### ISNE 2015 Program-at-a-glance

#### May 4 (Mon.)

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<tr>
<th>Time</th>
<th>IB101</th>
<th>IB201</th>
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<td>13:30 - 13:40</td>
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<td></td>
<td>Opening Ceremony I</td>
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<td>13:40 - 15:20</td>
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<td>Keynote Speech 1&amp;2 (IB101)</td>
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<td>15:20 - 15:40</td>
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<td>Coffee Break</td>
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<tr>
<td>15:40 - 17:40</td>
<td>T1-1</td>
<td>T3-1</td>
<td>T4-1</td>
<td>T5-1</td>
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<tr>
<td>18:00 - 20:00</td>
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<td>Welcome Reception (12F, International Building (IB), NTUST)</td>
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#### May 5 (Tue.)

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<tr>
<td>09:00 - 09:10</td>
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<td>Opening Ceremony II</td>
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<td>Keynote Speech 3 (IB101)</td>
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<td>Coffee Break</td>
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<td>10:20 - 12:00</td>
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<td>Keynote Speech 4&amp;5 (IB101)</td>
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<td>Lunch (IB201, 202, 301)</td>
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<td>13:15 - 15:15</td>
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<td>SPC-2</td>
<td>SPC-3</td>
<td>SPC-4</td>
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<td>14:30 - 17:00</td>
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<td>Poster Session I, Zone B, IB 1F</td>
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<td>15:15 - 15:45</td>
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<td>Coffee Break</td>
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<tr>
<td>15:45 - 17:45</td>
<td>T2-1</td>
<td>T4-2</td>
<td>T5-2</td>
<td>T6-1</td>
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<td>17:45 - 18:00</td>
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<td>Best Student Paper Award Ceremony (IB101)</td>
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<td>Banquet (14F, Howard International House)</td>
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<td>T6-2</td>
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<td>09:30 - 12:00</td>
<td>Poster Session II, Zone B of IB 1F</td>
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<td>10:00 - 10:30</td>
<td>Coffee Break</td>
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<td>12:30 - 13:30</td>
<td>Lunch (IB201, 202, 301)</td>
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<tr>
<td>13:30 - 15:00</td>
<td>Tutorial (IB101)</td>
<td>Free city tour for foreign participants (Optional)</td>
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<td>15:00 - 15:30</td>
<td>Coffee Break</td>
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<tr>
<td>15:30 - 16:30</td>
<td>Invited Session</td>
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<td>16:30 - 16:40</td>
<td>Closing remark</td>
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Monday May 4, 2015

13:30 - 13:40

Opening Ceremony I
Room: IB101
Chairs:
Ching-Jong Liao (Honorary Chair, President of NTUST, Taiwan)
Poki Chen (Organizing Committee Chair, ISNE 2015)

13:40 - 15:20

Keynote Speech 1
Room: IB101
Presider: San-Liang Lee (General Chair, ISNE 2015)

_EUVL, the future lithographic technology for semiconductor fabrication_
Dr. Alek C. Chen, Asia ASML

Keynote Speech 2
Presider: Shien-Kuei Liaw (TPC Chair, ISNE 2015)

_Detection of Single Traps and Characterization of Individual Traps: Beginning of “Atomistic Reliability Physics”_
Prof. Toshiaki Tsuchiya, Shimane University, Japan

15:20 - 15:45

Coffee Break
IB 1F

15:40 - 17:40

T1-1 Green Photonics I

Session Chairs:
Sheng-Lung Huang (National Taiwan University, Taiwan),
Byoungho Lee (Seoul National University, Korea)
Room: IB101
**Broadband Tunable Laser and High-Brightness Light Sources (Invited Talk)**
Dong-Yo Jheng, Shih-Chang Wang, Tuan-Shu Ho, Teng-I Yang, Kuang-Yu Hsu, and Sheng-Lung Huang (National Taiwan University, Taiwan)

**Plasmonic beam manipulation and vortex control methods (Invited Talk)**
Byoungho Lee (Seoul National University, Korea)

**Water Splitting Using Gallium Nitride Based Working Electrodes for Hydrogen Generation with Bias by Solar Cells**
Yen Yu Chen, Jinn Kong Sheu, Wei Chi Lai (National Cheng Kung University, Taiwan), and Ming Lun Lee (Southern Taiwan University of Science and Technology, Taiwan)

**Enhancement on Photovoltaic Properties by Inserting a Lowly Boron-doped Gradient Si-rich Oxide Multilayer in Si Quantum Dot Thin Film**
Yu-Chieh Lin, Jia-Ruei Chang, You-Jeng Chen, Pin-Ruei Huang, Kuang-Yang Kuo, and Po-Tsung Lee (National Chiao Tung University, Taiwan)

**Simulation of Charge Collection Probability in GaAs and Si Solar Cells from External Quantum Efficiency**
Shih-Li Lin, Hung-Ruei Tseng, Shun-Chieh Hsu, Yin-Han Chen, and Chien-Chung Lin (National Chiao-Tung University, Taiwan)

**Antireflection and high absorption coefficient nano-porous tin sulfides**
Gong-Ru Lin, and Chih-Hsien Cheng (National Taiwan University, Taiwan)

**T3-1 Computer and Communication Engineering I**

**Session Chairs:**
Riri Fitri Sari (University of Indonesia, Indonesia)
Chang Hong Lin (National Taiwan University of Science and Technology, Taiwan)

**Room:** IB201

**IoT for Intelligent Transport System: The era of Wireless Sensor Networks Vs Crowdsourcing (Invited Talk)**
Riri Fitri Sari (University of Indonesia, Indonesia)

**Study of Low Cost Mobile Phone Tracking System**
Jung-Shiuan Huang, Ruki Harwahyu, and Ray-Guang Cheng (National Taiwan University of Science and Technology, Taiwan)

**A Real-time Non-contact Pulse Rate Detector based on Smartphone**
Min-Che Li, and Yuan-Hsiang Lin (National Taiwan University of Science and Technology, Taiwan)

**Dynamic Reconfigurable AWG-based Encryption and Decryption with Integrated Chaos/M-Sequence Mapping Algorithm for Secure Transmission**
Yao-Tang Chang (Kao Yuan University, Taiwan), Chung-Wei Tsailin, and Yen-Chung Huang (National Cheng Kung University, Taiwan)

**Performance Evaluation of Corrupted Signal Caused by Random Way Point and Gauss Markov Mobility Model on IEEE 1609.4 Standards**
Doan Perdana, and Riri Fitri Sari (University of Indonesia, Indonesia)

**A Window-based Methodology for ADBs Insertion and Clock Gating Design in Multiple Power Modes**
Wei-Kai Cheng, and Po-Han Wu (Chung Yuan Christian University, Taiwan)
A Hyperchaotic Oscillator Design for the Encrypted Communication Application
Chang-Hsi Wu and Yu-Sheng Li (Lunghwa University of Science and Technology, Taiwan), Cheng-Hsiung Yang and Yuan-Long Wu (National Taiwan University of Science and Technology, Taiwan)

T4-1 Electronic Devices I

Session Chairs:
Siegfried Selberherr (TU Wien, Austria),
Teruo Suzuki (Socionext Inc., Japan)

Room: IB202

Spin-Based Devices for Future Microelectronics (Invited Talk)
Siegfried Selberherr, and Viktor Sverdlov (TU Wien, Austria)

Electro-Static Discharge (ESD) (Invited Talk)
Teruo Suzuki (Socionext Inc. Japan)

Multi-state resistance switching and variability analysis of HfOx Based RRAM for ultra-high density memory applications
Amit Prakash, J-S.Park, J.Song, S-J.Lim, J-H.Park, J.Woo, E.Cha, and Hyunsang Hwang (Pohang University of Science and Technology, Korea)

ESD Reliability Comparison of Different Layout Topologies in the 0.25-um 60-V nLDMOS Power Devices
Shen-Li Chen, Chun-Ju Lin, Shawn Chang, Yu-Ting Huang, and Shun-Bao Chang (National United University, Taiwan)

