

## S0501. Oral Session I

🕒 Nov 27, Wednesday, 13:30-15:00

📍 Room 505a

🗣️ Presider: Prof. Ching-Cherng Sun (National Central University, Taiwan)  
Dr. Shu-Wei Chang (Academia Sinica, Taiwan)

13:30

2024-WED-S0501-O001

### A Hybrid Optical-Digital Neural Network for Terahertz Computational Imaging

Han-Yu Liang, Shao-Hsuan Wu, Seyed Mostafa Latifi, Shang-Hua Yang, Tsinghua University (Taiwan)

13:45

2024-WED-S0501-O002

### Active Optical Dispersion Compensation for Temporal Focusing Microscopy

Cheng-Yu Lee, Chia-Yuan Chang, National Cheng Kung University (Taiwan)

14:00

2024-WED-S0501-O003

### Decuple Boost in Outcoupling Efficiency of Amber-light Emitting Perovskite Quantum Dots

Kavya Nair Jayakumaran, Wen-Hsin Chang, National Taiwan University (Taiwan); Ming-Chung Liu, Hsiao-Wen Tu, Industrial Technology Research Institute (Taiwan); Hsuen-Li Chen, National Taiwan University (Taiwan)

14:15

2024-WED-S0501-O004

### White Light Diffraction-Based Overlay Measurement by Dual-Frequency-Modulation Technique

Hsiang-Yu Chung, Chi-Han Chung, Song-Ying Wei, Hung-Chih Hsieh, National United University (Taiwan)

14:30

2024-WED-S0501-O005

### Continuously electro-tunable Linear Polarization Rotator

Yi-Xuan Liu, Pravinraj Selvaraj, Chi-Tang Huang, Ko-Ting Cheng, National Central University (Taiwan)

14:45

2024-WED-S0501-O006

### Model Predictive Control with Long Short-Term Memory Model for Path Following of Tracked Vehicle

Chi-Wei Yeh, Shean-Jen Chen, Hao-Yang Chuang, National Yang Ming Chiao Tung University (Taiwan)

## S0502. Oral Session II

🕒 Nov 27, Wednesday, 15:15-16:45

📍 Room 505a

🗣️ Presider: Prof. Pin Han (National Chung Hsing University, Taiwan)  
Prof. Tsung-Xian Lee (National Taiwan University of Science and Technology, Taiwan)

15:15

2024-WED-S0502-O001

### Optimal Light Sources for VHOE-based Mixed Reality System

Yin-Cheng Huang, Tsung-Hsun Yang, Ching-Cherng Sun, Yeh-Wei Yu

15:30

2024-WED-S0502-O002

### Low-Temperature Processing of Shortwave Infrared Narrow-Bandpass Filters

Ya-Hsuan Lin, Che-Hong Wu, Sheng-Hui Chen, National Central University (Taiwan)

15:45

2024-WED-S0502-O003

### Terahertz photonic crystals based on metal-wire-woven pipe structures

Liang-Cheng Yu, Chin-Lun Kuo, Jayu Lu, Borwen You, National Changhua University of Education (Taiwan)

16:00

2024-WED-S0502-O004

### Fabrication of Ambient Temperature Fiber-Optic Sensor Based on Lossy Mode Resonance

Yu-Siang Hu, Chuen-Lin Tien, Feng Chia University (Taiwan); Chen-Yuan Huang, National Central University (Taiwan)

16:15

2024-WED-S502-O005

### Cavity mode analysis of Blue InGaN Resonant-Cavity Light-Emitting Diodes with Top Dielectric Deflectors

Chia-Yi Chen, Chia-Feng Lin, National Chung Hsing University (Taiwan)

16:30

2024-WED-S0502-O006

### Deep Neural Network based Deformable Mirror Identification and Control in Non-normal Incidence System

Po-Jen Ting, Chia-Yuan Chang, National Cheng Kung University (Taiwan)

## S0503. Oral Session III

🕒 Nov 28, Thursday, 10:45-12:00

📍 Room 505a

🗣️ **Presider:** Prof. Chung-Hao Tien (National Yang Ming Chiao Tung University, Taiwan)  
Prof. Wei-Hung Su (National Sun Yat-sen University, Taiwan)

10:45

2024-THU-S0503-I001

Invited

### Optical Trilogy: Design, Fabrication, and Testing for Astronomical Telescopes

Prof. Daewook Kim, University of Arizona (USA)

11:15

2024-THU-S0503-I002

Invited

### Multifunctional crystalline materials and applications

Prof. Shizhuo Yin, Penn State University (USA)

11:45

2024-THU-S0503-O001

### Prototype of a 0.6/1.2-Meter Optical Subsystem for a 12-Meter Periscope System

Chiyung Hsieh, National Yang Ming Chiao Tung University (Taiwan); Chia-Fa Chu, Taiwan Space Agency (Taiwan); Li-Jen Hsiao, National United University (Taiwan); Shao-Rong Huang, Ting-Feng Tseng, Diopter Precision Taiwan Co., Ltd (Taiwan); Cheng-Sheng Huang, National Yang Ming Chiao Tung University (Taiwan); Jin-Cherng Hsu, Fu Jen Catholic University (Taiwan); Sheng-Hui Chen, National Central University (Taiwan); Hsing-Yu Wu, Taiwan Space Agency (Taiwan)

## S0504. Oral Session IV

🕒 Nov 28, Thursday, 13:30-14:45

📍 Room 505a

🗣️ **Presider:** Prof. Chuen-Lin Tien (Feng Chia University, Taiwan)  
Prof. Jui-Wen Pan (National Yang Ming Chiao Tung University, Taiwan)

