PROGRAM

【July 6th, Wednesday】

Opening Session (13:00-13:10)

Plenary Session (13:10-14:00)
Chair: J. Motohisa (Hokkaido University)

Plenary 13:10 (50min + poster) 1
IH-V Semiconductor nanowires and their applications
T. Fukui
Hokkaido University

Session We1: Flexible Electronics and 2D Materials (14:00-15:06)
Chair: J. Motohisa (Hokkaido University)

We1-1 [Invited] 14:00 (30min + poster) 3
Development of the printable functional materials for flexible devices
T. Kamata, K. Suzuki & M. Yoshida
National Institute of Advanced Industrial Science and Technology

We1-2 14:30 (3min + poster) 5
Solution-processed top-gate organic transistor memory with small molecule-polymer composite as a charge storage layer
T. Nagase, F. Shiono, T. Kobayashi and H. Naito
Osaka Prefecture University

We1-3 14:33 (3min + poster) 7
Stretchable plastic type disposable healthcare wearable device
Y. Yamamoto, S. Harada, W. Honda, T. Arie, S. Akita and K. Takei
Osaka Prefecture University

We1-4 14:36 (3min + poster) 9
Optimization in microwave synthesis of copper phthalocyanine for organic thin-film transistors
S. Mizuka* and M. Kimura, T. Yashima, S. Murakami** and N. Fujimura*
*Kobe University, **The University of Tokyo

We1-5 14:39 (3min + poster) 11
Design and analysis of piezoelectric MEMS vibration energy harvesters
M. Aramaki*, K. Kaya, T. Yoshimura*, S. Murakami** and N. Fujimura*
*Osaka Prefecture University, **Technology Research Institute of Osaka Prefecture

We1-6 14:42 (3min + poster) 13
Carrier control in C60 doped Si thin films using organic ferroelectric gate field effect transistors
H. Nonami, Y. Miyata, T. Yoshimura, A. Ashida and N. Fujimura
Osaka Prefecture University

We1-7 14:45 (3min + poster) 15
Synthesis of graphene by microwave surface-wave plasma chemical vapor deposition
S. Ichinoura, Y. Hayashi** and Masayoshi Umeno*
*Chubu University, **Okayama University

We1-8 14:48 (3min + poster) 19
Study of direct growth mechanism of multilayer graphene by precipitation method using W capping layer
J. Yamada, Y. Ueda, T. Maruyama and S. Narita
Meijo University
We1-9  14:51 (3min+poster)  Investigation of growth mechanism on non-catalytic CVD growth of graphene on sapphire substrate
Y. Ueda, J. Yamada, T. Maniyama and S. Naito
Meijo University

We1-10  14:54 (3min+poster)  Graphene nanoribbons grown on cleaved SiC(1-100) surfaces
A. Shioji, T. Takasaki, T. Kajiwara, A. Visakovskiy and S. Tanaka
Kyushu University

We1-11  14:57 (3min+poster)  Fabrication of Molybdenum Disulfide (MoS2) Thin Film at Low Temperature under Atmospheric Pressure by Mist CVD
S. Sato and T. Kawaharamura
Kochi University of Technology

We1-12  15:00 (3min+poster)  Field Effect Modulation of Interlayer Exciton Photoluminescence in 1L-MoS2/1L-MoSe2 van der Waals Hetero-structure
S. Mouri*,**, W. Zhang*, Y. Miyachi* and K. Matsuda*
*Kyoto University *Kitsumexkan University

We1-13  15:03 (3min+poster)  Cross-sectional STM/STS study of 2D-topological insulator AlSb/InAs/GaSb/AlSb quantum wells
T. Ando, S. Kaku and J. Yoshino
Tokyo Institute of Technology

Break (15:06-15:16)

Session We2: Solar Cells and Optical Devices (15:16-16:46)
Chairs: H. Tampo (AIST)

We2-1 [Invited]  15:16 (30min+poster)  Recent progress in development of Cu(InGa)(SeS)2 solar cells
H. Sugimoto
Solar Frontier K.K.