Influences of Drain Side P+ Discrete-Islands on ESD Robustness in the 60-V pLDMOS-SCR ("PNPNP" Arranged-type)
Shen-Li Chen, Yu-Ting Huang, Shawn Chang, and Shun-Bao Chang (National United University, Taiwan)

Evaluation of Electrical Performance of Various Tunnel TFETs
Chi Hwang, Tao-Yi Hung, Pei-Yu Wang, and Bing-Yue Tsui (National Chiao Tung University, Taiwan)
T5-1 Optoelectronic and Semiconductor Technologies I
Room: IB301
Session Chairs:
Wen-Chang Yeh (Shimane University, Japan)
Yi-Jen Chiu (National Sun Yet-Sen University, Taiwan)

Fast and Low-temperature sputtering epitaxy of Si and Ge and its application to optoelectronics (Invited Talk)
Wen-Chang Yeh, Motohiro Matsumoto, and Keisuke Sugihara (Shimane University, Japan)

Realization of Tunable Microsphere Resonators Suspended in Liquid via Dielectrophoretic Force
Te-Chang Chen, Tse-Jen Liao, and Ming-Chang M. Lee (National Tsing Hua University, Taiwan)

Low-Temperature Direct Wafer Bonding for III–V Compound Semiconductors to Nanometer-scale Grating Arrays
Bai-Ci Chen, Yu-Chang Wu, Jen-Hung Huang, Hao-Chung Kuo and Chien-Chung Lin (National Chiao Tung University, Taiwan)

Mirror-tunable Laser Interference Lithography System for Wafer-scale Patterning with Flexible Periodicity
Yu-Nung Lin, Yung-Jr Hung, Chia-Wei Huang and Ping-Chien Chang (National Sun Yat-sen University, Taiwan)

Design and Fabrication of Multi-section Bragg-Wavelength-Detuned Distributed Feedback Lasers
Ling-Hsiu Hung, San-Liang Lee (National Taiwan University of Science and Technology, Taiwan), Yung-Jr Hung (National Sun Yat-sen University, Taiwan), Charng-Gan Tu (National Taiwan University, Taiwan), and Yen-Ting Pan (Source Photonics Taiwan Inc., Taiwan)

Design, optimization and fabrication of two-dimension high contrast ubwavelength grating (HCG) mirror on Silicon-on-insulator
Shen-Che Huang and Tien-Chang Lu (National Chiao-Tung University, Taiwan), Qiangsheng Huang, Keqi Ma, Jianhao Zhang, Yaocheng Shi and Daoxin Dai (Zhejiang University, China), Sailing He (Zhejiang-KTH Joint Research Center of Photonics, JORCEP, China)

18:00 – 20:00
Welcome Reception
12F, International Building (IB), National Taiwan University of Science and Technology
Tuesday May 5, 2015

09:00 - 09:10
Opening Ceremony II
Room: IB101
Chair: Shien-Kuei Liaw (TPC Chair, ISNE 2015)

09:10 - 10:00
Keynote Speech 3
Room: IB101
Presider: Bohr-Ran Huang (National Taiwan University of Science and Technology, Taiwan)
*The Art and Science for Packaging High-Coupling Photonics Devices and Modules*
Prof. Wood-Hi Cheng, National Chung-Hsing University, Taiwan

10:00 - 10:20
Coffee Break
IB 1F

10:20 - 12:00
Keynote Speech 4&5
Room: IB101
Presider: Liang-Chiuin Chao (National Taiwan University of Science and Technology, Taiwan)
*Prospect and Outlook of Electrostatic Discharge (ESD) Protection in Emerging Technologies*
Prof. Juin J. Liou, UCF, USA

Presider: Ren-Young Liu (Senior Research Fellow, NARLabs, Taiwan)
*Next Generation Blood Test Electronics for Home-Based Health Care*
Prof. Fu-Liang Yang, Academia Sinica, Taiwan

12:00 – 13:15
Lunch (Room 201, 202, 301)

13:15 - 15:15
SPC-1 Students Paper Contest-1
Room: IB101
Session Chairs and Reviewers:
Jinn-Komg Sheu (National Cheng Kung University, Taiwan)
Pinghui S. Yeh (National Taiwan University of Science and Technology, Taiwan)

*The Optical Influence of InN Dot-Like Mixed with InGaN on Nitride-Based Substrate*
Lung-Hsing Hsu, Chien-Chung Lin, Hao-Chung Kuo (National Chiao Tung University, Taiwan), and Shih-Yen
All silicon rich silicon carbide based solar cell
Chih-Hsien Cheng, and Gong-Ru Lin (National Taiwan University, Taiwan)

Mirror-assisted Interdigitated Back-contact CMOS Photovoltaic Devices for Powering Subcutaneous Implantable Devices
Jia-Fa Chen, Chung-Lin Chun, and Yung-Jr Hung (National Sun Yat-sen University, Taiwan)

GaN-based LEDs with Flower shape ZnO nanorods by SILAR-based and Hydrothermal Methods
Nan-Ming Lin, Shih-Chang Shei (National University of Tainan, Taiwan), and Shou-Jinn Chang (National Cheng Kung University, Taiwan)

Field Emission of Electrochemical Graphene Oxide
Yun-Jhung Chih, and Yi-Tsung Chang (National Sun Yat-sen University, Taiwan)

Enhancing the performance of inverted organic solar cells using a carbon nanotubes-doped active layer
Meng-Cheng Yeh, Shui-Hsiang Su, Wen-Kai Lin, Yang-Chan Huang, Jhih-Yung Chen, and Yokoyama Meiso (I-Shou University, Taiwan)

See-Through Ga2O3 Solar-Blind Photodetectors for Use in Harsh Environments
Tzu-Chiao Wei, Dung-Sheng Tsai, Jr-Jian Ke, Meng-Lin Tsai, Der-Hsien Lien (National Taiwan University, Taiwan), Parvaneh Ravadgar (National Cheng Kung University, Taiwan), Chiung-Yi Huang, Ray-Hua Horng (National Chung Hsing University, Taiwan), and Jr-Hau He (King Abdullah University of Science & Technology, Saudi Arabia)

Analytical Studies of GaN-based LEDs Grown on Patterned Sapphire, Silicon and GaN Substrates
Hao-Chung Kuo, An-Yje Tzou, Dan-Hua Hsieh, Chia-Yu Lee, Chyong-Hua Chen, Chun-Yen Chang (National Chiao Tung University, Taiwan), and Zen-Yu Li (Academia Sinica, Taiwan)

SPC-2 Students Paper Contest-2
Room: IB201
Session Chairs and Reviewers:
Yi-Jan Chen (National Taiwan University, Taiwan)
Chih-Wen Lu (National Tsing Hua University, Taiwan)

A 2.4-GHz Fractional-N Frequency Synthesizer with Noise Filtering Technique for Wireless Application
Wen Cheng Lai (National Taiwan University of Science and Technology, Taiwan)

Physical Level IC Implementation for Speed Control of Three Phase Induction Motors
Gomathi Bhavani, Srinivasan S V, and Neenu Sivanand (Birla Institute of Technology & Science, United Arab Emirates)

A Multi-Channel Highly Precise Current Matching LED Driver for Dimming Light
Yung Hsian Chen, Ya-Wen Yang, Poki Chen, Hsien-Chih Liu, Ya-Ying Li, and Fajar Budiman (National Taiwan University of Science and Technology, Taiwan)

Study of SiOx-Based Resistive Switching Memory (ReRAM) in Integrated One Diode – One Resistor (1D-1R) Architecture
Yao-Feng Chang, Fei Zhou, Jack C.Lee (University of Texas at Austin, USA), and Burt Fowler (PrivaTran, LLC, USA)

High-Accuracy Multiple-Device Matching Layout for High-Order Gradient Cancellation
Pranata Sanjaya, Poki Chen, Rella Mareta, and Fajar Budiman (National Taiwan University of Science and
Impact-Based Area Allocation for Yield Optimization in Integrated Circuit
Billion Abraham, Arif Widodo, and Poki Chen (National Taiwan University of Science and Technology, Taiwan)