13:30

2024-THU-S0504-I001

Invited

### NASA Sensors and Instrumentation: Driving Technologies to Enable an Innovative and Prosperous Future

Dr. Upendra N. Singh, NASA Langley Research Center (USA)

14:00

2024-THU-S0504-I002

Invited

### Non-contact vibration measurements by self-mixing interferometry

Prof. Silvano Donati, University of Pavia (Italy)

14:30

2024-THU-S0504-O001

### To Improve Underwater Fish Recognition Rate of YOLO-NAS via Deep Learning Image Restoration

Chi-Jui Tsai, Shean-Jen Chen, Sumesh Nair, Chun-Yu Lin, Guo Fong Hong, National Yang Ming Chiao Tung University (Taiwan); Yu-Chi Chang, National Museum of Marine Biology and Aquarium (Taiwan); Yi-Hao Hsiao, National Center for High-performance Computing (Taiwan)

## S0505. Oral Session V

🕒 Nov 28, Thursday, 15:00-16:00

📍 Room 505a

🗣️ Presider: Prof. Cheng-Mu Tsai (National Chung Hsing University, Taiwan)  
Prof. Shih-Hsin Ma (Feng Chia University, Taiwan)

15:00

2024-THU-S0505-I001

Invited

**Full of view 50-degree projection lens design for AR glasses waveguide system**

Prof. Wen-Shing Sun, National Central University (Taiwan)

15:30

2024-THU-S0505-I002

Invited

**Laser white light: the next breakthrough in solid-state lighting technology**

Prof. Tsung-Xian Lee, National Taiwan University of Science and Technology (Taiwan)

## S0506. Oral Session VI

🕒 Nov 29, Friday, 09:00-11:00

📍 Room 505a

🗣️ Presider: Prof. Wen-Shing Sun (National Central University, Taiwan)  
Prof. Tsung-Xian Lee (National Taiwan University of Science and Technology, Taiwan)

09:00

2024-FRI-S0506-I001

Invited

**From the Wave Optics to the Ray Tracing: A Novel Photonic Integrated Circuit with Broadband and High-Efficiency Focusing**

Prof. Chun-Yuan Fan, National Taiwan University of Science and Technology (Taiwan)

09:30

2024-FRI-S0506-O001

**Development of an Automated Micron-Level Circular Hole Measurement System Based on Shape From Focus Method**

Yan-Rui Lin, Chun-Yen Chu, Ju-Yi Lee, National Central University (Taiwan)

## S0506. Oral Session VI

🕒 Nov 29, Friday, 09:00-11:00

📍 Room 505a

🗣️ Presider: Prof. Wen-Shing Sun (National Central University, Taiwan)  
Prof. Tsung-Xian Lee (National Taiwan University of Science and Technology, Taiwan)

09:45

2024-FRI-S0506-O002

**Multifunctional Metasurface-Driven Structured Light with a 1-to-3 Beam Splitting**

Po-Sheng Huang, Hsiu-Ping Su, Pin Chieh Wu, National Cheng Kung University (Taiwan)

10:00

2024-FRI-S0506-O003

**Enhanced Optical Anisotropy and Birefringence in Ta<sub>2</sub>O<sub>5</sub> Nanostructured Thin Films by Oblique Deposition on Polymer Gratings**

Yi-Jun Jen, Bo-Wei Zhan, Ming-Yuan Wang, Meng-Jie Lin, National Taipei University of Technology (Taiwan)

10:15

2024-FRI-S0506-O004

**SU8 Polymer Microlens Integrated High-Performing Normal-Incidence Germanium Photodetector**

Yu-Hsuan Liu, National Tsing-Hua University (Taiwan)

10:30

2024-FRI-S0506-O005

**Predicting the Impact of Star Tracker Lens Structure Composition on Thermal Drift**

Kuo-Chuan Wang, Cheng-Huan Chen, National Yang Ming Chiao Tung University (Taiwan)

10:45

2024-FRI-S0506-O006

**Development of a Larger Aperture Space Telescope Equipped with an Area Sensor**

Shih-Yu Chen, Yu-Jiun Chang, National Chung-Shan Institute of Science and Technology (Taiwan); Shao-Rong Huang, National Central University (Taiwan); Li-Jen Hsiao, National United University (Taiwan); Hsing-Yu Wu, Taiwan Space Agency (Taiwan)

## S5. Poster Session I

🕒 Nov 27, Wednesday, 13:30-16:00

📍 Room 521

2024-WED-P0501-P001

### Light assisted reduction of silver nanoclusters on gold nanoplates

Naushad Khan, Jiunn-Woei Liaw, Chang Gung University (Taiwan)

2024-WED-P0501-P002

### Multi-focus Matrix with Intensity Equalizing Feedback-control by using Spatial Light Modulator

I Chen Tsai, Xiang Ting Lin, Chia Yuan Chang, National Cheng Kung University (Taiwan)

2024-WED-P0501-P003

### An Economic Fresnel Zone Plate for Fast-Prototyping in Millimetre Wave and Terahertz Frequencies

Jo-Yu Huang, International Bilingual School at Hsinchu Science Park (Taiwan); Chia-Ming Mai, Seyed Mustafa Lafiti, Shang-Hua Yang, National TsingHua University (Taiwan)

