

**Monday, March 2nd**

**Special Lectures: 25 min (Presentation) + 5 min (Discussion)**

**General Lectures: 10 min (Presentation) + 5 min (Discussion)**

**Poster Previews: 1 min (Presentation), No Discussion**

### **Special Lecture (9:00-9:30)**

- 1S-1 SWCNT Growth on Substrates Studied by a Combinatorial Method  
○*Suguru NODA*

### **General Lecture (9:30-10:30)**

#### **Properties of Nanotubes**

- 1-1 Photoluminescence Spectra from SWNTs Encapsulating Water Molecules  
○*Shohei Chiashi, Tateki Hanashima, Ryota Mitobe, Yoshikazu Homma*
- 1-2 Environmental effect on the exciton transition energy of single wall carbon nanotubes  
○*Riichiro Saito, Kentaro Sato, Junichiro Shiomi, Shigeo Maruyama*
- 1-3 Low-Temperature Magneto-Optical Spectroscopy for Single SWNTs  
○*Ryusuke Matsunaga, Kazunari Matsuda, Yoshihiko Kanemitsu*
- 1-4 Optical Properties of Single-Walled Carbon Nanotube in the UV Region  
○*Yoshiteru Takagi, Susumu Okada*

### **Coffee Break (10:30-10:45)**

### **General Lecture (10:45-11:45)**

#### **Properties of Nanotubes**

- 1-5 Electronic and Optical Properties of SWCNT Thin Films Deposited on Flexible Substrates by Dry-Process  
○*Takeshi Saito, Bikau Shukla, Motoo Yumura, Sumio Iijima*
- 1-6 Pressure dependence of superconductivity in thin films of boron-doped carbon nanotubes  
*M. Matsudaira, ○J. Haruyama, J. Nakamura, T. Shimizu, T. Eguchi, T. Nishio, Y. Hasegawa, H. Sano, Y. Iye, J. Reppert, A. M. Rao*
- 1-7 Current-voltage Property Analysis of Carbon Nanotube at Room Temperature on Substrate  
○*Tomohiro TOJO, Tomoko HARA, Yoshitaka MURAMOTO, Takuya YOKOMAE, Takuya HAYASHI, Yoong-Ahm KIM, Morinobu ENDO*
- 1-8 Electric characterization of CNTs grown in nanosized via interconnects at low temperatures by remote plasma CVD  
○*M. Iizuka, K. Ishimaru, D. Yokoyama, T. Iwasaki, I. Yuito, T. Takeuchi, S. Sato, M. Nihei, Y. Awano, H. Kawarada*

### **Lunch Time (11:45-13:00)**

### **General Lecture (13:00-14:15)**

#### **Properties of Nanotubes**

- 1-9 Characterizing thermal conductivity of vertically-aligned single-walled carbon nanotube films  
○*Kei Ishikawa, Saburo Tanaka, Koji Miyazaki, Junichiro Shiomi, Shigeo Maruyama*
- 1-10 Molecular-Dynamics Simulations on Thermal Transport in Peapod and Multi-Walled Carbon Nanotube  
○*Fumio Nishimura, Kazuyuki Watanabe, Yamamoto Takahiro*

- 1-11 Direct Determined Precise Electronic States of Single-Walled Carbon Nanotubes  
 ○*Yasuhiko Tanaka, Yasuhiko Hirana, Naotoshi Nakashima*
- 1-12 Intrinsic Electron Dipoles in Capped Carbon Nanotubes  
 ○*Minoru Otani, Susumu Okada*
- 1-13 Hydrogen Adsorption on Carbon Nanotubes under Tensile Strains  
 ○*Takazumi Kawai, Yoshiyuki Miyamoto*

## Coffee Break (14:15-14:30)

### General Lecture (14:30-15:45)

#### Applications of Nanotubes

- 1-14 Observation of Photoinduced Current in Azafullerene C<sub>59</sub>N Encapsulated Single-Walled Carbon Nanotubes at Low Temperatures  
 ○*Yongfeng Li, Toshiro Kaneko, Rikizo Hatakeyama*
- 1-15 Improvement of the performance of CNT thin-film transistor by using high purity semiconducting SWCNTs  
 ○*Shunjiro Fujii, Takeshi Tanaka, Hehua Jin, Yasumitsu Miyata, Hiroshi Suga, Yasuhisa Naitoh, Takeo Minari, Tetsuhiko Miyadera, Kazuhito Tsukagoshi, Hiromichi Kataura*
- 1-16 Carbon Nanotube Black Body: Highly Efficient Light Absorber by Vertically Aligned Single Walled Carbon Nanotubes  
 ○*Kohei Mizuno, Juntaro Ishii, Hideo Kishida, Yuhei Hayamizu, Satoshi Yasuda, Don N Futaba, Motoo Yumura, Kenji Hata*
- 1-17 Evaluation of dispersion state of carbon nanotubes/UV-curable resin nanocomposites by resonance Raman spectroscopy  
 ○*Takahiro Fukumaru, Tsuyohiko Fujigaya, Naotoshi Nakashima*
- 1-18 NIR-Triggered Volume Phase Transition of Carbon Nanotubes / Polymer Gel Composite  
 ○*Tatsuro Morimoto, Tsuyohiko Fujigaya, Naotoshi Nakashima*