Room-temperature Sm$\text{O}_3$ dielectric preparation for high performance In-Ga-Zn-O thin-film-transistor fabrication
Mochamad Januar, and Kou-Chen Liu (Chang Gung University, Taiwan)

A Field Programmable Gate Array Time-to-Digital Converter Based On Delay Wrapping and Time Sorting
Ya-Yun Hsiao, Yi-Su Chung, Poki Chen, Wei-Xiang Tsai, and Jhih-Min Lin (National Taiwan University of Science and Technology, Taiwan)

SPC-3 Students Paper Contest-3
Room: IB202
Session Chairs and Reviewers:
Peichen Yu (National Chiao Tung University, Taiwan)
Liang-Chiun Chao (National Taiwan University of Science and Technology, Taiwan)

Narrowband Reflection from Integrated Bragg Gratings with Corrugations on Long Side Structures
Keng-Hsien Lin, Chong-Jia Wu, Yung-Jr Hung, Cheng-Yu Wang, and Yung-Jui Chen (National Sun Yat-sen University, Taiwan)

20-Gbit/s Chip-Level Optical Interconnects Using Polymer Waveguide Terminated at 45° Micro-reflector with Laser and Photo-detector
Chin-Ta Chen, Po-Kuan Shen, Ruei-Hung Chen, Shu-Shuan Lin, Chia-Chi Chang, Yo-Shen Lin, and Mount-Learn Wu (National Central University, Taiwan)

Electrodeposition of Diamond-Like Carbon Thin Film on Conductive Indium-Tin-Oxide Glass Substrate
Ching-Tsang Chang, Yi-Tsung Chang, and John Chih (National Sun Yat-sen University, Taiwan)

Chip-Level Optical Interconnect Module Using Guide-Wave Silicon Optical Bench Integrated with Lasers, PDs, Driver IC, and Amplifier IC
Po-Kuan Shen, Chin-Ta Chen, Chia-Hao Chang, Chien-Yu Chiu, Chia-Chi Chang, and Mount-Learn Wu (National Central University, Taiwan)

Multi-microwave sources generation based on dual optical frequency combs
Wenhui Sun, Jianguo Liu, Wen-Ting Wang, Wei-Yu Wang, Haiqing Yuan, and Ninghua Zhu (Chinese Academy of Sciences, China)

Frequency-Quadrupling Microwave Signal Generation Based on Brillouin-Assisted Optical Notch Filter
Wen-Ting Wang, Qi Wang, Wen-Hui Sun, Weiyu Wang, Youwan Tong, Jianguo Liu, and Ninghua Zhu (Chinese Academy of Sciences, China)

Frequency Stability Measurement of Laser by Using Two Independent Tunable Lasers
Weiyu Wang, Jianguo Liu, Wenting Wang, Wenhui Sun, and Ninghua Zhu (Chinese Academy of Sciences, China)

Composition Ratio Dependent Refractive Index and Optical Bandgap of Nonstoichiometric Si$_{1-x}Ge_x$ on Silicon
Bo-Ji Huang, Chung-Lun Wu, Yung-Hsiang Lin, Po-Han Chang, Chih-I Wu, and Gong-Ru Lin (National Taiwan
SPC-4 Students Paper Contest-4
Room: IB301

Session Chairs and Reviewers:
Ming-Chang M. Lee (National Tsing Hua University, Taiwan)
Ching-Hwa Ho (National Taiwan University of Science and Technology, Taiwan)

A Tunable Data Hiding Scheme for CABAC in H.264/AVC Video Streams
Wei-Siang Wang, and Yih-Chuan Lin (National Formosa University, Taiwan)

Depth-based Hand Gesture Recognition Using Hand Movements and Defects
Wei-Lun Chen, Chih-Hung Wu and Chang Hong Lin (National Taiwan University of Science and Technology, Taiwan)

Orthogonal Polarization Modulation based Fully Coherent Self-Heterodyne Detection for Future UDWDM-PON
Jianyu Zheng, Wenhui Sun, Wei-yu Wang, Jianguo Liu, Ninghua Zhu (Chinese Academy of Sciences, China),
and Gee-Kung Chang (Georgia Institute of Technology, USA)

Subwavelength Focusing of Hybrid Ag-Au Plasmonic Lens with Variant Slit Widths
Min-Hsiu Chen, Kai-Hao Chang, and Po-Tsung Lee (National Chiao Tung University, Taiwan)

Analysis of Second Order Fiber Bragg Gratings by Coupled Mode Theory
Yu-Wei Liu, Kuo-Kai Huang, Nai-Hsiang Sun, Yen-Ju Huang, Jung-Sheng Chiang (I-Shou University, Taiwan),
Jiun-Jie Liau (National Taiwan University, Taiwan)

Simulation of Tilted Fiber Bragg Gratings by Coupled Mode Theory
Yu-Wei Liu, Jheng-Rong Li, Nai-Hsiang Sun, Kai-Yang Huang, Wen-Chi Chao, Jung-Sheng Chiang (I-Shou University, Taiwan),
and Jiun-Jie Liau (National Taiwan University, Taiwan)

Image Retrieval Using Point- and Block-Based Visual Vocabulary
Chung-Ming Kuo, Chang-Ming Kuo, Nai-Chung Yang, and Liang-Kang Haung (I-Shou University, Taiwan)

In-Line Fiber Vibration Sensor Based on Fiber Plugs Bridging in a Hollow Core Fiber
Cheng-Ling Lee, You-Nan Tsai, Guan-Hung Chen, and J. M.Hsu (National United University, Taiwan)
14:30 - 17:00

Poster Session I
Zone B, IB 1F

Session Chairs:
Cheng-Ling Lee (National United University, Taiwan)
Yi-Lin Yu, (National Taiwan University of Science and Technology, Taiwan)

**PT-01:** Design of a Single-Input Fuzzy PID Controller Based on Genetic Optimization Scheme for DC-DC Buck Converter
Changyuan Chang, Yubo Yuan, Zhiqi Zhou, Xiaomin Huang, and Yang Xu (Southeast University, China)

**PT-02:** Design of a Low EMI Boost Converter Using Bi-frequency PFM Control Mode
Changyuan Chang, Cheng'en Wu, Yan Zhang, Junjie Hu, and Yao Chen (Southeast University, China)

**PT-03:** Resistive Switching Behaviors in Gelatin-based Flexible Memory Devices
Yu-Chi Chang, Ke-Jing Lee, and Yeong-Her Wang (National Cheng-Kung University, Taiwan)

**PT-04:** A Group-Oriented QoS-Enhanced Proportional Fair Scheduling Algorithm over Downlink OFDMA-based Networks
I-Fen Chao, Chuei-Sheng Chiou, and Kaiyuan Hsu (Yuan Ze University, Taiwan)

**PT-05:** Large Scale Metal Drawing by Using Laser Color Marking Technology
Shih-Chiang Lin, Nai-Hsiang Sun, Li-Ti Kung, and Chun-An Cheng (I-Shou University, Taiwan)

**PT-06:** Comparison of Space Vector PWM and Carrier-based PWM under Multi-phase Setting
Keng-Yuan Chen, Yu-Lin Shie (Yuan Ze University, Taiwan), Jwu-Sheng (National Chiao-Tung University, Taiwan), and Shin-Hung Chang (Industrial Technology Research Institute, Taiwan)

**PT-07:** Resistive Switching Characteristics of Sol-Gel Strontium TitanateNickelate Thin Films for Flexible Nonvolatile Memory Applications
Ke-Jing Lee, Yu-Chi Chang, and Yeong-Her Wang (National Cheng Kung University, Taiwan)

**PT-08:** An Optical Index Sensor by Using a Etched-Slanted Fiber Bragg Grating
Li-Wei Chen, Kai-Ting Hu, Kuan-Ting Li, Hung-Ying Chang, Hao-Jan Sheng, and Wen-Fung Liu (Feng-Chia University, Taiwan)