We2-2  15:46 (3min+poster)  Degradation mechanism of Cu(In, Ga)Se2 solar cells induced by ir exposure
J. Nishanaga, Y. Kamikawa, T. Koda and H. Shibata
National Institute of Advanced Industrial Science and Technology

We2-3  15:49 (3min+poster)  Fabrication of Cu2ZnSnS4 thin films with Cl-free solution by mist CVD method
T. Ikenoue, Y. Watanabe, M. Miyake and T. Hirato
Kyoto University

We2-4  15:52 (3min+poster)  Solution based mist-CVD technique for hybrid organic-inorganic perovskite
H. Nishinaka and M. Yoshimoto
Kyoto Institute of Technology

We2-5  15:55 (3min+poster)  Stability and controllability of InGaAs/GaAsP wire-on-well (WoW) structure for multi-junction solar cells
H. Cho, K. Topprasertpong, H. Sudabanlu, K. Watanabe, M. Sugiyama and Y. Nakano
The University of Tokyo
We2-6 13:58 (3min+poster) 41
Effects of Si gas flow sequence on electrical characteristics of GaAsN films grown by atomic layer epitaxy
Y. Yokoyama*, M. Kawano, M. Horikiri, T. Haraguchi, T. Yamauchi, H. Suzuki, T. Ikari and A. Fukuyama
University of Miyazaki

We2-7 13:01 (3min+poster) 43
2D photocurrent excitation spectroscopy on two step photon absorption in InAs quantum dot intermediate band solar cells
R. Tamaki, Y. Shoji and Y. Okada
The University of Tokyo

We2-8 13:04 (3min+poster) 45
Thermal carrier-escape process from the intermediate band in InAs/GaAs quantum dot solar cells
K. Hirao, S. Asahi, S. Watanabe, T. Kaizu, Y. Harada and T. Kita
Kobe University

We2-9 13:07 (3min+poster) 47
Observation of mini-band formation in the ground and high-energy electronic states of super-lattice solar cells
*The University of Tokyo, **University of Miyazaki

We2-10 13:10 (3min+poster) 49
Investigation of bulk-like carrier transport and effective mobility in multiple quantum well solar cells
K. Toprasertpong*, T. Inoue*, K. Watanabe*, T. Kita**, M. Sugiyama* and Y. Nakano*
*The University of Tokyo, **Kobe University

We2-11 13:13 (3min+poster) 51
Investigation of thermal carrier escape from an AlGaAs/GaAs single quantum well by temperature-dependent I-V measurements
Miyazaki University

We2-12 13:16 (3min+poster) 53
InGaN/AlGaN/GaN polarization engineered water splitting photoanode under visible light irradiation
A. Nakamura*, K. Fujii**, Y. Nakano* and M. Sugiyama*
*The University of Tokyo, **The University of Kitakyushu

We2-13 13:19 (3min+poster) 55
Emission properties of Er³⁺ ions in GaAs modulated by photonic crystal cavities
M. Ogawa, T. Kojima, K. Sakuragi, N. Fujioka, A. Koizumi and Y. Fujiwara
Osaka University

We2-14 13:22 (3min+poster) 57
Photonic-crystal structure grown by tertiary-butyl arsine-based MOVPE for photonic-crystal lasers
M. Yoshida, M. De Zoyo, K. Ishizuki, R. Hatsuoda and S. Noda
Kyoto University

We2-15 13:25 (3min+poster) 59
Strain engineering in Ge photonic devices on Si using a cross beam structure
M. Nishimura, Y. Ishikawa and K. Wada
The University of Tokyo

We2-16 13:28 (3min+poster) 61
Two-color laser based on a wafer-bonded coupled multilayer cavity for novel terahertz LED
H. Ota, X. M. Lu, N. Kumagai, T. Kitada and T. Izu
Tokushima University
We2-17 13:31 (3min+poster)  
GaN-based VCSEL using a periodic gain structure consisting of two GaInN 5QWs  
Meijo University