### Poster Preview (15:45-16:25)

#### Poster Session (16:25-17:45)

#### Properties of Nanotubes

- 1P-1 Molecular Geometry and Electronic Structure of Single Wall Carbon Nanotube in Non-equilibrium States  
*Somphob Thompho, Oraphan Saengsawang, Uthumporn Arsawang and ○Supot Hannongbua*
- 1P-2 Defect creation and annihilation of Single-Walled Carbon Nanotubes with Scanning Tunneling Microscopy  
*○Yuta Ebine, Maxime Berthe, Shoji Yoshida, Atsushi Taninaka, Satoru Suzuki, Koji Sumitomo, Osamu Takeuchi, Hidemi Shigekawa*
- 1P-3 First principles study of substitutional impurities in carbon nanotubes  
*○Takashi Koretsune, Susumu Saito*
- 1P-4 Constant-Pressure Molecular Dynamics Study of Single-Walled Carbon Nanotubes with a Small Diameter  
*○Masahiro Sakurai and Susumu Saito*

- 1P-5 Microwave plasma CVD synthesis and characterization of boron-doped carbon nanotubes  
○*Tohru Watanabe, Yoshikazu Mizuguchi, Shunsuke Tsuda, Takahide Yamaguchi, Yoshihiko Takano*
- 1P-6 Phase Breaking in Low Temperature Magneto-resistance of Thin Multi-Walled Carbon Nanotubes  
○*M. Kida, T. Hatori, Y. Nakamura, Y. Togashi, N. Aoki, J. P. Bird, Y. Ochiai*
- 1P-7 Temperature dependence of radial breathing modes in double walled carbon nanotubes  
○*Hitoshi Kakehi, Ryoji Naito, Noriyuki Hasuike, Kenji Kisoda, Koji Nishio, Toshiyuki Issiki, Hiroshi Harima*
- 1P-8 Work Function of Single-Walled Carbon Nanotube  
○*Koichiro Kato, Susumu Saito*
- 1P-9 Electrical features of FETs using boron-doped single-walled carbon nanotubes  
○*T. Shimizu, J. Haruyama, H. Sano, Y. Iye, T. Eguchi, T. Nishio, Y. Hasegawa, J. Reppert, A. M. Rao*
- 1P-10 Effects of laser irradiation and thermal oxidation on CoMoCAT nanotubes Probed by Raman spectroscopy  
○*Mari Hakamatsuka, Dongchul Kang, Kenichi Kojima, Masaru Tachibana*
- 1P-11 C<sub>60</sub>(OH)<sub>n</sub> Assisted Dispersion of Single-walled Carbon Nanotubes  
○*Yutaka Maeda, Takaaki Kato, Junki Higo, Tadashi Hasegawa, Takahiro Tsuchiya, Takeshi Akasaka, Jing Lu, Shigeru Nagase*
- 1P-12 Molecular-Dynamics Simulations on Phonon-Assisted Mass Transport in Carbon Nanotubes  
○*Takuma Shiga, Toru Takahashi, Eduardo R. Hernandez and Kazuyuki Watanabe*
- 1P-13 Energy level of defect-induced state in semiconducting single wall carbon nanotube  
○*Ken-ichi Sasaki, Katsunori Wakabayashi, Riichiro Saito*
- 1P-14 Mechanism of Radial Corrugation in Many-Walled Carbon Nanotubes  
○*Motohiro Sato, Hiroyuki Shima*
- 1P-15 Electrical Characteristics of Single-Walled Carbon Nanotubes Irradiated with Ionic Liquids in Electrolyte Plasmas  
○*Yu Hirotsu, Toshiro Kaneko, Rikizo Hatakeyama*
- 1P-16 Individually dispersed single-walled carbon nanotubes in both liquid and dried solid states using a new dispersant  
○*Tatsuhiro Yamamoto, Masaru Kato*
- 1P-17 G band resonance Raman spectra of single-wall carbon nanotubes  
○*Jin Sung Park, Kenich Sasaki, Riichiro Saito, Gene Dresselhaus, Mildred S. Dresselhaus*
- 1P-18 Magnetic attractive multiwalled carbon nanotubes formed by high temperature treatment of multiwalled carbon nanotube/boric-oxide composite in hydrogen environment  
○*Hiroki Endo, Shunji Bandow, Sumio Iijima*
- 1P-19 Characterization of CNT-FET by Scanning Gate Microscopy  
○*Yuki Okigawa, Shigeru Kishimoto, Yutaka Ohno, Takashi Mizutani*
- 1P-20 Pressure dependence of Meissner effect in thin films of boron-doped carbon nanotubes  
○*J. Nakamura, M. Matsudaira, J. Haruyama, T. Shimizu, T. Eguchi, T. Nishio, Y. Hasegawa, H. Sano, Y. Iye, J. Reppert, A. M. Rao*
- 1P-21 Molecular-Dynamics Simulations on Carbon-Nanotube Phonon Fiber  
○*Takahiro Yamamoto, Fumio Nishimura, Toru Takahashi, Kazuyuki Watanabe*

- 1P-22 Energetics and Electronic Structures of Carbon Nanowires  
○*Susumu Okada*

