【October 15th, Wednesday】

Opening Session (13:00-13:10)

Plenary Session (13:10-14:00)

Chair: T. Araki (Ritsumeikan University)

Plenary 13:10-14:00 (50 min)
Progress of Photonic Crystals: from Fundamentals to Social Implementation
- Looking back on my 37-years research –
フォトニック結晶研究の進展：萌芽研究から社会実装まで ー 自身の 37 年間の研究を振り返って ー
S. Noda
Kyoto University

Session We1 (10/15 Wed. 14:00 - 16:15)

Chair: M. Higashiwaki (Osaka Metropolitan University)

We1-1 [Invited] (30 min)
Emerging Spintronic Functionalities Enabled by Strongly Correlated Oxide Heterostructures
強相関酸化物ヘテロ構造が拓くスピントロニクスの新展開
S. Ohya*, **
* Department of Electrical Engineering and Information Systems, The University of Tokyo,
** Center for Spintronics Research Network, The University of Tokyo

We1-2 (2 min + Poster)
Process Development for β-Ga_2O_3 photonic crystal nanocavity structure
β 酸化ガリウムフォトニック結晶ナノ共振器構造のプロセス開発
J. Jeon*, N. Pholsen**, H. Otsuki**, R. Jinno* and S. Iwamoto*,**
*RCAST U-Tokyo, **IIS U-Tokyo

We1-3 (2 min + Poster)
Investigation of Sidemode Suppression in Circular Defect in 2D Photonic Crystal (CirD) Lasers with AlGaAs Funnel Structures
AlGaAs ファンネル構造を有する 2 次元フォトニック結晶円形欠陥(CirD)レーザにおけるサイドモード抑制に関する研究
R. Zuo, M. Morifuji, H. Kajii, A. Maruta, T. Yagi, N. Kikuchi, and M. Kondow
Osaka University

We1-4 (2 min + Poster)
Formation of periodic nanostructures induced by supercontinuum femtosecond laser
超広帯域フェムト秒レーザーによって誘起される周期的なナノ構造の形成
N. Nishiyama*, S. Naito*, S. A. Rezvani**, and R. Miyagawa*,***
*Nagoya Institute of Technology, **Santec Holdings Corporation, ***National Institute for Fusion Science

We1-5 (2 min + Poster)
Formation of Periodic Nanostructures on a Tungsten Surface for Fusion Applications
T. Furukawa*, T. Inagaki*, H. Uehara**,***, and R. Miyagawa*,**
*Nagoya Institute of Technology, **National Institute for Fusion Science, ***The Graduate University for Advanced Studies

We1-6 (2 min + Poster)
Energy relaxation time of $^{167}Er^{3+}$ hyperfine structure measured by time-resolved spectral hole burning
$^{167}Er^{3+}$超微細構造におけるエネルギー緩和時間の時間分解スペクトルホールバーニング測定
T. Hamazaki*, Z. Matsuzaki*, H. Omi**, S. Yasui***,****, S. Adachi***, T. Inaba****,
X. Xu**** , and T. Tawara*
*Nihon University, **Yamato University, ***Hokkaido University, **** NTT Basic Research Laboratories

We1-7 (2 min + Poster)
Electron dynamics in a lambda-type three-level system of $^{167}Er^{3+}$:Y_2SiO_5 measured by spectral hole burning
$^{167}Er^{3+}$:Y_2SiO_5 の Λ 型 3 準位系における電子ダイナミクスのホールバーニングによる測定
Z. Matstuzaki*, T. Hamazaki*, H. Omi**, S. Yasui***,****, S. Adachi***, T. Inaba****, X. Xu****,
and T. Tawara*
*Nihon Univ., **Yamato Univ., ***Hokkaido Univ., ****NTT Basic Res. Labs.

We1-8 (2 min + Poster)
Tuning the Metal-Insulator Transition and Transmittance of VO_2 Thin Films via Nitrogen Doping and Thickness Control
N ドープと膜厚制御による VO_2薄膜の金属–絶縁体転移と透過率の制御
T. Kano* and H. Nishinaka**
*Department of Electronics, Kyoto Institute of Technology, **Faculty of Electrical Engineering and Electronics, Kyoto Institute of Technology

We1-9 (2 min + Poster)
Correlation between near-band-edge and trap-hole center related emission in Al doped MgO films
Al ドープ MgO 薄膜におけるバンド端近傍発光と正孔捕獲中心に起因する発光との相関関係
R. Nemoto*, K. Ogawa*, S. Nakashima*, K. Tanaka*, Y. Ota**, T. Yamaguchi*, T. Honda* and T. Onuma*
*Kogakuin University, **Toyama Prefectural University

We1-10 (2 min + Poster)
Impurity doping in MgO: Formation energies from first-principles study
MgO への不純物ドーピング：第一原理計算による形成エネルギー
Y. Ota* and T. Onuma**
*Toyama Pref. University, **Kogakuin University

We1-11 (2 min + Poster)
Observation of Quantum Size Effects by Thinning Well Layer Thickness in Rocksalt-structured MgZnO Multiple Quantum Wells Fabricated by Mist CVD Method
ミスト CVD 法で作製した岩塩構造 MgZnO 多重量子井戸における井戸層の薄層化による量子サイズ効果の観測
H. Aichi, K. Ogawa, Y. Abe, K. Tanaka, T. Yamaguchi, T. Honda, and T. Onuma
Kogakuin University

We1-12 (2 min + Poster)
Bandgap Engineering of Rocksalt-structured $Sc_xB_{1-x}N$ Alloys
岩塩構造 $Sc_xB_{1-x}N$ 混晶のバンドギャップエンジニアリング
R. Kawashima*, H. Mizuno*, K. Matsumoto*, and Y. Ota*
*Toyama Prefectural University

We1-13 (2 min + Poster)
Effect of Impurities on Carrier Dynamics in GaN Revealed by Bayesian TRPL Fitting
GaN における不純物のキャリアダイナミクスに与える影響：ベイズ推定を用いた TRPL 曲線解析による解明
K. Ikebe*, O. Ito**, Y. Sakurai**, K. Akiyama**, S. Kaneki***, H. Fujikura***, K. Iwamitsu*, Z. Akase*,
A. A. Yamaguchi**, and S. Tomiya*
*Nara Institute of Science and Technology, **Kanazawa Institute of Technology, ***Sumitomo Chemical Co., Ltd.

We1-14 (2 min + Poster)
Analysis of bonding between gallium dangling bonds and fluorine in gallium-nitride by molecular orbital method
分子軌道法を用いた窒化ガリウムにおける Ga ダングリングボンド-フッ素間の結合に関する解析
Y. Fujishiro*, T. Yayama**, T. Nagata***, T. Chikyow**** and F. Akagi*,**
*Graduate school of Engineering, Kogakuin University, **School of Advanced Engineering, Kogakuin University, ***Research Center for Electronic and Optical Materials, National Institute for Materials Science (NIMS), ****Research Center for Materials Nanoarchitectonics (MANA), NIMS

We1-15 (2 min + Poster)
Effect of Hydrophilic Organic Surface functionalization on the Electronic Properties of Silicon Nanoparticles
親水性有機表面官能基化がシリコンナノ粒子の電子特性に与える影響
T. Matsushita*, Y. Ota*, H. Mizuno* and K. Matsumoto*
*Toyama Prefectural University

We1-16 (2 min + Poster)
Energy conversion loss mechanisms of an InGaAs photodiode used for a laser power converter
InGaAs レーザーパワーコンバータを使用したエネルギー変換損失メカニズムの解明
I. Kan, R. Hanakuma, R. Yasumatsuya, S. Asahi, Y. Harada, and T. Kita
Kobe University

We1-17 (2 min + Poster)
Effects of band tails on output power of thermoradiative diode
熱放射発電素子の発電密度へのバンドテイルの効果
Y. Harada and T. Kita
Kobe University

We1-18 (2 min + Poster)
Numerical Calculation of 2DEG in Nitride Semiconductor Heterostructure Incorporating the Modified Fang-Howard Wave Functions with Second Subband
改良 Fang-Howard 波動関数および第二サブバンドを考慮した窒化物半導体ヘテロ構造における二次元電子の数値計算
Y. Wakamoto and T. Maeda
The University of Tokyo

We1-19 (2 min + Poster)
Characterization of temperature dependence of barrier height in Si-doped AlN Schottky barrier diodes on AlN substrates
AlN 基板上 Si ドープ AlN ショットキーバリアダイオードの障壁高さの温度依存性評価
I. Sasaki*, M. Hiroki**, K. Kumakura**, K. Hirama**, Y. Taniyasu** and T. Maeda*
*The University of Tokyo, **Basic Research Laboratories, NTT, inc.

