withdrawn)**

#### 17A-am-04 10:50 – 11:10

Temperature Effects in Raman Spectra from Single-walled Carbon Nanotubes and Assignments of Their Chiral Indices at High Temperature

Takashi Uchida<sup>1,2</sup>, Akira Yamazaki<sup>1,3</sup>, Yoshihiro Kobayashi<sup>1,2</sup> (<sup>1</sup>NTT Basic Research Laboratories, Japan) (<sup>2</sup>CREST/JST, Japan) (<sup>3</sup>Meiji Univ., Japan) 118

#### 17A-am-05 11:10 – 11:30

Dispersion and Individualization of Single Walled Carbon Nanotubes through an Alkali Vapor Intercalation Process

Brigitte Vigolo<sup>1</sup>, Claire Hérold<sup>1</sup>, Jean-François Maréché<sup>1</sup>, Patrice Bourson<sup>2</sup>, Samuel Margueron<sup>2</sup>, Jaafar Ghanbaja<sup>1</sup>, Edward McRae<sup>1</sup> (<sup>1</sup>Laboratoire de Chimie du Solide Minéral, France) (<sup>2</sup>Laboratoire Matériaux Optiques, Photoniques et Systèmes, France) 119

12:00 – 18:00 Excursion (Lunch: Oginoya)

Special lectures (Suzaka Mesena Hall)

18:30 - 21:30 Banquet Metropolitan Asama A, B, C

#### Session B

Hotel Metropolitan Room Azusa

#### **CARBON FIBERS AND COMPOSITES**

*Chairs: Prof. Michiya Ota (Gunma College of Tech., Japan)*

*Prof. De Chen (NTNU, Norway)*

#### 17B-am-01 9:50 – 10:20 INVITED LECTURE

Carbon-Carbon Composite Material as a Catalytic Reactor

Prof. De Chen<sup>1</sup>, Nina Hammer<sup>1</sup>, Magnus Rønning<sup>1</sup>  
(<sup>1</sup>NTNU, Norway) 119

#### 17B-am-02 10:20 – 10:40

Resistance of Multi-walled Carbon Nanotube/Poly (p-phenylene) Composite for Toluene Detection

Adi Ilcham<sup>1</sup>, Tawatchai Charinpanitkul<sup>2</sup>, Mana Sriyuthsak<sup>1</sup>, Apinan Soottitantawata<sup>2</sup>, Amornwong Srisurichan<sup>2</sup>, Noriaki Sano<sup>3</sup> (<sup>1</sup>Chulalongkorn Univ., Thailand) (<sup>2</sup>Center of Excellence in Particle Technology, Thailand) (<sup>3</sup>Hyogo Univ., Japan) 120

#### 17B-am-03 10:40 – 11:00

Study of Wettability and Reactive Infiltration of Carbon by AlSi Alloys

Javier Narciso<sup>1</sup>, Noelia Calderon<sup>1</sup>, Rayisa Voytovych<sup>2</sup>, Nicolas Eustathopoulos<sup>2</sup>, Francisco Reinoso<sup>1</sup> (<sup>1</sup>Alicante Univ., Spain) (<sup>2</sup>INP de Grenoble, France) 121

#### 17B-am-04 11:00 – 11:20

Acid Modified Cup-Stacked-Type Carbon Nanofibers for Environmental Applications

Guillermo Abdrade-Espinosa<sup>1</sup>, Jose Rene Rangel-Mendez<sup>1</sup>, Emilio Muñoz-Sandoval<sup>1</sup>, Humberto Terrones-Maldonado<sup>1</sup>, Mauricio Terrones-Maldonado<sup>1</sup> (<sup>1</sup>Institute for Scientific and Technological Research of San Luis Potosi, Mexico) 121

#### 17B-am-05 11:20 – 11:40

Effect of Carbonization Temperature on Emersion of Nano-structured Carbon Materials in Wood Treated with ACQ

Shuji Yoshizawa<sup>1</sup>, Michio Ohata<sup>1</sup> (<sup>1</sup>Meisei Univ., Japan)

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12:00 – 18:00 Excursion (Lunch: Oginoya)

Special lectures (Suzaka Mesena Hall)

18:30 - 21:30 Banquet Metropolitan Asama A, B, C

# CARBON 2008 Conference Program Oral

## Oral Sessions THURSDAY, JULY 17, 2008

### 17AM2 (ORAL SESSION 10)

#### Session C

##### Metropolitan Room Shiga

##### CHARACTERIZATION

Chairs: Prof. Malcolm Heggie (Univ. Sussex, UK)