### **Endohedral Nanotubes**

- 1P-23 A high-resolution laboratory x-ray diffractometer for the bulk structure analysis of nanotubes and peapods  
○*Shinobu Aoyagi, Eiji Nishibori, Ryo Kitaura, Hiroshi Sawa, Makoto Sakata and Hisanori Shinohara*
- 1P-24 Nucleation of an SWNT inside a carbon nanotube  
○*Yoshifumi Izu, Junichiro Shiomi and Shigeo Maruyama*
- 1P-25 First principles calculations of electronic states in SWCNTs encapsulating oxygen molecules  
○*Keitaro Harada, Kazuyuki Matsuda, Yutaka Maniwa, Syogo Tejima, Hisashi Nakamura*
- 1P-26 Dielectric properties of water clusters inside SWCNTs  
○*Fuminori Mikmai, Kazuyuki Matuda, Yutaka Maniwa*
- 1P-27 Scanning Tunneling Microscopy/Spectroscopy on the Electronic Structure of Metallofullerene Peapods ( $\text{Gd}@\text{C}_{82}$ )<sub>n</sub>@SWCNTs  
○*Kazunori Ohashi, Yuki Iijima, Naoki Imazu, Ryo Kitaura, Hisanori Shinohara*
- 1P-28 Fabrication of the air stable n-type single-walled carbon nanotube transistor based on calcium atoms encapsulation  
○*Tetsuhiro Shimizu, Toshiaki Kato, Wataru Oohara, Rikizo Hatakeyama*
- 1P-29 Encapsulation of Room Temperature Ionic Liquid inside Single-Wall Carbon Nanotubes  
○*Shimou Chen, Ryo Kitaura, and Hisanori Shinohara*

### **Carbon nanoparticles**

- 1P-30 Electronic spectra and fragmentation of polyynes in the gas phase  
○*Takeshi Yamada, Yoriko Wada, Tomonari Wakabayashi, Koji Okuda, Masa-aki Ubukata*
- 1P-31 Formation of polyyne-iodine complexes in solutions  
○*Yoriko Wada, Tomonari Wakabayashi, Ryoichi Osada, Tatsuhisa Kato*
- 1P-32 Characterization of La fullerene soot and formation of  $\text{LaC}_2$  containing multi-shell carbon nanocapsules by heat treatment  
○*Kazunori Yamamoto, Takeshi Akasaka*
- 1P-33 Formation of Polyhedral Graphite Particles by High-density Carbon Arc Discharge with Alcohol Vapor  
○*Yoji Katagiri, Akira Koshio, Fumio Kokai*

### **Miscellaneous**

- 1P-34 Formation Peculiarities, Structure and Morphology of  $\text{C}_{60}$ -PANI and  $\text{C}_{60}$ -PTFE Thin Composite Films  
*Victor Kazachenko, Tetsu Mieno, ○Ihar Razanau*
- 1P-35 New Method of Sidewall Functionalization of SWNT with Fuming Nitric Acid  
○*Hiroshi Kitamura, Masaru Sekido, Hisato Takeuchi, Masatomi Ohno*
- 1P-36 Theoretical Study of Spin Injection from Fe into Oligoacene  
○*Yoshitaka Kato, Hiroyuki Fueno, Kazuyoshi Tanaka*
- 1P-37 Density-functional tight-binding molecular dynamics simulations of the self-capping process in open-ended (n,n) SWCNTs (n=3 to 10)  
○*Hironori Hara, Stephan Irle*

- 1P-38 Synthesis and Search for Superconductivity of Alkaline Earth Graphite Intercalation Compounds  
○*Satoshi Heguri, Kimata Nozomu, Mototada Kobayashi*
- 1P-39 Studies on Ion RF Devices for Ion Mobility Measurement  
○*Toshiki Sugai*
- 1P-40 Growth of One-dimensional Array of Graphitic Cones in Vertically Aligned Carbon Nanofibers  
○*Takayuki Yamasaki, Akira Koshio, Yuta Tango, Tomohito Imai, Fumio Kokai*

**Tuesday, March 3rd**

**Special Lectures: 25 min (Presentation) + 5 min (Discussion)**

**General Lectures: 10 min (Presentation) + 5 min (Discussion)**

**Poster Previews: 1 min (Presentation), No Discussion**

**Special Lecture (9:00-9:30)**

2S-2 Synthesis and properties of fullerene nanowiskers and related fullerene nanomaterials

○*Kun'ichi Miyazawa*

**General Lecture (9:30-10:30)**

**Environmental/Safety Characterization of Fullerenes**

**and Endohedral Metallofullerenes**

2-1 Examination of the factors affecting in vitro evaluation of cellular responses induced by fullerene C<sub>60</sub>

○*Masanori Horie, Keiko Nishio, Naohide Shinohara, Haruhisa Kato, Ayako Nakamura, Katsuhide Fujita, Shinichi Kinugasa, Shigehisa Endoh, Hitoshi Iwahashi, Yasukazu Yoshida and Junko Nakanishi*

2-2 Detailed characterization of cellular responses induced by fullerene C<sub>60</sub>

○*Keiko Nishio, Masanori Horie, Naohide Shinohara, Haruhisa Kato, Ayako Nakamura, Katsuhide Fujita, Shinichi Kinugasa, Shigehisa Endoh, Hitoshi Iwahashi, Yasukazu Yoshida, Junko Nakanishi*

2-3 Structure determination and chemical functionalization of metallofullerene Sc<sub>2</sub>C<sub>82</sub>