We1-20 (2 min + Poster)
Analysis of C-V Characteristics of Nitrogen-Doped Ga_2O_3/n-Ga_2O_3 Junctions Grown by Plasma-Assisted Molecular Beam Epitaxy
プラズマ援用分子線エピタキシー成長した窒素ドープ Ga_2O_3/n-Ga_2O_3 接合の C-V 特性解析
K. Tsujimoto*, T. Uehara*, J. Inajima*, Y. Teramura*, R. Ferreyra*, S. Honda*, and M. Higashiwaki**
*Osaka Metropolitan University, **National Institute of Information and Communications Technology

We1-21 (2 min + Poster)
Bayesian Inference-Based Analysis of Capacitance Transient for Detection of Energetically Close Deep Levels
エネルギー的に近接した深い準位検出のためのベイズ推定に基づく過渡容量解析
K. Yamanaka, K. Mikami, T. Kimoto and M. Kaneko
Kyoto University

We1-22 (2 min + Poster)
Non-contact and non-destructive simultaneous measurement of thickness and electrical properties of ultrathin GaN films on $ScAlMgO_4$ substrates by THz-TDSE
THz-TDSE による $ScAlMgO_4$ 基板上 GaN 極薄膜の膜厚および電気特性の非接触・非破壊同時測定
K. Tsuchida*, T. FUjii**,***, T. Iwamoto*** and T. Araki*
*Ritsumeikan University, **ROST, ***NIPPO PRECISION

We1-23 (2 min + Poster)
SEM voltage contrast observation in semiconductor devices using cross-sectional plane prepared by multi-species plasma FIB
マルチイオン種プラズマ FIB による半導体デバイスの電位コントラスト観察
A. Hashimoto, S. Hayashi, H. sako and N. Kawasaki
Toray Research Center, Inc.

We1-24 (2 min + Poster)
Classification of scratch-like polishing damage in 4H-SiC wafers using mirror projection electron microscope
ミラー電子顕微鏡を用いた 4H-SiC ウェハに導入されたスクラッチ状研磨ダメージの分類
H. Sako*, S. Hayashi*, K. Ohira**, D. Bizen**, K. Kobayashi**, N. Hasuike*** and T. Isshiki***
*Toray Research Center, Inc., **Hitachi High-Tech Corp., ***Kyoto Institute of Technology

We1-25 (2 min + Poster)
High Breakdown Voltage MOSFET s for WiFi and Cellular PA Applications
WiFi およびセルラー用パワーアンプ向け高耐圧 MOSFET
A. Fujihara*, M. Saji*, M. Aoike*, T. Saimei*, H. Yamazaki*, T. Wada*, D. Mohata**,
S. Nedeljkovic**,
and P. Candra**
*Murata Manufacturing Co., Ltd., **pSemi Corporation

We1-26 (2 min + Poster)
Fabrication and Characterization of H-terminated Diamond MOSFETs with Buried Electrodes Formed by Ion Implantation
イオン注入法により埋め込み電極を形成した水素終端ダイヤモンド MOSFET の試作と特性評価
U. Sakura*, S. Yuhei*, H. Yasushi**, U. Hitoshi***, and K. Junich H.*
*Hokkaido Univ., **Kanagawa Univ., ***AIST.

Break (15:20-15:35)

We1-27 (2 min + Poster)
Vertical Gate-All-Around Tunnel FETs using InGaAs nanowire/Si heterojunction on SOI(111)
SOI(111)上の InGaAs ナノワイヤ/Si ヘテロ接合縦型ゲートオールアラウンドトンネル FET の作製
K. Taniyama, Y. Azuma, K. Fujimoto, and K. Tomioka
Graduate School of Information Science and Technology and Research Center for Integrated Quantum Electronics (RCIQE), Hokkaido University

We1-28 (2 min + Poster)
Post-annealing effects on p-channel SnO_x thin-film transistors fabricated by reactive sputtering using a Sn target
Sn ターゲットを用いた反応性スパッタ法により作製した p チャネル SnO_x 薄膜トランジスタに対するポストアニール効果
M. Taki*, T. Nihongi*, Y. Hattori*, and M. Kitamura*
*Kobe University

We1-29 (2 min + Poster)
Demonstration of GaN Photoconductive Semiconductor Switches Using Mn-doped Semi-insulating GaN Substrates
Mn ドープ半絶縁性 GaN 基板を用いた GaN 光導電型半導体スイッチの実証
C. Li*, K. Iso**, R. Nakane*, and T. Maeda*
*The University of Tokyo, **EEIC/EEIS, Mitsubishi Chemical Corporation

We1-30 (2 min + Poster)
Effect of Growth Temperature of ScAlN on Electrical Properties of ScAlN/AlGaN/AlN/GaN Heterostructures
成長温度が ScAlN ヘテロ構造の電気特性に与える影響
T. Okuda*, Y. Wakamo**, K. Kubota**, T. Kawahara***, K. Makiyama***, K. Nakata***, K. Ikeda*, T. Maeda**, and A. Kobayashi*
*Tokyo University of Science, **The University of Tokyo, ***Sumitomo Electric Industries Ltd

We1-31 (2 min + Poster)
Ferroelectric properties of ScAlN films epitaxially grown on GaN by sputtering
スパッタ法で作製した ScAlN/GaN ヘテロ構造の強誘電性評価
S. Sato*, Y. Wakamoto**, T. Maeda**, H. Funakubo***, K. Ueno****, H. Fujioka****, K. Ikeda*,
and A. Kobayashi*
*Tokyo University of Science, **The University of Tokyo, ***Institute of Science Tokyo, ****Institute of Industrial Science, The University of Tokyo

We1-32 (2 min + Poster)
X-ray Spectroscopic Measurements of Surface Oxidation of ScAlN Thin Films Grown by Sputtering on GaN
X 線分光測定による GaN 上スパッタ成長 ScAlN の表面酸化状態評価
H. Sasaki*, A. Munakata*, M. Kobayashi*, R. Yamamoto**, S. Sato**, A. Kobayashi**, T. Maeda*
*The University of Tokyo, **Tokyo University of Science

We1-33 (2 min + Poster)
Carrier Trapping Effect in Sputtered ScAlN Thin Films Grown on GaN/Sapphire Substrates
GaN/サファイア基板上にスパッタ成長した ScAlN 薄膜におけるキャリアトラッピング効果
K. Joya*, S. Sato**, A. Kobayashi** and T. Maeda*
*Dept. of Electrical Engineering and Information Communication, The University of Tokyo,
**Dept. of Materials Science and Technology, Tokyo University of Science

We1-34 (2 min + Poster)
Comparative Study on 2DEG Transport in ScAlN/GaN-based Heterostructures Grown by Sputtering and Plasma-Assisted Molecular Beam Epitaxy
スパッタ法および PA-MBE 成長 ScAlN/GaN ヘテロ構造の 2DEG 輸送特性比較
K. Kubota*, Y. Wakamoto*, T. Kawahara**, S. Yoshida**, K. Makiyama**, K. Nakata**, A. Kobayashi***,
R. Nakane*, and T. Maeda*
*The University of Tokyo, **Sumitomo Electric Industries, Ltd., ***Tokyo University of Science