Prof. Yoshihiro Hishiyama (Musashi Institute of Tech., Japan)

##### 17C-am-01 9:50 – 10:20 FEATURED LECTURE

##### Synthesis of Porous Carbons: A Microscopic View of Physical and Chemical Activation

Dr. Juan M. D. Tascon<sup>1</sup>, Juan Paredes<sup>1</sup>, Fabian Suarez-Garcia<sup>1</sup>, Amelia Martinez-Alonso<sup>1</sup> (<sup>1</sup>Institute National of Carbon, Spain) 122

##### 17C-am-02 10:20 – 10:50 FEATURED LECTURE

##### Formation of Hydrogen and Carbon Nanotubes on Nanometal-Dispersed Single Wall Nanocarbons

Dr. Hirofumi Kanoh<sup>1</sup>, Yusuke Aoki<sup>1</sup>, Ai Uematsu<sup>1</sup>, Koki Urita<sup>1</sup>, Daisuke Noguchi<sup>1</sup>, Tsutomu Itoh<sup>1</sup>, Tomonori Ohba<sup>1</sup>, Masako Yudasaka<sup>2</sup>, Sumio Iijima<sup>3</sup>, Katsumi Kaneko<sup>1</sup> (<sup>1</sup>Chiba Univ., Japan) (<sup>2</sup>JST/SORST, Japan) (<sup>3</sup>Meijo Univ., Japan) 59

##### 17C-am-03 10:50 – 11:10

##### X-Ray Tomography for the Investigation of Carbon and Graphite Materials

Felix Eckstorff<sup>1</sup>, Christoph Mohr<sup>1</sup>, Wilhelm Frohs<sup>1</sup>, Franz Fendt<sup>1</sup>, (<sup>1</sup>SGL Carbon GmbH, Germany) 123

##### 17C-am-04 11:10 – 11:30

##### Pyrocarbon Deposit on Flexible Graphite Ribbon: Reactivity with Molten Silicon

Mathieu R. Monville<sup>1</sup>, Sylvie Bonnamy<sup>1</sup>, Marco Schowalter<sup>2</sup>, Christian Belouet<sup>3</sup> (<sup>1</sup>CNRS-Orleans, France) (Univ. of Bremen, Germany) (<sup>3</sup>Solarforce, France) 124

##### 17C-am-05 11:30 – 11:50

##### Extra-terrestrial Carbons and Possible Earth Analogues

Jean-Noël M. Rouzaud<sup>1</sup>, Coentim H. LE Guillou<sup>1</sup> (<sup>1</sup>CNRS, France) 124

12:00 – 18:00 Excursion (Lunch: Oginoya)

18:30 - 21:30 Banquet Metropolitan Asama A, B, C

#### Session D

##### Sunrute Room Hiten

##### ENVIRONMENT AND ENERGY

Chairs: Prof. Chong R. Park (Seoul National Univ., Korea)

Prof. Kouichi Miura (Kyoto Univ., Japan)

##### 17D-am-01 9:50 – 10:20 FEATURED LECTURE

##### Carbon Modified TiO<sub>2</sub> Photocatalysts for Water Purification

Dr. Antoni Morawski<sup>1</sup>, Magdalena Janus<sup>1</sup>, Beata Tryba<sup>1</sup> (<sup>1</sup>Szczecin Univ., Poland) 125

##### 17D-am-02 10:20 – 10:40

##### High Performance PCM-Graphite Heat Storage Systems

Martin U. Christ<sup>1</sup>, Oswin Oettinger<sup>1</sup>, Wolf Steinmann<sup>2</sup>, Rainer Tamme<sup>2</sup> (<sup>1</sup>SGL Carbon GmbH, Germany) (<sup>2</sup>DLR Stuttgart, Germany) 125

##### 17D-am-03 10:40 – 11:00

##### Effect of Carbon Coating and Metal Doping for the Photoactivity of W<sub>18</sub>O<sub>49</sub>

Hany Hussein Hemida<sup>1</sup>, Michio Inagaki<sup>2</sup>, Tomoki Tsumura<sup>1</sup>, Masahiro Toyoda<sup>1</sup> (<sup>1</sup>Oita Univ., Japan) (<sup>2</sup>Aichi Institute of Technology, Japan) 126

