ISOM'23

Takamatsu Symbol Tower, Takamatsu, Kagawa, Japan
Nov. 19 - 22, 2023

SPONSORED BY
◆The Optical Society of Japan (OSJ)

COSPONSORED BY
◆Optoelectronics Industry and Technology Development Association (OITDA)

IN COOPERATION WITH
◆The Japan Society of Applied Physics (JSAP)
◆The Magnetics Society of Japan (MSJ)
◆The Institute of Electronics, Information and Communication Engineers (IEICE)
◆The Chemical Society of Japan
◆Information Processing Society of Japan
◆The Institute of Electrical Engineers of Japan
◆The Institute of Image Electronics Engineers of Japan
◆The Institute of Image Information and Television Engineers
◆The Japan Society for Precision Engineering
◆The Laser Society of Japan

FINANCIALLY SUPPORTED BY
◆The Takano Eiichi Optical Science Funds
◆Support Center for Advanced Telecommunications Technology Research, General Incorporated Foundation
◆Nippon Sheet Glass Foundation for Materials Science and Engineering
◆Inoue Foundation for Science
◆Konica Minolta Science and Technology Foundation
◆Kagawa Industry Support Foundation
◆Takamatsu Convention & Visitors Bureau
◆Kagawa Prefecture MICE Promotion

WELCOME STATEMENT FROM THE ORGANIZING COMMITTEE CHAIRPERSON

The 33rd ISOM (ISOM'23) will be held in a HYBRID style with both online and onsite meeting from Nov. 19 to Nov. 22, 2023 at the Takamatsu Symbol Tower, Kagawa, Japan.

On behalf of the ISOM organizing committee, I am delighted to welcome all of you to the ISOM'23.

The last ISOM meeting, held jointly with CLEO-PR2022 and ODF'22 in Sapporo, Japan, provided an opportunity to share the latest research results not only in the areas covered by ISOM, but also with researchers from a wide range of fields that have not previously participated in ISOM.

We believe that ISOM's activities have been very fruitful and have produced significant results. Since the first ISOM in 1987, many papers have been presented and discussed in depth at the conference, which has led to new developments and new applications in the field of optical memory. It has not only produced innovations in optical memory technology, but has also led to the economic development of optical memory-related industries.

In 2017, ISOM extended the conference scope to broader optical fields and applications, and changed the conference name as "International Symposium on Imaging, Sensing, and Optical Memory." The new ISOM includes the fields of image sensing, medical and bio-optics, nano photonics, information system, holographic technologies, as well as optical memory. We believe that the change of ISOM produces technological innovations and new applications in whole field related to this conference.

I sincerely ask all of ISOM'23 participants to discuss on new technologies of the next generation optical memory and new applications of optical memory technologies in coming ISOM'23.

志村努

Tsutomu Shimura
ISOM'23 Organizing Committee, Chairperson

ISOM'23 COMMITTEES

Organizing Committee

Chair:
Shimura, T. (The Univ. of Tokyo)
Exofficio:
Kawata, Y. (Shizuoka Univ.)
Mitsuhashi, Y. (ADTC)
Toshima, T. (formerly NTT)
Tsunoda, Y. (Hitachi)
Members:
Hoshizawa, T. (Hitachi)
Itoh, K. (Osaka Univ.)
Nakai, K. (Mitsubishi)
Nakamura, Y. (Toyohashi Univ. of Tech.)
Odani, Y. (OITDA)

Advisory Committee

Furuya, A. (Tokushima Bunri Univ.)
Goto, K. (Tokai Univ.)
Katayama, R. (Fukuoka Inst. of Tech.)
Kinoshita, N. (NHK)
Kondo, T. (JAXA)
Maeda, T. (formerly Hitachi)
Mansuripur, M. (The Univ. of Arizona)
Nakamura, Y. (Hitachi)
Ojima, M. (formerly Hitachi)
Okino, Y. (Kansai Univ.)
Park, Y. -P. (Yonsei Univ.)
Shimano, T. (Hitachi)
Shinoda, M. (Kanazawa Inst. of Tech.)
Sugiura, S. (The Univ. of Tokyo)
Tominaga, J. (AIST)
Tsuchiya, Y. (Nagoya Inst. of Tech.)
Watabe, K. (Toshiba)

Steering Committee

Chair:
Nakamura, Y. (Toyohashi Univ. of Tech.)
Vice Chair:
Imai, T. (Kyoto Univ. of Advanced Science)
Members:
Barada, D. (Utsunomiya Univ.)
Hashimoto, R. (Nat'l Institute of Tech.,Suzuka College)
Kim, Y. -J. (Yonsei Univ.)
Nishiwaki, H. (Pioneer)
Ogawa, Y. (OITDA)
Okano, H. (Toshiba)
Sao, M. (Hitachi)
Shima, T. (AIST)
Tsai, D. P. (City Univ. of Hong Kong)
Ueno, M. (Tokushima Bunri Univ.)
Watanabe, E. (The Univ. of Electro-Communications)
Yoshida, S (Kindai Univ.)