2024-WED-P0501-P004

### Uniform 3D Imaging Resolution in Large Field of View Systems Using Distortion-Free Dot Arrays

Bochang Wu, Hao Wang, Cheng-Feng Pan, Joel K. W. Yang, Singapore University of Technology and Design (Singapore)

2024-WED-P0501-P005

### Online transparent conductive film coating quality inspection equipment development and manufacturing technology guidance

Feng-Yi Chen, Cheng-Wen Chen, Donyau Chang, National Applied Research Laboratories (Taiwan); Dong-Woo Suh, National Yang Ming Chiao Tung University (Taiwan); Po-Kai Chiu, National Applied Research Laboratories (Taiwan)

2024-WED-P0501-P006

### Parameter optimization study of TIR lens design for LED counter beam tunnel lights based on CIE regulations

Yixiu Ynag, Hsiao-Yi Lee, Hsing-Yuan Liao, National Kaohsiung University of Science and Technology (Taiwan)

2024-WED-P0501-P007

### Fundamental Investigation of Deposition Technology for Fabricating Mono-material Graded-index AR coating

Yuhang Yang, Tokai University (Japan), Taisei Wakamiya, Electronic Device Technology Research Laboratory, the Japan Steel Works, Ltd (Japan); Naoya Tajima, Tokai University (Japan), Takayuki Matsudaira, SHINCRON Co., Ltd (Japan); Hiroshi Murotani, Tokai University (Japan)

2024-WED-P0501-P008

### Study of Improving the Efficiency of Photocatalyst Formaldehyde Decomposition Using Array-type Mechanisms and Titanium Dioxide Hydrosol

Zhan-You Wu, Chun-Wei Yeh, Hsing-Yuan Liao, Hsiao-Yi Lee, National Kaohsiung University of Sciences and Technology (Taiwan)

2024-WED-P0501-P009

### Uniform Illumination Freeform Lens Design with Diagonal Refractive Surfaces Using Numerical Methods

MingRen Liu, Shi-Hong Qiu, Cheng-Mu Tsai, Ting-Chun Mi, National Chung Hsing University (Taiwan)

2024-WED-P0501-P010

### Optical design of high numerical aperture objective lens combined with liquid lens for laser micromachining

Wei-Jei Peng, Kun-Huan Wu, Ming-Fu Chen, National Applied Research Laboratories (Taiwan); Tsung-Xian Lee, National Taiwan University of Science and Technology (Taiwan)

2024-WED-P0501-P011

### Twisted Poynting Vector and Chirality Flux in Plasmonic Nanostructures

Yun-Cheng Ku, Chang Gung University (Taiwan); Mao-Kuen Kuo, National Taiwan University (Taiwan); Jiunn-Woei Liaw, Chang Gung University (Taiwan)

2024-WED-P0501-P012

### Full-field 30-Degree to 50-Degree five-stage zoom projection lens design for head-mounted displays

Huai-Chih Chang, Wen-Shing Sun, National Central University (Taiwan)



## S5. Poster Session I

🕒 Nov 27, Wednesday, 13:30-16:00

📍 Room 521

2024-WED-P0501-P013

### Designs of Athermalized Autocollimators with Monochromatic and White Light

Yun-Hsuan Hsu, Chaohsien Chen, National Kaohsiung University of Science and Technology (Taiwan)

2024-WED-P0501-P014

### 2D Metal sulfide modified Cu<sub>2</sub>O/ZnO nanorod for non-enzymatic glucose sensor

Ping Tang Lin, Hsi Chao Chen, National Yunlin University of Science and Technology (Taiwan); Ying Sheng Lin, National Taiwan University Hospital Yunlin Branch (Taiwan); An Hsiung Cheng, Yu Chuan Lin, National Yunlin University of Science and Technology (Taiwan)

2024-WED-P0501-P015

### Study of automotive tail lights with optical array elements compliant with ECE regulations

Xing-Hao Li, Hsing-Yuan Liao, Hsiao-Yi Lee, National Kaohsiung University of Science and Technology (Taiwan)

2024-WED-P0401-P016

### Fundamental approach to investigating larger aperture optical telescope

Chang-Shiu Jiang, Taiwan Space Agency (Taiwan); Li-Jen Hsiao, National United University (Taiwan); Jin-Cherng Hsu, Fu Jen Catholic University (Taiwan); Shao-Rong Huang, National Central University (Taiwan); Hsing-Yu Wu, Taiwan Space Agency (Taiwan)

2024-WED-P0401-P017

### Design Proposal for Taiwan Largest Aperture Space Telescope

Chang-Shiu Jiang, Taiwan Space Agency (Taiwan); Li-Jen Hsiao, National United University (Taiwan); Jin-Cherng Hsu, Fu Jen Catholic University (Taiwan); Shao-Rong Huang, National Central University (Taiwan); Hsing-Yu Wu, Taiwan Space Agency (Taiwan)

2024-WED-P0401-P018

### Silver Nanoparticle-Enhanced Etching for Tunable Multi-wavelength Reflection in Porous Silicon Bragg Reflectors

Yi-Chen Lee, Vincent Hsiao, National Chi Nan University (Taiwan)

2024-WED-P0401-P019

### IR LED and VCSEL Electro-Optical Characteristic Comparison and Application

Hsuan Fu Chen, National Yang Ming Chiao Tung University (Taiwan)

2024-WED-P0401-P020

### FOV 50-Degree Projection Lens Design for AR System

Yong-Han Shih, Wen-shing Sun, National Central University (Taiwan)