##### 17D-am-04 11:00 – 11:20

##### Titanate Nanotube-Two dimensionally Deposited Carbon Nanosheet Composite

Wen-Qin Peng<sup>1</sup>, Yong-Jun<sup>1</sup>, Mami Aizawa<sup>1</sup>, Zheng-Ming Wang<sup>1</sup>, Noriko Yoshizawa<sup>1</sup>, Hiroaki Hatori<sup>1</sup>, Takahiro Hirotsu<sup>1</sup> (<sup>1</sup>National Institute of Advanced Industrial Science and Technology (AIST), Japan) 126

##### 17D-am-05 11:20 – 11:40

##### Improvement of Fe/Activated Carbon Catalysts for CWPO upon Oxidative Treatment

Juan Zazo<sup>1</sup>, Jose Casas<sup>1</sup>, Angel Mohedano<sup>1</sup>, Juan Rodrigue<sup>1</sup> (<sup>1</sup>Universidad Autonoma de Madrid, Spain) 127

12:00 – 18:00 Excursion (Lunch: Oginoya)

18:30 - 21:30 Banquet Metropolitan Asama A, B, C

## Special Session THURSDAY, JULY 17, 2008

### Special Lecture (Suzaka Mesena Hall)

16:30 – 17:30

### *Mechanisms of Self Assembly at Nanoscale Dimensions*

Sir Harold W. Kroto

The Florida State Univ., USA

# CARBON 2008 Conference Program Oral

## Oral Sessions

**FRIDAY, JULY 18, 2008**

### 18AM1 Metropolitan

8:00 - 8:30 Asama B, C INFORMATION (Announcement of coming international conferences)

8:30 - 9:20 Asama B, C PLENARY LECTURE

**Dr. Frederick S. Baker (Oak Ridge National Laboratory, USA)**

**“A Carbon Cycle: Use of Biomass-based Carbon Fiber Materials for Reduction of Carbon Emissions to the Environment”**

*Chair: Prof. Michio Inagaki (Aichi Institute of Technology, Japan)*

9:20 – 9:50 BREAK Metropolitan Lobby 3F, Asama B, Lobby 2F, Sunroute Lobby 3F

### 18AM2 (ORAL SESSION 11)

#### Session A

Metropolitan Room Asama A

#### **NANOTUBES**

*Chairs: Prof. M. Terrones (IPICYT, Mexico)*

*Prof. Yoong Ahm Kim (Shinshu Univ., Japan)*

#### 18A-am-01 9:50 – 10:20 KEYNOTE LECTURE

**Dark and Bright Exciton Energies of Carbon Nanotubes**

Prof. Riichiro Saito (Tohoku Univ., Japan) 128

#### 18A-am-02 10:20 – 10:40

**Growth of Vertical Aligned Carbon Nanotubes Arrays with Layer Catalysts: A Step Closer to Commercial Realization**

Qiang Zhang<sup>1</sup>, Mengqiang Zhang<sup>1</sup>, Jiaqi Huang<sup>1</sup>, Yi Liu<sup>1</sup>, Weizhong Qian<sup>1</sup>, Yao Wang<sup>1</sup>, Guohua Luo<sup>1</sup>, Fei Wei<sup>1</sup>, (Tsinghua Univ., China) 128

#### 18A-am-03 10:40 – 11:00

**Optical Resolution of SWNTs through Extraction with Chiral Diporphyrin Nanotweezers**

Naoki Komatsu<sup>1</sup>, Xiaobin Peng<sup>1</sup>, Takahide Kimura<sup>1</sup>, Atsuhiko Osuka<sup>2</sup> (Shiga Univ. of Medical Science, Japan) (Kyoto Univ., Japan) 129

#### 18A-am-04 11:00 – 11:20

**Dispersion of Elementary Excitations in Carbon Nanotubes, Graphene Sheets and Graphite Crystals**

Victor O. Gubanov<sup>1</sup>, Mykola Biliy<sup>1</sup>, Larysa O. Komarova<sup>1</sup>, Sergij V. Kovrygin<sup>1</sup>, Ludmyla Yu. Matzui<sup>1</sup>, Yevgen Melnychuk<sup>1</sup> (Kiev National Taras Shevchenko Univ., Ukraine) 129

#### 18A-am-05 11:20 – 11:40

**Atomic and Electronic Structure in Collapsed Carbon Nanotubes Evidenced by Scanning Tunneling Microscopy**

Cristina E. Giusca<sup>1</sup>, Yann Tison<sup>2</sup>, S. Ravi Silva<sup>1</sup> (Univ. of Surrey, UK) (Technical Univ. of Denmark, Denmark) 130