Technical Program Committee

Chair:
Shima, T. (AIST)
Vice Co-Chairs:
Iiyama, K. (Kanazawa Univ.)
Muroi, T. (NHK)
Members:
Chong, T. C. (SUTD)
Higashino, S. (Sony Storage Media Solutions)
Horisaki, R. (The Univ. of Tokyo)
Ichiura, S. (Gifu Univ.)
Irie, M. (Osaka Sangyo Univ.)
Kao, T. S. (Nat'l Yang Ming Chiao Tung Univ.)
Kawamata, R. (Hitachi)
Kikukawa, T. (TDK)
Kim, J. -H. (LG)
Kim, W. -C. (Hanbat Nat'l Univ.)
Kim, Y. -J. (Yonsei Univ.)
Matoba, O. (Kobe Univ.)
Milster, T. (The Univ. of Arizona)
Nishiwaki, H. (Pioneer)
Nomura, T. (Wakayama Univ.)
Ohno, H. (Toshiba)
Ono, M. (JVC KENWOOD)
Park, N. -C. (Yonsei Univ.)
Saito, K. (Kindai Univ. Tech. College)
Takabayashi, M. (Kyushu Inst. of Tech.)
Takeda, M. (Kyoto Inst. of Tech.)
Tan, X. (Fujian Normal Univ.)
Tsai, D. P. (City Univ. of Hong Kong)
Wang, Y. (Shanghai Inst. of Optics & Fine Mechanics)
Wright, C. D. (The Univ. of Exeter)
Yoshida, S. (Kindai Univ.)

Local Steering Committee

Furuya, A. (Tokushima Bunri Univ.)
Kawai, H. (Tokushima Bunri Univ.)
Ueno, M. (Tokushima Bunri Univ.)

ISOM'23 SYMPOSIUM SCHEDULE

	Nov. 19, Sun	Nov. 20, Mon	Nov. 21, Tue	Nov. 22, Wed	
8:40			**Tu-A** [Special Session] Metamaterials and Plasmonics	**We-A** Materials and Devices for Optics	8:40
9:00		**Mo-A** Opening Remarks & Keynote			9:00
		Short Break			
10:00		**Mo-B** Computational Imaging		**Break**	10:00
			Break	**We-B** Medical and Bio-systems	
11:00		Break	**Tu-B** Digital Holography	Short Break	11:00
		Mo-C Display	**Tu-C** Short Presentation for Poster Online	**We-C** Holographic Memory I	
12:00			**ISOM'24 Announcement & Photo**		12:00
		Lunch	**Lunch**	**Lunch**	
13:00					13:00
		Mo-D Special Invited	**Tu-D** Optical System Design	**We-D** Holographic Memory II	
14:00		Short Break	Short Break		14:00
		Mo-E Spectroscopy		**We-PD** Post Deadline	
15:00		**Mo-F** Optical Information Processing	**Tu-E** Three-dimensional Sensing	**Award & Closing**	15:00
		Break			
16:00			Break		16:00
		Mo-G [Special Session] LiDAR Technology	**Tu-F** Poster Session		
17:00	**Get Together**				17:00
18:00			Break (Move to Banquet)		18:00
19:00			**Banquet**		19:00
20:00					20:00

CONTENTS

Nov. 19, 2023 (Sunday)

17:00 - 19:00 Get Together

Nov. 20, 2023 (Monday)

Mo-A: Opening Remarks & Keynote

Presider: Takayuki Shima (AIST, Japan)

9:00 Opening Remarks

Tsutomu Shimura (The University of Tokyo, Japan)
Yuichi Nakamura (Toyohashi Univ. of Tech., Japan)

Mo-A-01 Keynote: Online
9:15 Deep-learning-enabled computational microscopy and diffractive imaging 1

Aydogan Ozcan
UCLA (USA)

9:50 - 9:55 Short Break

Mo-B: Computational Imaging

Presiders: Masanori Takabayashi (Kyushu Institute of Technology, Japan)
Ryota Kawamata (Hitachi, Ltd., Japan)

