

September 3rd, Tue.

Special Lecture: 25min (Presentation) + 5min (Discussion)

General Lecture: 10min (Presentation) + 5min (Discussion)

Poster Preview: 1min (Presentation)

Special Lecture (9:00–9:30)

- 1S-1 Putting Carbon Nanotubes to Use as Industrial Materials 1
-Research and Development of Carbon Nanotube at AIST since 1991
* *Motoo Yumura*

General Lecture (9:30–10:30)

Applications of nanotubes ▪ Formation and purification of nanotubes

- 1-1 Supercapacitors with no capacitance decay at -50 °C enabled by aligned CNT bundles 13
connected with traversing CNTs
* *Xiang Gao, Lingchang Li, Mengmeng Zhang, Don. N Futaba, Ming Xu*
- 1-2 Design of Carbon Nanotube-based Non-precious Metal Electrocatalysts with High Performance 14
and Durability
*Jin Nishida, Jun Yang, Shunsuke Uchimura, Jyunko Matsuda, * Naotoshi Nakashima*
- 1-3 Separation of carbon nanotubes using multiscale hydrophobic interaction 15
* *Hiromichi Kataura, Mayumi Tsuzuki, Tomoko Sugita, Mariko Sugita, Guowei Wang, Takeshi Tanaka*
- 1-4 Aqueous two phase extraction of semiconducting single-wall carbon nanotubes with 16
isomaltodextrin and thin-film-transistor applications
* *Haruka Omachi, Tomohiko Komuro, Kaisei Matsumoto, Minako Nakajima, Hikaru Watanabe, Jun Hirotani, Yutaka Ohno, Hisanori Shinohara*

>>>>>> **Coffee Break (10:30–10:45)** <<<<<<<

Special Lecture (10:45–11:15)

- 1S-2 Optical properties of nanotubes and two-dimensional materials by using circularly polarized 2
light
* *Riichiro Saito*

General Lecture (11:15–11:30)

Properties of graphene

- 1-5 Non-Zero Wavevector Electronic Excitation of Graphene induced by Localized Surface 17
Plasmon
*Jinjiang Zhang, Ruifeng Zhou, Hiro MInamimoto, * Kei Murakoshi*

Poster Preview (11:30–12:15) (★)Candidates for the Young Scientist Poster Award

Candidates for the Young Scientist Poster Award

- 1P-1 Time-resolved photoluminescence spectroscopy of epitaxial bilayer graphene on SiC 41
★ * *Kensuke Saito, Tomonari Koishi, Jianfeng Bao, Wataru Norimatsu, Michiko Kusunoki, Hideo Kishida, Takeshi Koyama*

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1P-2	Effects of CNT diameter on mechanical and electrical properties of aligned CNT/epoxy composite	42
☆	<i>* Yohei Tsuyuguchi, Kazuya Hosogi, Takayuki Nakano, Yoku Inoue</i>	
1P-3	The effect of gas phase species on chirality selectivity between (6,4) and (6,5) single-walled carbon nanotubes	43
☆	<i>* Satoru Shiina, Takuya Shima, Bin Xu, Toshiro Kaneko, Toshiaki Kato</i>	
1P-4	Wavelength modulation of near infrared photoluminescence from single-walled carbon nanotubes functionalized with diarylethene derivatives	44
☆	<i>* Yasuto Nakagawa, Tomohiro Shiraki, Tsuyohiko Fujigaya</i>	
1P-5	Monolayer WS ₂ Light-Emitting Devices with micro-cavity	45
☆	<i>* Tomohiro Ogura, Tomoyuki Yamada, Naoki Wada, Takahiko Endo, Kenichi Yamashita, Yasumitsu Miyata, Jiang Pu, Taishi Takenobu</i>	
1P-6	Restoring intrinsic optical properties of CVD-grown MoS ₂ monolayers and their heterostructures	46
☆	<i>* Kana Kojima, Hong En Lim, Zheng Liu, Wenjin Zhang, Takahiko Endo, Kenji Watanabe, Takashi Taniguchi, Kazunari Matsuda, Yuhei Miyauchi, Yasumitsu Miyata, Tetsuki Saito, Yusuke Nakanishi, Yu Kobayashi, Yutaka Maniwa</i>	
1P-7	Wide-range control of excitonic properties in monolayer WS ₂ by dielectric screening effect	47
☆	<i>* Yuto Kajino, Kenichi Oto, Yasuhiro Yamada</i>	
1P-8	Growth of Transition-metal-dichalcogenide-based two-dimensional superstructures with Cold-walled Metal-Organic CVD	48
☆	<i>* Satoshi Iida, Takato Hotta, Kenji Watanabe, Takashi Taniguchi, Hisanori Shinohara, Ryo Kitaura</i>	
1P-9	Thickness dependence of CVD-grown h-BN on PL emission and Raman of monolayer MoS ₂	49
☆	<i>* Hiroki Honda, Daichi Tanaka, Yuki Uchida, Kenji Kawahara, Hiroki Ago</i>	
Properties of nanotubes		
1P-10	Charge-state investigation on metallic and semiconducting SWCNTs with various diameters	50
	<i>* Yuki Kuwahara, Takeshi Saito</i>	
1P-11	Fabrication of large-area aligned films of single-wall carbon nanotubes using artificially grooved membrane filters	51
	<i>* Atsuhiko Katagiri, Natsumi Komatsu, Junko Eda, Hitomi Okubo, Kanako Horiuchi, Kan Ueji, Yohei Yomogida, Weilu Gao, Junichiro Kono, Kazuhiro Yanagi</i>	
1P-12	Thermophysical property of single-wall carbon nanotube thin film on Au electrodes by a time-domain thermorefectance method	52
	<i>* Yuya Matsuoka, Kan Ueji, Hiroyuki Matsuo, Yohei Yomogida, Takashi Yagi, Kazuhiro Yanagi</i>	

