

## S0201. Oral Session I

🕒 Nov 27, Wednesday, 13:30-15:00

📍 Room 506

🗣️ Presider: Prof. Hai-Han Lu (National Taipei University of Technology, Taiwan)  
Prof. Shih-Hsiang Hsu (National Taiwan University of Science and Technology, Taiwan)

13:30

2024-WED-S0201-I001

Invited

### Optical Wireless Convergence: Next-Generation Optical Crosshaul Networking

Prof. Christina Lim, The University of Melbourne (Australia)

14:00

2024-WED-S0201-O001

### Above 67GHz, 100Gb/s and high-extinction ratio electro-absorption modulator laser using traveling-wave electrodes

Kun-Sian Lin, Yi-Jen Chiu, National Sun Yat - Sen University (Taiwan)

14:15

2024-WED-S0201-O002

### Air-to-Water Rolling Shutter Based Optical Camera Communication Using CUDA Deep-Neural-Network Long-Short-Term-Memory (CuDNNLSTM)

Yung-Jie Chen, Po-Sheng Lin, Jia-Fu Li, Ming-Chieh Tsai, National Yang Ming Chiao Tung University (Taiwan); Chien-Hung Yeh, Feng Chia University (Taiwan); You-Chia Chang, Chi-Wai Chow, National Yang Ming Chiao Tung University (Taiwan)

14:30

2024-WED-S0201-O003

### Sub-nanosecond Photonic Microwave Switch Using Phase-locked P1 Dynamics for Microwave OFDM Down-link

Hao-Wen Weng Lin, Chun-An Sung, Yu-Han Hung, National Sun Yat-sen University (Taiwan)

14:45

2024-WED-S0201-O004

### Quantum Noise with Volterra Equalizer-Aided OFDM system to Address Privacy Issues in THz communication

Chun Han Chen, Chi Wei Chiu, Yen Yi Terng, Pouya Torkaman, Xuan Wei Miao, Sheng Yuan Zheng, Kai Ming Feng, Shang Hua Yang, National Tsing Hua University (Taiwan)

## S0202. Oral Session II

🕒 Nov 27, Wednesday, 15:15-16:45

📍 Room 506

🗣️ Presider: Prof. Yu-Han Hung (National Sun Yat - Sen University, Taiwan)  
Prof. Jiun-Yu Sung (National Taiwan University of Science and Technology, Taiwan)

15:15

2024-WED-S0202-I001

Invited

### Overviews of Indoor Infrared Optical Wireless Communications (IR-OWC)

Prof. Jiun-Yu Sung, National Taiwan University of Science and Technology (Taiwan)

15:45

2024-WED-S0202-O001

### Broadband, high fabrication tolerance adiabatic mode evolution coupler with bent axis

Yu-Kai Lee, Shuo-Yen Tseng, National Cheng Kung University (Taiwan)

16:00

2024-WED-S0202-O002

### Fabrication of TiO<sub>2</sub> waveguide resonators

Po-Kai Hsu, Meng-Fu Chi, Chien-Cheng Kuo, National Central University (Taiwan); Pei-Hsun Wang, National Yang Ming Chiao Tung University (Taiwan)

16:15

2024-WED-S0202-O003

### 1580 nm InGaAsP Distributed-feedback laser integrated with high thermal conductivity substrate

Jhuo-Yen Chang-Chien, Yi-Jen Chiu, National Sun Yat-Sen University (Taiwan)

16:30

2024-WED-S0202-O004

### 100GHz and 100Gb/s Silicon Photonics Micro-ring Modulator using high nonlinearly effect

Rih-You Chen, Jheng-Huei Dong, Yi-Jen Chiu, National Sun Yat-sen University (Taiwan)

## S0203. Oral Session III

🕒 Nov 28, Thursday, 10:45-12:00

📍 Room 506

🗣️ Presider: Prof. Yi-Jen Chiu (National Sun Yat-sen University, Taiwan)  
Prof. Shu-Wei Chang (Academia Sinica, Taiwan)