We2-18 13:34 (3min+poster)  
Controlling emission properties of Eu-doped GaN by microcavity  
T. Inaba, T. Kojima, A. Keizumi and Y. Fujiwara  
Osaka University

We2-19 13:37 (3min+poster)  
Localized emission from quantum dot like InGaN islands formed in N-polar InGaN/GaN multiple quantum wells  
T. Tanikawa, K. Shojiki, R. Nonoda, S. Kuboya, R. Katayama and T. Matsuoka  
Tohoku University

We2-20 13:40 (3min+poster)  
Development of ZnSe-based organic-inorganic hybrid UV-APDs array  
T. Abe, S. Uchida, K. Tanako, H. Kasada, K. Ando, and K. Ichino  
Tottori University

We2-21 13:43 (3min+poster)  
Development of ultraviolet optical modulator using non-polar ZnO/ZnMgO multiple quantum wells  
S. Iwagashita, T. Abe, M. Yamamoto, H. Kasada, K. Ando and K. Ichino  
Tottori University

Break (16:46-16:56)

Poster Session I (We1, We2) (16:56-19:00)

Dinner (19:00-20:00)

Rump Session (20:00-21:30)

"Novel Energy Harvesting Technologies Supporting IoT Society"

Organizer: M. Sugiyama (The University of Tokyo)  
N. Fujimura (Osaka Prefecture University)

Panelists: H. Akinaga (AIST); Moderator  
K. Uchida (Tohoku University)  
Y. Hikosaka (Fujitsu Semiconductor Ltd)  
K. Takeuchi (NTT)  
T. Yoshimura (Osaka Pref. University)
Session Th1: Characterization / Spintronics (8:30-10:15)

Chair: M. Kitamura (Kobe University)

Th1-1 [Invited] 08:30 (30min+poster) 73
Study on kinetics and thermodynamics of 4H-SiC thermal oxidation for the control of MOS interface characteristics
K. Kita, H. Hirai, Y. Fujino and H. Kajifusa
The University of Tokyo

Th1-2 09:00 (3min+poster) 75
Semi-conducting characteristics of nano-polycrystalline diamond synthesized by high pressure and high temperature technique
Ehime University

Th1-3 09:03 (3min+poster) 77
Stress-dependent spectroscopy on single-crystalline diamond
R. Ishii*, S. Shikata**, M. Funato* and Y. Kawakami*
*Kyoto University, **Kwansei Gakuin University

Th1-4 09:06 (3min+poster) 79
Effects of post-growth annealing temperature on photoluminescence from phosphorus doped n’Ge on Si
N. Higashitarumizu, K. Wada, and Yasuhiko Ishikawa
The University of Tokyo

Th1-5 09:09 (3min+poster) 81
Rare earth ion doping in Ge deposited by molecular beam epitaxy
Y. Miyata, K. Ueno, T. Yoshimura, A. Ashida and N. Fujimura
Osaka Prefecture University

Th1-6 09:12 (3min+poster) 83
Raman scattering studies of strained Ge films on Si substrates
*Kyoto Institute of Technology, **Wafer Masters, Inc.

Th1-7 09:15 (3min+poster) 85
Effect of carrier on magneto-transport characteristics of Ce doped Si films
Y. Miyata, T. Yoshimura, A. Ashida and N. Fujimura
Osaka Prefecture University

Th1-8 09:18 (3min+poster) 87
Effect of nitrogen source on optical properties of Eu- and Mg-codoped GaN grown by molecular beam epitaxy
H. Tateishi, H. Sekiguchi, K. Tomoyasu, K. Yamane, H. Okada and A. Wakahara
Toyoohashi University of Technology