We1-35 (2 min + Poster)
Impact of Structural Design on RF Oscillation Properties in Spin Hall Nano Oscillators
スピンホールナノオッシレータの RF 発振特性の素子構造依存性
H. Iida[1,2], V. Zoysa[1], Y. Yoshida[1,2], A. Sud[1,3], A. Lagarrigue[1], T. Dohi[1], A. Kumar[1,4,7], A. Awad[1,4,7], S. Kanai[1,2,5-9],
J. Akerman[1,4,7], S. Fukami[1,2,7,8,10,11], and H. Ohno[1,7,8,10]
1. Laboratory for Nanoelectronics and Spintronics, RIEC, Tohoku University, 2. Department of Electronic Engineering, Graduate School of Engineering, Tohoku University, 3. Frontier Research Institute for Interdisciplinary Sciences, Tohoku University, 4. Physics Department, University of Gothenburg, 5. JST-PRESTO, 6. DEFS, Tohoku University, 7. Center for Science and Innovation in Spintronics, Tohoku University, 8. Advanced Institute for Materials Research (WPI-AIMR), Tohoku University, 9. National Institutes for Quantum Science and Technology (QST), 10. Center for Innovative Integrated Electronic Systems, Tohoku University, 11. Inamori Research Institute for Science

We1-36 (2 min + Poster)
Temperature dependence of current-induced switching in non-collinear antiferromagnetic Mn_3Sn epitaxial films
ノンコリニア反強磁性 Mn_3Sn エピタキシャル膜における電流誘起スイッチングの温度依存性
K. Nihei, T. Uchimura, J. Han, S. Kanai, H. Ohno, and S. Fukami
Tohoku University

We1-37 (2 min + Poster)
Current-Induced Torque in Cr-Pt/CoFeB/MgO Heterostructures
Cr-Pt/CoFeB/MgO ヘテロ構造における電流誘起トルク
K. Masumoto*, **, Y. Marui*, R. Yamamoto*, **, S. Chiba*, **, H. Ohno*, ***, ****, *****
and S. Fukami*, **, ***, ****, *****, ******
*Laboratory for Nanoelectronics and Spintronics, RIEC, Tohoku Univ. **Department of Electronic Engineering, Graduate School of Engineering, Tohoku Univ. ***WPI-AIMR, Tohoku Univ. ****CSIS, Tohoku Univ. *****CIES, Tohoku Univ. ******Inamori Research Institute for Science

We1-38 (2 min + Poster)
Spin-Dependent Circularly Polarized Emission from Ce^{3+} center in YAG for High-Sensitivity Magnetometry
YAG 中 Ce^{3+}中心のスピン依存偏光特性を用いた高感度磁場測定
Y. Maeda1,2, M. Kawahara1,2, K. Takano1,2, S. Fukami1-6, H. Ohno1,3-5, and S. Kanai1-4,7-9
1 Laboratory of Nanoelectronics and Spintronics, RIEC, Tohoku Univ., 2 Department of Electronic Engineering, Tohoku Univ., 3 Center for Science and Innovation in Spintronics, Tohoku Univ., 4 WPI-Advanced Institute for Materials Research, Tohoku Univ., 5 Center for Innovative Integrated Electronic System, Tohoku Univ., 6 Inamori Research Institute for Science, 7National Institute for Quantum Science and Technology, 8 DEFS, Tohoku Univ., 9 PRESTO, Japan Science and Technology Agency

We1-39 (2 min + Poster)
Optical detection of Ce^{3+} in YAG within a nanowindow
ナノウィンドウ内の YAG 結晶中の Ce^{3+}の光学的検出
S. Abe1,2, K. Takano1,2, Y. Maeda1,2, M. Kawahara1,2, J. Ishihara2, M. Kohda2-5, H. Ohno1,2,6,7,
S. Fukami1,2,4,5,7-9, and S. Kanai1-5,8,10
1Laboratory for Nanoelectronics and Spintronics, Research Institute of Electrical Communication, Tohoku University, 2Department of Electronic Engineering, Tohoku University, 3Division for the Establishment of Frontier Sciences of Organization for Advanced Studies at Tohoku University, 4Center for Science and Innovation in Spintronics, Tohoku University, 5National Institute for Quantum Science and Technology, 6 Advanced Institute for Materials Research, Tohoku University,7Center for Innovative Integrated Electronic System, Tohoku University, 8WPI-Advanced Institute for Materials Research, Tohoku University, 9Inamori Research Institute for Science,10PRESTO, Japan Science and Technology Agency

We1-40 (2 min + Poster)
Magnetic field-free ferromagnetic resonance in magnetic tunnel junction for wireless signal energy harvesting
無線信号環境発電に向けた磁気トンネル接合による無磁場強磁性共鳴
H. Chiku, K. Kino, T. Dohi, S. Kanai, H. Ohno, and S. Fukami
Tohoku University

We1-41 (2 min + Poster)
Electrical detection of spin accumulation signals in n-GaAs(011) using Schottky tunnel contacts
ショットキートンネルコンタクトを用いた n-GaAs(011)におけるスピン蓄積信号の電気的検出
K. Okeya1, S. Obinata1,2, T. Usami2,3, K. Tomioka4, and K. Hamaya1,2,3
1GSES, The University of Osaka, 2CSRN, The University of Osaka, 3OTRI, The University of Osaka, 4RCIQE, Hokkaido Univ.

We1-42 (2 min + Poster)
Effect of RKKY interaction on relaxation time in stochastic magnetic tunnel junctions with synthetic antiferromagnetic free layers
確率論的コンピュータ向け積層フェリ自由層超常磁性体磁気トンネル接合における RKKY 相互作用が与える緩和時間への影響
M. Ohtani1,2, T. Kinoshita1,2, H. Kaneko1,2, N. Cacoilo1, S. Kanai1,2,3,4,5,6,7, H. Ohno1,3,4,8,
and S. Fukami1,2,3,4,8,9
1Lab. for Nanoelectronics and Spintronics, RIEC, Tohoku Univ., 2Department of Electronic Engineering, Tohoku Univ., 3WPI-AIMR, Tohoku Univ., 4CSIS, Tohoku Univ., 5PRESTO, Japan Science and Technology Agency (JST), 6DEFS, Tohoku Univ., 7National Institutes for QST, 8CIES, Tohoku Univ., 9Inamori Research Institute for Science

We1-43 (2 min + Poster)
RF-Tunable Multilevel Resistance Modulation in a Monoclinic Ag_2Te-Based Device for Neuromorphic Applications
ニューロモルフィック応用に向けた単斜晶 Ag_2Te 素子の RF 波による多段抵抗変調
J. Yamasawa, Y. Tsuchihashi and T. Nakaoka
Sophia University

We1-44 (2 min + Poster)
Photon emission in the telecom band from ytterbium-doped optical fibers
Yb 添加光ファイバーからの通信帯域における光子放出
M. Takeda*, K. Kageyama*, S. Katabami*, R. Tsunoda*, H. Gotoh**, and T. Tawara*
*Nihon University, **Hiroshima University

We1-45 (2 min + Poster)
Fabrication and Evaluation of BGaN Neutron Detectors Grown Under Low V/III Ratio Conditions
低 V/III 比成長条件で作製した BGaN 中性子検出器の評価
R. Kudo*, E. Kokubo**, K. Takagi*, G. Wakabayashi***, Y. Honda**, H. Amano**,
Y. Inoue*, T. Aoki* and T. Nakano*
*Shizuoka University, **Nagoya University, ***Kindai University

We1-46 (2 min + Poster)
A demonstration of homogenous dielectrophoretic assembly of fluorescent nanodiamond particles with fine floating-potential electrodes
微小浮遊電位電極を用いた蛍光ナノダイヤモンドの均質誘電泳動集積
M. Inaba
Kyushu University

Break (15:20-15:35)

Poster Session I (16:30-17:45)

Free Time / Dinner (17:45-19:30)

Rump Session (19:30-21:00)

"The Future of Electronic Materials Research Pioneered by AI"
セッションテーマ：「AI が拓く電子材料研究の将来」