Mo-B-01
9:55 Performance Improvement by Convolutional Neural Networks in Virtual Phase Conjugation-based Optical Tomography 3

Yu Yamada, Atsushi Okamoto, Yuki Oyama, and Akihisa Tomita
Hokkaido University (Japan)

Mo-B-02
10:15 Depth Perception and Autofocusing for Fresnel Zone Aperture Lessless Imaging.....5

Jiachen Wu, Fangyu Liu, Yuchen Ma, and Liangcai Cao
Tsinghua University (P.R.China)

Mo-B-03
10:35 Imaging through random scattering media.....7

Jinpeng Liu[1,2], Minda Qiao[1], Linge Bai[1], Yi Feng[1], Meng Xiang[1,2], Teli Xi[1,2], Fei Liu[1,2] , and Xiaopeng Shao[1,2]
[1]Xidian University, [2]Xi'an Key Laboratory of Computational Imaging (P.R.China)

10:55 - 11:15 Break

Mo-C: Display

Presider: Tetsuhiko Muroi (NHK, Japan)

Mo-C-01 Invited
11:15 Recent Trends on Holographic Video Display 9

Hiroshi Yoshikawa
Nihon University (Japan)

Mo-C-02 Invited
11:40 AR Contact Lens Display Using Holography 11

Yasuhiro Takaki
Tokyo University of Agriculture and Technology (Japan)

12:05 - 13:30 Lunch

Mo-D: Special Invited

Presider: Takayuki Shima (AIST, Japan)

Mo-D-01 Special Invited
13:30 Dual-comb microscopy 13

Takeshi Yasui
Tokushima University (Japan)

14:00 - 14:05 Short Break

Mo-E: Spectroscopy

Presider: Hiroshi Ohno (Toshiba Corporation, Japan)

Mo-E-01
14:05 Carrier envelope phase modulation and monitoring of double terahertz pulses 15

Hironori Ito[1], Yoshinobu Otake[1], Ryuta Watanabe[1], Terumasa Saito[2], Kyosuke Makino[2], Hao-Keng Wei[3], Chih-Wei Luo[3], Kazuhiko Misawa[2], and Satoshi Honma[1]
[1]University of Yamanashi, [2]Tokyo University of Agriculture and Technology (Japan), [3]National Yang Ming Chiao Tung University (R.O.C.)

Mo-E-02
14:25 Quantum-enhanced Spectroscopy 17

Michał Lipka[1], and Michał Parniak[1,2]
[1]University of Warsaw (Poland), [2]University of Copenhagen (Denmark)

Mo-F: Optical Information Processing

Presider: Ryuichi Katayama (Fukuoka Institute of Technology, Japan)

Mo-F-01
14:45 Improvement of Phase Modulation Accuracy in LCOS-based Wave Shaper by Division of Modulation Region 19

Jianglian Wang[1], Atsushi Okamoto[1], Nobuhiro Yamagishi[1], Yuta Goto[2], and Akihisa Tomita[1]
[1]Hokkaido University, [2]National Institute of Information and Communications Technology (NICT) (Japan)

Mo-F-02
15:05 Maximum multiplexing number of mode diffusion multiplex communication using progressive phase conjugation.....21

Zeyu Shen, Atsushi Okamoto, and Akihisa Tomita
Hokkaido University (Japan)

15:25 - 15:45 Break

Mo-G: [Special Session]LiDAR Technology

Presiders: Koichi Iiyama (Kanazawa University, Japan)
Satoru Higashino (Sony Semiconductor Solutions, Japan)

Mo-G-01 Invited
15:45 Beam and image steering towards solid-state lidar and all-day wearable AR near-to-eye display.....23

Yuzuru Takashima, Ted Liang-tai Lee, Parker Liu, Chuan Luo, Brandon Friedman, Gregory Nero, Yexin Pei, Tianyao Zhang, Chin-I Tang, Xianyue Deng, Jeff Chan, Eunmo Kang, Jiafan Guang, and Jeff Chen
The University of Arizona (USA)

Mo-G-02 Invited
16:10 On-Chip FMCW LiDAR with Si Photonics and Slow Light Grating.....25

Toshihiko Baba
Yokohama National University (Japan)

Mo-G-03 Invited
16:35 FMCW Measurement Using Direct Phase Modulation of Silicon Photonics Hybrid Laser Diode.....27

Tomohiro Kita
Waseda University (Japan)

Mo-G-04 Invited: Online
17:00 Recent advances in photonic integrated FMCW LiDAR.....29