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- 1P-13 Effect of palladium nanoparticle decoration on thermoelectric performance of carbon nanotubes with vacancy defects: first principles simulation 53
 * *Nayu Araki, Takahiro Yamamoto*

Formation and purification of nanotubes

- 1P-14 Production of carbon nano-materials by the bipolar-pulsed arc-discharge method 54
 * *Tetsu Mieno, Md Abul Kalam, Maria Kazi Haniun*
- 1P-15 Effect of ethanol gas flow on synthesis of single-walled carbon nanotube by a hot-wall chemical vapor deposition reactor using Ir catalysts 55
 * *Ai Misaki, Tomoko Suzuki, Takahiro Maruyama*
- 1P-16 Growth of dense SWCNT from iron oxide nanoparticles for spin-capable forest 56
 * *Ryosuke Goto, Kento Tabata, Takayuki Nakano, Kazuhiko Takahashi, Yoku Inoue*
- 1P-17 Sub-nanometer diameter SWCNT Growth by Alcohol catalytic CVD 57
 * *Kamal P Sharma, Daiki Yamamoto, Aliza K. Sharma, Takahiro Maruyama*

Applications of nanotubes

- 1P-18 Study of MWCNT/Cotton Composites and Development of Compact Load Cells 58
 * *Md. Abdul Momin, Mohammad Jellur Rahman, Tetsu Mieno*
- 1P-19 Study of Ion Adsorption Properties of Single-Walled Carbon Nanotubes by Electrochemical Quartz Crystal Microbalance Method 59
 * *Mikako Takahashi, Masato Tsutsui, Yu Takeuchi, Ayar Al zubaidi, Yosuke Ishii, Shinji Kawasaki*
- 1P-20 High temperature capacitor electrode properties of nanocarbon materials in ionic liquid electrolytes 60
 * *Nanami Asai, Yosuke Ishii, Shinji Kawasaki*
- 1P-21 Catalytic properties of single-walled carbon nanotube /metal nanoparticles for CO₂ reduction reaction 61
 * *Sae Ishikawa, Shunya Inayama, Kohei Kondo, Yusuke Watanabe, Yosuke Ishii, Shinji Kawasaki*

Endohedral nanotubes

- 1P-22 Precise carrier density control of SWCNTs by controlled filling of donor and acceptor molecules 62
 * *Guowei Wang, Takeshi Tanaka, Atsushi Hirano, Hiromichi Kataura*

Nanohorns

- 1P-23 Novel Preparation Method of Carbon Nanobrushes using CO₂ Laser Ablation 63
 * *Ryota Yuge, Kiyohiko Toyama, Mayumi Kosaka, Hideyuki Sato*