2024-WED-P0401-P021

### Development of automated surface defect identification in selective laser melting facility

Yuan-Yao Lin, Jia-You Yan, Yu-Wei Li, National Sun Yat-sen University (Taiwan); Kuo-Kuang Jen, Ying-Sheng Huang, Chi-Ting Ku, National Chung-Shan Institute of Science and Technology (Taiwan); You-Zhen Chen, National Sun Yat-sen University (Taiwan)

2024-WED-P0401-P022

### Heterodyne light source based on two serial AOMs in Bragg diffraction condition

Ming-Hung Chiu, Chao-Ching Chiu, National Formosa University (Taiwan)

2024-WED-P0401-P023

### Machine Learning Methods for Multipoint FBG Sensor-Based Optical Sensing System

J. W. Li, H. W. Huang, C. Y. Yu, G. S. Liu, C. F. Hsu, M. J. Ho, A. M. Dehnaw, P. C. Peng, National Taipei University of Technology (Taiwan)

2024-WED-P0401-P024

### Vibration Measurement of Fiber Bragg Grating Under Different Stretch Tightness Conditions Using a Tunable Optical Interferometer

R. A. Dellimore, A. M. Dehnaw, C. K. Yao, W. L. Li, P. C. Peng, National Taipei University of Technology (Taiwan)

2024-WED-P0401-P025

### Liquid lens based Ultrashort Laser Pulse Compressor

Ping-Hua Shih, Cheng-Yu Lee, Chia-Yuan Chang, National Cheng Kung University (Taiwan)

## S5. Poster Session II

🕒 Nov 28 Thursday, 13:30-16:00

📍 Room 500

2024-THU-P0502-P001

### Preliminary Study on the Effects of Radiation on Space Optical Surfaces

Chih-Hsuan Shih, Hsing-Yu Wu, Taiwan Space Agency (Taiwan); Wei-Yu Chen, Cheng-Sheng Huang, National Yang Ming Chiao Tung University (Taiwan); Jin-Cherng Hsu, Fu Jen Catholic University (Taiwan)

2024-THU-P0502-P002

### Multidomain Liquid Crystal Linear Polarizer Rotator for Photonic device

Jin-Jie Ou, National Central University (Taiwan); You-Yu Wang, Kai-Wen Huang, National Formosa University (Taiwan); Ko-Ting Cheng, National Central University (Taiwan); Hui-Chi Lin, National Formosa University (Taiwan)

2024-THU-P0502-P003

### Light Scattering and Orientation Fluctuation in Liquid Crystal Lens

Wei-Cheng Cheng, Hung-Shan Chen, Yu-Jen Wang, Chun-Lin Chen, Yi-Hsin Lin, National Yang Ming Chiao Tung University (Taiwan)

2024-THU-P0502-P004

### High-Resolution and Wide-Field Three-Reflector System

Li-Siang Shen, Hsing-Yu Wu, Taiwan Space Agency (Taiwan)

2024-THU-P0502-P005

### Fabrication of Ion Beam Polishing Technique in High-Vacuum Environments

Li-Siang Shen, Hsing-Yu Wu, Taiwan Space Agency (Taiwan)

2024-THU-P0502-P006

### The 40-degree full-view freeform projection lens design is applied to AR glasses displays

Liao Wei-Hao, Sun Wen-shing, National Central University (Taiwan)

2024-THU-P0502-P007

### Snapshot Hyperspectral Imaging System Based on Fiber Array

Hsuan-Yu Hsia, Jyun-Jia Ciou, Jing-Rui Chen, Szu-Yu Chen, National Central University (Taiwan)

2024-THU-P0502-P008

### Optical constants of several optical films irradiated by Co-60 radiation

Ming-Kun Lee, Wei-Yu Chen, Jing-Lin Chen, Fu Jen Catholic University (Taiwan); Chih-Hsaun Shih, Taiwan Space Agency (Taiwan); Yung-Shin Sun, Jin-Cherng Hsu, Fu Jen Catholic University (Taiwan)

2024-THU-P0502-P009

### Band Gap of Metal Oxide Thin Films under Gamma-ray Irradiation

Jui-Ying Ou, Zhe-Rui Chang, Wei-Yu Chen, Cheng-Hao Lin, Fu Jen Catholic University (Taiwan); Chih-Hsaun Shih, Taiwan Space Agency (Taiwan); Yung-Shin Sun, Jin-Cherng Hsu, Fu Jen Catholic University (Taiwan)

2024-THU-P0502-P010

### FOV30-Degree and FOV65-Degree Projection Lens Design used in AR Systems

Yu-Chin Lin, Wen-Shing Sun, National Central University (Taiwan)

2024-THU-P0502-P011

### Foucault Knife-Edge Test for Surface Inspection of Uncoated Aspheric Mirrors

Po-Kai Liang, Che-Cheng Wu, Tso-Chen Li, Kun-Liang Liao, Fu Jen Catholic University (Taiwan); Jin-Cherng Hsu, Fu Jen Catholic University, National Central University (Taiwan)

2024-THU-P0502-P012

### Structural and Mechanical Properties of Low Refractive Index $Al_2O_3$ Films Prepared by Combination Coating Method

Tomoaki Suzuki, Hiroshi Murotani, Tokai University (Japan); Takayuki Matsudaira, SHINCRON Co.,Ltd., (Japan)