Vladimi Davydenko, Stanislav Aksarin, Frank Gindele, Felix Mederer, Hongwang Xia, and Andy Zott
Scantinel Photonics GmbH (Germany)

Nov. 21, 2023 (Tuesday)

Tu-A:[Special Session]Metamaterials and Plasmonics

Presiders: Tsung Sheng Kao (National Yang Ming Chiao Tung University, R. O. C.)
Tadayuki Imai (Kyoto University of Advanced Science, Japan)

Tu-A-01 Invited
8:40 Ghost Noise of Singlet Metalens with Wide Field-of-view of 170 deg. 31

Hidemitsu Toba, Daisuke Mori, Katsura Otaki, Hidetsugu Takagi, Michio Ohashi, Hiroshi Konishi, Seiki Yoshikawa, and Yuichi Takigawa
Nikon Corporation (Japan)

Tu-A-02
9:05 Varifocal Meta-devices from 1D to 3D for Bio-imaging and Future 6G Communication 33

Mu Ku Chen[1], Xiaoyuan Liu[1], Jingcheng Zhang[1], Takuo Tanaka[2,3,4], and Din Ping Tsai[1]
[1]City University of Hong Kong (Hong Kong), [2]RIKEN Center for Advanced Photonics, [3]RIKEN Cluster for Pioneering Research, [4]Tokushima University (Japan)

Tu-A-03
9:25 Fabrication and Behavior Analysis of Surface Plasmon Sensor Using Non-propagating Mode in Metal Diffraction Grating.....35

Atsushi Motogaito, Akitaka Harada, and Kazumasa Hiramatsu
Mie University (Japan)

Tu-A-04
9:45 Random Plasmonic Interferometric Scattering (π-SCAT) for Single Particle Sensing and Tracking 37

Joel Berk[1], Carl Paterson[1], and Matthew R. Foreman[2]
[1]Imperial College London (U.K.), [2]Nanyang Technological University (Singapore)

Tu-A-05
10:05 Fabrication and design tolerances of meta-atom in metasurface designed for space-division phase-shifting method 39

Teruyoshi Nobukawa, Ryo Higashida, and Kei Hagiwara
Japan Broadcasting Corporation (NHK) (Japan)

10:25 - 10:45 Break

Tu-B: Digital Holography

Presider: Xiaodi Tan (Fujian Normal University, P. R. China)

Tu-B-01
10:45 Aberration-free high bandwidth holographic multiplexing microscope 41

Zhengzhong Huang, and Liangcai Cao
Tsinghua University (P.R.China)

Tu-B-02
11:05 Raman Signal Detection of Biological Cell with Multimodal Holographic Microscopy 43

Chung-Hsuan Huang[1], Han-Yen Tu[2], and Chau-Jern Cheng[1]
[1]National Taiwan Normal University, [2]Chinese Culture University (R.O.C.)

Tu-C: Short Presentation for Poster Online

Presider: Shuhei Yoshida (Kindai University, Japan)

Tu-C-01 See Tu-F-50 for details
11:25 Giant Circular Dichroism in All-dielectric Planar Chiral Meta-GMR 153

Yung-Chih Liu, Yi-Cheng Lin, and Chih-Ming Wang
National Central University (R.O.C.)

Tu-C-02 See Tu-F-51 for details
11:30 Meta-corrector for optimization of the Cooke triplet 155

Shang-Ping Yeh, Sheng-Jie Shen, and Chih-Ming Wang
National Central University (R.O.C.)

Tu-C-03 See Tu-F-52 for details
11:35 Simulation Analysis of Optical Gate Switch Operation Using a Chalcogenide Phase-change Material 157

Haruyuki Sano[1], and Masashi Kuwahara[2]
[1]National Institute of Technology, Ishikawa College, [2]National Institute of Advance Industrial Science and Technology (Japan)

Tu-C-04 See Tu-F-53 for details
11:40 Mystery Circle Formation under a Fluctuating Vertical Magnetic Field 159

Satoshi Takagi[1,2], Kana Miura[3], Yohei Aoyagi[1], and Seiya Tsujimura[4]
[1]National Institute of Technology, Ariake College, [2]Fukushima University, [3]Fukushima College, [4]University of Tsukuba (Japan)

Tu-C-05 See Tu-F-54 for details
11:45 Measurement of crops using a compact spectrometer with a single optical fiber probe 161

Koichi Muro, and Ryuya Sasanuma
Teikyo University (Japan)