#### 18A-am-06

**(Withdrawn)**

12:10 – 12:30 Closing Address Metropolitan Asama B, C

#### Session B

Metropolitan Room Azusa

#### **CARBON FIBERS AND COMPOSITES**

*Chairs: Prof. Javier Narciso (Alicante Univ., Spain)*

*Prof. Takatoshi Futami (Toyohashi Univ. of Tech., Japan)*

#### 18B-am-01 9:50 – 10:20 INVITED LECTURE

**Matrix Microstructure and Properties of Carbon-Carbon Composites Made with Hybrid (Carbon Fiber-Carbon Nanomaterials) as Reinforcement**

Prof. Lalit Mohan Manocha<sup>1</sup>, Satish Manocha<sup>1</sup>, R. Pande<sup>1</sup>, Vishal Mankadia<sup>1</sup> (Sardar Patel Univ., India) 131

#### 18B-am-02 10:20 – 10:40

**Development of Ti-doped 3D Carbon/Carbon Composites**

Alba Centeno Pérez<sup>1</sup>, C. Blanco<sup>1</sup>, R. Santamaría<sup>1</sup>, M. Granda<sup>1</sup>, R. Menéndez<sup>1</sup> (Instituto Nacional del Carbón, Spain) 131

#### 18B-am-03 10:40 – 11:00

**Thermal Conductivity Measurements for Carbon Fibers**  
Amod A Ogale<sup>1</sup>, Rebecca Alway-Cooper<sup>1</sup>, Merlin Theodore<sup>2</sup>, David Anderson<sup>3</sup> (Clemson Univ., USA) (UTC, USA) (UDRI, USA) 132

#### 18B-am-04 11:00 – 11:20

**In situ Synthesis of Carbon Nanotubes within Carbon Fibre Cloth**

Bojan O. Boskovic<sup>1</sup>, Toby Hutton<sup>1</sup> (Dunlop Aerospace Braking Systems, UK) 132

#### 18B-am-05 11:20 – 11:40

**The Influence of Transport Modes on Numerical Analysis of Chemical Vapor Infiltration for Synthesis of C/C Composites**

Aijun Li<sup>1</sup>, Olaf Deutschmann<sup>1</sup>, (Univ. of Karlsruhe, Germany) 133

12:10 – 12:30 Closing Address Metropolitan Asama B, C

# CARBON 2008 Conference Program Oral

## Oral Sessions FRIDAY, JULY 18, 2008

### 18AM2 (ORAL SESSION 11)

#### Session C

##### Metropolitan Room Shiga

##### CHARACTERIZATION

Chairs: Dr. J. M. D. Tascon (Instituto Nacional del Carbon, Spain)

Dr. Y. Hanzawa (Chiba Univ. Tech., Japan)

#### 18C-am-01 9:50 – 10:20 INVITED LECTURE

##### The World of Dislocations in Graphite

Prof. Malcolm I. Heggie<sup>1</sup>, Irene Suarez-Martinez<sup>2</sup>, Gemma Haffenden<sup>1</sup>, Calvin Davidson<sup>1</sup> (<sup>1</sup>Univ. Sussex, UK) (<sup>2</sup>IMN Nantes, France) 133

#### 18C-am-02 10:20 – 10:40

##### Variations of Electrical Resistance and Thermal Diffusivity of Carbon Blocks during Graphitization

Norio Iwashita (National Institute of Advanced Industrial Science and Technology (AIST), Japan) 134

#### 18C-am-03 10:40 – 11:00

##### Application of Coconut Shell Activated Carbon Containing Additives for Electrical Grounding System

Nabihah Binti Hashim<sup>1</sup>, Mohamad Deraman<sup>2</sup>, Ahmadun Nijar Zainal Abidin<sup>1</sup>, Annuar Ramli<sup>1</sup>, Fakhrlrazi Mahtar<sup>1</sup>, Wan Razli Wan Abdullah<sup>1</sup>, Mohd Norfallah Md Isa<sup>1</sup> (<sup>1</sup>Telekom Malaysian Research and Development, Malaysia) (<sup>2</sup>Universiti Kebangsaan, Malaysia) 134

#### 18C-am-04 11:00 – 11:20

##### A Refined Method of Porous Structure Analysis of Activated Carbons with N<sub>2</sub> Adsorption Isotherms

Eugene A. Ustinov<sup>1</sup>, Julia Kukushkina<sup>1</sup>, Vasiliy Sokolov<sup>1</sup>, Alexander Kravchik<sup>1</sup>, Gennady Tereshchenko<sup>1</sup>, Maxim Melgunov<sup>2</sup>, Peter Eletski<sup>2</sup>, Vadim Yakovlev<sup>2</sup>, Vladimir Fenelonov<sup>2</sup> (<sup>1</sup>Ioffe Physicotechnical Institute, Russia) (<sup>2</sup>Boreskov Institute of Catalysis, Russia) 135