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Properties of graphene

- 1P-24 Topological phases in graphene nanoribbons 64
* *Mari Ohfuchi*

Graphene synthesis

- 1P-25 In situ XRD measurement of precipitation of multilayer graphene 65
* *Jumpei Yamada, Yuki Ueda, Takahiro Maruyama, Shigeya Naritsuka*
- 1P-26 Direct growth of multilayer graphene on SiO₂/Si substrate by precipitation method using nanodiamond ~Cooling rate dependence~ 66
* *Tatsuya Kashio, Asato Nakashima, Daichi Yamamoto, Takahiro Maruyama, Shigeya Naritsuka*

Applications of graphene

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* *Tatiana Zolotoukhna, Momoko Yamada*
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* *Amane Motoyama, Kenji Kawahara, Rika Matsumoto, Hiroki Ago*

Atomic Layers

- 1P-29 Role of the Hall conductivity in the optical absorption of circularly polarized light 69
* *Fenda Rizky Pratama, M. Shoufie Ukhtary, Riichiro Saito*
- 1P-30 Electrostatic properties of positively charged graphene edges terminated by functional groups 70
* *Yanlin Gao, Susumu Okada*

>>>>>> Lunch Time (12:15-13:30) <<<<<<<

Poster Session (13:30-15:00)

During 13:30-14:00, please give priority to selection of candidates for Young Scientist Poster Award

Special Lecture (15:00-15:30)

- 1S-3 Growth and structure of group 14 elemental 2D honeycomb structure 3
* *Junji Yuhara*

General Lecture (15:30-16:15)

Atomic Layers

- 1-6 In-situ monitoring of monolayer WS₂ growth 18
* *Tomoya Kameyama, Chao Li, Toshiro Kaneko, Toshiaki Kato*
- 1-7 Growth of pentagonal and diamond shaped h-BN crystals 19
* *Kamal Prasad Sharma, Yuta Niimi, Aliza K. Sharma, Takahiro Maruyama*
- 1-8 Carrier accumulation in bilayer MoS₂ under a perpendicular electric field 20
* *Mina Maruyama, Susumu Okada*

September 3rd, Tue.

>>>>>> Coffee Break (16:15–16:30) <<<<<<<

Special Lecture (16:30–17:30)

- | | | |
|------|--|---|
| 1S-4 | Growth of Transition Metal Dichalcogenide 2D Layers for Electronics
* <i>Lain-Jong Li</i> | 4 |
| 1S-5 | Nanocarbon-based flexible devices
* <i>Kuniharu Takei</i> | 5 |

General Lecture (17:30–18:00)

Atomic Layers ▪ Applications of graphene

- | | | |
|------|--|----|
| 1-9 | Room-Temperature Valley-Polarized Light-Emitting Devices via Strained Monolayer Semiconductors
* <i>Jiang Pu, Hirofumi Matsuoka, Tomoyuki Yamada, Yu Koayashi, Yuhei Takaguchi, Yasumitsu Miyata, Taishi Takenobu</i> | 21 |
| 1-10 | Interface dependent photoresponsivity in graphene/GaN heterojunction
* <i>Ajinkya Ranade, Rakesh Mahyavanshi, Pradeep Desai, Masaki Tanemura, Golap Kalita</i> | 22 |

September 4th, Wed.

Special Lecture: 25min (Presentation) + 5min (Discussion)

Award Nominee Lecture: 10min (Presentation) + 10min (Discussion)

General Lecture: 10min (Presentation) + 5min (Discussion)

Poster Preview: 1min (Presentation)

General Lecture (9:00–10:25)

Lectures of Osawa Award and Iijima Award Nominees

- | | | |
|-----|---|----|
| 2-1 | Construction and solid-state dynamics of molecular bearings composed of finite carbon nanotube host and guest rotors
<i>* Taisuke Matsuno, Yusuke Nakai, Yutaka Maniwa, Masahiro Fujita, Kengo Fukunaga, Sota Sato, Hiroyuki Isobe</i> | 23 |
| 2-2 | Controlled Redox of Lithium-ion Endohedral Fullerene on Carbon Nanotubes for Efficient and Stable Metal-free Perovskite Solar Cells
<i>* Il Jeon, Ahmed Shawky, Hiroshi Okada, Esko Kauppinen, Shigeo Maruyama, Yutaka Matsuo</i> | 24 |
| 2-3 | Observation and Spectral Assignment of Family of Hexagonal Boron Nitride Lattice Defects
<i>* Daichi Kozawa, Ananth Govind Rajan, Jamie H. Warner, Daniel Blankschtein, Michael S. Strano</i> | 25 |
| 2-4 | Designing two-dimensional tetradymites with 20% thermoelectric efficiency
<i>* Nguyen T. Hung, Ahmad R. T. Nugraha, Riichiro Saito</i> | 26 |