10:45

Invited

2024-THU-S0203-I001

**Taming the beasts: wavefront shaping to conquer nonlinear effects in multimode fiber amplifiers**

Dr. Chun-Wei Chen, Stanford University (USA)

11:15

2024-THU-S0203-O001

**240-Gbit/s PAM4 Modulation using SiGe Electro Absorption Modulator (EAM) with Long Short Term Memory Neural Network**

Wei-Lin Chen, Tun-Yao Hung, Yuan-Zeng Lin, National Yang Ming Chiao Tung University (Taiwan); David W. U. Chan, Hon Ki Tsang, The Chinese University of Hong Kong (Taiwan); Chien-Hung Yeh, Feng Chia University (Taiwan); Chi-Wai Chow, National Yang Ming Chiao Tung University (Taiwan)

11:30

2024-THU-S0203-O002

**16-channel CW-WDM wavelength demultiplexer employing cascaded MZIs and add-drop ring resonators**

Yen-Ming Lee, Yung-Jr Hung, Po-Chou Hung, Ruei-Shen Wang, Zong-Ming Chang, Chih-Hsien Chen, National Sun Yat-sen University (Taiwan)

11:45

2024-THU-S0203-O003

**Plasmonic Signal Amplification in Plasmonic Waveguide by Surface Acoustic Wave**

Cheng-Yi Cheng, Jian-Jang Huang, Rohit Gupta, Jiang-Qin Shi, National Taiwan University (Taiwan)

## S0204. Oral Session IV

### Joint Session - Si Photonics: AI computing and CPO with Optical Waveguides and Communications IV

🕒 Nov 28, Thursday, 13:30-14:45

📍 Room 506

🗣️ Presider: Prof. Jin-Wei Shi (National Central University, Taiwan)  
Prof. Shuo-Yen Tseng (National Cheng Kung University, Taiwan)

13:30

Special Symposium

Si Photonics: AI computing and CPO

**Empowering Silicon Photonics IC Design and Verification with Siemens EDA Solutions**

Vincent Lai, Enlight Technology Co., Ltd., Siemens EDA Taiwan

14:00

2024-THU-S0204-O001

**MEMS-Actuated Movable Optical Probes to Pre-calibrate Phase Errors in a Programmable Photonic Integrated Circuits**

Thuy Trinh, Ming-Chang Lee, National Tsing Hua University (Taiwan)

14:15

Special Symposium

Si Photonics: AI computing and CPO

**Silicon Photonics for Optical Interconnect and Computing**

Prof. Yung-Jr Hung, National Sun Yat-sen University (Taiwan)

## S0205. Oral Session V

🕒 Nov 28, Wednesday, 15:00-15:45

📍 Room 506

🗣️ Presider: Prof. Chi-Wai Chow (National Yang Ming Chiao Tung University, Taiwan)  
Prof. Yung-Jr Hung (National Sun Yat-sen University, Taiwan)

15:00

2024-THU-S0205-O001

### Two-Way WDM VSB-PAM4 Fiber-FSO Communications with Polarization Multiplexing Technique and Tunable Optical VSB Filter

Yu-Chen Chung, Yu-Yao Bai, Jia-Ming Lu, Kelper Okram, Wei-Wen Hsu, Hai-Han Lu, National Taipei University of Technology (Taiwan)

15:15

2024-THU-S0205-O002

### 5G NR Sub-THz Fiber-Wireless Converged Systems with Polarization Multiplexing-Multiband and Self-Polarization Diversity Techniques

Wei-Wen Hsu, Yu-Chen Chung, Yu-Yao Bai, Kelper Okram, Jia-Ming Lu, Hai-Han Lu, National Taipei University of Technology (Taiwan)