○*Hiroki Kurihara, Yuko Yamazaki, Naomi Mizorogi, Midori O. Ishitsuka, Takahiro Tsuchiya, Shigeru Nagase, Takeshi Akasaka*

2-4 Ultraviolet Photoelectron Spectroscopy of Sc<sub>2</sub>C<sub>2</sub>@C<sub>82</sub>(II)

○*Takafumi Miyazaki, Yuusuke Aoki, Youji Tokumoto, Ryohei Sumii, Haruya Okimoto, Hisashi Umemoto, Yasuhiro Ito, Hisanori Shinohara, Shojun Hino*

**Coffee Break (10:30-10:45)**

**General Lecture (10:45-11:45)**

**Fullerene solids and Chemistry of Fullerenes**

2-5 Energy Level Alignment of Interfaces Related to PCBM: PCBM/Ag Substrate, PCBM/Phthalocyanines  
○*Kouki Akaike, Kaname Kanai, Yukio Ouchi, Kazuhiko Seki*

2-6 Geometric curvature effects on Tomonaga-Luttinger states of one-dimensional peanut-shaped C<sub>60</sub> polymers

○*Hiroyuki Shima, Hideo Yoshioka, Jun Onoe*

2-7 Physical Properties of Hydrogen-molecule Endohedral C<sub>60</sub>

○*Ryotaro Kumashiro, Takeshi Rachi, Yasujiro Murata, Koichi Komatsu, Hiroshi Sawa, Yoshimitsu Kohama, Hitoshi Kawaji, Tooru Atake, Katsumi Tanigaki*

2-8 A Simple Formation Mechanism of a Fullerene from a Carbon Onion

○*Teruhiko Ogata, Yoshio Tatamitani*

**Lunch Time (11:45-13:00)**

**Awards Ceremony (13:00-13:30)**

**Special Lecture (13:30-14:00)**

2S-3 Business Development of Fullerenes in Life Science Applications

○*Shuichi Yamana*

## General Lecture(14:00-15:00)

### Nanowires

- 2-9 Formation mechanism of polyyne molecules upon laser ablation of carbon particles in organic solvents  
○*Tomonari Wakabayashi, Mao Saikawa, Yoriko Wada*
- 2-10 Synthesis and Characterization of Crystalline Gold Nanowires encapsulated within Single-Wall Carbon Nanotubes  
○*Keita Kobayashi, Ryo Kitaura, Hisanori Shinohara*
- 2-11 Semimetallic Molecular Nanowire: Oxygen Molecules Encapsulated into Carbon Nanotubes  
○*Michiko Tanaka, Takazumi Kawai, Susumu Okada*
- 2-12 Long Continuous Copper Nanowires Encapsulated in Carbon Nanotubes  
○*Akira Koshio, Hironobu Kito, Hiroyuki Nakano, Yuji Fujiwara, Hideki Sato, Fumio Kokai*

## Coffee Break (15:00-15:15)

## General Lecture(15:15-16:15)

### Graphene and Carbon Nanoparticles

- 2-13 Fabrication and Chemical modification of Nanographene  
○*Kazuyuki Takai, Yasuhiro Nishimura, Toshiaki Enoki*
- 2-14 Half-metallic Armchair Graphene Nanoribbon  
○*Keisuke Sawada, Fumiaki Ishii, Mineo Saito*
- 2-15 Selective synthesis of carbon nanotubes and graphene multi-layers by controlling catalyst thickness  
○*Daiyu Kondo, Shintaro Sato, Mizuhisa Nihei, Yuji Awano*
- 2-16 Cosequences of multi-pole electrostatic potential fields on the surface of single-nano buckydiamond (SNBD) particles  
○*Eiji Osawa, Dean Ho, Houjin Huang, Michail Korobov, Natalia Rozhkova*

## Poster Preview(16:15-16:55)

## Poster Session(16:55-18:15)

### Applications of Nanotubes

- 2P-1 Application of vertically well-aligned CNT films to capacitors  
○*Haruo Kato, Michiko Kusunoki, Shigeyuki Sugimoto, Kunihiro Sugihara, Nobuyuki Yamamoto, Hideki Hujita, Noriyoshi Shibata*
- 2P-2 Electrochemical Behaviors of Cytochrome c at Carbon Nanotube Surfaces  
*Masato Tominaga, ○Hiroyuki Yamaguchi, Shingo Sakamoto, Toshifumi Nishimura, Shiori Kaneko, Isao Taniguchi*
- 2P-3 Analysis of interfacial behaviors of carbon nanotubes using in-situ Raman spectroelectrochemistry  
*Masato Tominaga, ○Shingo Sakamoto, Toshifumi Nishimura, Isao Taniguchi*
- 2P-4 Diameter-Independent Thermal Oxidation of Single-Walled Carbon Nanotubes with NaCl under Microwave Heating  
*Yuki Kobayashi, ○Masahito Sano*
- 2P-5 Growth of Carbon Nanotubes on Flexible Carbon Fiber Sheet for Field Emitter

○*Bongyong Jang, Yoichi Ito, Yasuhiko Hayashi, Naoki Kishi, Tomoharu Tokunaga, Hidetoshi Matsumoto, Kazuyuki Fukuzono, Masaki Tanemura, Akihiko Tanioka, Gehan A.J. Amaratunga*