2024-THU-P0502-P013

### Tungsten and Tungsten Oxide Thin Films for Electrochromic Black Coatings

Yu-Wei Chen, Minghsin University of Science and Technology (Taiwan); Chao-Te Lee, National Applied Research Laboratories (Taiwan); Thi Hong Ngoc Nguyen, Thi Cam Tien Truong, Cheng-Chung Jaing, Bing-Mau Chen, Yih-Shing Lee, Pang-Shiu Chen, Minghsin University of Science and Technology (Taiwan)

2024-THU-P0502-P014

### Direct Extraction of Optical Constants of Organic Semiconductors in Ultrastrongly Coupled Microcavities

Zheng-Feng Zhuang, Sung-Jung Lin, Yu-Ming Li, National central university (Taiwan); Cheng-Chung Jaing, Minghsin University of Science and Technology (Taiwan); Jui-Fen Chang, National central university (Taiwan)

2024-THU-P0502-P015

### Optimizing the Aspect Ratio of Dihedral Corner Reflector Array Columns to Reduce Ghosting

Fu-Jung Hu, Chien-Yu Chen, National Taiwan University of Science and Technology (Taiwan)

## S5. Poster Session II

🕒 Nov 28 Thursday, 13:30-16:00

📍 Room 500

2024-THU-P0502-P016

### Range Determination of Optical Constants and Thickness of Thin Film by Optical Transmittance and Machine Learning

Thi Hong Ngoc Nguyen, Minghsin University of Science and Technology (Taiwan); Chao-Te Lee, National Applied Research Laboratories (Taiwan); Tan Dat Le, Yu-Wei Chen, Cheng-Chung Jaing, Bing-Mau Chen, Yih-Shing Lee, Minghsin University of Science and Technology (Taiwan)

2024-THU-P0502-P017

### Micro-structure Examinations by Single Shot Optical Sectioning Microscope

Jing-Hen Lin, Shyh-Tsong Lin, Wei-Feng Hsu, Ying Chen, National Taipei University of Technology (Taiwan)

2024-THU-P0502-P018

### Utilizing the Aperture Effect to Improve the Specific Spatial Frequency Response of Optical Imaging

Yu-Wei Huang, Cheng-Yang Lee, Ching-Cherng Sun, Tsung-Hsun Yang, Yeh-Wei Yu, National Central University (Taiwan)

2024-THU-P0502-P019

### Light-driven chemical reduction of silver dendrite structures

Cheng-Yao Chen, Ho-Chun Chuang, National Taiwan University (Taiwan); Yun-Cheng Ku, Naushad Ahmad Khan, Chang Gung University (Taiwan); Mao-Kuen Kuo, National Taiwan University (Taiwan); Jiunn-Woei Liaw, Chang Gung University (Taiwan)

2024-THU-P0502-P020

### Expanding the Field of View of Meta-Hologram for Enhanced 3D Depth Sensing

Chia-Jung Tsai, National Yang Ming Chiao Tung University (Taiwan); Chia-Hsun Chang, Wen-Cheng Hsu, National Yang Ming Chiao Tung University/Hon Hai Research Institute (Taiwan); Yu-Heng Hong, Hon Hai Research Institute (Taiwan); Yao-Wei Huang, National Yang Ming Chiao Tung University (Taiwan); Hao-Chung Kuo, National Yang Ming Chiao Tung University/Hon Hai Research Institute (Taiwan)

2024-THU-P0502-P021

### Circularly Polarized Laser-Driven Photochemical Reduction for Fabricating Chiral Silver Nanostructures and the Application in Surface-Enhanced Raman Spectroscopy Measurements

Yun-Tse Ho, Chuan-Yi Hsieh, National Taiwan University (Taiwan); Yun-Cheng Ku, Naushad Ahmad Khan, Chang Gung University (Taiwan); Mao-Kuen Kuo, National Taiwan University (Taiwan); Jiunn-Woei Liaw, Chang Gung University (Taiwan)

2024-THU-P0502-P022

### Optical properties and formation of uniform lying helix structures in frequency-controlled cholesteric liquid crystals doped with dimers

En-Hao Chang, Jia-Cheng Chen, Ko-Ting Cheng, National Central University (Taiwan)

2024-THU-P0502-P023

### Three Step Deformable Mirror Identification for Zernike Mode Generation

Chen Chin Chen, Ting Po Jen, Chang Chia Yuan, National Cheng Kung University (Taiwan)

2024-THU-P0502-P024

### Metal Mirror Catadioptric Telescope for CubeSat Mission

Cheng-Fang Ho, Jun-Cheng Chen, Wen-Lung Lin, Wei-Chen Lin, Chien-Yao Huang, National Applied Research Laboratories (Taiwan); Pei-Jun Lee, National Taiwan University of Science and Technology (Taiwan); Jyh-Ching Juang, National Cheng Kung University (Taiwan)

2024-THU-P0502-P025

### Tunable focusing in large-aperture liquid crystal lenses with multi-zone and 3D electrode structures

Chih-Cheng Lai, Yu-Ci Huang, Ko-Ting Cheng, National Central University (Taiwan); Shao-Che Sun, Guo-Dung Su, National Taiwan University (Taiwan)

2024-THU-P0502-P026

### Polarization dependency of varifocal lenses via nematic liquid crystals

Hao-Hsin Huang, Xin-Cheng Lin, Fu-Cheng Yang, Yi-Hsin Lin, National Yang Ming Chiao Tung University (Taiwan)

2024-THU-P0502-P027

### Image-Based Analysis of Intensity and Shape Distribution in Multi-Frequency Modulated White Light Sources

Sin-You Wu, Chia-Chi Liang, Chuan-Liang Chang, Hung-Chih Hsieh, National United University (Taiwan)