Th1-9 09:21 (3min+poster) 89
Investigation on energy transfer process in Eu-doped GaN by two-wavelength excited photoluminescence measurements
H. Kogame, K. Okada, T. Kojima, A. Koizumi, and Y. Fujiwara
Osaka University

Th1-10 09:24 (3min+poster) 91
Valence state control of Eu ions in Eu-doped GaN grown by organometallic vapor phase epitaxy
Osaka University
Th1-11 06:27 (3min+poster)  
Controllable energy transfer between Tm³⁺ and Yb³⁺ ions in Tm,Yb-codoped ZnO grown by sputtering-assisted MOCVD  
Osaka University

Th1-12 06:30 (3min+poster)  
Elastic properties of wurtzite-type BN evaluated by nanindentation  
M. Deou*, K. Kutsukake*, Y. Ohno*, I. Yonenaga* and T. Taniguchi**  
*Tohoku University, **National Institute for Materials Science

Th1-13 06:33 (3min+poster)  
Raman spectroscopy study of homoepitaxially grown hexagonal boron nitride  
K. Watanabe and T. Taniguchi  
National Institute for Materials Science

Th1-14 06:36 (3min+poster)  
Stimulated emission from optically-pumped semipolar AlGaN/AlN quantum well  
S. Ichikawa, M. Funato and Y. Kawakami  
Kyoto University

Th1-15 06:39 (3min+poster)  
Improvement of p-type electrical property by polarization-doping in graded-AlGaN layer  
*Meijo University, **Nagoya University

Th1-16 06:42 (3min+poster)  
Characterization of III-nitride semiconductors using electron-beam-induced-current (EBIC) measurement  
E. Oka, T. Araki and Y. Nanishi  
Ritsumeikan University

Th1-17 06:45 (3min+poster)  
Infrared reflectance spectroscopy and Raman scattering spectroscopy of free-standing GaN bulk substrates  
K. Kanegae, M. Kaneko, T. Kimoto, M. Horita and J. Suda  
Kyoto University

Th1-18 06:48 (3min+poster)  
Mechanism of broadband visible emission from InGaN/nano-AlN LED by temperature-dependent photoluminescence  
T. Arakawa*, M. Matue**, A. Chauhan*, K. Miyajima***, Y. Nakano* and M. Sugiyama*  
*The University of Tokyo, **Central Electronics Engineering Research Institute India, ***Tokyo University of Science

Th1-19 06:51 (3min+poster)  
Evaluation of internal quantum efficiency of InGaN based LEDs by photocurrent measurement  
S. Usami, Y. Honda and H. Amano  
Nagoya University

Th1-20 06:54 (3min+poster)  
Degradation of InGaN/GaN SQW structure under optical irradiation  
*Kanazawa Institute of Technology, **NTT Corporation

Th1-21 06:57 (3min+poster)  
Fluorine plasma treatment on InN films grown by RF-MBE  
S. Fukushima, S. Usuda, T. Araki and Y. Nanishi  
Ritsumeikan University
Th1-22  10:00 (3min+poster)  •••  115
Damping constant in a nanoscale magnetic tunnel junction evaluated by homodyne-detected ferromagnetic resonance
M. Shinozaki, E. Hiriyama, S. Kanai, H. Sato, F. Matsukura and H. Ohno
Tohoku University

Th1-23  10:03 (3min+poster)  •••  117
Magnetic field angular dependence of switching field in CoFeB-MgO magnetic tunnel junction with perpendicular easy axis
J. Igarashi, E. C. I. Esobio, H. Sato, S. Fukami, F. Matsukura and H. Ohno
Tohoku University

Th1-24  10:06 (3min+poster)  •••  119
Spin-orbit torque induced switching in three-terminal devices with a TaW channel
A. Ohkawara, T. Arikawa, C. Zhang, S. Fukami and H. Ohno
Tohoku University