**PT-09:** AlGaN-based Metal-Semiconductor-Metal Ultra-Violet Photodetectors with AlN/SiN Multiple Nucleation Layers
Chin-Hsiang Chen (Cheng Shiu University, Taiwan)

**PT-10:** Improved Efficiency of Dye Sensitized Solar Cells with a Thin HfO2 Barrier Layers
Chin-Hsiang Chen (Cheng Shiu University, Taiwan), Yu-Hsuan Tsai, and Shih-Kun Liu (National Kaohsiung University of Applied Sciences, Taiwan)

**PT-11:** Study of temperature- and time-resolved luminescence of CuInS2-ZnS quantum dots synthesized by one-pot method
Wen-Jui Chiang, Shih-Chang Shei, and Lung-Wei Huang (National University of Tainan, Taiwan)
PT-12: A 0.6-V 2.4/5.8-GHz Dual-Band LC VCO in CMOS 0.18-µm Technology
Her-Lih Chiueh, Chang-His Wu, Shun-Zhao Huang, and Hong-Cheng You (Lunghwa University of Science and Technology, Taiwan)

PT-13: Application of Burst Error Correcting Code to TDMA System with FPGA Implementation
Her-Lih Chiueh, and Hung-Chih Liu (Lunghwa University of Science and Technology, Taiwan)

PT-14: Amorphous effect on the advancing of structural-phase transition in r-In2Se3 polycrystalline layers
Yun-Ju Chu, and Ching-Hwa Ho (National Taiwan University of Science and Technology, Taiwan)

PT-15: An 8×1k SPAD Detector with TDI in 0.13µm CMOS Technology
Lixia Dong, Dong Wu, and Jun Zhou (Tsinghua University, China)

PT-16: A Glucose Sensor Based on a Fiber Bragg Grating Cascaded with a Long Period Grating
Gang-Show Fan, Hung-Ying Chang, Jin-Ji Liu, Hai-Tao Sun, Wen-Fung Liu (Feng-Chia University, Taiwan), and Ming-Yue Fu (Air Force Academy)

PT-17: A Multiple-Etching Technique for Single-Crystal Nanowires Fabrication
Jun Yan Guo, and Kai-yuen Lam (I-Shou University, Taiwan)

PT-18: Controller Design by Time-domain Objective Functions Using Modified Particle Swarm Optimization
Huey-Ynag Horng (I-Shou University, Taiwan)

PT-19: Experimental Investigation of Fiber-Bragg-Grating Fiber Lasers and Optical Code Division Multiple Access on Wireless Optical Communications
Bo-Rong Huang, and Hsu-Chih Cheng (National Formosa University, Taiwan)

PT-20: Ultra-Short Length of Couplers Padded with Gold Thin Films
Nai-Hsiang Sun, Li-Ti Kung, Hung-Liang Cheng (I-Shou University, Taiwan), and Po-Jui Chiang (National Kaohsiung University of Applied Sciences, Taiwan)

PT-21: A Study of Subthreshold Behavior of Short-Channel Junctionless Cylindrical Surrounding-Gate MOSFETs from an Electrostatic Potential Viewpoint
Chun sheng Jiang, Renrong Liang, Jing Wang, and Jun Xu (Tsinghua University, China)

PT-22: Tunable Yb-Doped Fiber Laser with Single Longitudinal Mode (SLM) Operation Based on Subring Cavities
Yu-Chu Lai, W.C. Hsu, Y.L. Yu, S.K. Liaw (National Taiwan University of Science and Technology, Taiwan), M.H. Shih (Academia Sinica, Taiwan), and N.K. Chen (National United University, Taiwan)

PT-23: Improved Photovoltaic Performance of Hybrid Organic/Silicon-Nanowire Heterojunction Solar Cells via Interface Engineering
Yi-Chun Lai, Yu-Fan Chang, Yi-Cheng Lin, Yu-chen Cheng, Hsin-Fei Meng, Gou-Chung Chi, and Peichen Yu (National Chiao Tung University, Taiwan)

PT-24: An Improvement on the Luminous Efficacy of High Power LEDs Using The Driver Circuit without Electrolytic Capacitors
Jia-Han Lee, and Chien-Sheng Huang (National Yunlin University of Science and Technology, Taiwan)

PT-25: Sol-Gel Processed TiO2 on InP and Its Application
Kuan-Wei Lee, Jung-Sheng Huang, Cheng-Hung Lai, Hung-Wei Chen (I-Shou University, Taiwan), Yu-Chi Chang, and Yeong-Her Wang (National Cheng-Kung University, Taiwan)

PT-26: Decoding the (13,7,6) Ternary Quadratic Residue Code
Chong-Dao Lee, and Yan-Haw Chen (I-Shou University, Taiwan)

**PT-27: Pentacene-Based Thin Film Transistors with Solution-Processed Melanin as Gate Dielectrics**
Cheng-Jung Li, Yeong-Her Wang (National Cheng-Kung University, Taiwan), and Dei-Wei Chou (Air Force Institute of Technology, Taiwan)

**PT-28: 500 Mb/s OOK visible light communications using RGB-based LEDs**
Shien-Kuei Liaw, Hsi-Hsir Chou, Chun-Jui Wu, Ming-Jen Chien, and Chiang Teng (National Taiwan University of Science and Technology, Taiwan)

**PT-29: FBG Based Multi-parameter Sensing Using Linear Cavity Laser Array**
Shien-Kuei Liaw (National Taiwan University of Science and Technology, Taiwan)

**PT-30: High-Capacity Transmission Combined Fiber Cable and Optical Wireless for Self-healing in Bridge Damage Situation**
Chia-Wen Lin, Yi-Lin Yu, Huai-Ching Wang, Shien-Kuei Liaw (National Taiwan University of Science and Technology, Taiwan), and Le Minh Hoa (Northumbria University, UK)

**PT-31: The Implementation of SISO/MIMO Communication Systems over NI Universal Software Radio Peripheral (USRP)**
Wei-Cheng Lin, Cheng-Wei Hung (I-Shou University, Taiwan), and Yi-FanLin (National Instruments Corp., Taiwan)

**PT-32: Improving the Correlated Color Temperature Uniformity of Multi-Chip White LEDs by SiO\textsubscript{2} Scatters**
Nguyen Thi Thu Khanh, Chia-Nan Wang, and Nguyen Doan Quoc Anh (National Kaohsiung University of Applied Sciences, Taiwan)

**PT-33: Optimization of Multi-Chip White LEDs with SiO\textsubscript{2} Structures**
Nguyen Thi Thu Khanh, Chia-Nan Wang, and Nguyen Doan Quoc Anh (National Kaohsiung University of Applied Sciences, Taiwan)

**PT-34: Measurement of Photodarkening Resistance in Heavily Yb-Doped Silica and Silicate Fibers**
Yu-Min Peng, Yin-Wen Lee, Shih-Ken Chen (National Taipei University of Technology, Taiwan), Dong-Yo Jheng, Sheng-Lung Huang (National Taiwan University, Taiwan), and Shibin Jiang (AdValue Photonics Inc, USA)

**PT-35: AlGaInP-based LEDs with ZnO nanostructures by Successive Ionic Layer Adsorption and Reaction and Hydrothermal Methods**
Shih-Chang Shei, Nan-Ming Lin (National University of Tainan, Taiwan), and Shoou-Jinn Chang (National Cheng Kung University, Taiwan)
PT-36: Synchrotron Radiation Photoemission Study of PFO/LiF/ITO Interface on Transparent Polymer Light Emitting Devices
Iyan Subiyanto, Liu Bei, Xiang-Yan Huang, Kou-Chen Liu (Chang Gung University, Taiwan), and Koji Hatanaka (Acadia Sinica, Taiwan)

PT-37: An Embedded System with Realtime Surveillance Application
Yuan-Wei Tseng, Chong-Yu Liao, and Tzung-Huei Hung (I-Shou University, Taiwan)