11:50 - 12:10 ISOM'24 Announcement & Photo

12:10 - 13:30 Lunch

Tu-D: Optical System Design

Presider: Kimihiro Saito (Kindai University Technical College, Japan)

Tu-D-01
13:30 Single pixel one-shot color-mapping of reflectance direction field 45

Hiroshi Ohno
Toshiba Corporation (Japan)

Tu-D-02
13:50 Design of CRIGF for TM-wave Incidence.....47

Aika Taniguchi[1], Keisuke Ozawa[1], Kenji Kintaka[2], Junichi Inoue[1], and Shogo Ura[1]
[1]Kyoto Institute of Technology, [2]National Institute of Advanced Industrial Science and Technology (Japan)

14:10 - 14:15 Short Break

Tu-E: Three-dimensional Sensing

Presiders: Ryuichi Katayama (Fukuoka Institute of Technology, Japan)
Koichi Iiyama (Kanazawa University, Japan)

Tu-E-01 Invited
14:15 Wide field of view technology for in-vehicle stereo camera 49

Kazuyoshi Yamazaki, Masayuki Kobayashi, and Felipe Gomez Caballero
Hitachi, Ltd (Japan).

Tu-E-02 Invited
14:40 Intelligent optical meta-device for multimodal perception 51

Xiaoyuan Liu, Mu Ku Chen, and Din Ping Tsai
City University of Hong Kong (Hong Kong)

Tu-E-03
15:05 Virtual measurement technology for reduction of inter-layer noise in virtual-phase-conjugation based optical tomography 53

Yuki Oyama, Atsushi Okamoto, and Akihisa Tomita
Hokkaido University (Japan)

Tu-E-04
15:25 Intelligent Meta-devices for Aerial, Land, and Underwater Imaging 55

Xiaoyuan Liu[1], Mu Ku Chen[1], Takuo Tanaka[2,3,4], and Din Ping Tsai[1]
[1]City University of Hong Kong (Hong Kong), [2]RIKEN Center for Advanced Photonics, [3]RIKEN Cluster for Pioneering Research, [4]Tokushima University (Japan)

15:45 - 15:55 Break

Tu-F: Poster Session

Presiders: Takayuki Shima (AIST, Japan)
Koichi Iiyama (Kanazawa University, Japan)
Tetsuhiko Muroi (NHK, Japan)

15:55 - 17:45

Core time for onsite presenters with the odd Tu-F numbers: 15:55-17:05

Core time for onsite presenters with the even Tu-F numbers and all online presenters:16:35-17:45

Tu-F-01
Accuracy Improvement of IFTA Method for Holographic Memory Utilizing a Spatial Partial Filter on Reconstructed SQAM signal 57

Akihiro Yamashita, Hironori Ito, and Satoshi Honma
University of Yamanashi (Japan)

Tu-F-02
High precision phase retrieval with embedded data based on deep learning in holographic data storage 59

Ruixian Chen, Jianying Hao, Jinyu Wang, Rongquan Fan, Xiaoqing Zheng, Dakui Lin, Kun Wang, Xiao Lin, and Xiaodi Tan
Fujian Normal University (P.R.China)

Tu-F-03
Fundamental Study on Partially Coherent Readout and Signal Beam Detection by the Transport of Intensity Equation Method in Holographic Memory 61

Tomohiro Nishimura, and Masatoshi Bunsen
Fukuoka University (Japan)

Tu-F-04
Additional Pattern Designing Method with Multi-Plane Evaluation of Intensity Distributions for Self-Referential Holographic Data Storage 63

Kazuki Chijiwa, and Masanori Takabayashi

Kyushu Institute of Technology (Japan)

Tu-F-05
Single-shot detection of complex-amplitude-modulated signal beam by the TIE method and its decoding by CNN-based neural networks 65

Taishi Miwa, and Masatoshi Bunsen
Fukuoka University (Japan)

Tu-F-06
Effect of Elemental Substitution on Magneto-Optical Properties of Bi-Substituted Rare Earth Iron Garnets 67

Sumiko Bharti Singh Chauhan[1], Ilham Zaki Bin Mohd Daud[1], Shunsuke Arai[2], Yuichi Nakamura[1], Shinichiro Mito[2], and Pang Boey Lim[1]
[1]Toyohashi University of Technology, [2]National Institute of Technology, Tokyo College (Japan)

Tu-F-07
The effect of focal position on the observation image of magnetic interference fringes by scanning magneto-optical microscope 69

Yuya Suzuki, Tsubasa Ebihara Yuichi Nakamura, and Pang Boey Lim
Toyohashi University of Technology (Japan)