Th1-25  10:09 (3min+poster)  •••  121
Fabrication of TiO₂ films on Ge and Si as tunnel barrier for spin injection
H. Inaba, T. Koike, A. Ono, M. Oogane and Y. Ando
Tohoku University

Th1-26  10:12 (3min+poster)  •••  123
Electrical spin-injection into n-type germanium using Co₉Fe₄Mn₃Si Heusler alloy film
*Tohoku University, **National Institute of Advanced Industrial Science and Technology

Break (10:15-10:25)

Poster Session II (Th1) (10:25-12:00)

Lunch (12:00-13:00)
Session Th2: Growth I (13:00-14:45)
Chair: T. Araki (Ritsumeikan University)

Th2-1 [Invited] 13:00 (30min+poster) 125
Growth dynamics of epitaxial interfaces using in situ synchrotron X-ray diffraction
M. Takahasi and T. Sasaki
National Institutes for Quantum and Radiological Science and Technology

Th2-2 13:30 (3min+poster) 127
Formation of stacking fault in high growth rate InGaN on (1 10) GaN stripe/Si(001)
M. Kushimoto, Y. Honda and H. Amano
Nagoya University

Th2-3 13:33 (3min+poster) 129
Three dimensional semi/nonpolar InGaN quantum wells toward phosphor-free polychromatic emitters
Y. Matsuda, M. Funato and Y. Kawakami
Kyoto University

Th2-4 13:36 (3min+poster) 131
Thermodynamic analysis of In- and N-polar InN growth by metalorganic vapor phase epitaxy
*Kyushu University, **Nagoya University, ***Tokyo University of Agriculture and Technology

Th2-5 13:39 (3min+poster) 133
Dependence of group-III source ratio on photoluminescence of N-polar (000-1) InGaN grown by metalorganic vapor phase epitaxy
Tohoku University

Th2-6 13:42 (3min+poster) 135
High temperature growth of thick InGaN ternary alloy by tri-halide vapor phase epitaxy
Tokyo University of Agriculture and Technology

Th2-7 13:45 (3min+poster) 137
High-temperature annealing of sputtered AlN on sapphire
*Mie University, **Sanko Seiki Co., Ltd.

Th2-8 13:48 (3min+poster) 139
Study on nitridation of α-AlKxOy using rf plasma for AlGaN growth
A. Buma*, N. Masudi*, M. Oda**, T. Hitomi**, T. Araki* and Y. Nanishi*
*Ritsumeikan University, **FLOSPIA

Th2-9 13:51 (3min+poster) 141
Evolution of strain and dislocations during ESVGPE growth of AlN
K. Kishimoto, P.T. Wu, M. Funato and Y. Kawakami
Kyoto University

Th2-10 13:54 (3min+poster) 143
Epitaxial growth of Mg-doped AlN thin films at low substrate temperature using reactive sputtering technique
T. Miskonen*, K. Ozaki*, T. Ishihara**, H. Izumi** and T. Kita*
*Kobe University, **Hyogo Prefectual Institute of Technology
<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Authors</th>
<th>Institution(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>14:00</td>
<td>Structural property of boron-doped AlN grown by metal-organic vapor phase epitaxy</td>
<td>M. Imura*, Y. Ota**, R. G. Ranal* and Y. Koide*</td>
<td>National Institute for Materials Science, Tokyo Metropolitan Industrial Technology Research Institute</td>
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<tr>
<td>14:03</td>
<td>Crystal growth modes of hexagonal boron nitride films on c-plane sapphire substrate grown by low pressure chemical vapor deposition</td>
<td>N. Umemura, A. Masuda, T. Shimizu, T. Kouno, H. Kominami and K. Hara</td>
<td>Shizuoka University</td>
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<tr>
<td>14:15</td>
<td>Effects of GaN low-temperature buffer layer on GaN surface flatness grown on Al templates</td>
<td>Y. Hoshikawa, Y. Suzuki, K. Uchida, T. Onuma, T. Yamaguchi and T. Honda</td>
<td>Kogakuin University</td>
</tr>
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<td>14:18</td>
<td>MOVPE growth and annealing of Ge buffer layer on Si substrate for high-crystalline-quality GaAs epitaxial layer</td>
<td>R. Nakao, K. Yamamoto and S. Matsuo</td>
<td>NTT Corporation</td>
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<td>14:21</td>
<td>Effect of initial stage of Ge growth on dark leakage current in near-infrared Ge photodiodes on Si</td>
<td>K. Ito, Y. Miyasaka and Y. Ishikawa</td>
<td>The University of Tokyo</td>
</tr>
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Th2-22 14:30 (3min+poster)  
Au thickness dependent solid phase crystallization of amorphous Ge on insulating substrate by catalytic Au insertion  
R. Mochii, K. Kudo, T. Nomitsu, K. Takakura and I. Tsunoda  
National Institute of Technology, Kumamoto College