PT-38: A Low-complexity MIMO detector
H. C. Wang, C. Ma and L. C. Hao (National Taiwan University of Science and Technology, Taiwan)

PT-39: Pentacene-Based Thin Film Sensor with Solution-Processed Barium ZirconateTitanate Gate Dielectric for Primary Alcohol Analytes Applications
Yeong-Her Wang, Cheng-Jung Li (National Cheng-Kung University, Taiwan), and Dei-Wei Chou (Air Force Institute of Technology, Taiwan)

PT-40: Solution-Processed Melanin for Resistive Random Access Memory Applications
Yeong-Her Wang, Ke-Jing Lee, Yu-Chi Chang, and Men-Hui Shen (National Cheng Kung University, Taiwan)

PT-41: High-resolution configuration of optically reconfigurable gate arrays
Minoru Watanabe, and Kouta Akagi (Shizuoka University, Japan)

PT-42: The Implementation of 1.8GHz Dual Channel Switched Beam-Former with Active Inductors Phase Shifters
Ming Shiu Wen (Yuan Ze University, Taiwan)

PT-43: A 5.2/5.8 GHz Dual Band On-Off Keying Transmitter Design for Bio-Signal Transmission.
Chang-His Wu, Hong-Cheng You, and Shun-Zhao Huang (Lunghwa University of Science and Technology, Taiwan)

PT-44: A Study of Thermal Energy Management with Advanced Structures
Bo-Ying Wu, Jun Yan Guo, and Kai-Yuen Lam (I-Shou University, Taiwan)

PT-45: Reducing the Threshold Pumping Density of the Random Lasing in Hollow Optical Fibers Infiltrated with Dye-doped Liquid Crystals by Using Ag Nanoparticles
Chin-Ping Yu, and Yi-Ping Huang (National Sun Yet-sen University, Taiwan)

PT-46: Ultra-compact Polarization Rotator by Using an L-shaped Asymmetric Hybrid Plasmonic Waveguide
Chin-Ping Yu, and Tzu-Han Fang (National Sun Yet-sen University, Taiwan)

PT-47: Faraday-Tyndall Effect of Gold Colloids
Shang-Yang Yu (Chang Gung University, Taiwan)

Jun Zhou, Dong Wu, and Lixia Dong (Tsinghua University, China)

PT-49: Enhanced optoelectronics properties by inserting silver on Al-doped ZnO layer
Siang-You Fang, Yen-Sheng Lin, and Cheng-Wei Chen (I-Shou University, Taiwan)
**PT-50: High sensitivity in-line strain sensor based on abrupt-tapered fiber Mach-Zehnder interferometers**
Jhih-He Jhang, Yu-Lin Tseng, Wen-Chuan Lin and Nan-Kuang Chen (National United University, Taiwan), and Shien-Kuei Liaw (National Taiwan University of Science and Technology, Taiwan)

**PT-51: Tunable fundamental-mode cutoff wavelength in fiber short-pass filter for strain sensing applications**
Jhih-He Jhang, Yu-Lin Tseng and Nan-Kuang Chen (National United University, Taiwan), and Shien-Kuei Liaw (National Taiwan University of Science and Technology, Taiwan)

15:15 – 15:45
Coffee Break
IB 1F

15:45 - 17:45
T2-1 Microelectronic Circuits and Systems I
Room: IB101
Session Chairs:
Jinwook Burm (Seoul National University, Korea)
Kiat Seng Yeo (Singapore University of Technology and Design, Singapore)

**Single Photon Detection Technology for PET applications (Invited Talk)**
Jinwook Burm (Seoul National University, Korea)

**Transformer-Based Class-E CMOS Power Amplifiers (Invited Talk)**
Kiat Seng Yeo (Singapore University of Technology and Design, Singapore, Singapore)

**A Gate-Oxide-Breakdown Antifuse OTP ROM Array Based on TSMC 90nm Process**
Zicheng Liu, Ruifeng Zheng, and Zheng Sun (Beijing Institute of Technology, China)

**A 1.25 GHz Q-enhanced Filter with Image Rejection**
Peng Gao, Wei Cui, and Xiaoyan Gui (Beijing Institute of Technology, China)

**Thermal analysis and linear optical properties of (1-x)TeO2-(x)ZnCl2 optical glasses for photonic applications**
Idris Kabalci, and Refik Polat (Karabuk University, Turkey), Nese Ozturk Korpe (Eskisehir Osmangazi University, Turkey)

**Design and Experimental Results of a Wireless Power Receiver for the Water Pollution Detection System**
Che-Yi Chiang, Long-Yi Lin and Hao-Chiao Hong (National Chiao Tung University, Taiwan)
T4-2 Electronic Devices II
Room: IB201
Session Chairs:
Yao-Feng Chang (The University of Texas at Austin, USA)
Yiming Li (National Chiao Tung University, Taiwan)

*Intrinsic Unipolar SiO$_x$-Based Resistive Switching Memory: Characterization, Mechanism and Applications (Invited Talk)*
Yao-Feng Chang (The University of Texas at Austin, USA)

*Modeling and Simulation of Well-Ordered Ge/Si-Nanodisk Array for Quantum Dot Solar Cells (Invited Talk)*
Yiming Li (National Chiao Tung University, Taiwan)

*CoW Alloy as Multi-function Diffusion Barrier Material for Next-generation Cu Metallization*
Yin Hsien Su, Jai Nan Shih, Wei Hsiang Liao, Chun Yi Hung, Wen His Lee (National Cheng Kung University, Taiwan), Yu Sheng Wang, Ying Lang Wang, and Wei Hsiang Tseng (Taiwan Semiconductor Manufacturing Company, Taiwan)

*Effect of channel doping profiles on performance of germanium-on-insulator based junctionless transistors*
Chuanchuan Sun, Renrong Liang, Libin Liu, Jing Wang, and Jun Xu (Tsinghua National Laboratory for Information Science and Technology, China)

*Electrical conduction mechanisms of Ni/Boron-doped Zinc Oxide (BZO)/TaN structure*
Wen-Ping Chiang, Chih-Chi Chen, Chun Wang, Min-Yu Yang, Ko-Chia Liao, Hsin-Mei Wang and Fu-Chien Chiu (Ming Chuan University, Taiwan)

*Rectification of QR-Code Images Using the Parametric Cylindrical Surface Model*
Kuen-Tsair Lay, Lee-Jyi Wang, and Chun-Hung Wang (National Taiwan University of Science and Technology, Taiwan)

T5-2 Optoelectronic and Semiconductor Technologies II
Room: IB202
Session Chairs:
Pei-Kuen Wei (Academia Sinica, Taiwan)
Tz-Shiuan Peng (Chung-Shan Institute of Science and Technology, Taiwan)

*Efficient light harvesting and applications of nanostructures in green photonic devices (Invited Talk)*
Pei-Kuen Wei (Academia Sinica, Taiwan)

*Recent radiation hardening researches for optical fiber sensing and communications in Taiwan (Invited Talk)*
Tz-Shiuan Peng (Chung-Shan Institute of Science and Technology, Taiwan), and Ren-Young Liu (Senior Research Fellow, NARLabs, Taiwan)

*Synthesis and selenization of Cu$_2$SnSe$_3$ nanocrystals by a novel solution method*
Yi-Hao Chen, and Shih-Chang Shei (National University of Tainan, Taiwan)
Synthesis of CuInS$_2$-ZnS quantum dots for different Cu/In ratios by one-pot method and its applications to white light-emitting diodes
You-Cheng Lin, Jun-Wei Lai, and Shih-Chang Shei (National University of Tainan, Taiwan)

Dual hollow core fibers Fabry-Pérot interferometer for measuring thermo-optic coefficients of liquids
Jheng-Hong Gu, Cheng-Ling Lee, Hsuan-Yu Ho, Chung-Hao Tseng and Tung-Yuan Yeh (National United University, Taiwan)

Directional Micro-Displacement Sensor base on a Tapered Fiber Connected to a D-Shaped Fiber
Yu-Jie Xiao, Chia-Chi Yeh and Cheng-Ling Lee (National United University, Taiwan)