Organizers: H. Murakami (Tokyo University of Agriculture and Technology)
T. Araki (Ritsumeikan University)
Panelists: S. Tomiya (Nara Institute of Science and Technology)
A. Kobayashi (Tokyo University of Science)
Y. Honda (Nagoya University)
TBA

【October 16th, Thursday】

Session Th1 (10/16 Thu. 9:00 - 11:00)

Chair: R. Katayama (The University of Osaka)

Th1-1[Invited] (30 min)
Ferroelectricity in nitride semiconductors and its device application via sputter epitaxy
強誘電性窒化物半導体の材料開拓とデバイス応用
A. Kobayashi* and T. Maeda**
* Department of Materials Science and Technology, Tokyo University of Science, **Department of Electrical Engineering and Information Systems, The University of Tokyo

Th1-2 (2 min + Poster)
Nanochannel epitaxy of GaAs on Si (001) substrate using nano-patterned, dry-transferred graphene mask
ドライ転写グラフェンマスクを用いた Si 基板上 GaAs ナノチャネルエピタキシー
A. Ohsumi*, W. Ohta*, T. Maruyama**, and S. Naritsuka*
*Dept. of Materials Science, Meijo Univerisity, **Dept. of Applied Chemistry, Meijo University

Th1-3 (2 min + Poster)
Growth and surface roughness evaluation of AlGaAs/GaAs with AlAs sacrificial layer for epitaxial lift-off membranes
エピタキシャルリフトオフ膜用の AlAs 犠牲層を有する AlGaAs/GaAs の成長および表面粗さ評価
S. Fuchikami*, H. Hashimoto*, S. Wajima*, D. Sato**,***, A. Koizumi**, T. Nishitani**,***, and F. Ishikawa*
*Research Center for Integrated Quantum Electronics, Hokkaido University, **Photoelectron Soul Inc., ***Institute of Materials and Systems for Sustainability, Nagoya University

Th1-4 (2 min + Poster)
MBE growth of GaSb nanowires on GaAs(001) using HSQ mask
HSQ マスクを用いた GaAs(001)基板上への GaSb ナノワイヤの MBE 成長
S. Komatsu and M. Akabori
Japan Advanced Institute of Science and Technology

Th1-5 (2 min + Poster)
Molecular Beam Epitaxial Growth of Nitrogen delta-doped GaAs Nanowires and Dependence of its Characteristics on Amounts of delta-doped Nitrogen
窒素デルタドープ GaAs ナノワイヤーの分子線エピタキシャル成長とその特性のデルタドープ窒素量依存性
M. Sano, K. Minehisa, H. Hashimoto and F. Ishikawa
Research Center for Integrated Quantum Electronics, Hokkaido University

Th1-6 (2 min + Poster)
Growth and characterization of $InSb_{1-x}N_x$ thin films by MBE
MBE 法による $InSb_{1-x}N_x$ 薄膜の成長と特性評価
Y. Shirakawa, K. Taramae, H. Yaguchi and S. Fujikawa
Saitama University

Th1-7 (2 min + Poster)
Raman scattering characterization of $InSb_{1-x}N_x$ thin films grown by sputtering
スパッタ法で作製した $InSb_{1-x}N_x$ 薄膜のラマン散乱特性評価
K. Taramae, H. Yaguchi and S. Fujikawa
Saitama University

Th1-8 (2 min + Poster)
Growth of $Al_xIn_{1-x}Sb$ thin films by magnetron sputtering
マグネトロンスパッタ法による $Al_xIn_{1-x}Sb$ 薄膜成長
Y. Ariji, H. Yaguchi, and S. Fujikawa
Saitama University

Th1-9 (2 min + Poster)
Photoluminescence Study of GaPN Alloys Grown Using Sb as a Surfactant
Sb をサーファクタントとして用いて成長させた GaPN 混晶のフォトルミネッセンス研究
H. Saida*, K. Yagi*, S. Yagi*, H. Yaguchi*, Y. Kyuno**, and K. Yamane**
*Saitama University, **Toyohashi University of Technology

Th1-10 (2 min + Poster)
Origin of doners in CBE grown InGaAsN
CBE 成膜 InGaAsN におけるドナーの起源
R. Honda, H. Tamashiro, N. Kojima, and Y. Ohshita
Toyota Technological Institute

Th1-11 (2 min + Poster)
Surface Stoichiometry Control in GaN Pulsed Sputtering Epitaxy Using Sintered Target
焼結体ターゲットを用いた GaN 薄膜のパルススパッタ成長における表面ストイキオメトリ制御
K. Nomura*,**, K. Bando***, Y. Ueoka***, Y. Kususe***, M. Mesuda***, M. Uemukai*,**, T. Tanikawa*,**
and R. Katayama*,**
*Grad. Sch. of Eng. and **OTRI-Spin, The University of Osaka, ***Tosoh Corporation

Th1-12 (2 min + Poster)
Growth of GaN nanowires on -c -plane GaN by RF-molecular-beam-epitaxy
-c 面 GaN への RF-MBE 法による GaN ナノワイヤの選択成長
K.Hikosaka, M.Sekiguchi, and J.Motohisa
Hokkaido University

Th1-13 (2 min + Poster)
Epitaxial lateral overgrowth of N-polar GaN by using Cl_2-based HVPE
Cl_2 系 HVPE 法を用いた N 極性 GaN の選択横方向成長
H. Ishida*, K. Shiroma*, Q. Ping*, A. Hiyama Zazuli**, N. Okada**, and H. Murakami*
*Tokyo University of Agriculture and Technology, **Yamaguchi University

Th1-14 (2 min + Poster)
Promotion of Coalescence of GaN Crystals Grown by Vertical Agitation in Na-Flux Method
Na フラックス法における上下攪拌による GaN 結晶の結合成長促進
S. Aso, M. Imanishi, K. Murakami, S. Washida, S. Usami, M. Maruyama, M. Yoshimura, and Y. Mori
The University of Osaka

Th1-15 (2 min + Poster)
Inclusion Suppression in GaN Crystals Grown by the Na-Flux Method via Rotational Stirring
自転撹拌を用いた Na フラックス GaN 結晶のインクルージョン抑制
Y. Tanaka*, M. Imanishi*, S. Washida*, K. Murakami*, S. Usami*, M. Maruyama*, M. Yoshimura*, and Y. Mori*
*Graduate School of Engineering, Osaka University

Th1-16 (2 min + Poster)
Etch Pit Size Analysis of GaN Crystals Grown by Facet Growth in the Na-flux Method
Na フラックス法におけるファセット成長後結晶のエッチピットサイズ解析
S. Washida*, M. Imanishi*, R. Sasaki*, K. Murakami*, S. Usami*, M. Maruyama*, M. Yoshimura*,**, and Y. Mori*
* Grad. Sch. of Eng., the Univ. of Osaka, ** ILE, the Univ. of Osaka

Break (10:00-10:10)

Th1-17 (2 min + Poster)
Surface Planarization of {20-21} GaN Crystals by Barium Addition in Na-Flux Method
Na フラックス法における Ba 添加による{20-21} 面 GaN 結晶の表面平坦化
T. Miyamoto*, M. Imanishi*, S. Washida*, K. Murakami*, S. Usami*, M. Maruyama*, M. Yoshimura**, and Y. Mori*
*Graduate School of Engineering, Osaka University, **Institute of Laser Engineering, Osaka University

Th1-18 (2 min + Poster)
Thermodynamic and experimental studies of OVPE-GaN growth under high to low V/III ratio
OVPE-GaN 成長における高V/III比から低V/III比にかけた熱力学解析および実験の比較
T. Nakazono*, S. Usami*, M. Imanishi*, T. Sumi**, J. Takino**, Y. Okayama**,
M. Maruyama*,
M. Yoshimura***, M. Hata****, M. Isemura*****, and Y. Mori*
*Grad. School of Eng., Osaka University, **Panasonic Holdings Corporation, ***ILE Osaka University, ****Itochu Plastics Incorporated, *****Sosho-Ohshin Incorporated