Th2-23 14:33 (3min+poster)  
Low-temperature formation of Sn-doped Ge on insulator by Au-induced lateral crystallization for flexible electronics  
T. Sakai, R. Matsumura, T. Sadeh and M. Miyao  
Kyushu University

Th2-24 14:36 (3min+poster)  
Enhancement of solid-phase crystallization of amorphous Ge on insulating substrate by electron stimulated nucleation  
K. Okamoto, K. Tomouchi, E. Murakami, M. Yoneoka, K. Takakura and I. Tsunoda  
National Institute of Technology, Kumamoto College

Th2-25 14:39 (3min+poster)  
Temperature dependence of photoluminescence properties of ZnS grown by mist CVD  
K. Uno, Y. Asano, Y. Yamasaki and I. Tanaka  
Wakayama University

Th2-26 14:42 (3min+poster)  
Effects of ion irradiation in sputter-deposition of TiNi films  
N. Ienaga and N. Sacudo  
Kanazawa Institute of Technology

Break (14:45-14:55)

Session Th3: Quantum Optics / Growth II (14:55-15:58)  
Chair : R. Katayama (Osaka University)

Th3-1 [Invited] 14:55 (30min+poster)  
Application of quantum information technology for advanced sensing  
S. Takeuchi  
Kyoto University

Th3-2 15:25 (3min+poster)  
Density control of InP-based nanowires and nanowire quantum dots  
S. Yanase, H. Sasakura, S. Haru and J. Motohisa  
Hokkaido University

Th3-3 15:28 (3min+poster)  
GaAs/AlAs triple-coupled cavity with InAs quantum dots for ultrafast wavelength conversion devices  
X. M. Lu, N. Kumagai, T. Kitada and T. Isu  
Tokushima University

Th3-4 15:31 (3min+poster)  
Selective-area MOVPE growth of InGaAs nanowires for optical communication band  
*Hokkaido University, **JST-PRESTO
Th3-5 15:34 (3min+poster)  
Photoluminescence spectra of zinc-blend and wurtzite phases coexisted Si-doped GaAs nanowires  
*Miyazaki University, **Nagoya University

Th3-6 15:37 (3min+poster)  
Post growth material conversion of GaAs nanowires  
K. Nishioka and F. Ishikawa  
Ehime University

Th3-7 15:40 (3min+poster)  
Growth of GaAs/GaAsBi heterostructure nanowires by molecular beam epitaxy  
K. Takada, Y. Kubota, Y. Akamatsu, P. Patil, F. Ishikawa and S. Shimomura  
Ehime University

Th3-8 15:43 (3min+poster)  
Analysis of the Ga incorporation mechanism in selectively-grown InGaAs on Si (111)  
T. Watanabe, Y. Nakano and M. Sugiyama  
The University of Tokyo

Th3-9 15:46 (3min+poster)  
Evaluation of the localized state of low-temperature-grown InGaAs using Hall effect measurement  
S. Tsurisaki, Y. Tominaga and Y. Kadoya  
Hiroshima University

Th3-10 15:49 (3min+poster)  
Crystalline state of low-temperature-grown InGaAs - In the case of In content dependence -  
S. Hirose, K. Hirayama, Y. Tominaga and Y. Kadoya  
Hiroshima University

Th3-11 15:52 (3min+poster)  
Annealing effect to amorphous InxGa1−xAs on InP substrate  
K. Hirayama*, Y. Tominaga*, Y. Kadoya* and H. Morioka**  
*Hiroshima University, **Brucker AXS K.K.