T6-1 Electrical Engineering and Photonic Devices I
Room: IB301
Session Chairs:
Wen-Fung Liu (Feng Chia University, Taiwan)
Yin-Wen Lee (National Taipei University of Technology, Taiwan)

Plasmonic Optical Binding Forces of Gold or Silver Dimer (Invited Talk)
Jiunn-Woei Liaw (Chang Gung University, Taiwan)

Applications and design for different kinds of fiber grating sensors (Invited Talk)
Wen-Fung Liu (Feng Chia University, Taiwan)

Enhanced optoelectronic properties on AZO thin film by inserting meticulous nano-silver quasi-mesh structures
Chen-Hui Weng, Yen-Sheng Lin, and Cheng-Wei Chen (I-Shou University, Taiwan)

Enhanced conductivity by constructing the nano-Au quasi-mesh structures on Al-doped ZnO thin films
Cheng-Wei Chen, Yen-Sheng Lin, and Chen-Hui Weng (I-Shou University, Taiwan)

Optical Study of Multiple-layered Colloidal Quantum Dots
Yin-Han Chen, Shun-Chieh Hsu, Shih-Li Lin, Teng-Ming Chen and Chien-Chung Lin (National Chiao-Tung University, Taiwan)

GeSn Waveguide Photodetectors Fabricated by Rapid-Melt-Growth Method
Chih-Kuo Tseng, Ching-Hsiang Chiu, Shih-Che Yen, Kuang-Chien Hsieh, Neil Na and Ming-Chang Lee (National Tsing-Hua University, Taiwan)

17:45 - 18:00
Best Student Paper Award Ceremony
Room: IB101

18:30 – 20:45
Banquet
14F, Howard International House
Address: No. 30,Sec. 3,Shin-Sheng South Road. Taipei, 106, Taiwan
Wednesday May 6, 2015

08:30 - 10:00

T6-2 Fiber Optics and Photonic Devices II
Room: IB201
Session Chairs:
Nai-Hsiang Sun (I-Shou University, Taiwan)
Hung-chun Chang (National Taiwan University, Taiwan)

Numerical Modeling on Plasmonic Waveguides (Invited Talk)
Hung-chun Chang, and Hsuan-Hao Liu (National Taiwan University, Taiwan)

Fundamental and Second-Order Modes of THz Photonic Crystal Fiber
Jung-Sheng Chiang, Syuan-Yu Jhang, Yong-Hang Wu and Nai-Hsiang Sun (I-Shou University, Taiwan)

Simulation and Application of Second Order Fiber Bragg Gratings (Invited Talk)
Nai-Hsiang Sun and Chia-Ming Hu (I-Shou University, Taiwan)

Numerical Analysis of Photonic Crystal Fiber Sensor
Jung-Sheng Chiang, Yong-Hang Wu, Syuan-Yu Jhang, Nai-Hsiang Sun and Shih-Chiang Lin (I-Shou University, Taiwan)

T1-2 Green Photonics II
Session chairs:
Nan-Kuang Chen (National United University, Taiwan)
Hiroki Hamada (Kinki University, Japan)

Room: IB202

Progress of AlGaInP Red Laser Diodes and Beyond (Invited Talk)
Hiroki Hamada (Kinki University, Japan)

Thermal field simulation of multi package LED module
Koon Chun Lai, Choon Foong Tan and Kok Seng Ong (Universiti Tunku Abdul Rahman, Malaysia), Kok Eng Ng (OSRAM Opto Semiconductor, Malaysia)

Minuscule fiber interferometric sensors with small sample volume (Invited Talk)
Nan-Kuang Chen (National United University, Taiwan)

Simulation and Demonstration of MOS-Structure Silicon Solar Cell Using ITO/Al2O3/TiO2 Antireflective Coating
Zhong-Fu Hou, Wen-Jeng Ho, Chien-Wu Yeh, Ruei-Siang Su, Yu-Tang Shen, Chia-Hua Hu and Yu-Jie Deng (National Taipei University of Technology, Taiwan)
**T2-2 Electronic Devices and Systems II**

Room: IB101

Session chairs:
Jung-Sheng Chiang (I-Shou University, Taiwan)
Yeong-Her Wang (National Cheng Kung University, Taiwan)

**Fabrication and Optical Characterization of Ultra-Thin Anodic Aluminum Oxide Nanoporous Templates**
Kuan-Yu Hsiao, Wen-Jeng Ho, Po-Yueh Cheng, Chien-Wu Yeh, Ruei-Siang Su, Yu-Tang Shen, Chia-Hua Hu and Yu-Jie Den (National Taipei University of Technology, Taiwan)

**Modelling of a Sensor for Gas adsorption on P and Ga doped GNRFET**
Akshay Moudgil, Shyam Sumukh S R, and Sundaram Swaminathan (BITS Pilani, Dubai Campus, United Arab Emirates)

**Reverse recovery time reworking of fast recovery diodes for industrial production**
Wiwat Itthikusumarn (Faculty of Engineering, King Mongkut's Institute of Technology Ladkrabang, Thailand)

**Design of a parallel-operation-oriented FPGA**
Minoru Watanabe (Shizuoka University, Japan)

**Environmentally Benign and Health-caring Warm-white Lighting Using Rare-Earth-Element Free Fluorescence Nano-composites (Invited Talk)**
Ching-Fuh Lin (National Taiwan University, Taiwan)

**09:30 - 12:00**

**Poster Session II:**
Zone B, IB 1F

Session Chairs:
Yung-Jr Hung (National Sun Yat-sen University, Taiwan)
Chien-Chung Lin (National Chiao Tung University, Taiwan)

**PW-01: An Efficient VLSI Architecture of Lossless ECG Compression for Wireless Healthcare Monitoring System**
Shih-Lun Chen, Tsun-Kuang Chi, Min-Chun Tuan, and Ting-Lan Lin (Chung Yuan Christian University, Taiwan)

**PW-02: Packet Controller for Video Streaming over IEEE 802.11e**
Kuan-Yu Chen, and Wei-Mei Chen (National Taiwan University of Science and Technology, Taiwan)

**PW-03: Common-Mode Noise Suppression Using Decoupling Capacitor**
Chun-Long Wang, Che-Yu Lin, Bao-Ren Huang, and Kuan-Chung Chen (National Taiwan University of Science and Technology, Taiwan)

**PW-04: The Liquid Sample Measurement by Use Of Low Coherence Interferometry**
Yu-An Chen, Hsu-Chih Cheng, and Yan-Feng Liu (National Formosa University, Taiwan)

**PW-05: Application of notched long-period fiber grating based sensor for CO2 gas sensing**
Chia-Chin Chiang, and Janw-Wei Wu (National Kaohsiung University of Applied Sciences, Taiwan)

**PW-06: 1×6 Multicast Optical Interconnection Core for Fiber Optics Sensor Network (FOSN) Application**
Hsi-Hsir Chou (National Taiwan University of Science and Technology, Taiwan), Fan Zhang (Cambridge
**PW-07: Photocatalytic Study of Silver and Bismuth Codoped Zinc Oxide by Spray Pyrolysis**
Tzu-Yang Lin, Wei-Hsuan Hsu, Chun-Yi Lee, Yu-Xuan Ding, Sheng-Chung Huang, Wen-How Lan (National University of Kaohsiung, Taiwan), and Mu-Chun Wang (Minghsin University of Science and Technology, Taiwan)

**PW-08: High performance Thin-Film Flip-Chip Light Emitting Diodes with ACA technology**
Feng Jeng Gwo (Chang Gung University, Taiwan), Chia-Yu Lee, and Yu-Pin Lan (National Chiao Tung University, Taiwan), Ray-Ming Lin, and Chiang-Pin Chen (Chang Gung University, Taiwan)