Tu-F-08
Parallel Detection Structure Exploiting the Extrinsic Information from the Serial Detection in the Holographic Data Storage System 71

Nguyen An Thien, and Jaejin Lee
Soongsil University (Korea)

Tu-F-09
An Approach to Writing Noise Suppression Using Error Recording Method 73

Kimihiro Saito
Kindai University Technical College (Japan)

Tu-F-10
ARSC: Adaptive Reed-Solomon Codes based on Shared Redundancies to Improve Reliability for Optical Disc Storage 75

Tianwei Gui, Meng Zhang, Wei Li, Zheng Fang, Changsheng Xie, and Fei Wu
Huazhong University of Science and Technology (P.R.China)

Tu-F-11
Fourier ptychographic microscopy for extended depth of field using focal length change by wavelengths 77

Giseok Oh, and Hyun Choi
Gyeongsang National University (Korea)

Tu-F-12
Basic Motion Detection Circuit Based on Insect Vision Systems 79

Yuki Ogawa, and Kimihiro Nishio
National Institute of Technology, Tsuyama College (Japan)

Tu-F-13
Basic Circuit for Edge and Motion Detection Based on the Vertebrate Retina with Low Power Consumption 81

Lalitphat Rodsrisamut, and Kimihiro Nishio
National Institute of Technology, Tsuyama College (Japan)

Tu-F-14
Improvement of Focusing Performance by Complex Modulation of Light Waves Using a Single Phase-only Spatial Light Modulator.....83

Koki Abe, and Masatoshi Bunsen
Fukuoka University (Japan)

Tu-F-15
Numerical Investigation of Optical Diffraction Tomography using Iterative Methods Considering Constraint Condition.....85

Tomoaki Komatsu, and Shuhei Yoshida
Kindai University (Japan)

Tu-F-16
Effectiveness and Concerns of Tissue Diagnosis Using Resolution-Enhanced Quantitative Phase Images by Deep Neural Network.....87

Sho Nezaki, and Masanori Takabayashi
Kyushu Institute of Technology (Japan)

Tu-F-17
Fast and accurate three-dimensional object profiling by FMCW optical ranging system using pre-distorted modulation signal for optical frequency chirp.....89

Yogetsu Nagasaka, Asuka Higuchi, and Koichi Iiyama
Kanazawa University (Japan)

Tu-F-18
Fast and accurate FMCW LiDAR by using pre-distorted modulation waveform for optical frequency chirp.....91

Yuki Momose, Kosei Kondo, Yasuyuki Mori, and Koichi Iiyama
Kanazawa University (Japan)

Tu-F-19
Improvement of Hologram Recording in Digital Holographic Microscopy Using Speckle Illuminations.....93

Soshi Taneda[1], Hideki Funamizu[1], and Jun Uozumi[2]
[1]Muroran Institute of Technology, [2]Hokkai-Gakuen University (Japan)

Tu-F-20 Withdrawn

Tu-F-21 Withdrawn

Tu-F-22
Preparetion of fine particles for fabrication of flexible MO sensors.....95

Takuma Shimada, Takuya Tamamura, Kota Tahori, and Ryosuke Hashimoto
National Institute of Technology, Suzuka College (Japan)

Tu-F-23
Visual sound signal measurement using speckle patterns.....97

Nobukazu Yoshikawa[1], and Noriteru Kobayashi[2]
[1]Tottori University, [2]Saitama University (Japan)

Tu-F-24
Multiplexed fiber Bragg grating sensor system combined incoherent FMCW optical ranging system for interrogation of sensor signals.....99

Jiaxun You, Yuto Sugita, Zhixuan Cheng, and Kohichi Iiyama
Kanazawa Univeristy (Japan)

Tu-F-25
Optical Noise Reduction by Laser Wavelength Adjustment in Electro-Optic Sensor Systems 101

Yuki Kawai[1], Mitsuru Shinagawa[1], Jun Katsuyama[2], Yoshinori Matsumoto[2], and Shinichiro Tezuka[2]
[1]Hosei University, [2]Yokogawa Electric Corporation (Japan)

Tu-F-26
Drift Measurement of Laser Power in an Electro-Optic Sensor System 103

Kanna Kishi[1], Mitsuru Shinagawa[1], Jun Katsuyama[2], Yoshinori Matsumoto[2], and Shinichiro Tezuka[2]
[1]Hosei University, [2]Yokogawa Electric Corporation (Japan)

Tu-F-27
~~**Stable, Semitransparent and Self-Powered Conjugated-Polymer/$CsPbI_2Br$ UV-Vis-NIR Photodetector via Crystal Growth Control.....105**~~

~~Fengren Cao~~
~~Soochow University (P.R.China)~~

Cancelled

Tu-F-28
Design of Two-dimensional Exit Pupil Expander Based on Volume Holographic Optical Elements 107

Wen-Kai Lin[1], Shao-Kui Zhou[1,2], Wen-Teng Liang[1], Chih-Wei Chen[1], and Wei-Chia Su[1]
[1]National Changhua University of Education, [2]National Chiao Tung University (R.O.C.)