Th1-19 (2 min + Poster)
Facet-Controlled Growth toward Large-Pit-Free GaN Substrates Using the OVPE Method
OVPE 法を用いた大ピットフリーGaN 基板に向けたファセット制御成長
N. Fujimoto*, S. Usami*, M. Imanishi*, M. Maruyama*, M. Yoshimura*,**, T. Sumi***, J. Takino***,
Y. Okayama***, M. Hata****, M. Isemura*****, and Y. Mori*
*Graduate School of Eng, The University of Osaka, **Institute of Laser Engineering The University of Osaka, ***Panasonic Holdings, ****Itochu Plastics Incorporated, *****Sosho-Oshin Incorporated

Th1-20 (2 min + Poster)
Investigation of GaN diameter maintenance conditions by OVPE method
OVPE 法による GaN の口径維持領域の調査
J. Terashima*, S. Usami*, M. Imanishi*, M. Maruyama*, M. Yoshimura*,**, T. Sumi***, J. Takino***,
Y. Okayama***, M. Hata****, M. Isemura*****, and Y. Mori*
*Graduate School of Eng, The University of Osaka, **Institute of Laser Engineering, The University of Osaka, ***Panasonic Holdings, ****Itochu Plastics Incorporated, *****Sosho-Oshin Incorporated

Th1-21 (2 min + Poster)
Study of Al/AlN layer formation during low-temperature AlN growth by RF-MBE under Al-rich conditions
RF-MBE 法を用いた低温 AlN 成長における Al リッチ成長条件下での Al/AlN 積層構造形成
R. Tanaka*, S. Kawabata*, T. Nakamoto**, T. Fujii***, and T. Araki*
*Col. of Sci. & Eng., **Ritsumeikan Global Innovation Research Organization (R-GIRO),
***Ritsumeikan Organization of Science and Technology (ROST)

Th1-22 (2 min + Poster)
Microstructural Characterization of RF-MBE Low-Temperature-Grown AlN Films Using Transmission Electron Microscopy
透過電子顕微鏡を用いた RF-MBE 低温成長 AlN の極微構造評価
S. Kawabata*, R. Tanaka*, T. Nakamoto**, T. Fujii*** and T. Araki*
*College of Science and Engineering, **R-GIRO, ***ROST Ritsumeikan University

Th1-23 (2 min + Poster)
Epitaxial growth of AlN thin films on Si wafers utilizing facet-independent buffer layer technologies
バッファ層技術を用いた Si ウェハー上への AlN 薄膜のエピタキシャル成長
A. N. Hattori, O. Nakagawara, and K. Ogata
I-PEX Piezo Solutions Inc.

Th1-24 (2 min + Poster)
Impact of Electrode Annealing Temperature on Ohmic Contact Formation and Performance of AlGaN-Based UV-B Laser Diodes
AlGaN 系 UV-B レーザーダイオードにおける電極アニール温度がオーミックコンタクト形成および性能に与える影響
R. Watanabe*, T. Saito*, S. Maruyama*, R. Miyake*, S. Karino*, Y. Sasaki*, N. Kitta*, S. Kato*, Y. Miyamoto*,
S. Kamiya*, S. Iwayama*, Y. Koide*, H. Miyake**, T. Takeuchi*, S. Kamiyama*, and M. Iwaya*
*Meijo University, **Mie University

Th1-25 (2 min + Poster)
Realization of High Carrier Injection Efficiency in AlGaN-based UV-B Laser Diodes
AlGaN 系 UV-B レーザーダイオードにおける高キャリア注入効率の実現
T. Saito*, R. Miyake*, S. Maruyama*, Y. Sasaki*, S. Karino*, S. Kato*, N. Kitta*, R. Watanabe*, Y. Miyamoto*,
S. Iwayama*, H. Miyake**, S. Kamiyama*, T. Takeuchi*, and M. Iwaya*
*Meijo University, **Mie University

Th1-26 (2 min + Poster)
Optical gain spectroscopy of red-light-emitting InGaN LED epitaxial layers
赤色発光 InGaN 系 LED エピ膜における光学利得スペクトル測定
I. Shimbo*, A. A. Yamaguchi*, D. Iida**, and K. Ohkawa**
*Kanazawa Institute of Technology, **King Abdullah University of Science and Technology

Th1-27 (2 min + Poster)
Study on Mechanical Exfoliation Process for Transfer of Semipolar (1-101) InGaN Micro-LEDs on Si
Si 基板上の半極性(1-101)InGaN マイクロ LED の転写に向けた機械的剥離プロセスの検討
Y. Sano*,**, K. Uchihara*,**, M. Uemukai*,**, T. Tanikawa*,** and R. Katayama*,**
*Grad. Sch. of Eng., **OTRI-Spin, The University of Osaka

Th1-28 (2 min + Poster)
Fabrication Process Improvement for Inverted Transfer of Step-less MicroLED Arrays
反転転写を用いた LED フィルムの作製プロセスの開発
R. Kurogi*, K. Matsui**, A. Loesing***, A. Nishikawa***, and H. Sekiguchi*
*Meijo University, **Toyohashi University of Technology, ***ALLOS Semiconductor GmbH

Th1-29 (2 min + Poster)
Design of Temperature-Controlled MicroLED Film Device for Brain Optogenetics
光遺伝学用マイクロ LED フィルムデバイスの温度制御設計
W. Oda*, R. Kanda*, K. Matsui*, A. Nishikawa**, A. Loesing**, and H. Sekiguchi***
*Toyohashi University of Technology, **ALLOS Semiconductors GmbH, ***Meijo University

Th1-30 (2 min + Poster)
Highly Efficient Green Emission from InGaN/GaN Quantum Wells by Depositing Ag Films and Laser Irradiation
銀被膜とレーザー照射による InGaN/GaN 量子井戸からの高校率緑色発光
N. Ueda*, S. Ito*, T. Matsuyama*, S. Murai*, K. Wada**, M. Funato***, and K. Okamoto*
*Osaka Metropolitan University, **OMU-ESCARI, ***Kyoto University

Th1-31 (2 min + Poster)
Far Ultraviolet Second Harmonic Generation in Four-Layer Polarity Inverted AlN Channel Waveguide
4 層極性反転 AlN チャネル導波路における遠紫外第二高調波発生
E. Sato*,**, H. Honda*,**, T. Tamano***, K. Shojiki****, H. Miyake***, M. Uemukai*,**, T. Tanikawa*,**,
and R. Katayama*,**
*Graduate School of Engineering The University of Osaka, **OTRI-Spin The University of Osaka, ***Graduate School of Engineering Mie University, ****Graduate School of Engineering Kyoto University

Th1-32 (2 min + Poster)
Design of Linear/Nonlinear Quasi Phase Matched Photon-pair Generation Device Using InGaN Laser Epitaxial Wafer
InGaN レーザエピタキシャルウエハを用いた線形/非線形擬似位相整合光子対発生デバイスの設計
T. Wada*,**, H. Ogawa*,**, M. Uemukai*,**, T. Tanikawa*,**, and R. Katayama*,**
*Grad. Sch. of Eng. and **OTRI-Spin, The University of Osaka

Th1-33 (2 min + Poster)
Characterization of Ga-polar/N-polar GaN Polarity Inversion Interface Grown by Metalorganic Vapor Phase Epitaxy
有機金属気相成長法で成長させた Ga 極性/N 極性 GaN 極性反転界面の特性評価
K. Ueda*,**, S. Ichikawa***, J. Yamasaki***, K. Ikeda*,****, M. Uemukai*,**, T. Tanikawa*,**,
and R. Katayama*,**
*Graduate school of Engineering, **OTRI-Spin, and ***Research Center of Ultra-High Voltage Electron Microscopy, The University of Osaka, ****Tokyo University of Science