- 2P-6 Direct Growth of Single-walled Carbon Nanotubes Films and Their Opto-electric Properties  
○*Huafeng Wang, Kaushik Ghosh, Zhenhua Li, Takahiro Maruyama, Sakae Inoue, Yoshinori Ando*
- 2P-7 Optical properties of single-wall carbon nanotube-P3HT composites  
○*Ye Feng, Yasumitsu Miyata, Kiyoto Matsuishi, Hiromichi Kataura*
- 2P-8 Ionization Vacuum Gauge with a Carbon Nanotube Field Electron Emitter Combined with a Shield Electrode  
○*Huarong Liu, Hitoshi Nakahara, Sashiro Uemura, Yahachi Saito*
- 2P-9 Dispersion of Single-Walled Carbon Nanotubes Using Poly(amidoamine) Dendrimer Having Alkyl Chain at the Core  
○*Ryouta Ikeuchi, Tetsuya Uchida, Tatsuo Fujii, Jun Takada, Yutaka Takaguchi*
- 2P-10 Field Emission of Carbon Nanotubes for Electron Microscopes  
○*Yoshikazu Kusano, Koji Asaka, Hitoshi Nakahara, Yahachi Saito*
- 2P-11 Fabrication of CaCO<sub>3</sub>/SWNT Nanocomposite Using Fullerodendron-Assisted Approach  
○*Akira Tsutsui, Yutaka Takaguchi*
- 2P-12 Measurement of Thermal Conductivity of CNT-nanofluids by Transient Short-Wire Method  
○*Takeshi Morimatsu, Shogo Moroe, Yasuyuki Takata, Motoo Fujii, Shinzo Suzuki, Masamichi Kohno*
- 2P-13 Gate voltage dependence of electroluminescence from single-walled carbon nanotubes  
○*Norihito Hibino, Hideyuki Maki, Tetsuya Sato, Satoru Suzuki, Yoshihiro Kobayashi*
- 2P-14 Study on Hydrocarbon Adsorption on MWNTs Using Field Emission Microscopy (FEM)  
○*Tetsuya Yamashita, Koji Asaka, Hitoshi Nakahara, Yahachi Saito*
- 2P-15 Application of Vertically-Aligned SWNT Films to the Counter Electrode of Dye-Sensitized Solar Cells  
○*Jun Okawa, Erik Einarsson, Junichiro Shiomi, Shigeo Maruyama*
- 2P-16 Carbon nanotube growth on atomic force microscope cantilever by using liquid Co catalyst  
○*Chien-Chao Chiu, Masamichi Yoshimura, Kazuyuki Ueda*
- 2P-17 A molecular dynamics study of metal coating on SWNT  
○*Tepppei Matsuo, Junichiro Shiomi, Shigeo Maruyama*
- 2P-18 Line-Patterned Carbon Nanotube Cold Cathodes  
○*Yosuke Shiratori, Koji Furuichi, Suguru Noda*
- 2P-19 New electrocatalyst for PEFC based on carbon nanotubes wrapped by polybenzimidazole  
*Minoru Okamoto, ○Tsuyohiko Fujigaya, Naotoshi Nakashima*
- 2P-20 Transparent conducting properties of SWCNT films at a range of thickness  
○*Eisuke Haba, Suguru Noda*
- 2P-21 Defects on Multi-walled Carbon Nanotubes by Cobalt Oxide  
○*Do-Hyun Kim, Keiko Waki*

## **Endohedral Metallofullerenes**

- 2P-22 Third Isomer of La@C<sub>82</sub>

○*Hidenori Kuga, Hidehumi Nikawa, Naomi Mizorogi, Takahiro Tuchiya, Midori Oinuma, Slanina Zdenek, Takeshi Akasaka, Kenji Yoza, Shigeru Nagase*

- 2P-23 Molecular and Electronic Structures of Di-erbium and Di-erbium-carbide Metallofullerenes  $\text{Er}_2(\text{C}_2)@\text{C}_{82}$ : Density Functional Theory Calculations  
○*Jian Wang, Stephan Irle, Keiji Morokuma*
- 2P-24 Selective Irradiation of Ionic Heterogeneous Fullerenes Generated by Electron Beam Impact Ionization  
○*Yohei Hanabusa, Toshiro Kaneko, Rikizo Hatakeyama, Kennji Omote, Yasuhiko Kasama*
- 2P-25 Change in Molecular Orientation of Individual Lu@C<sub>82</sub> on Octanethiol Self Assembled Monolayer Observed by Scanning Tunneling Microscopy  
○*Masachika Iwamoto, Yuhsuke Yasutake, Hisashi Umemoto, Yasuhiro Ito, Haruya Okimoto, Noriko Izumi, Hisanori Shinohara, Yutaka Majima*
- 2P-26 Storage Condition of Metallofullerene  
○*Yosuke Kikuchi, Takuma Ooba, Fuyuko Yamashita, Yasuhiro Takabayashi, Yoshihiro Ono, Kazuhiko Kawachi, Kenji Omote, Yasuhiko Kasama, Yoshihiro Kubozono*