>>>>>>> Coffee Break (10:25–10:45) <<<<<<<<

Special Lecture (10:45–11:15)

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|------|--|---|
| 2S-1 | Templated synthesis of nanomaterials with single-walled carbon nanotubes and their properties
<i>Shohei Chiashi</i> | 6 |
|------|--|---|

General Lecture (11:15–11:30)

Properties of graphene

- | | | |
|-----|--|----|
| 2-5 | Electronic Orbitals and Spin-Polarization at Graphene Edge Revealed by Field Emission and Field Ion Microscopy
<i>* Saito Yahachi, Watanabe Yuhdai, Hoshino Tohru, Nakahara Hitoshi, Nagai Shigekazu, Ikemizu Hiromu, Kunoh Kazuya, Hata Koichi</i> | 27 |
|-----|--|----|

Poster Preview (11:30–12:15) (★)Candidates for the Young Scientist Poster Award

Candidates for the Young Scientist Poster Award

- | | | |
|------|---|----|
| 2P-1 | Influence of capacitance on field intensity in nano-scale filed emitters
<i>★ * Keita Funayama, Hiroya Tnaka, Jun Hirotani, Keiichi Shimaoka, Yutaka Ohno, Yukihiro Tadokoro</i> | 71 |
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2P-2	Growth of single-walled carbon nanotubes on chemically etched graphene layers by cold-wall CVD using Ir catalysts	72
☆	<i>* Aliza Khaniya Sharma, Kamal P Sharma, Saeki Mayumi, Saida Takahiro, Naritsuka Shigeya, Maruyama Takahiro</i>	
2P-3	Control of high-harmonic generation in single-wall carbon nanotubes by gating	73
☆	<i>* Hiroyuki Nishidome, Kohei Nagai, Kento Uchida, Yota Ichinose, Kengo Fukuhara, Junko Eda, Hitomi Okubo, Yohei Yomogida, Koichiro Tanaka, Kazuhiro Yanagi</i>	
2P-4	Photoluminescence study of graphene quantum dots esterified with benzyl alcohol and their application to solar cells	74
☆	<i>* Suzuka Tachi, Toshiki Sugai, Shota Kuwahara</i>	
2P-5	Interface electroluminescence from WS ₂ /WSe ₂ in-plane heterostructures	75
☆	<i>* Naoki Wada, Jiang Pu, Wenjin Zhang, Zheng Liu, Hirofumi Matsuoka, Kazunari Matsuda, Yusuke Nakanishi, Yuhei Miyauchi, Taishi Takenobu, Yasumitsu Miyata, Yutaka Maniwa</i>	
2P-6	Simulating van der Waals Heteroepitaxy Using Classical Mechanical Approach	76
☆	<i>* Mitsuhiro Okada, Yosuke Uchiyama, Tetsuo Shimizu, Toshitaka Kubo, Ryo Kitaura</i>	
2P-7	Fabrication of transition metal dichalcogenide heterostructures using molecular beam epitaxy	77
☆	<i>* Yuya Murai, Nanami Ichinose, Satoshi Yasuda, Ryo Kitaura</i>	
2P-8	Machine-learning approach for predicting low temperature valley polarization landscapes in 2D semiconductors	78
☆	<i>* Kenya Tanaka, Kengo Hachiya, Wenjin Zhang, Kazunari Matsuda, Yuhei Miyauchi</i>	
2P-9	Single-layer MoS ₂ nanogenerator for harvesting clean electric energy from dynamic motion of liquid	79
☆	<i>* Adha Sukma Aji, Ryohei Nishi, Hiroki Ago, Yutaka Ohno</i>	
Fullerenes		
2P-10	Infrared Spectral Simulation of Isotopically Manipulated C ₆₀	80
	<i>* Tomonari Wakabayashi, Takamasa Momose, Mario E. Fajardo</i>	
Chemistry of fullerenes		
2P-11	Synthesis of Benzothieno[60]fullerenes Using Fullerenyl Cation Intermediates	81
	<i>* Yutaka Matsuo, Yun Yu, Xiao-Yu Yang, Hiroshi Ueno, Hiroshi Okada</i>	
Properties of nanotubes		
2P-12	Chirality dependence of the tensile strengths of carbon nanotubes	82
	<i>* Akira Takakura, Kou Beppu, Taishi Nishihara, Akihito Fukui, Takahiro Kozeki, Takahiro Namazu, Yuhei Miyauchi, Kenichiro Itami</i>	
2P-13	In-plane and out-of-plane thermal conductivity of single wall carbon nanotube buckypapers with selected electronic structure	83
	<i>* Hiroyuki Matsuo, Kan Ueji, Yohei Yomogida, Takashi Yagi, Kazuhiro Yanagi</i>	