2024-THU-P0502-P028

### Soft Actor-Critic Trained with Model Predictive Control as Expert for Path Following and Obstacle Avoidance of Tracked Vehicle

Jen-Ting Kuo, Jhen-Min Hung, Chun-Yu Lin, Shean-Jen Chen, National Yang Ming Chiao Tung University (Taiwan)



## S5. Poster Session II

🕒 Nov 28 Thursday, 13:30-16:00

📍 Room 500

2024-THU-P0502-P029

### Optimization calculation of optical plate thickness in white light interferometry

Ting-Wei Xu, Jenq-Nan Yih, Nai-Jen Cheng, Chih-Cheng Chu, National Kaohsiung University of Science and Technology (Taiwan)

2024-THU-P0502-P030

### Phase-shifting Projected Fringe Profilometry by Means of One-shot Measurements

Wei-Hung Su, Pei-Chi Li, National Sun Yat-Sen University (Taiwan)

2024-THU-P0502-P031

### Optical Design and Image Processing of Wide-Angle Fill Light for Mobile Phone Flash

LiShuo Chen, Po-Yuan Chen, Tsung-Hsun Yang, Yeh-Wei Yu, Ching-Cherng Sun, National Central University (Taiwan)

2024-THU-P0502-P032

### Mutual Benefits of Optics and Programming Education

Nien-Po Chen, Yuan Ze University (Taiwan)

2024-THU-P0502-P033

### Diffraction Efficiency Characteristics of a Reflection-type Volume Grating for Diffractive Waveguide Application

Yuan-Yen Liang, Chi Sun, Zih-Fan Chen, National Yang Ming Chiao Tung University (Taiwan); Tsung-Hsun Yang, Yeh-Wei Yu, National Central University (Taiwan); Wei-Chia Su, National Changhua University of Education (Taiwan); Ching-Cherng Sun, National Central University (Taiwan); Shiu-an-Huei Lin, National Yang Ming Chiao Tung University (Taiwan)

2024-THU-P0502-P034

### Optimization of Process Parameters for W-Doped Vanadium Dioxide Thin Films by Taguchi Method

Chuen-Lin Tien, Chun-Yu Chiang, Feng Chia University (Taiwan); Jia-Kai Tien, National Chung Hsing University (Taiwan); Ching-Chiun Wang, Shih-Chin Lin, Industrial Technology Research Institute (Taiwan)

2024-THU-P0502-P035

### The Optimized Design of Light Pattern Modulated by Reflector with Lens Array Applied to Headlamp

Pin-Chien Chien, Ching-Cherng Sun, Tsung-Hsun Yang, Yeh-Wei Yu, Chi-Shou Wu, National Central University (Taiwan)

## S5. Poster Session III

🕒 Nov 29 Friday, 09:00-11:00

📍 Room 521

2024-FRI-P0503-P001

### Design of the Vehicle Headlamp Using Refractive Lens

Jui-Yu Chen, Ching-Cherng Sun, Tsung-Hsun Yang, Yeh-Wei Yu, Chi-Shou Wu, National Central University (Taiwan)

2024-FRI-P0503-P002

### Fabricating Hybrid Lens for Virtual Reality Applications Using Photo-Polymerization 3D Printing

Hao-En Hsu, Tzu-Shen Hsu, Hsi-Fu Shih, National Chung Hsing University (Taiwan)

2024-FRI-P0503-P003

### Two Color Modeling of the Mini-LED Applied to the Lens of Direct Backlit Module

Po-Chun Chao, Ching-Cherng Sun, Tsung-Hsun Yang, Yeh-Wei Yu, Chi-Shou Wu, Pei-Shu Hsieh, National Central University (Taiwan)

2024-FRI-P0503-P004

### Hierarchical modularized interference fiber-optic gyroscope

Sheng-Han Chang, Ching-Lu Hsieh, Bor-Wen Hsiao, Hung-Pin Chung, Aegiverse (Taiwan)

2024-FRI-P0503-P005

### Development of Electronic Speckle Pattern Interferometry and Its Application in High-precision Linear and Angular Displacement Measurement

Sheng-Wei Wang, Hung-Lin Hsieh, Yu-Chia Chang, National Taiwan University of Science and Technology (Taiwan)

2024-FRI-P0503-P006

### Verification of Microlens Arrays Data Generated by Context-GAN by Using Zernike Coefficients

Chong-Yuan Liao, Heng-Hsiu Chou, Ching-Huang Lin, Hsin-Mao Yeh, National Yunlin University of Science and Technology (Taiwan)

2024-FRI-P0503-P007

### Quality Analysis of Single Layer Optical Film

Ming-Wei Zhang, Jenq-Nan Yih, Liang-Cheng Xu, Chun-Peng Yang, Wei-Siang Cin, Wei-Cheng Huang, Nai-Jen Cheng, National Kaohsiung University of Science and Technology (Taiwan)



## S5. Poster Session III

🕒 Nov 29 Friday, 09:00-11:00

📍 Room 521

2024-FRI-P0503-P008

### Intelligent Surface Profile and Roughness Measurement System Based on Deep Learning

Chuen-Lin Tien, Yuan-Ming Chang, Yu-Siang Hu, Feng Chia University (Taiwan); Jia-Kai Tien, National Chung Hsing University (Taiwan)

2024-FRI-P0503-P009

### Imager Lens for Star Sensor

Sheng-feng Lin, Taiwan Space Agency (Taiwan)