Th3-12 15:55 (3min+poster)  
MOVPE growth of metamorphic InAsSb on GaAs substrate for mid-infrared photonic devices  
K. Yoshibukuro, Y. Iitokura and M. Arai,  
Miyazaki University

Break (15:58-16:08)

Poster Session III (Th2, Th3) (16:08-18:00)

Break (18:00-19:00)

Banquet (19:00-21:00)
Recent progress in development of gallium oxide power devices
*National Institute of Information and Communications Technology, **Tamura Corporation, ***Tokyo University of Agriculture and Technology, ****Linköping University

Characteization of β-Ga$_2$O$_3$ single crystal based Schottky barrier diode
Y. Fujiki, T. Araki, Y. Moon, A. Kim and Y. Namiishi
Ritsumeikan University

Photocurrent induced by sub-bandgap-wavelength light absorption due to Franz-Keldysh effect in n-type GaN Schottky barrier diode
T. Maeda*, M. Okazaki**, M. Ueno**, Y. Yamamoto**, M. Horita* and J. Suda*
*Kyoto University, **Suumotomo Electronic Industries, Ltd.

Impacts of near-interface trap density reduction by annealing and substrate surface damage by thermal oxidation on 4H-SiC MOSFET mobility
H. Hirai and K. Kita
The University of Tokyo

Characterization of Ni electrode on SiC formed by the continuous wave laser irradiation
H. Kawakami, K. Kondo, Y. Naof and T. Tomita
Tokushima University

Study of mobility enhancement by stresses at the channel of gate-ill-around nMOSFETs
National Institute of Technology, Kumamoto College*, imec**

Vertical type hydrogen terminated diamond MOSFETs
M. Inaba, T. Muta, M. Kobayashi, D. Matsumura, T. Saito, T. Kuo, A. Hiraiwa and H. Kawarada
Waseda University

Inorganic-based flexible CMOS digital and analog circuits
K. Takci, W. Honda, T. Airc and S. Akita
Osaka Prefecture University

InSb HEMT with over 300 GHz-T using stepped buffer layer for strain reduction
*Tokyo University of Science, **National Institute of Information and Communications Technology
Efficient gate control of spin-valve signals and Hanele signals in GaAs channel with p-i-n junction-type back-gate structure
W. Nomura, I. Miyakawa, M. Yamamoto and I. Uemura
Hokkaido University

Electron transport properties of novel InSb/GalnSb composite channel high electron mobility transistor structures
J. Takeuchi, S. Fujikawa, Y. Harada and H. I. Fujishiro
Tokyo University of Science

Atomic-level GaAs digital wet etching using a computer-controlled multiple spraying system
R. Kuroda, M. Sato and S. Kasai
Hokkaido University

Control of thermal-plasma-jet ejection direction by magnetic field
K. Teramoto, H. Hanafusa and S. Higashi
Hiroshima University

Growth of Ga$_2$O$_3$ layer using gallium tri-chloride precursor
M. Takahashi, Y. Hirashima, Y. Mae, Q.-T. Thieu, H. Murakami and A. Koukitu
Tokyo University of Agriculture and Technology

Crystal properties of corundum-structured $\alpha$-Ga$_2$O$_3$ thin films on sapphire with $\alpha$-(Al,Ga)$_{1-x}$O$_2$ multi buffer layer
R. Jinno, T. Uchida, K. Kaneko and S. Fujita
Kyoto University