15:30

2024-THU-S0205-O003

### Advanced Modulation Techniques based on Power Optimization for the Terahertz Communication

Chia Hsuan Chen, National Yang Ming Chiao Tung University (Taiwan); Sheng Yuan Zheng, Xuan Wei Miao, Pouya Torkaman, Kai Ming Feng, Shang Hua Yang, National Tsing Hua University (Taiwan)

## S0206. Oral Session VI

🕒 Nov 29, Friday, 09:00-10:45

📍 Room 506

🗣️ Presider: Dr. Chi Chen (Academia Sinica, Taiwan)  
Prof. Shuo-Yen Tseng (National Cheng Kung University, Taiwan)

09:00

2024-FRI-S0206-O001

### Deep learning-based CNN-LSTM prediction model-assisted growth of chromium-doped crystal optical fiber

Chin Wen Tseng, Chun Nien Liu, National Chung Hsing University (Taiwan); Kai Chieh Chang, National Taiwan University (Taiwan); Yun Ting Wang, Wood Hi Cheng, National Chung Hsing University (Taiwan)

09:15

2024-FRI-S0206-O002

### Comparative Analysis of Nonlinear Equalization Techniques for Mitigating Transceiver Nonlinearities in High-Speed Short-Reach Optical Communication

Benedictus Yohanes Bagus Widhianto, Jychong Chen, Yu-Chen Lai, National Yang-Ming Chiao-Tung University (Taiwan)

09:30

2024-FRI-S0206-O003

### Parallel photonic convolution process with spectrum-sliced light source on silicon photonics platform

Pao-Chia Shih, Zong-Ming Chang, Po-Hsiang Huang, National Sun Yat-sen University (Taiwan); Chwen-Pu Jou, TSMC (Taiwan); Chua-Chin Wang, Yung-Jr Hung, National Sun Yat-sen University (Taiwan)

09:45

2024-FRI-S0206-O004

### 1.74 Gbps White-Light System Combining a Semipolar (20-21) Blue Micro-LED and an Organic Emitter for Visible Light Communication and Solid-State Lighting

Annada Sankar Sadhu, Li-Yin Chen, Hao-Chung Kuo, National Yang Ming Chiao Tung University (Taiwan)

## S0206. Oral Session VI

🕒 Nov 29, Friday, 09:00-10:45

📍 Room 506

🗣️ Presider: Dr. Chi Chen (Academia Sinica, Taiwan)  
Prof. Shuo-Yen Tseng (National Cheng Kung University, Taiwan)

10:00

2024-FRI-S0206-O005

### Polynomial-Based Nonlinear Equalization with Hybrid Pruning in Short-Reach High-Speed Optical Links

Benedictus Yohanes Bagus Widhianto, Jyehong Chen, National Yang-Ming Chiao-Tung University (Taiwan)

10:15

2024-FRI-S0206-O006

### High Bandwidth 1135 nm Vertical Cavity Surface Emitting Laser for Communication Application

Yu-Jie Lin, National Yang Ming Chiao Tung University (Taiwan); Fu-He Hsiao, Wei-Ta Huang, Tzu-Yi Lee, National Yang Ming Chiao Tung University/Hon Hai Research Institute (Taiwan); Kuo-Bin Hong, Yu-Heng Hong, Hon Hai Research Institute (Taiwan); Shu-Wei Chang, National Yang Ming Chiao Tung University/Academia Sinica (Taiwan); Hao-Chung Kuo, National Yang Ming Chiao Tung University/Hon Hai Research Institute (Taiwan)

10:30

2024-FRI-S0206-O007

### High-Efficiency Chirped Grating Couplers Using Amorphous Silicon with Polysilicon Overlay on Lithium Niobate on Insulator

Huai-Yi Chen, Kai-Hsin Huang, Huafan University (Taiwan)