2024-FRI-P0503-P011

### Water-Immersion Laser Scanning Annealing of Gold Films

Shang-Yang Yu, Chang Gung University (Taiwan); Min-Hsiung Shih, Academia Sinica (Taiwan); Yi-Han Kuo, Jiunn-Woei Liaw, Chang Gung University (Taiwan)

2024-FRI-P0503-P012

### Inverse Design and AI-Optimized Algorithm Design of Broadband, Wide-Angle Retroreflectors in 2D Metamaterials for Microwave Frequencies

Chihjung Chang, Tajen Yen, National Tsing Hua University (Taiwan); Tsungyu Huang, Ming Chi University of Technology (Taiwan)

2024-FRI-P0503-P013

### Simulation and Analysis of Lighting in Integral Imaging System for Industrial Inspection

Chih-Hao Lin, Xing-Wei Liu, Ming-Fu Chen, Taiwan Instrument Research Institute (Taiwan)

2024-FRI-P0503-P014

### High power pulse magnetron reactive sputtering of 3C-silicon carbide wide bandgap semiconductor thin films

Szu-Hui Lee, Hsi-Chao Chen, Xin-Ya Zheng, Ming-Ying Wu, Ting-Chun Lai, You-Sheng Chen, National Yunlin University of Science and Technology (Taiwan)

2024-FRI-P0503-P015

### Fabrication of Self-Powered Skin Using Silver Nanowire-Modified Polydimethylsiloxane/Polyvinylidene Fluoride

Yao-Hua Wang, Hsi-Chao Chen, National Yunlin University of Science and Technology (Taiwan); Ying-Sheng Lin, Hui-Hsiu Chang, National Taiwan University Hospital Yunlin Branch (Taiwan); Yen-Chi Wang, You-Sheng Chen, Zin-Ling Shen, National Yunlin University of Science and Technology (Taiwan)

2024-FRI-P0503-P016

### Fast Fabrication of Large-Area Monocrystalline BPLCs Using Reverse Electrostriction Directed Assembly (REDA)

Yan-Ting Liu, Tsung-Hsien Lin, Duan-Yi Guo, Ting-Mao Feng, Wen-Xin Zeng, Wen-Ming Guo, Li-Min Chang, Hung-Chang Jau, Chun-Ta Wang, National Sun Yat-sen University (Taiwan)

2024-FRI-P0503-P017

### Lattice Structure Analysis of Blue Phase Liquid Crystals Using Kossel Diagram and Reflective Spectrum

Jun-Jie Lu, Wen-Xin Zeng, Duan-Yi Guo, Ting-Mao Feng, Wen-Ming Guo, Li-Min Chang, Hung-Chang Jau, Chun-Ta Wang, Tsung-Hsien Lin, National Sun Yat-sen University (Taiwan)

2024-FRI-P0503-P018

### Low-cost time-of-flight laser SIPM signal processing and system improvement

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

2024-FRI-P0503-P019

### Development of Lens Assembly Alignment Correction Technology Based on Wavefront Sensors

Tsung-Hua Tsai, Zhe-Wei Lin, Hung-Lin Hsieh, National Taiwan University of Science and Technology (Taiwan)

2024-FRI-P0503-P020

### Study on Optical Property of Dual Gate Metasurfaces Based on Optical Phased Array in Lidar System

Qi-Jie Yang, Bo-Yi Wu, Chun-Nien Liu, Chien-Wei Huang, Wood-Hi Cheng, National Chung Hsing University (Taiwan)

2024-FRI-P0503-P021

### High-Power Pulse Reactive Sputtering TiCN Antistatic and Corrosion-Resistant Semiconductor Fixture Hard Coating with Bias Voltage

Ming-Ying Wu, Ming-Ying Wu, You-Quan Zhang, His-Chao Chen, Yu-Chen Lai, Ping Sun, Ping-Jie Zhang, National Yunlin University of Science and Technology (Taiwan)

## S5. Poster Session III

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2024-FRI-P0503-P022

### Anthracene-bidibenzofuran as the Blue Host of Triplet-triplet Fusion Organic Light-emitting Diodes with Maximum External Quantum Efficiency of 12.66%

Lian-Chun Huang, Jiun-Haw Lee, National Taiwan University (Taiwan); Tien-Lung Chiu, Yuan Ze University (Taiwan); Julie Hsieh, Stanley Chen, Nichem Fine Technology (Taiwan)

2024-FRI-P0503-P023

### Different Crystal Structures in Single-Crystal Blue Phase Liquid Crystals via Reverse Electrostriction

Yi-Kai Fan Chiang, Wen-Xin Zeng, Duan-Yi Guo, Ting-Mao Feng, Wen-Ming Guo, Li-Min Chang, Hung-Chang Jau, Chun-Ta Wang, Tsung-Hsien Lin, Sun Yat-sen University (Taiwan)

2024-FRI-P0503-P024

### Design and Development of a 4-to-2 Encoder Circuit Using Quantum Well Heterojunction Phototransistors

Yun Jue Huang, Shu Jui Hsu, Kuang Yu Hsueh, Shu Yun Ho, Chao Hsin Wu, Lucas Yang, National Taiwan University (Taiwan)

2024-FRI-P0503-P025

### Space Large-Aperture Aspheric Lens Testing Technology

Yun-Ting Chiu, Fu Jen Catholic University (Taiwan); Hsing-Yu Wu, Chih-Hsuan Shih, Taiwan Space Agency (Taiwan)