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2P-14	Solving the Thermoelectric Trade-Off Problem with Metallic Carbon Nanotubes * Yota Ichinose, Akari Yoshida, Kanako Horiuchi, Kengo Fukuhara, Natsumi Komatsu, Weilu Gao, Yohei Yomogida, Manaho Matsubara, Takahiro Yamamoto, Junichiro Kono, Kazuhiro Yanagi	84
2P-15	Theoretical Study on Thermoelectric Properties of Nitrogen-Doped Carbon Nanotubes with Various Diameters * Manaho Matsubara, Kenji Sasaoka, Takahiro Yamamoto	85
Formation and purification of nanotubes		
2P-16	Towards high yield growth of single-walled carbon nanotubes by alcohol catalytic CVD using Pt catalyst * Daiki Yamamoto, Kamal Sharma, Takahiro Saida, Shigeya Naritsuka, Takahiro Maruyama	86
2P-17	Synthesis of vertically aligned single walled carbon nanotube by conventional cold-wall CVD system using Ir catalysts * Mayumi Saeki, Kamal Sharma, Takahiro Saida, Shigeya Naritsuka, Takahiro Maruyama	87
2P-18	Interaction between defective carbon nanotubes and surfactant molecules * Hideyuki Jippo, Mari Ohfuchi	88
2P-19	Growth, etching, and regrowth of individual single-walled carbon nanotubes: Isotope labeling study * Taiki Inoue, Bunsho Koyano, Shun Yamamoto, Keigo Otsuka, Rong Xiang, Shohei Chiashi, Shigeo Maruyama	89
Applications of nanotubes		
2P-20	Bright electroluminescence from air-suspended carbon nanotubes * Wataru Terashima, Hidenori Machiya, Keigo Otsuka, Akihiro Ishii, Yuichiro Kato	90
2P-21	Effect of electrode configuration on formation and elongation of carbon nanotube filaments by gas discharge breakdown * Masatoshi Hiromura, Soichiro Magata, Hideki Sato	91
Endohedral nanotubes		
2P-22	Encapsulation of $C_{60}F_x$ in SWCNTs and its properties * Tsuyoshi Hasegawa, Shunsuke Kondo, Shun Manabe, Kohei Kondo, Yosuke Ishii, Shinji Kawasaki	92
Nanohorns		
2P-23	Carbon nanobrushes-based gas sensor * Mayumi Kosaka, Ryota Yuge	93
Applications of graphene		
2P-24	Fabrication of superhydrophobic and superoleophilic sponge using graphene oxide and carbon nanotubes * Yuki Morikuni, Masanori Hara, Masamichi Yoshimura	94

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- 2P-25 Zinc Oxide Nanoparticle Decorated on Nitrogen-Doped Graphene Sheet as Advanced Supercapacitor Electrode 95
* Rohit Yadav, Masanori Hara, Prerna Joshi, Masamichi Yoshimura

Nanowires

- 2P-26 Enhancement of electric field by surface plasmon on hollow cylinder 96
* Yuan Tian, Fenda Pratama, Muhammad Ukhtary, Riichiro Saito
- 2P-27 Synthesis of vertically aligned CNTs and evaluation of yarn spinnability 97
* Shinji Igimi, Morihiro Okada, Taiki Inoue, Shigeo Maruyama, Shohei Chiashi