## S2. Poster Session I

🕒 Nov 27, Wednesday, 13:30-16:00

📍 Room 500

2024-WED-P0201-P001

### Ultrahigh Extinction Ratio Fiber Mach-Zehnder Interferometer based on Connections of Discrepant Hollow-Core Fibers

Ren-Xiang Luo, Yan-Han Lu, Yi-Chen Huang, Wei-Cheng Lin, Jing-Yaun Fan, Cheng-Ling Lee, National United University (Taiwan)

2024-WED-P0201-P002

### Thermally tunable optical switch based on liquid crystal-clad SU-8 waveguide

Hung-Lin Chen, Chun-Ta Wang, National Sun Yat-sen University (Taiwan)

2024-WED-P0201-P003

### On-Chip Squeezer based on Si<sub>3</sub>N<sub>4</sub> Photonics Ring Molecule

Cheng-Ting Liao, Zi-Hao Shi, Po-Han Wang, Te-Hwei Suen, Chien-Ming Wu, Ray-Kuang Lee, Ming-Chang Lee, National Tsing Hua University (Taiwan)

2024-WED-P0201-P004

### Hybrid WDM-TDM OTDR System for Multi-Wavelength and Multi-Branch Optical Transport Systems

Wei-Che Yen, Ching-Hung Chang, National Chiayi University (Taiwan)

2024-WED-P0201-P005

### Assessing the AprilTag Recognition Performance Under Blur Image and Ambient Lights in Optical Camera Communication Based Unmanned Aerial Vehicle System

Hsing-Weng Lin, Yung-Jie Chen, National Yang Ming Chiao Tung University (Taiwan); Chien-Hung Yeh, Feng Chia University (Taiwan); Chi-Wai Chow, National Yang Ming Chiao Tung University (Taiwan)

2024-WED-P0201-P006

### Silicon Photonics Coherent Electrical Absorption Modulator Module for Generating High Speed NRZ and PAM4 Signals

Jing-Xuan Chen, Yi-Jang Hsu, Ching-Chih Chan, National Yang Ming Chiao Tung university (Taiwan)

2024-WED-P0201-P007

### 5G NR Fiber-Wireless Convergent Systems through Injection Locking Multiple Optical Carriers into DMLs

Yu-Yao Bai, Kelper Okram, Jia-Ming Lu, Wei-Wen Hsu, Yu-Chen Chung, Hai-Han Lu, National Taipei University of Technology (Taiwan)

## S2. Poster Session I

🕒 Nov 27, Wednesday, 13:30-16:00

📍 Room 500

2024-WED-P0201-P008

### Rapid All-Optical Modulation of a Vanadium Dioxide Thin Film

Hao-Yu Cheng, National Taiwan University (Taiwan); Ming-Jyun Ye, National Yang Ming Chiao Tung University (Taiwan); Lu-Hsing Chen, National Tsing Hua University (Taiwan); Yen-Yu Wang, Yu-Jung Lu, Academia Sinica (Taiwan); Shi-Wei Chu, National Taiwan University (Taiwan); Kuo-Ping Chen, National Tsing Hua University (Taiwan); Kung-Hsuan Lin, Academia Sinica (Taiwan)

2024-WED-P0201-P009

### Silicon Nanohole Array as Waveguide Output Couplers

Ya-Cin Chung, Yi-Lin Chuang, National Chung Hsing University (Taiwan); Min-Hsiung Shih, Shu-Wei Chang, Academia Sinica (Taiwan); Wan-Shao Tsai, National Chung Hsing University (Taiwan)

2024-WED-P0201-P010

### Radio-over-fiber multi-channel microwave generation using semiconductor lasers at period-one dynamics

Guan-Ting Lu, Chin-Hao Tseng, Sheng-Kwang Hwang, National Cheng Kung University (Taiwan)

2024-WED-P0201-P011

### Design of Silicon Waveguides Nanodisk Array Output Couplers

Yi-Hsuan Wu, Jun-Ping You, Wan-Shao Tsai, National Chung Hsing University (Taiwan)