Tu-F-29
Direct Visualization of Phase Mismatch Quantity in Volume Holographic Optical Elements 109

Chung-Kuan Andy Lin[1], Chi Sun[2], Chih-Yuan Cheng[1], Pin-Duan Huang[1], Yeh-Wei Yu, Shiuan-Huei Lin[2], and Ching-Cherng Sun[1,2]
[1]National Central University, [2]National Yang Ming Chiao Tung University (R.O.C.)

Tu-F-30
The Two-dimensional Exit Pupil Expansion System Based on Holographic Lightguide Elements Group 111

Shao-Kui Zhou[1,2], Wen-Teng Liang[1], Wen-Kai Lin[1], Fu-Li Hsiao[1], and Wei-Chia Su[1]
[1]National Yang Ming Chiao Tung University, [2]National Changhua University (R.O.C.)

Tu-F-31
A Simplified Model for Transmission-type Volume Holographic Optical Element (VHOE) 113

Chih-Yuan Cheng, Yeh-Wei Yu, Chih-Hung Chen, Tsung-Hsun Yang, and Ching-Cherng Sun
National Central University (R.O.C.)

Tu-F-32
The Simulation of the Diffraction Pattern of the Reflection-type Volume Holographic Optical Element (VHOE) 115

Chih-Yuan Cheng, Yeh-Wei Yu, Chih-Hung Chen, Tsung-Hsun Yang, and Ching-Cherng Sun
National Central University (R.O.C.)

Tu-F-33
Surface plasmon resonance in indium tin oxide grating coupler fabricated by the combination of thermal nanoimprint lithography and reactive plasma deposition 117

Noriyuki Hasuike[1], Takeshi Maeda[1], Yugo Okada[2], Makoto Maehara[2], Kimio Kinoshita[2], and Minoru Takeda[1]
[1]Kyoto Institute of Technology, [2]Sumitomo Heavy Industries, Ltd. (Japan)

Tu-F-34
Photonic Crystal Based Two-Dimensional Surface Relief Grating.....119
Ying-Pin Tsai[1], Fu-Li Hsiao[2], and Li-Chuan Yu[2]
[1]National Yang Ming Chiao Tung University, [2]National Changhua University of Education (R.O.C.)

Tu-F-35
XR Imaging Technology Development Applied by Holograms.....121
Taichi Wakaume[1], Toshihiro Kasezawa[2], Hideyoshi Horimai[3], and Yuichi Nakamura[1]
[1]Toyohashi University of Technology, [2]EGARIM Co., Ltd., [3]HOLOMEDIA LLC (Japan)

Tu-F-36
Simulational and Experimental Investigation of Optical Configurations for Applying Antireflective Nanotexture on Spherical Lenses by Ultrashort Laser Structuring.....123
Lóránt Tibor Csőke[1,3], Evangelos Skoulas[2], and Zsolt Kollár[3]
[1]Optimal Optik Ltd. (Hungary), [2]Biomimetic Ltd. (Greece), [3]Budapest University (Hungary)

Tu-F-37
Simulation on Temperature Rise Using Nano-Heater Device for Heat-Assisted Magnetic Recording 125
Ryuichi Katayama[1], and Satoshi Sugiura[2]
[1]Fukuoka Institute of Technology, [2]InnovaStella, Inc. (Japan)

Tu-F-38
I-V characteristics and frequency response of organic photodetector based on structure of organic photovoltaics.....127
Xingjian Xu, Jiaxun You, Md. Shahiduzzaman, Tetsuya Taima, and Koichi Iiyama
Kanazawa University (Japan)

Tu-F-39
Spectral Characteristics of Random Lasing Action in Randomly Distributed Media and Metal Halide Perovskite Thin Films 129
Tsung Sheng Kao, and Jian Xuan Liu
National Yang Ming Chiao Tung Univ. (R.O.C.)