**PW-09: Proportion-Aware IP over Hierarchical WDM Ring Networks**
Jih-Hsin Ho (Taiwan Shoufu University, Taiwan)

**PW-10: Wavelength Dependence of Trapping Efficiency in Optical Tweezers**
Shih-Kun Liu, Wen-Kai Hsieh, Wei-Yi Sung, Yong-Jai Shen, Chia-Ching Tsai, and Fong-Min Hsu (National Kaohsiung University of Applied Sciences, Taiwan)

**PW-11: Photosensing properties of CuO metal-semiconductor-metal Schottky Photodiodes**
Ming-An Hu, Min-Jyun Huang and Liang-Chiun Chaoa (National Taiwan University of Science and Technology, Taiwan)

**PW-12: Electrical Study of Indium Doped Magnesium Zinc Oxide by Spray Pyrolysis**
Tzu Yang Lin, Wei Hsuan Hsu, Chun Yi Lee, Sheng Chung Huang, Yu Xuan Ding, Wen How Lan, and Ming Chang Shih (National University of Kaohsiung, Taiwan)

**PW-13: Electrical Performance of Dense and Isolated n-type FinFETs in Micro-loading Effect**
Mu-Chun Wang, Jian-Liang Lin, De-Huang Jhuang, and Yi-De Lai (Minghsin University of Science and Technology, Taiwan), Wen-Shiang Liao (Hubei University, China), Wen-How Lan (National University of Kaohsiung, Taiwan), and Shea-Jue Wang (National Taipei University of Technology, Taiwan)

**PW-14: Design of Low-cost Computers with Video Surveillance and Private Network Cloud Functions**
Tain-Lieng Kao (I-Shou University, Taiwan), Chia-Hung Ma (National University of Kaohsiung, Taiwan)

**PW-15: Joint Precoding and Transmit Antenna Selection With Power Allocation in Multiuser MIMO Systems under Limited Feedback**
Wen-Hsien Fang (National Taiwan University of Science and Technology, Taiwan)

**PW-16: Electrical Characteristics of Multi-gate P-channel FinFETs with V_T Implanting Energies under Temperature Stress**
Mu-Chun Wang, Yi-De Lai, and Shao-Syuan Syu (Minghsin University of Science and Technology, Taiwan), Wen-Shiang Liao (Hubei University), Shea-Jue Wang (National Taipei University of Technology, Taiwan), Wen-How Lan (National University of Kaohsiung)

**PW-17: On-chip ± 1.0-A Wide Range Bidirectional Current Sensor for Li-ion Battery Management System**
Tzung-Je Lee, and Yen-Ting Chen (Cheng Shiu University, Taiwan)

**PW-18: Experimental demonstration of L band Single Longitude Mode Tunable Fiber Laser**
Yin-wen Lee, and Jiun-shin Chang (National Taipei University of Technology), Shien-Kuei Liaw (National Taiwan University of Science and Technology, Taiwan), Wen-Fang Wu (National Taiwan University)

**PW-19: Pumping Power Recycling Designed for Bidirectional Erbium-Doped Fiber Amplifier with Good Characteristics**
Chia-Lu Lin, and Shien-Kuei Liaw (National Taiwan University of Science and Technology, Taiwan)
PW-20: **Performance Measurement and Queueing Model of Web Servers with a Variation of Webpage Sizes**

Yen-Hsing Lin, Chung-Ping Chen, Huai-Ping Song (National Taipei University of Technology, Taiwan), Guan-Jhong Lin (National Taiwan University, Taiwan), and Ying-Wen Bai (Fu Jen Catholic University, Taiwan)

PW-21: **Heating Stress Probing Electrical Performance of Multiple N-channel FinFETs with VT Doping Energies**

Mu-Chun Wang, Jian-Liang Lin, and Shao-Syuan Syu (Minghsin University of Science and Technology, Taiwan), Wen-Shiang Liao (Hubei University, China), Wen-How Lan (National University of Kaohsiung, Taiwan), Shea-Jue Wang (National Taipei University of Technology, Taiwan)

PW-22: **Combined influence of intrapulse Raman scattering and self-steepening effect on soliton interaction in 160 Gbps system**

Bhupeshwaran Mani, Jawahar A, Sivasubramanian A (Anna University, India), and Chitra K (VIT University, India)

PW-23: **A Dual-Band CMOS Power Amplifier at 1.8 GHz and 2.6 GHz for LTE Applications**

Guan Yu Pan (Yuan Ze University, Taiwan)

PW-24: **Bidirectional WDM PON with Remote Pumped Gain Flattening EDFA by Using Cascading FBGs and LPFG**

Yi-Lin Yu, Chang-Ming Peng, and Shien-Kuei Liaw (National Taiwan University of Science and Technology, Taiwan)

PW-25: **Development of Portable SPR Sensor by Simulation and Its Application**

Chia-Jung Liu, Muhammad Khari Secario, Brilliant Adhi Prabowo, and Kou-Chen Liu (Chang Gung University, Taiwan)

PW-26: **Viral Detection of Enterovirus 71 Using Surface Plasmon Resonance Biosensor**

Muhammad Secario, Chia-Jung Liu, Brilliant Prabowo, and Kou-Chen Liu (Chang-Gung University, Taiwan)

PW-27: **Design of an Optical Flow Switch Based on LCoS Technologies**

Yhi Shiau, Yuh-Jiuh Cheng, and Shu-Ying Cheng (Chunghwa Telecom Co., Ltd., Taiwan)


Wun-Hao Siao, and Shien-Kuei Liaw (National Taiwan University of Science and Technology, Taiwan)

PW-29: **Low Phase Noise Varactor-Switched Left-Handed Resonator Voltage-Controlled Oscillator**

Heng-Fa Teng (Nan Kai University of Technology, Taiwan), Sheng-Lyang Jang, Wei-Chun Hung, and Ching-Wen Hsue (National Taiwan University of Science and Technology, Taiwan)

PW-30: **Experimental Study of a Portable FLCOS Projector with Visible Light Communication (VLC) Technology**

Hsi-Hsir Chou, Shien-Kuei Liaw, Ming-Jen Chien, Chun-Jui Wu, and Chiang Teng (National Taiwan University of Science and Technology, Taiwan)

PW-31: **Engineered Threshold Voltage in Algan/Gan Hemts for Normally-Off Operation**

Jung-Ruey Tsai, Yi-Sheng Chang, and Kuo-Shu Wei (Asia University, Taiwan), Ting-Ting Wen (National Chiao Tung University, Taiwan)

PW-32: **Improve Efficiency by Surface Treatment of Top-emission Flexible Polymer Light-emitting Diode**

Ming-Lung Tu (Fortune Institute of Technology, Taiwan), Yan-Kuin Su (National Cheng Kung University,
PW-33: Forming-free resistive switching characteristics of Pt/(HfCuAlTi)Ox/Pt for next-generation nonvolatile memory applications
Ting-Yu Wang, J. P. Chu, and Wayhu Diyatmika (National Taiwan University of Science and Technology, Taiwan), S. F. Wang (National Taipei University of Technology, Taiwan)

PW-34: The integration process of W-plug landing on Cu line in 28nm-node flash memory and beyond
Wei-Lin Wang, Yi-Wen Lu, Pei-Chia Chen, Chun-Chi Lai, Hung-Ju Chien, and Hsien-Chang Kou (Powerchip Technology Corporation, Taiwan)

PW-35: Debye Behavior Analysis of InGaN/GaN Multiquantum-well Heterostructures
Ya-Fen Wu (Ming Chi University of Technology, Taiwan), Jiunn-Chyi Lee (Taipei Chengshih University of Technology, Taiwan), Jui-Ju Hsiao, and Tzer-En Nee (Chang Gung University, Taiwan)

PW-36: A Crossbar-Based Controller Design for Flash Memory
Yun-Chi Lee, and Chin-Hsien Wu (National Taiwan University of Science and Technology, Taiwan)
PW-37: Thin film metallic glass as a diffusion barrier layer for flexible CIGS solar cell on stainless steel substrates
Lingjun Xue, J. P. Chu, and Wahyu Diyatmika (National Taiwan University of Science and Technology, Taiwan)