#### 18C-am-05 11:20 – 11:40

##### Sulfuric Acid Intercalation of Wood Charcoals Heat-Treated at Various Temperatures

Yukie Saito<sup>1</sup>, Kodai Kuwata<sup>1</sup>, Satoshi Shida<sup>1</sup>, Masamitsu Ohta<sup>1</sup> (<sup>1</sup>The Univ. of Tokyo, Japan) 135

#### 18C-am-06 11:40 – 12:00

##### Effect of Inorganics on Porosity Development of Activated Carbons Produced from Biomass

Esin A. Varol<sup>1</sup>, Ersan Pütün<sup>1</sup>, Ayşe Pütün<sup>1</sup> (<sup>1</sup>Anadolu Univ., Turkey) 136

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12:10 – 12:30 Closing Address Metropolitan Asama B, C

#### Session D

##### Sunroute Room Hiten

##### ENVIRONMENT AND ENERGY

Chairs: Dr. F. S. Baker (Oak Ridge National Laboratory, USA)

Dr. Jun Maruyama (Osaka MTRI, Japan)

#### 18D-am-01 9:50 – 10:20 FEATURED LECTURE

##### Novel Hybrid Adsorbents with Dual Functions of High Adsorptive and Photocatalytic Activities

Prof. Chong R. Park<sup>1</sup>, Hyeon Gu Cho<sup>1</sup>, Chang Hun Yun<sup>2</sup>, Ji Hyuk Im<sup>1</sup> (<sup>1</sup>Seoul National Univ., Korea) (<sup>2</sup>Engineering Plastics R&D, LG Chem. Ltd., Korea) 136

#### 18D-am-02 10:20 – 10:40

##### Palladium-doped Nanoporous Carbon Fibers for Hydrogen Storage

Nidia C. Gallego<sup>1</sup>, Cristian I. Contescu<sup>1</sup>, Vinay V. Bhat<sup>1</sup>, Halil Tekinalp<sup>2</sup>, Dan D. Edie<sup>2</sup> (<sup>1</sup>Oak Ridge National Laboratory, USA) (<sup>2</sup>Clemson Univ., USA) 137

#### 18D-am-03 10:40 – 11:00

##### Carbon-Supported Metallic Catalysts for the Improvement of MgH<sub>2</sub> Decomposition Kinetics

Maria Angeles Lillo-Rodenas<sup>1</sup>, Z. Xiao Guo<sup>2</sup>, K. François Aguey-Zinsou<sup>2</sup>, Diego Cazorla-Amoros<sup>1</sup>, Angel Linares-Solano<sup>1</sup> (<sup>1</sup>Univ. of Alicante, Spain) (<sup>2</sup>Univ. College London, UK) 137

#### 18D-am-04 11:00 – 11:20

##### Ni/Pd Nanoparticles Supported on Carbon as Catalysts for MgH<sub>2</sub> Decomposition

Diego Cazorla-Amoros<sup>1</sup>, Sonia Dominguez-Dominguez<sup>1</sup>, Maria Angeles Lillo-Rodenas<sup>1</sup>, Angel Berenguer-Murcia<sup>1</sup>, Joseph Calo<sup>2</sup> (<sup>1</sup>Univ. of Alicante, Spain) (<sup>2</sup>Brown Univ., USA) 138

#### 18D-am-05 11:20 – 11:40

##### Hydrogenation Properties of Hydride-Containing Carbon Materials

Cathie Vix-Guterl<sup>1</sup>, Renato Campesi<sup>1</sup>, Fermin Cuevas<sup>1</sup>, E. Leroy<sup>1</sup>, Mickael Hirscher<sup>2</sup>, Stephen Knopf<sup>1</sup>, Roger Gadiou<sup>1</sup>, Cathie Vix-Guterl, Michel Latroche (<sup>1</sup>ISIC/CNRS, France) (<sup>2</sup>MPI-MF, Germany) 138

#### 18D-am-06 11:40 – 12:00

##### Preparation of Novel Platinum-Supported Carbon Catalysts from Ion Exchange Resin and Its Application to the Combustion of Toluene

Kouichi Miura<sup>1</sup>, Satoshi Ido<sup>1</sup>, Hiroyuki Nakagawa<sup>1</sup> (<sup>1</sup>Kyoto Univ., Japan) 139

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12:10 – 12:30 Closing Address Metropolitan Asama B, C