Th1-34 (2 min + Poster)
Design of Triple-Layer GaN Polarity Inverted Structure for Transverse Quasi Phase Matched Optical Parametric Down-Conversion
横型擬似位相整合による光パラメトリック下方変換用 3 層 GaN 極性反転構造の設計
K. Taniguchi and K. Ueda, M. Uemukai, T. Tanikawa, and R. Katayama
The University of Osaka

Th1-35 (2 min + Poster)
Reducing Wavelength Dependence of Input Coupling Efficiency via Tapered Waveguide into GC-Integrated GaN Channel Waveguide Device
GC 集積 GaN チャネル導波路デバイスへのテーパ導波路による入射光結合効率の波長依存性低減
M. Takenaka*,**, G. Aoki*,**, M. Uemukai*,**, T. Tanikawa*,**, and R. Katayama*,**
*Grad.Sch. of Eng. and **OTRI-Spin, The University of Osaka

Th1-36 (2 min + Poster)
High-Order Guided Mode Excitation Grating Coupler in a Single-Layer GaN Waveguide
GaN 単層導波路における高次モード励振グレーティング結合器
G. Aoki*,**, M. Takenaka*,**, R. Momosaki*,**, M. Uemukai*,**, T. Tanikawa*,**,
and R. Katayama*,**
*Graduate School of Engineering, **OTRI-Spin, University of Osaka, Osaka

Th1-37 (2 min + Poster)
Coupling characteristics of a grating coupler optimized by gradient method in rare-earth strip-loaded waveguides
勾配法を用いた希土類ストリップ装荷型導波路におけるグレーティングカプラの最適化
Y. Sakurada*, R. Fujimaki*, X. Xu**, T. Inaba**, and T. Tawara*
*Graduate School of Engineering, Nihon University **NTT Basic Research Laboratories

Th1-38 (2 min + Poster)
Fabrication of α-Ga_2O_3 Optical Waveguides using Facet Formation of Selective Area Growth
選択成長によるファセット面形成を用いた α-Ga_2O_3 光導波路の製作
K. Toyoshima*, R. Jinno*, N. Pholsen** and S. Iwamoto*,**
*RCAST, The University of Tokyo, **IIS, The University of Tokyo

Th1-39 (2 min + Poster)
Design of a Vertical Electric Field Driven Mach-Zehnder Interferometers Using Z-cut Thin Film $LiNbO_3$ Waveguide
z カットニオブ酸リチウムを用いた垂直電界印加型マッハツェンダ干渉計の設計
K. Komatsu*,**, T. Einaga*,**, S. Katsuki*,**, M. Uemukai*,**, T. Tanikawa*,**, and R. Katayama*,**
*Grad. Sch. of Eng. and **OTRI-Spin, The University of Osaka

Th1-40 (2 min + Poster)
Rib Waveguide Formation Process Using Neutral Loop Discharge Reactive Ion Etching for Thin Film $LiNbO_3$ Mach-Zehnder Interferometer
薄膜ニオブ酸リチウムマッハツェンダ干渉計に向けた磁気中性線放電反応性イオンエッチングによるリブ型導波路形成プロセス
T. Einaga*,**, K. Komatsu*,**, S. Katsuki*,**, M. Uemukai*,**, T. Tanikawa*,**, and R. Katayama*,**
*Grad. School of Eng. and **OTRI-Spin, The University of Osaka

Th1-41 (2 min + Poster)
SiN_x Stressor for Extended Ge Photodetectors on Si
SiN_x 応力膜を用いた Si 上 Ge フォトダイオードの動作波長域拡大
Y. Yoshino, J. A. Piedra-Lorenzana, K. Oya, Y. Noda, D. Akai, T. Hizawa, and Y. Ishikawa
Toyohashi University of Technology

Break (11:00-11:15)

Poster Session II (11:15-12:30)

Industrial Session / Lunch (12:30-13:50)

Invited Session (10/16 Thu. 13:50 - 15:20)

Chair: M. Iwaya (Meijo University)

Th2-1[Invited] (30 min)
Crystal Growth Technologies for GaN Power Devices
パワーデバイス用 GaN 結晶成長のコツ
Y. Honda*, H. Watanabe*, S. Nitta*, S. Usami**, S. Kawasaki**, K. Hamasaki**, K. Onishi**, M. Kushimoto**, T. Kumabe**, A. Tanaka*, and H. Amano*
*Institute of Materials and Systems for Sustainability (IMaSS), **Department of Electronics, Graduate School of Engineering, Nagoya University

Th2-2[Invited] (30 min)
Giga Watt Tiny Integrated Lasers
ギガワット小型集積レーザー展望
T. Taira*,**
*RIKEN(The Institute of Physical and Chemical Research), ** National Institutes of Natural Sciences

Chair: T. Fuyuki (Sumitomo Electric)

Th2-3[Invited] (30 min)
Machine Learning Technology in SiC Solution Growth Method
T. Ujihara
Nagoya University

Break (15:20-15:35)

Free Discussion (15:35-17:45)

Break (17:45-18:00)

Banquet (18:00-20:00)

【October 17th, Friday】

Session Fr1 (10/17 Fri. 9:00 - 11:00)

Chair: J. Nishinaga (AIST)

Fr1-1[Invited] (30 min)
Research and Development of Space Solar Cells Based on the Japanese Space Technology Strategy
宇宙技術戦略に基づく宇宙用太陽電池の研究開発
T. Nakamura
Japan Aerospace Exploration Agency

Fr1-2 (2 min + Poster)
High speed growth of β-Ga_2O_3 by HVPE via Addition of HCl
HCl 添加 HVPE 法による β-Ga_2O_3 の高速成長
Y. Hamaoka*, R. Serizawa*, K. Sasaki** and H. Murakami*
*Tokyo University of Agriculture and Technology, **Novel Crystal Technology

Fr1-3 (2 min + Poster)
Reduction of Si impurities in β-Ga_2O_3 homoepitaxial thin films grown by mist-CVD method
ミスト CVD 法により成長した β-Ga_2O_3 ホモエピタキシャル薄膜中の Si 不純物の低減
Y. Isobe*, Y. Yamamoto**, T. Wakamatsu*, K. Kaneko***, S. Fujita**** and K. Tanaka*
*Graduate School of Engineering, Kyoto University, **OXIDE Corporation, ***Ritsumeikan University, ****Institutional Advancement and Communications, Kyoto University

Fr1-4 (2 min + Poster)
Microstructural Characterization of β-Ga_2O_3 on Off-Axis $ScAlMgO_4$ Substrate Using TEM
TEM による $ScAlMgO_4$ オフ基板上 β-Ga_2O_3 の極微構造評価
T. Kusayama*, S. Kato*, T. Nakamoto**, K. Kaneko***, M. Matsukura****, T. Kojima****, and T. Araki*
*Ritsumeikan Univ., **R-GIRO, ***ROST, ****OXIDE Co.

Fr1-5 (2 min + Poster)
Controlling Conductivity of β-Ga_2O_3 thin films by F doping via Mist CVD
ミスト CVD 法による F ドープ β-Ga_2O_3 薄膜の導電性制御
I. Seike*, H. Miyake*,** and H. Nishinaka*
*Kyoto Institute of Technology, **MIRISE Technologies Corporation

Fr1-6 (2 min + Poster)
Electrical Properties of Si-Doped Ga_2O_3 Formed by Hot Implantation
加熱注入による高濃度 Si ドープ n-Ga_2O_3 の電気的特性
K. Yagi*, D. Matsuo**, S. Konno**, K. Usui**, Y. Andoh***, K. Tanaka**, and M. Higashiwaki*,****
*Osaka Metropolitan University, **Nissin Ion Equipment Co., Ltd.,***Nissin Electric Co., Ltd.,
****National Institute of Information and Communications Technology

Fr1-7 (2 min + Poster)
Growth of N-doped β-Ga_2O_3 thin films by rf plasma-assisted ALD
rf プラズマ支援 ALD による N ドープ β -Ga_2O_3薄膜の成長
S. Ata, K. Furukawa, T. Yoshimura and N. Fujimura
Osaka Metropolitan University