2024-FRI-P0503-P026

### Improved focusing power of 3D-printed terahertz lenses with an analytically corrected spherical profile

Rayko Stantchev, National Sun Yat-sen University (Taiwan); Seyed Latifi, Shang-Hua Yang, National Tsing Hua University (Taiwan)

2024-FRI-P0503-P027

### Design considerations of GaAs-based laser power converters

Pei-Yu Yeh, Zon, Chun-Nien Liu, Tsong-Sheng Lay, Chien-Wei Huang, National Chung Hsing University (Taiwan); Jen-Inn Chyi, National Central University (Taiwan); Ujwala Kshirsagar, Symbiosis International University (India); Charles W. Tu, National Chung Hsing University (Taiwan)

2024-FRI-P0503-P028

### Influence of Deposition Parameters on Amorphous Silicon Carbide Films Using Plasma-Assisted Reactive Magnetron Sputtering

Chun-Yu Yu, Chien-Jen Tang, Feng Chia University (Taiwan)

2024-FRI-P0503-P029

### A Methodology to Accurately Identify Emission Characteristic Parameters in Sputtering Processes

Pei-Hsuan Tsai, Yan-Cheng Lin, Chien-Jen Tang, Feng Chia University (Taiwan)

2024-FRI-P0503-P030

### Impact of DC Magnetron Sputtering Parameters on Ultra-Thin Silver Films for Fabry-Pérot Filters

Mei-Hui Li, Lan-Chen Huang, Chien-Jen Tang, Feng Chia University (Taiwan)

2024-FRI-P0503-P031

### Optimizing Optical Multilayer Coatings Using Broadband Monitoring with Merit Function Curve Fitting

Yu-Kuan Tsai, You-Ming Cheng, Chien-Jen Tang, Feng Chia University (Taiwan)

2024-FRI-P0503-P032

### Design of a Universal Open Microcavity System with Tunable Cavity Length for Strong Coupling Applications

Ling-Qi Huang, Chia-Hao Lin, Li-Tzu Wang, Hyeyoung Ahn, Tzu-Ling Chen, National Yang Ming Chiao Tung University (Taiwan)

2024-FRI-P0503-P033

### The Optical and Thermal Stress Properties of VO<sub>2</sub> Thin Films Doped with Different Tungsten Contents

Yan-Yi Li, Hsi-Fu Shih, National Chung Hsing University (Taiwan); Chun-Lin Tien, Feng Chia University (Taiwan); Ching-Chiun Wang, Shih-Chin Lin, Industrial Technology Research Institute (Taiwan)

2024-FRI-P0503-P034

### Achieving a Full-Color Maxwellian AR Display Without Image Distortion

Yu-Ting Chiu, Wei-Ting Hsu, Yu-Wei Cheng, Yu-Chieh Cheng, National Taipei University of Technology (Taiwan)

## S5. Poster Session III

🕒 Nov 29 Friday, 09:00-11:00

📍 Room 521

2024-FRI-P0503-P035

### Current Progress in Machining Space Mirrors for Small Optical Satellites in Low Earth Orbit (LEO)

Shih-Yu Chen, Yu-Jiun Chang, National Chung-Shan Institute of Science and Technology (Taiwan); Li-Jen Hsiao, National United University (Taiwan); Shao-Rong Huang, National Central University (Taiwan); Hsing-Yu Wu, Taiwan Space Agency (Taiwan)

2024-FRI-P0503-P036

### In-situ Green-ripe Pineapple Detection and 3D Positioning Using YOLO-NAS with RGB-D Camera

Guo-Fong Hong, Shean-Jen Chen, Chun-Yu Lin, Sumesh Nair, National Yang Ming Chiao Tung University (Taiwan)

2024-FRI-P0503-P037

### Optical Design of a 12-Meter Periscope System

Shao-Rong Huang, Hsing-Yu Wu, National Central University (Taiwan); Chia-Fa Chu, Taiwan Space Agency (Taiwan); Chi-Yung Hsieh, National Yang Ming Chiao Tung University (Taiwan); Li-Jen Hsiao, National United University (Taiwan); Cheng-Sheng Huang, National Yang Ming Chiao Tung University (Taiwan); Jin-Cherng Hsu, Sheng-Hui Chen, National Central University (Taiwan)

2024-FRI-P0503-P038

### Microscopic Defect Detection of Optical Thin Films Based on Deep Learning

Hsiang-Hsun Tsai, Jia-Kai Tien, Hsi-Fu Shih, National Chung Hsing University (Taiwan); Chuen-Lin Tien, Feng Chia University (Taiwan)

2024-FRI-P0503-P039

### How the color quantification values of low-reflectance objects, calculated by reflection, approximate to the colors perceived by the human eye

ChunYu Lin, Chen-Cheng Kuo, National Central University (Taiwan)

2024-FRI-P0503-P040

### Compact AR Optical System Design Enabled by Photo-Polymerization 3D Printing

Tzu-Shen Hsu, Hsi-Fu Shih, National Chung Hsing University (Taiwan)

2024-FRI-P0503-P041

### Centimeter-scaled zoom metalens for long wavelength infrared imaging

Lian-Ting Feng, Yen-Chun Chen, Chen-Yi Yu, Cheng-Yu Li, Chin-Ming Wang, National Central University (Taiwan)

2024-FRI-P0503-P042

### Galvometer mirror scanned optical coherence microscopy

Pai Yu Cheng, Yuan Luo, National Taiwan University (Taiwan)