Atomic Layers

- 2P-28 Laser-energy dependent helicity-changing Raman spectra of MoS₂ 98
* Tong Wang, Nguyen T. Hung, Ahmad R.T. Nugraha, Riichiro Saito
- 2P-29 Edge plasmon in rectangular antenna of graphene 99
* Maruoka Masato, Maeda Taisei, M. Shoufie Ukhtary, Saito Riichiro

>>>>>>> Lunch Time (12:15–13:30) <<<<<<<<

Poster Session (13:30–15:00)

During 13:30–14:00, please give priority to selection of candidates for Young Scientist Poster Award

Awards Ceremony (15:00–15:15)

General Meeting (15:15–15:45)

Special Lecture (15:45–16:15)

- 2S-2 Nano carbon for sustainable mobility 7
* Hideki Iba

>>>>>>> Coffee Break (16:15–16:30) <<<<<<<<

Special Lecture (16:30–17:00)

- 2S-3 Mechanical and thermal-optical properties of chirality-defined single-walled carbon nanotubes 8
* Yuhei Miyauchi

General Lecture (17:00–18:00)

Atomic Layers ▪ Graphene synthesis ▪ Applications of fullerenes ▪ Chemistry of fullerenes

- 2-6 On-surface synthesis of conjugated polycyclic nanowires by copolymerization strategy 28
* Hironobu Hayashi, Hiroko Yamada
- 2-7 In Situ TEM study of catalytic property of Mo during graphene formation 29
* Subash Sharma, Golap Kalita, Masaki Tanemura

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2-8	Isomer effects of fullerene derivative acceptors on organic photovoltaic devices * <i>Tomokazu Umeyama, Hiroshi Imahori</i>	30
2-9	Synthetic Usefulness and Device Application Studies of Cationic Fullerenes * <i>Yutaka Matsuo</i>	31

Moving

Banquet (18:30-20:30)

September 5th, Thu.

Special Lecture: 25min (Presentation) + 5min (Discussion)

Invited Lecture: 10min (Presentation) + 5min (Discussion)

General Lecture: 10min (Presentation) + 5min (Discussion)

Poster Preview: 1min (Presentation)

Special Lecture (9:00–9:30)

- 3S-1 Bioelectronic interface controlled by self-assembled peptides on two-dimensional nanomaterials 9
* *Yuhei Hayamizu*

Invited Lecture (9:30–9:45)

- 3I-1 Highly Uniform, Flexible Microelectrodes Based on the Clean Single-Walled Carbon Nanotube Thin Film with High Electrochemical Activity 11
* *Xuan Viet Nguyen*

General Lecture (9:45–10:30)

Bio ▪ Other topics

- 3-1 Self-Assembled Peptides as a Molecular Scaffold on CVD Grown Monolayer MoS₂ Transistor towards Biosensing 32
* *Hironaga Noguchi, Yuhei Hayamizu*
- 3-2 High-resolution Ion Mobility Measurement on Graphene Quantum Dots 33
* *Toshiki Sugai, Fumiaki Uchiyama, Yuya Ooishi, Takanori Nakayasu, Ryo Sasaki*
- 3-3 A three-dimensional covalent network of fused pentagons: A hard carbon allotrope with negative Poisson's ratio 34
* *Yasumaru Fujii, Mina Maruyama, Nguyen Thanh Cuong, Susumu Okada*

>>>>>>> **Coffee Break (10:30–10:45)** <<<<<<<<

Special Lecture (10:45–11:15)

- 3S-2 Physics of twisted 2D materials 10
* *Mikito Koshino*

General Lecture (11:15–11:30)

Properties of graphene

- 3-4 Edge plasmon in graphene ribbon 35
* *Muhammad Ukhtary, Maruoka Masato, Riichiro Saito*

Poster Preview (11:30–12:15) (★)Candidates for the Young Scientist Poster Award

Candidates for the Young Scientist Poster Award

- 3P-1 Trion-based High-speed Electroluminescence Emitters with Carbon Nanotube Films 100
★ * *Hidenori Takahashi, Yuji Suzuki, Kenta Nakagawa, Hideyuki Maki*
- 3P-2 Single-chirality separation of single-walled carbon nanotubes with a thermoresponsive polymer 101
★ * *Eriko Shimura, Toshiki Sugai, Shota Kuwahara*