## Chemistry of Fullerenes

- 2P-27 Synthesis of Amino Fullerene Derivative and its Application for PA-6 Nanocomposites  
○*Masaru Sekido, Katsuma Ohno, Yasuyuki Ohyama, Daisuke Saitou, Susumu Kumagai, Mitsuhiro Takeda, Hiroshi Kitamura, Masatomi Ohno*
- 2P-28 Ultrasound-Assisted Cycloadditions of [70]Fullerene with Various 2-Azidoethyl per-O-Acetyl  
*Shinsook Yoon, Sung Ho Hwang, Sung Kyu Hong*, ○*Jeong Ho Lee and Weon Bae Ko*
- 2P-29 Enantiomeric Separation of Fullerodendron Formed by Diastereoselective Diels-Alder Reaction  
○*Naoki Tsugawa, Nobuhiro Takahashi, Yutaka Takaguchi*
- 2P-30 Syntheses, Electrochemical and Photocurrent-Generating Properties of Penta(carbazolyl)[60]fullerene Derivatives  
○*Katsumasa Nakahara, Yutaka Matsuo, Eiichi Nakamura*
- 2P-31 Luminescent and Liquid Crystalline Deca(organo)[60]Fullerenes  
○*Chang-Zhi Li, Yutaka Matsuo, Eiichi Nakamura*
- 2P-32 Fullerene Self-Assembled Monolayer as a Nano Capacitor Switchable by Light  
○*Sebastian Lacher, Aiko Sakamoto, Keiko Matsuo, Yutaka Matsuo, Eiichi Nakamura*
- 2P-33 Fullerene Functionalization through Palladium Catalysis  
○*Masakazu Nambo, Susumu Mori, Kenichiro Itami*

## Function and Applications of Fullerenes

- 2P-34 Electron-Transport Property of Fullerene Derivatives C<sub>60</sub>X<sub>2</sub>  
○*Ken Tokunaga*
- 2P-35 Preparation of Self-Assembled of α-D-Mannosyl Fullerene[C<sub>60</sub>] - Gold Nanoparticle Films  
*Shinsook Yoon, Sung Ho Hwang*, ○*Sung Kyu Hong, Jeong Ho Lee, Jung Mi Kim and Weon Bae Ko*

## Fullerene Formation, Higher Fullerenes

- 2P-36 Synthesis and Structural Characterization of Nano-Peapods Encapsulating Higher Fullerenes by High-Resolution TEM  
○*Teguh Endah Saraswati, Naoki Imazu, Kazunori Ohashi, Yasuhiro Ito, Ryo Kitaura and Hisanori Shinohara*

2P-37 NMR characterization of cyanopolyyynes NC<sub>7</sub>H and NC<sub>9</sub>H

○*Mao Saikawa, Tomonari Wakabayashi*

2P-38 Production of atomic nitrogen-doped fullerene N@C<sub>60</sub> by ion bombardment

○*Masahito Kinoshita, Tomonari Wakabayashi*

2P-39 Computational Study on the Stone-Wales Transformation of non-IPR C<sub>60</sub> Fullerenes

*Jun Li, Ting Ren, ○Xiang Zhao*

2P-40 Laser-merging experiments of C<sub>60</sub><sup>-</sup> stored in an electrostatic ion storage ring

○*H. Shiromaru, M. Goto, T. Kodama, J. Matsumoto, Y. Achiba, T. Majima, H. Tanuma, T. Azuma, A.E.K. Sunden, K. Hansen*

## **Wednesday, March 4th**

**Special Lectures: 25 min (Presentation) + 5 min (Discussion)**

**General Lectures: 10 min (Presentation) + 5 min (Discussion)**

**Poster Previews: 1 min (Presentation), No Discussion**

### **Special Lecture (9:00-9:30)**

3S-4 Creation of Fullerene- and Carbon Nanotube-Based Artificial Photosynthetic Systems

○*Hiroshi Imahori*

### **General Lecture (9:30-10:30)**

#### **Formation and Purification of Nanotubes**

3-1 Chirality Sorting of Single-Walled Carbon Nanotubes Using Density Gradients Centrifugation

○*Yuichi Kato, Yasuro Niidome, Naotoshi Nakashima*

3-2 Diameter and Chirality Distribution of SWNTs Grown from Zeolite Surfaces

○*Yoichi Murakami, Takahiko Moteki, Suguru Noda, Tatsuya Okubo, Shigeo Maruyama*

3-3 Highly selective production of single-wall carbon nanotubes by laser vaporization method

○*Yohji Achiba, Takashi Nakayama, Akihito Inoue, Yuki Onishi, Takeshi Kodama, Toshiya Okazaki*

3-4 Impact of Molecular Structure of Carbon Source in CVD Growth of SWCNTs

○*Bikau Shukla, Takeshi Saito, Motoo Yumura, Sumio Iijima*

### **Coffee Break (10:30-10:45)**

### **Special Lecture (10:45-11:15)**

3S-5 Biological Reaction of Nanotubes and Nanoparticles : Functions and Risk Assessment

○*Fumio Watari*

### **General Lecture (11:15-12:30)**

#### **Formation and Purification of Nanotubes**

3-5 Patterned Growth of Vertically Aligned SWNTs through Liquid-based Catalyst Manipulation

○*Rong Xiang, Erik Einarsson, Junichiro Shiomi, Shigeo Maruyama*

3-6 Top-Down Approach to Align Single-Walled Carbon Nanotubes on Silicon Substrate