Growth and electrical properties of Sn-doped corundum-structured aluminum gallium oxide alloy thin films
S. Takemoto, T. Uchida, R. Jinno, K. Kaneko and S. Fujita
Kyoto University

Electrical properties of Sn-doped $\alpha$-Ga$_2$O$_3$ films grown on annealed buffer layer
K. Akaia*,**, K. Kaneko**, K. Ichino* and S. Fujita**
*Tottori University, **Kyoto University

Characterization of corundum structured $\alpha$-(Al,Ga)$_{1-x}$O$_2$/$\alpha$-Ga$_2$O$_3$ heterojunction band offsets by X-ray photoelectron spectroscopy
T. Uchida, R. Jinno, S. Takemoto, K. Kaneko and S. Fujita
Kyoto University

Growth of corundum-structured III-oxide semiconductors on sapphire and their device applications
K. Kaneko*,**, M. Kitajima*, T. Uchida*, M. Oda*,**, A. Takatsuka**, T. Hitura** and S. Fujita*
*Kyoto University, **FLOSFIA

Mist CVD growth of In$_2$O$_3$ on various substrates
T. Kobayashi, K. Tamima, T. Yamaguchi, T. Onuma and T. Honda
Kogakuin University
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Deep-ultraviolet luminescence in rocksalt-structured Mg1-xZnxO thin films
*Kyoto University, **Kogakuin University

Fr1-22 10:00 (3min+poster) 245
Fabrication of copper superconductive thin film by mist CVD
Y. Nakasone, Y. Suwi, and T. Kawaharamura
Kochi University of Technology

Fr1-23 10:03 (3min+poster) 247
Simple solvothermal synthetic approach to spherical Al2O3-TiO2 and ZnO-TiO2 composite nanoassemblies
E. K. C. Pradeep, M. Ohtani, T. Kawaharamura and K. Kobiro
Kochi University of Technology

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Fabricating high quality YIG thin film by mist CVD under open-air atmospheric pressure
Kochi University of Technology

Fr1-25 10:09 (3min+poster) 251
Phonon mode assignments of SrAlMgO6 single crystal by polarized Raman scattering spectroscopy
*Kyoto Institute of Technology, **Fukada Crystal Laboratory, ***Tohoku University

Fr1-26 10:12 (3min+poster) 253
Investigation of the electrocaloric effect in BaTiO3 ceramics
Y. Matsushita, D. Kirya, T. Yoshimura and N. Fujimura
Osaka Prefecture University

Fr1-27 10:15 (3min+poster) 255
Fabrication of (Ba0.55Lu0.45)SrTiO3 semiconductor films on (111) SrTiO3 substrate by PLD method
K. Miura, D. Kirya, T. Yoshimura, A. Ashida and N. Fujimura
Osaka Prefecture University

Break (10:18-10:28)

Poster Session IV (Fr1) (10:28-12:00)

Lunch (12:00-13:00)
Special Session (13:00-16:00)
"Forefront of Semiconductor Lasers"
Chair: S. Fujita (Kyoto University)

Introduction 13:00 (5min)
S. Fujita
Kyoto University

Special Tutorial 13:05 (75min+poster)  
System, Device, and Material – A Learning from Optical Communication –
Y. Suematsu
Honorary Professor of Tokyo Institute of Technology

Break (14:20-14:30)

SP-1 [Invited] 14:30 (30min+poster)  
Recent progress on the wavelength tunable lasers for optical communication
Y. Tohmori
Tsurugi-Photonics Foundation

SP-2 [Invited] 15:00 (30min+poster)  
Novel semiconductor lasers for communication, industrial, and consumer applications
M. Sugawara
QDLaser, Inc.

SP-3 [Invited] 15:30 (30min+poster)  
GaN-based optical pulse sources
R. Koda, S. Kono, N. Futagawa and H. Narui
Sony Corporation

Closing Session (16:00-16:20)