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3P-3	Optical Studies of Monolayer MoSe ₂ on Strongly Correlated Manganese Oxide	102
☆	<i>* Yan Zhang, Yutaka Moritomo, Keisuke Shinokita, Yuhei Miyauchi, Kazunari Matsuda</i>	
3P-4	Nearly Isotropic and Large Critical Field from Three-Dimensional Networks of Anisotropic Superconducting Flakes	103
☆	<i>* Chisato Ando, Yusuke Nakanishi, Jiang Pu, Togo Takahashi, Taishi Takenobu, Yasumitsu Miyata</i>	
3P-5	Work function modulation of transparent electrode for fabrication of WS ₂ -based highly transparent solar cell	104
☆	<i>* Xing He, Yoshiki Yamaguchi, Toshiro Kaneko, Toshiaki Kato</i>	
3P-6	Fabrication and evaluation of hBN-encapsulated Monolayer MoSe ₂ with CNT local gates	105
☆	<i>* Takato Hotta, Haruna Nakajima, Taiki Inoue, Shohei Chiashi, Keiji Ueno, Kenji Watanabe, Takashi Taniguchi, Shigeo Maruyama, Ryo Kitaura</i>	
3P-7	Detection of odor molecule with graphene biosensor	106
☆	<i>* Honma Chisyu, Noguchi Hironaga, Isobayashi Atsunobu, Sugizaki Yoshiaki, Hayamizu Yuhei</i>	
3P-8	Efficient Production and Characterization of 1D Transition Metal Monochalcogenides Inside Carbon Nanotubes	107
☆	<i>* Naoyuki Kanda, Yusuke Nakanishi, Dan Liu, Zheng Liu, Kazu Suenaga, David Tomanek, Hisanori Shinohara</i>	
Endohedral metallofullerenes		
3P-9	Supramolecule of Li ⁺ @C ₆₀ and fluorinated tetraphenylporphyrin	108
	<i>* Kazuhira Miwa, Shinobu Aoyagi, Hiroshi Ueno, Hiroshi Okada, Kazuhiko Kawachi, Yasuhiko Kasama</i>	
Applications of fullerenes		
3P-10	Catalytic activity for the reduction of 4-nitroaniline with nickel oxide nanoparticle-[C ₆₀]fullerene nanowhisker composites	109
	<i>* Jeong Won Ko, Sugyeong Jeon, Weon Bae Ko</i>	
Properties of nanotubes		
3P-11	Thermal transport study of molybdenum disulfide nanotubes by molecular dynamics simulations	110
	<i>* Kaoru Hisama, Takuma Shiga, Susumu Okada, Shohei Chiashi, Shigeo Maruyama</i>	
3P-12	Hall Effect on Aligned Metallic Single-Wall Carbon Nanotube Thin Films	111
	<i>* Kanako Horiuchi, Ryotaro Okada, Hideki Kawai, Kan Ueji, Yohei Yomogida, Weilu Gao, Junichiro Kono, Kazuhiro Yanagi</i>	
3P-13	Transition from Metallic to Semiconducting behaviors in Seebeck coefficients of Semiconducting Single-Wall Carbon Nanotube film.	112
	<i>* Akari Yoshida, Yota Ichinose, Kengo Fukuhara, Kan Ueji, Yohei Yomogida, Kazuhiro Yanagi</i>	

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Formation and purification of nanotubes		
3P-16	Effect of nickel/aluminum bilayer film on growth and magnetic properties of carbon nanotubes filled with iron nanowire * Masayoshi Oka, Hideki Sato, Yuji Fujiwara	115
3P-17	Carbon nanotube growth on discontinuous alumina buffer layer * Taishi Yamashita, Hiromichi Watanabe, Takaya Akashi	116
3P-18	Synthesis of WSe ₂ nanotubes by selenization of tungsten oxide nanowires * Yohei Yomogida, Yoshiki Kainuma, Takahiko Endo, Yasumitsu Miyata, Kazuhiro Yanagi	117
Applications of nanotubes		
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3P-20	Effect of single-walled carbon nanotubes on electrochemical properties of platinum-based electrocatalyst for fuel cells * Kazuki Kishida, Toru Harigai, Hirofumi Takikawa, Takeshi Hashimoto	119
3P-21	Self-powered wireless optical transmitter based on triboelectric generator with carbon nanotube thin film * Masahiro Matsunaga, Jun Hirotani, Shigeru Kishimoto, Yutaka Ohno	120
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