○*Carlo M. Orofeo, Hiroki Ago, Naoki Yoshihara, Masaharu Tsuji*

3-7 Fluidized Bed Synthesis of Sub-Millimeter-Long Single-Walled Carbon Nanotubes

○*Dong Young Kim, Hirofumi Fukai, Hisashi Sugime, Kei Hasegawa, Toshio Osawa, Suguru Noda*

3-8 Purity Evaluation of Single Wall Carbon Nanotubes based on Raman Spectroscopy

○*Daisuke Nishide, Yasumitsu Miyata, Kazuhiro Yanagi, Takeshi Tanaka, Hiromichi Kataura*

3-9 *Ab Initio* Energetics of Sodium Dodecyl Sulfate on Metallic and Semiconducting Single-Wall Carbon Nanotubes

○*Mari Ohfuchi*

### **Lunch Time (12:30-13:45)**

### **Special Lecture (13:45-14:15)**

3S-6 Application of carbon nanohorns to anti-cancer drug carriers

○*Masako Yudasaka*

## **Poster Preview(14:15-14:55)**

## **Poster Session(14:55-16:15)**

### **Formation and Purification of Nanotubes**

- 3P-1 Si Doping into Densely-Aligned Carbon Nanotube Films on SiC  
○*Takehiro Maruyama, Kenta Yoshida, Wataru Norimatsu, Michiko Kusunoki*
- 3P-2 Optical spectroscopic characterization of vertically aligned single-walled carbon nanotubes  
○*Erik Einarsson, Rong Xiang, Theerapol Thurakitseree, Zhengyi Zhang, Yoichi Murakami, Junichiro Shiomi, Shigeo Maruyama*
- 3P-3 Low Temperature Growth of Single-Walled Carbon Nanotubes by High Vacuum ACCVD Method  
○*Yohei Yamamoto, Hiroto Okabe, Taiki Inoue, Erik Einarsson, Makoto Watanabe, Shigeo Maruyama*
- 3P-4 Selective Isolation of (6,5) Carbon Nanotubes by Density Gradient Ultracentrifugation  
○*Pei Zhao, Yoichi Murakami, Rong Xiang, Erik Einarsson, Junichiro Shiomi, Shigeo Maruyama*
- 3P-5 Laser Fluence Effect on the Chirality Characteristics of Individually Dispersed Single-walled Carbon Nanotube in Aqueous Solution with Pulsed OPO Laser Irradiation  
○*Isamu Tajima, Akira Kumazawa, Katsumi Uchida, Tadahiro Ishii, Hirofumi Yajima*
- 3P-6 Low temperature growth of carbon nanotubes from acetylene  
○*Takashi Shirai, Suguru Noda*
- 3P-7 Progress in Separation of Metallic and Semiconducting Carbon Nanotubes Using Agarose Gel  
○*Takeshi Tanaka, Hehua Jin, Yasumitsu Miyata, Shunjiro Fujii, Hiroshi Suga, Yasuhisa Naitoh, Takeo Minari, Tetsuhiko Miyadera, Kazuhito Tsukagoshi, Hiromichi Kataura*
- 3P-8 Influence of laser power on the formation of SWNTs by laser ablation  
○*Masaomi Teshiba, Tomonari Wakabayashi*
- 3P-9 Synthesis of Thin Carbon Nanocoils by Fe-Sn Catalyst Supported on Zeolite  
○*Masashi Yokota, Yoshiyuki Suda, Shinichiro Oke, Hirofumi Takikawa, Youhei Fujumura, Tatsuo Yamaura, Shigeo Ito, Hitoshi Ue, Masakatsu Morioki*
- 3P-10 Chirality Selective Separation for Single-walled Carbon Nanotube with Density Gradient Ultracentrifugation  
○*Yoshiya Kaminosono, Katumi Uchida, Ishii Tadahiro, Yajima Hirofumi*
- 3P-11 Effect of water vapor on structure of single-walled carbon nanotubes  
○*Naoki Yoshihara, Hiroki Ago, Masaharu Tsuji*
- 3P-12 Dip-pen nanolithography for CNTs patterning  
○*Naoko Kayumi, Tsuyohiko Fujigaya, Naotoshi Nakashima*
- 3P-13 TiC formation for metal contact with carbon composite structures consisting of nanotubes and graphene multi-layers  
○*Daiyu Kondo, Shintaro Sato, Mizuhisa Nihei, Eiji Ikenaga, Masaaki Kobata, Jung Jin Kim, Keisuke Kobayashi, Yuji Awano*
- 3P-14 Theoretical Study on the Growth of Single Walled Carbon Nanotube (SWNT)  
*Jingshuang Dang, Weiwei Wang, ○Xiang Zhao*
- 3P-15 Analysis of Fe Catalyst Behavior on Al/SiO<sub>2</sub>/Si Substrate for CNT Growth Using Mössbauer Spectroscopy  
○*Hisayoshi Oshima, Tomohiro Shimazu, Milan Siry, Ko Mibu*