2024-WED-P0201-P012

### Power-dependent sensing performance in silicon photonics interferometric fiber optic gyroscope

Shu-Ting Yang, Ting-Hsuan Kuo, Wei-Xuan Chen, Yung-Jr Hung, National Sun Yat-sen University (Taiwan)

2024-WED-P0201-P013

### Novel Reflective-type Liquid-Crystal Phase Shifters Base on Differential CPW

Ping-Chen Tsai, Yuh-Chyi Chang, Tien-Lun Ting, Tsung-Hsien Lin, National Sun Yat-Sen University (Taiwan)

2024-WED-P0201-P014

### Reducing interface reflection in silicon photonics fiber optic gyroscopes

Meng-Hsuan Tsai, Yu-Yun Tzeng, Yu-Tong Lee, Wei-Xuan Chen, Yung-Jr Hung, National Sun Yat-sen University (Taiwan)

2024-WED-P0201-P015

### Uniform and Nonuniform Grating Coupler Designs Based on Silicon-on-Insulator

Yi-An Chen, Chun-Ta Wang, National Sun Yat-sen University (Taiwan)

2024-WED-P0201-P016

### High Performance Micro-Ring Resonators on SOI using Optimized Low-loss Bends

Chih-Chieh Hsia, Yung-Lin Chen, Shuo-Yen Tseng, National Cheng Kung University (Taiwan)

2024-WED-P0201-P017

### Design and Analysis of 3.5GHz Liquid Crystal Phase Shifter with High FoM

Pin-Jui Su, Yuh-Chyi Chang, Tien-Lun Ting, Tsung-Hsien Lin, National Sun Yat-sen University (Taiwan)

2024-WED-P0201-P018

### Adiabatic 3-dB Coupler with 145 nm Bandwidth by Adiabaticity Engineering

Jiun-Zhu Lai, Huai-Wei Tu, Li-Fu Chang, Shuo-Yen Tseng, National Cheng Kung University (Taiwan)

2024-WED-P0201-P019

### Coherent OFC generation using optically injected semiconductor lasers with optoelectronic feedback

Yu-Ren Li, Hsu-Ting Tang, Yu-Han Hung, National Sun Yat-sen University (Taiwan)

2024-WED-P0201-P020

### Automatic Intensity Control of Low-orbit Satellite Optical Communication Transceiver

Bo-Han Chen, Sheng-Hui Chen, National Central University (Taiwan)

## S2. Poster Session II

🕒 Nov 28, Thursday, 13:30-16:00

📍 Room 521

2024-THU-P0202-P001

### Design and Analysis of Tunable Microring Resonator Filter by Thermo-Optic Effect in SOI

Yu-Cheng Lin, Yan-Chih Lu, Cheng-Feng Wei, Hong-Chen Li, Pei-Shiun Hsu, Ming Chuan University (Taiwan)

2024-THU-P0202-P002

### Applying Rayleigh Backscattering Injection and Saturable Absorber for Stable Single-Mode Erbium Fiber Laser

Chien-Yu Liao, Yu-Hsin Kao, Tsu-Hsin Wu, Yuan-Wen Chen, Sung-Yi Lin, Yu-Heng Lin, Chien-Hung Yeh, Feng Chia University (Taiwan)

2024-THU-P0202-P003

### High Coupling Efficiency of Spot-Size-Converter for Fiber Coupling to Silicon Wire Waveguide

Yu-Cheng Lin, Chun-Nien Liu, Chien-Wei Huang, Wood-Hi Cheng, National Chung Hsing University (Taiwan)

2024-THU-P0202-P004

### Enhanced Optical Gain in Erbium doped Al<sub>2</sub>O<sub>3</sub>/SOI Waveguide Using Subwavelength Grating Structures

Zhu-Xuan Huang, Hung-Tai Chao, San-Liang Lee, National Taiwan University of Science and Technology (Taiwan); Vítězslav Jeřábek, Czech Technical University (Czech Republic)