Fr1-8 (2 min + Poster)
Structural Characterization of Nitrogen-Doped Ga_2O_3 Thin Films Grown by Plasma-Assisted Molecular Beam Epitaxy
プラズマ援用分子線エピタキシー成長した窒素ドープ Ga_2O_3 の構造特性評価
T. Uehara*, S. Honda*, J. Inajima*, K. Tsujimoto*, Y. Teramura* and M. Higashiwaki*,**
*Department of Physics and Electronics, Osaka Metropolitan University, **National Institute of Information and Communications Technology

Fr1-9 (2 min + Poster)
Analysis of β-Ga_2O_3 Surface Structures Using First-Principles Calculations
第一原理計算を用いた β-Ga_2O_3 の表面構造解析
K. Oshima, T. kawamura, and T. Akiyama
Mie University

Fr1-10 (2 min + Poster)
Analysis of electronic structure of Hf-based ferroelectric/Ga_2O_3 interface
Hf 系強誘電体/酸化ガリウム界面電子状態の解析
K. Furukawa, S. Ata, T. Yoshimura, and N. Fujimura
Osaka Metropolitan University

Fr1-11 (2 min + Poster)
Electrical Properties of Nitrogen-Doped Ga_2O_3 Schottky Barrier Diodes Fabricated Using Reactive Ion Etching
反応性イオンエッチングを用いて作製した窒素ドープ Ga_2O_3 ショットキーバリアダイオードの電気的特性
A. Mineyama* and M. Higashiwaki*,**
*Osaka Metropolitan University, **National Institute of Information and Communications Technology

Fr1-12 (2 min + Poster)
Epitaxial growth of Ga_2O_3 on the Cr_2O_3 templates by HVPE
HVPE 法による Cr_2O_3 テンプレート上への Ga_2O_3 成長
K. Takeda*, Y. Morishita*, S. Xiao**, K. Murakami**, M. Watanabe**, T. Tomita** and R. Miyagawa*,***
*Nagoya Institute of Technology, **NGK INSULATORS, LTD., ***National Institute for Fusion Science

Fr1-13 (2 min + Poster)
Critical thickness of $(Al,Ga)_2O_3$ thin films on c-plane sapphire substrates prepared by mist chemical vapor deposition
ミスト化学気相成長法による c 面サファイア基板上の α-$(Al,Ga)_2O_3$ 薄膜の臨界膜厚
H. Ito*, T. Wakamatsu*, Y. Isobe*, K. Kaneko**, and K. Tanaka*
* Kyoto University, **Ritsumeikan University

Fr1-14 (2 min + Poster)
α-Ga_2O_3 Films Grown on Patterned-Sapphire Substrates by Mist Chemical Vaper Deposition
微細加工を施したサファイア基板上における mist-CVD 法を用いた α-Ga_2O_3 の成長
K. Etokoro*, T. Wakamatsu*, K. Kaneko** and K. Tanaka*
*Kyoto University, **Ritsumeikan University

Fr1-15 (2 min + Poster)
Thermal stability of δ-Ga_2O_3 thin films grown on YSZ substrates by mist CVD
ミスト CVD 法による YSZ 基板上への δ-Ga_2O_3 薄膜成長と熱的安定性
A. Saito, K. Shimazoe, and H. Nishinaka
Kyoto Institute of Technology

Fr1-16 (2 min + Poster)
O_2 Annealing for In_2O_3 Polycrystalline Films Deposited by Mist CVD
Mist CVD 法を用いた In_2O_3 多結晶膜に対する O_2 アニールの影響
R. Ishikawa, S. Aikawa, T. Onuma, T. Honda, and T. Yamaguchi
Kogakuin University

Break (10:00-10:10)

Fr1-17 (2 min + Poster)
Transmittance of Ce-doped indium oxide film deposited by sputtering
スパッタリング法で製膜したセリウム添加インジウム酸化物の透過率
M. Okada*, B. Palanisamy*, T. Ando*, L. Hyunju** and Y. Oshita*
*Toyota Technological Institute, **Meiji University

Fr1-18 (2 min + Poster)
Growth of rutile GeO_2 by Oxide Vapor Phase Epitaxy method
酸化物気相成長法によるルチル型 GeO_2 の成長
H. Nakano, E. Kishimoto, S. Usami, M. Imanishi and Y. Mori
The University of Osaka

Fr1-19 (2 min + Poster)
Thermodynamic analysis of rutile GeO_2 growth via Oxide Vapor Phase Epitaxy method
OVPE 法による r-GeO_2 成長の熱力学解析
S. Usami, M. Imanishi and Y. Mori
The University of Osaka

Fr1-20 (2 min + Poster)
The impact of dilution gas rates and solvent types on the growth of aluminum oxide films using mist-CVD method
ミスト CVD 法による酸化アルミニウム膜の成長における希釈ガス流量と溶媒の種類の影響
Y. Yona *,** , I. Takahashi **, T. Matsuda * and K. Kaneko ** ,***
* Kindai University, * * ROST, Ritsumeikan University, * * * RISA, Ritsumeikan University

Fr1-21 (2 min + Poster)
Mist CVD Growth of Epitaxial NiO on MgO: Temperature Effects on Strain and Orientation
MgO 基板上へのエピタキシャル NiO の Mist CVD 成長：成長温度が歪みと配向性に与える影響
Y. Ueno, T. Ikenoue, and M. Miyake
Kyoto University

Fr1-22 (2 min + Poster)
Growth of $LiGa_5O_8$ thin films on $MgAl_2O_4$ substrates by mist CVD
ミスト CVD 法による $MgAl_2O_4$基板への $LiGa_5O_8$薄膜の成長
S. Takada and H. Nishinaka
Kyoto Institute of Technology

Fr1-23 (2 min + Poster)
Piezoelectric thin films epitaxially grown on Si(100) and (111) substrates with ZrO_2 buffer layer
ZrO_2 バッファーを用いた Si(100)および Si(111)基板上での圧電薄膜のエピタキシャル成長
O. Nakagawara, A. N. Hattori and K. Ogata
I-PEX Piezo Solutions Inc.

Fr1-24 (2 min + Poster)
High-Temperature Growth of Rocksalt MgZnO Thin Films on Sapphire Substrates with MgO Buffer Layer
MgO バッファ層を用いたサファイア基板上への岩塩構造 MgZnO 薄膜の高温成長
K. Kimura*, S. Kawabata*, K. Shima**, K. Matsuo***, K. Uchida***, A. Oono***, I. Takahashi****, T. Araki*,
S. F. Chichibu**, and K. Kaneko****,*****
*Grad. Sch. of Sci. & Eng. Ritsumeikan University, **IMRAM-Tohoku University, ***IWASAKI ELECTRIC Co., Ltd., ****ROST, *****RISA

Fr1-25 (2 min + Poster)
Effect of growth temperature on Ga/Sn composition ratio in GTO thin films
GTO 薄膜における Ga/Sn 組成比に対する成長温度の影響
S. Toyooka*,**, I. Takahashi**, T. Matsuda* and K. Kaneko**,***
Kindai University, ROST Ritsumeikan University, RISA Ritsumeikan University

Fr1-26 (2 min + Poster)
Effects of implanted ion species on the net acceptor concentration in Mg-doped p-GaN epitaxial layers after ultra-high-pressure annealing
Mg ドープ p 型 GaN エピタキシャル成長層にイオン注入および超高圧アニールを行った時の注入イオン種が実効アクセプタ密度におよぼす影響
H. Itakura*, M. Horita*, **, 2, T. Kachi*, ** and J. Suda*, **
*Nagoya University, **Institute of Materials and Systems for Sustainability (IMaSS), Nagoya University

Fr1-27 (2 min + Poster)
Electrical properties of Heavily Mg-Doped GaN Contact Layers Formed by Ion Implantation and Subsequent Ultra-high-pressure Annealing
イオン注入および超高圧アニールによる高濃度 Mg ドープ GaN コンタクトの電気的特性
D. Yamanaka, M. Horita, T. Kachi, and J. Suda
Department of Electronics, Nagoya University