- 3P-16 Diameter control of single-walled carbon nanotubes grown by diffusion plasma CVD  
○*Shunsuke Kuroda, Toshiaki Kato, Toshiro Kaneko, Rikizo Hatakeyama*
- 3P-17 Comparison of thermal and plasma CVD for the growth of single-walled carbon nanotubes from nonmagnetic nanoparticles  
○*Zohreh Ghorannevis, Toshiaki Kato, Toshiro Kaneko, Rikizo Hatakeyama*
- 3P-18 Effect of Al Oxide Buffer Layer on SWNT Growth at Low Temperature in Alcohol Gas Source Method in High Vacuum  
○*Yoshihiro Mizutani, Kuninori Sato, Takahiro Maruyama, Shigeya Naritsuka*
- 3P-19 Synthesis of DWNTs using arc discharge by adjusting gas pressure  
○*K. Kato , H. Wang , X. Zhao , S. Inoue and Y. Ando*
- 3P-20 Purification of Single-walled Carbon Nanotubes Generated with Arc-burning Apparatus by Utilizing Mono-dispersion Technique  
○*Shinzo Suzuki, Kazuto Hara, Takuya Fujita, Takashi Mizusawa, Toshiya Okazaki, Yohji Achiba*
- 3P-21 Measurement of Cohesion Process of Carbon-Clusters by the Mie-Scattering Method in Gravity-free Arc-Synthesis of Nanotubes  
○*Tetsu Mieno, Tan Guodong, Shu Usuba, Kazunori Koga, Masaharu Shiratani*

## Graphene

- 3P-22 Open and Closed Edges of Graphene Layers  
○*Zheng Liu, Kazu Suenaga, Peter J. F. Harris, Sumio Iijima*
- 3P-23 New Carbon Thin Film Growth on YSZ (111) by Very High Temperature Surface Pyrolysis of C<sub>60</sub>  
○*Takuya Noguchi, Yoshihiro Shimada, Akinori Hanzawa, Tetsuya Hasegawa*
- 3P-24 Temperature dependence of Raman spectra in epitaxial few-layer graphene on vicinal 6H-SiC  
○*Ryoji Naito, Susumu Kamoi, Hitoshi Kakehi, Noriyuki Hasuike, Kenji Kisoda, Hiroshi Harima, Kouhei Morita, Satoru Tanaka, Akihiro Hashimoto*
- 3P-25 Probing graphene-metal contacts in bilayer graphene nanoconstriction  
○*Y. Ujiie, S. Motooka, T. Morimoto, D. K. Ferry, J. P. Bird, Y. Ochiai*
- 3P-26 Edge States of ZigZag Boron Nitride Nanoribbons  
○*Fawei Zheng, Ken-ichi Sasaki, Riichiro Saito , Wenhui Duan and Bing-Lin Gu*
- 3P-27 Edge phonon of nano-graphite ribbons  
○*Masaru Furukawa , Zheng Fawei, Riichiro Saito*
- 3P-28 Ultra-fast structural change of graphite surface by pulse laser irradiation: A time-dependent first-principles approach  
○*Yoshiyuki Miyamoto*

## Nanohorns

- 3P-29 Detailed Structure Analysis of Carbon Nanohorns  
*Michiko Irie, Ryota Yuge, Sumio Iijima, ○Masako Yudasaka*
- 3P-30 Isolating Individual Single-Wall Carbon Nanohorns From Their Aggregate  
○*Minfang Zhang, Sumio Iijima, Masako Yudasaka*
- 3P-31 Plugs Formed by Hydrogen Peroxide Treatment at Holes of Carbon Nanohorns  
○*Jianxun Xu, Minfang Zhang, Sumio Iijima, Masako Yudasaka*

## **Fullerene Solids**

- 3P-32 Epitaxial growth and electronic characterization of Mg-doped C<sub>60</sub>  
○*Masato Natori, Nobuaki Kojima, Hidetoshi Suzuki, Masafumi Yamaguchi*
- 3P-33 Pressure-Induced Structural Phase Transition of Solid C<sub>60</sub>  
○*Yuichiro Yamagami, Susumu Saito*
- 3P-34 Electronic transport properties of photo-irradiated C<sub>60</sub>  
○*Y.Chiba, H.Tsuji, M.Ueno, Shih-Ren Chen, N.Aoki, and Y.Ochiai*
- 3P-35 Assembling behaviors of [70]fullerene on addition of aliphatic amines  
○*Ken-ichi Matsuoka, Tsuyoshi Akiyama, Sunao Yamada*
- 3P-36 Length growth measurement of C<sub>60</sub> fullerene nanowhiskers  
○*Kayoko Hotta, Kunichi Miyazawa*
- 3P-37 Internalization of Fullerene Nanowhiskers by PMA-treated THP-1 Cells  
○*Shin-ichi Nudelman, Kun'ichi Miyazawa, Junko Okuda-Shimazaki and Akiyoshi Taniguchi*
- 3P-38 Water-Dispersible Fullerene Whisker  
○*Yasuhiro Fujita, Yutaka Takaguchi*
- 3P-39 Transmission Electron Microscopy Observation of Cross-Sectional Structure of C<sub>60</sub> Nanofibers  
○*Ryohei Kato, Kun'ichi Miyazawa*
- 3P-40 Insulating behavior of Cs<sub>3</sub>C<sub>60</sub> at ambient pressure as probed by optical reflectivity measurements  
○*Takumi Takano, Alexey Y. Ganin, Yasuhiro Takabayashi, Matthew J. Rosseinsky, Kosmas Prassides, Yoshihiro Iwasa*