2024-THU-P0202-P005

### High Modulation Linearity of Double-Injection Microring Fano Modulators

Pei-En Huang, Hsiang-Chih Kao, National Tsing-Hua University (Taiwan); Ming-Wei Lin, National Applied Research Laboratories (Taiwan); Ming-Chang M. Lee, National Tsing-Hua University (Taiwan)

2024-THU-P0202-P006

### Polarization-Dependent Transmission Characteristics of Rectangular Terahertz Pipe Waveguides

Yan Zhang Chen, Chih Hsien Lai, National Yunlin University of Science and Technology (Taiwan)

2024-THU-P0202-P007

### FDTD Methods of Topological Waveguides and Resonators by Complementary Structured PEC Sheets

Yu-Teng Wu, Yi-Chi Chen, Fu-Jia Shiau, Shih-Hui Chang, National Cheng Kung University (Taiwan)

2024-THU-P0202-P008

### Parallel Dual Ring Modulators for High-Speed PAM-4 Signal Modulation

Xiang-Yu Wang, National Taiwan University of Science and Technology (Taiwan); Hsiao-Yuan Chang, National Taiwan University of Science and Technology (Taiwan); Tung-Hung Su, Pei-En Huang, Ming-Wei Lin, Taiwan Semiconductor Research Institute (Taiwan); San-Liang Lee, National Taiwan University of Science and Technology (Taiwan)

2024-THU-P0202-P009

### High-Efficiency Silicon Nitride Waveguide Grating Coupler With Multi-Layer Grating Films

Cheng-Li Chang, Yi-Chung Lai, Chi-Chien Yang, Jun-Ru Yang, Tzyy-Jiann Wang, National Taipei University of Technology (Taiwan)

2024-THU-P0202-P010

### FDTD Analysis of Slot Antenna Radiation Mode Fed by Quantum Spin Hall Topological Waveguide

Chun-Ting Lin, Yung-Chi Chen, Chih-Kai Tsai, Shih-Hui Chang, National Cheng Kung University (Taiwan)

2024-THU-P0202-P011

### Study on the Performance Impact Due to Environmental Factors in Underwater Optical Communication

Xin-Yu Fan, Jun-Kai Wei, Pin-Chen Chen, Shien-Kuei Liaw, Pei-Jun Lee, National Taiwan University of Science and Technology (Taiwan); Kishikawa Hiroki, Tokushima University (Japan)

2024-THU-P0202-P012

### TE-mode coupling coefficients in multilayer periodic dielectric waveguides

Nai-Hsiang Sun, Yu-Cheng Yan, I-Hsuan Chen, Jung-Sheng Chiang, I-Shou University (Taiwan); Weida Zhang, Tso-Min Chou, Gary Evans, Jerome Butler, Southern Methodist University (United States)

2024-THU-P0202-P013

### Power Loss in Misaligned Mode Projection

Jayson Cabanilla, University of the Philippines Diliman (Taiwan)

2024-THU-P0202-P014

### Novel Wavelength Router Functional Elements with Photonic Integrated Circuits in Recursive Wavelength Routing Networks

Kimio Oguchi, Chi-Chia Chung, Bo-Shen Yang, NTUST (Taiwan)

## S2. Poster Session II

🕒 Nov 28, Thursday, 13:30-16:00

📍 Room 521

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2024-THU-P0202-P015

### **Spectral Characteristics of Slot-Structure-Based Hybrid Plasmonic Waveguides with Various Metals**

Chi Hung Liu, Chih-Hsien Lai, National Yunlin University of Science and Technology (Taiwan)

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2024-THU-P0202-P016

### **Femtosecond-laser-written liquid crystal/polymer composite waveguides for controllable electro-optical switches**

MING-YANG JHENG, Jia-De Lin, National Dong Hwa University (Taiwan)

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2024-THU-P0202-P017

### **Lithium Niobate-Based Polarization Convertor**

I-Shien Huang, Chii-Chang Chen, Department of optics and Photonics (Taiwan)