PW-38: Graph Realization of Reed-Muller Codes for Data Hiding
Tingya Yang, and Houshou Chen (National Chung Hsing University, Taiwan)

PW-39: Characteristics Analysis of ZnO Nanowire Flexible Nanogenerator
Yi-Kuei Yu (National Dong Hwa University, Taiwan)

PW-40: A Fully Pipelined CORDIC-Based FPGA Implementation for Biped Robots
Yi-Qin Zhang, Rih-Lung Chung, Ming-Jun Lin, and Shih-Lun Chen (Chung Yuan Christian University, Taiwan)

PW-41: Investigation and Real-time Monitoring of Anti-radiation Broadband Light Source with Low Thermal Coefficient
Zhong-Yu Lu, Shien-Kuei Liaw, Sean Wang, Cheng-Hsuan Lee, Chia-Ju Lin (National Taiwan University of Science and Technology, Taiwan) and Ren-Young Liu (Senior Research Fellow, NARLabs, Taiwan)

PW-42: Water Temperature and Water Level Sensing using Fiber Bragg Gratings
Shih-Syuan Hong, Shien-Kuei Liaw, Bo-Wei Chen, Yu-Chu Lai (National Taiwan University of Science and Technology, Taiwan), Chun-Chung Chen and Zheng-Kuan Lee (National Center for Research on Earthquake Engineering)

PW-43: Indoor Positioning using visible light communications
Hoa Le-Minh (Northumbria University, UK) and Shien-Kuei Liaw (National Taiwan University of Science and Technology, Taiwan)

PW-44: Effect of the polymer overcoat on the performance of the SiNₓ/SiOₓ multilayer barrier for OLED gas barrier applications
Jia-Hao Zhang, Yung-Sheng Wang, Jia-Hao Liang and Dong-Sing Wuu (National Chung Hsing University, Taiwan)

PW-45: A New Quasi-2D Compact Threshold Voltage Model for Junctionless Surrounding-gate (JLSRG) MOSFETs with the Interface Trapped Charges
Te-Kuang Chiang and Yi-Hung Chiou (National University of Kaohsiung, Taiwan)

PW-46: A Three Dimensional Analytical Subthreshold Current Model for Quadruple Gate MOSFET with the Interface Trapped Charges
Te-Kuang Chiang (National University of Kaohsiung, Taiwan), Hong-Wun Gao, Yeong-Her Wang and Che-Wei Liu (National Cheng Kung University, Taiwan)

PW-47: A New Quasi-2D Interface-Trapped-Charge-Degraded Subthreshold Current Model for Junctionless Surrounding-Gate (JLSRG) MOSFETs
Te-Kuang Chiang and Yi-Hung Chiou (National University of Kaohsiung, Taiwan)

10:00 - 10:30
Coffee Break (IB 1F)

10:30 - 12:15
HS-1 Semiconductor and Thin Film Technologies
Room: IB201
Session Chairs:
Cheng-Chung Lee (National Central University, Taiwan)
Uraoka Yukiharu (Nara Institute of Science and Technology, Japan)

Uraoka Yukiharu (Nara Institute of Science and Technology, Japan)

Coatings with arbitrary nano-pass bandwidth for fiber optical communication (Invited Talk)
Cheng-Chung Lee (National Central University, Taiwan)

High-Volume-Manufacturing (HVM) of BVA™ Enabled
Wael Zohni, Ashok Prabhu, Rajesh Katkar and Rey Co (Invensas Corp, USA)

Selenization of Cu₂ZnSnSe₄ Thin Films by Rapid Thermal Processing
Jian-Wei Du and Shih-Chang Shei (National University of Tainan, Taiwan)

Design of III-V/Silicon hybrid surface-emitting laser with grating structure
Jen-Hung Huang, Bai-Ci Chen, Yu-Chang Wu, and Chien-Chung Lin (National Chiao Tung University, Taiwan)

HS-2 Optical components, devices and sensor
Room: IB202

Session Chairs:
Shui-Hsiang Su (I-Shou University, Taiwan)
Ray-Hua Horng (National Chung Hsing University, Taiwan)

Effects of Interface State Traps on Performance of MOS-HEMTs (Invited Talk)
Ray-Hua Horng (National Chung Hsing University, Taiwan)

FTT Block Implementation for OFDM Based Cognitive Radio System Application
Shang-Ping Pan, Shih-Chun Lin, Yu-Chang Huang, Yu-Jung Huang, Wei Lin, and Chung-Long Pan (I-Shou University, Taiwan)

Measurement for Tilted Gratings of a Fiber
Wen-Chi Chao, Nai-Hsiang Sun, Kuo-Kai Huang and Jung-Sheng Chiang (I-Shou University, Taiwan)

High performance nanowire LED (Invited Talk)
Hao-Chung Kuo (National Chiao-Tung University, Taiwan)

Phase Shifted Gratings of Dielectric Waveguides with Two Grating Periods
Li-Ti Kung, Nai-Hsiang Sun, Yu-Wei Liu, Jheng-Rong Li and Jung-Sheng Chiang (I-Shou University, Taiwan)

HS-3 Electronic Devices and Transmission System
Room: IB101

Session Chairs:
Shanq-Jang Ruan (National Taiwan University of Science and Technology, Taiwan)
Kuen-Tsair Lay (National Taiwan University of Science and Technology, Taiwan)

Electronic flow document in the university environment using public-key infrastructure
Radek Holy, Lukáš Vopařil, and Marek Kalika (CTU in Prague, Czech)

Modeling and Simulation of Piezoelectric based Micro Cantilever Systems for Prostate Specific Antigen
Raghav Gupta and Sundaram Swaminathan (Bits Pilani Dubai Campus, United Arab Emirates)

User authentication system for testing students in computer sciences subjects
Milan Koukol, Jana Kalikova, and Jan Krcal (CTU in Prague Faculty of Transportation Sciences, Czech)
The energy calibration of BGO system for luminosity monitoring
Jiun-Jie Liau, Yu-Tan Chen, Kuan-Po Lin, Fa-Hui Lin, Jing-Ge Shiu and Min-Zu Wang (National Taiwan University, Taiwan)

Improvement of Memory Bandwidth Utilization using OpenMP Task with Processor Affinity
Joseph Arul, and Chun-Chih Huang (Fu Jen Catholic University, Taiwan)

Improved Output Power of GaN-based Light emitting diodes grown on patterned Sapphire Substrates with nano-patterned structures
Yu-Hsiang Yeh, Jinn-Kong Sheu, Po-Hsun Liao, Po-Cheng Chen, Wei-Chih Lai (National Cheng Kung University, Taiwan) and Ming-Lun Lee (National Taiwan University of Science and Technology, Taiwan)

Influence of the Thickness of Ge Layer on the Optical Properties and Recording Characteristics of Ge/NiGe Write-Once Blu-Ray Disc
Sin-Liang Ou (National Taiwan University, Taiwan), Hsuan-Chung Wu, Chao-Kuang Wen, Che-Wei Ma Lee, Yan-Cheng Lin, and Sheng-Chi Chen (Ming Chi University of Technology, Taiwan)

12:15 - 13:30
Lunch (Room 201, 202, 301)

13:30 - 15:00
Tutorial
Room: IB101
Chair: Jian-Jang Huang (National Taiwan University, Taiwan)

Development and Application of UV Light-Emitting Device Technologies
Dong-Sing Wuu (National Chung Hsing University, Taiwan)

15:00 -15:30
Coffee Break

15:30-16:30
Invited Session
Room: IB101
Chair: Shien-Kuei Liaw (National Taiwan University of Science and Technology, Taiwan)

Development of portable SPR sensor using organic light source for biochemcials detection (Invited Talk)
Kou-Chen Liu (Chang Gung University, Taiwan)

A 20km/60Gbps Two-Way PON (Invited Talk)
Hai-Han Lu (National Taipei University of Technology, Taiwan)

16:30 - 16:40
Closing remark
13:00 - 17:30

Free city tour to National Palace Museum for foreign participants only
Shuttle bus leaves NTUST at 13:00