Fr1-28 (2 min + Poster)
One-dimensional unsteady thermal conduction simulation of pulsed-laser annealing for ion-implanted GaN using a Diamond-Like Carbon film
ダイヤモンドライクカーボン膜を用いたイオン注入 GaN に対する パルスレーザアニールの一次元非定常熱伝導シミュレーション
S. Ono*, A. Sugimoto*, A. Nishigaki*, K. Tomita**, D. Imai* and T. Miyajima*
*Meijo University, **Nagoya University

Fr1-29 (2 min + Poster)
Low-temperature photoluminescence characterization of pulsed-laser annealed Mg-ion implanted GaN
パルスレーザアニールした Mg イオン注入 GaN の低温フォトルミネッセンス評価
A. Sugimoto*, S. Ono*, A. Nishigaki*, K. Tomita**, D. Imai*, and T. Miyajima*
*Meijo University, **Nagoya University

Fr1-30 (2 min + Poster)
Electrical characterization of pulsed-laser annealed Si-ion implanted GaN
パルスレーザアニールした Si イオン注入 GaN の電気特性評価
A. Nishigaki*, H. Hirota*, S. Ono*, A. Sugimoto*, K. Tomita**, A. Uedono***, D. Imai*, and T. Miyajima*
*Meijo University, **Nagoya University, ***Tsukuba University

Fr1-31 (2 min + Poster)
Temperature dependence of carrier diffusion constants in InGaN quantum wells estimated by time-resolved photoluminescence measurements
時間分解発光測定による InGaN 量子井戸におけるキャリア拡散の温度変化測定
O. Ito*, K. Akiyama***, Y. Sakurai***, A. A. Yamaguchi*, M. Fukui**, R. Koda**, and T. Hamaguchi**
*Kanazawa Inst. of Tech., **Sony Semiconductor Solutions Corp. ***Kyushu Univ.

Fr1-32 (2 min + Poster)
Temperature and wavelength dependence of photoluminescence lifetime in InGaN quantum wells with different alloy composition
In 組成の異なる InGaN 量子井戸におけるフォトルミネセンス寿命の温度および波長依存性
R. Yamagata*, S. Hatanaka*, S. Yamagishi* I. Shimbo*, AA. Yamaguchi*, K. Iwamitsu**,
and S. Tomiya**
*Kanazawa Institute of Technology, **Nara Institute of Science and Technology

Fr1-33 (2 min + Poster)
Studies on Functional Forms of Photoluminescence Decay Curves in InGaN Quantum Wells
InGaN 量子井戸における PL 減衰曲線の関数形の検討
A. Suzaki*, R. Yamagata*, I. Shimbo*, AA. Yamaguchi*, D. Iida** and K. Ohkawa**
*Kanazawa Institute of Technology, **King Abdullah University of Science and Technology

Fr1-34 (2 min + Poster)
High fill-factor of $Cu(In,Ga)Se_2$ solar cells by wet chemical etching
ダメージフリー素子分離法による高効率 CIGS 太陽電池
J. Nishinaga, Y. Kamikawa, and S. Ishizuka
AIST

Fr1-35 (2 min + Poster)
Enhancement of open-circuit voltage in widegap CIGS solar cells using Cd-free ZnSnO buffer layer
Cd フリーZnSnO バッファによるワイドギャップ CIGS 太陽電池の開放電圧向上
T. Nishida, J. Nishinaga, Y. Kamikawa, and S. Ishizuka
AIST

Fr1-36 (2 min + Poster)
All Perovskite Two-Step Photon Upconversion Solar Cells using $CsPbBr_{3-x}Cl_x$ with Embedded PbS Quantum Dots
$CsPbBr_{3-x}Cl_x$ を用いた PbS 量子ドットを有する全ペロブスカイト 2 段階フォトンアップコンバージョン太陽電池
S. Ueno, H. Mahamu, S. Asahi, and T. Kita
Kobe University

Fr1-37 (2 min + Poster)
Efficiency Enhancement of Intermediate Band Solar Cells Using Self-Assembled GaSb/GaAs Quantum Rings
自己組織化 GaSb/GaAs 量子リングを用いた中間バンド太陽電池の効率向上
Y. Oteki, K. Myeongok, and Y. Okada
RCAST, The University of Tokyo

Fr1-38 (2 min + Poster)
Optical properties of Er-doped GaAs towards the utilization of intermediate band solar cells
エルビウム添加ガリウムヒ素の光学特性と中間バンド太陽電池への応用
K. Toda*, Y. Kitano*, T. Kontani*, S. Asahi*, Y. Harada*, Y. Ohteki**, K. Myeongok**, T. Sogabe***,
Y. Okada**, and T. Kita*
Kobe University

Fr1-39 (2 min + Poster)
Investigation of optical wireless power transmission using a GaAs solar cell module
GaAs 太陽電池モジュールを用いた光無線給電の検討
M. Chiba*, G. Hirano*, S. Kosugi*, H. Sato*, J. Suzuki*, R. Maeno*, R. Aoyama*, R. Kakiuchi*, R. Takahashi*,
M. Ayukawa**, M. Maeda**, K. Iizuka**, T. Fukamachi**, K. Naniwae**, K. Akahane***, S. Uchida*
*Chiba Tech, **Ushio Inc, ***NICT

Fr1-40 (2 min + Poster)
Incident laser wavelength dependence of conversion efficiency in GaInP solar cells for optical wireless power transmission
光無線給電用 GaInP 太陽電池における変換効率の入射レーザ波長依存性
J. Suzuki*, R. Aoyama*, K. Mutsuzaki*, R. Kawanabe*, Y. Kaneko*, K. Naniwae**, T. Fukamachi**, M. Hagimoto**, K. Akahane***, S. Uchida*
*Chiba Tech, **Ushio Inc, ***NICT

Break (10:58-11:15)

Poster Session III (11:15-12:30)

Lunch (12:30-13:50)

Special Session　(13:50 - 16:05)

"Photonics-Electronics Convergence Technology: A Key to Solving the Energy Challenge?"

セッションテーマ：「エネルギー問題の解決が期待される「光電融合技術」とは？」

Chairs:　A. Ubukata (Taiyo Nippon Sanso Corp) and R. Katayama (The University of Osaka)

Special Session-1　(30 min)

What is "Ko-den Yu-gou"?

光電融合ってそもそも何？－要素技術と今後－

N. Nishiyama*,**, K. Kawahara*, and T. Horikawa*

*Dept. of Electrical and Electronic Engineering, Institute of Science Tokyo, **Photonics Electronics Technology Research Association (PETRA)

Special Session-2　(30 min)

Membrane Photonic Devices for Photonics-Electronics Convergence

光電融合に向けたメンブレン光デバイス

T. Sato*,**, and S. Matsuo*

*Device Technology Labs., NTT, Inc., **Device Innovation Center, NTT, Inc.

Break (14:50-15:05)

Special Session-3　(30 min)

InP/Si Heterogeneous Integration Platform using Chip on Wafer Bonding Technology

小片接合技術を用いた InP/Si 異種材料集積プラットフォーム

H. Yagi*,**,***, N. Nishiyama*,***, N. Fujiwara*,**,***, N. Inoue*,**,***, and M. Yanagisawa*,**

*Photonics Electronics Technology Research Association (PETRA),

**Transmission Devices Laboratory, Sumitomo Electric Industries, Ltd.,

***Dept. of Electrical and Electronic Engineering, Institute of Science Tokyo

Special Session-4　(30 min)

High-speed EML and Assembly Technique for AI datacenters

光電融合に向けた高速光デバイスと実装技術

M. Shirao*, K. Masuyama*, A. Uchiyama*, S. Okuda**, and N. Ohata*

*Information Technology R & D Center, Mitsubishi Electric Corporation

**High Frequency and Optical Devices Works, Mitsubishi Electric Corporation

Closing Session (16:05-16:25)