Tu-F-40
Anion exchanges of methylammonium lead halide perovskite nanowires at solid and vapor phases.....131
Li Ming Chiang, Wei Zhang, and Tsung Sheng Kao
National Yang Ming Chiao Tung University (R.O.C.)

Tu-F-41
Electro-holography using MEMS spatial light modulator and fiber coupling RGB laser diode.....133
Takafumi Kinosada, and Shuhei Yoshida
Kindai University (Japan)

Tu-F-42
Dust Concentration Distribution Measurement Using Time-Synchronized Network and its System Configuration.....135
Joshua Junker, Akinori Furuya, Hiroyuki Kawai, Masahiro Ueno, and Munekazu Date
Tokushima Bunri University (Japan)

Tu-F-43
A Transmitter with Impedance Adjustment Circuit in Electric Field Car Area Network 137
Ken Ogasawara, and Mitsuru Shinagawa

Hosei University (Japan)

Tu-F-44
Signal Power Improvement in Intra-body Communication with Impedance Adjustment Circuit Receiver 139

Manae Ono, Haruto Kawai, and Mitsuru Shinagawa
Hosei University (Japan)

Tu-F-45
Bandwidth Improvement of Electro-optical Tool for Measuring Transmission Path in Intrabody Communication 141

Riki Morita, Kazuho Ouchi, and Mitsuru Shinagawa
Hosei University (Japan)

Tu-F-46
Weight Memory Compaction Scheme for High Performance Neural Network Hardware 143

Yuji Inooka, Taisei Iiyama, Taiyo Mizuno, Takeshi Owada, Hiroyuki Kawai, Akinori Furuya, Masahiro Ueno, and Munekazu Date
Tokushima Bunri University (Japan)

Tu-F-47 Technical Demonstration 1 (Demo withdrawn)
Analysis of Accumulated Lipid Molecular Properties in Nonalcoholic Fatty Liver Disease by Use of Brillouin Scattering Microscopy 145

Naoya Okubo, Eiji Hase, Kazuki Ysumaru, Yu Tokizane, Takeo Minamikawa, and Takeshi Yasui
Tokushima University (Japan)

Tu-F-48 Technical Demonstration 2 (Demo withdrawn)
Full-cascade-linked synthetic-wavelength digital holography using a line-by-line full-mode-extracted optical frequency comb 147

Kodai Yamaji[1], Kazuki Sadahiro[1], Eiji Hase[1], Yu Tokizane[1], Takeo Minamikawa[1], Isao Morohashi[2], and Takeshi Yasui[1]
[1]Tokushima University, [2]National Institute of Information and Communications Technology (Japan)

Tu-F-49 Technical Demonstration 3
Unidirectional Window Display Which Enables to Make Images Invisible from Back Side Using Special-designed Color Generating Transparent Film 149

Kunio Sakamoto, Keiichiro Tamano, and Towa Maeda
Konan University (Japan)

Tu-F-50 Online (See also Tu-C-01)
Giant Circular Dichroism in All-dielectric Planar Chiral Meta-GMR 151

Yung-Chih Liu, Yi-Cheng Lin, and Chih-Ming Wang
National Central University (R.O.C.)

Tu-F-51 Online (See also Tu-C-02)
Meta-corrector for optimization of the Cooke triplet 153

Shang-Ping Yeh, Sheng-Jie Shen, and Chih-Ming Wang
National Central University (R.O.C.)

Tu-F-52 Online (See also Tu-C-03)
Simulation Analysis of Optical Gate Switch Operation Using a Chalcogenide Phase-change Material 155

Haruyuki Sano[1], and Masashi Kuwahara[2]
[1]National Institute of Technology, Ishikawa College, [2]National Institute of Advance Industrial Science and Technology (Japan)

Tu-F-53 Online (See also Tu-C-04)
Mystery Circle Formation under a Fluctuating Vertical Magnetic Field 157

Satoshi Takagi[1,2], Kana Miura[3], Yohei Aoyagi[1] and Seiya Tsujimura[4]
[1]National Institute of Technology, Ariake College, [2]Fukushima University, [3]Fukushima College, [4]University of Tsukuba (Japan)

Tu-F-54 Online (See also Tu-C-05)
Measurement of crops using a compact spectrometer with a single optical fiber probe ...159

Koichi Muro, and Ryuya Sasanuma
Teikyo University (Japan)

17:45 - 18:15 Break (Move to Banquet)

18:15 - 20:15 Banquet

Nov. 22, 2023 (Wednesday)

We-A: Materials and Devices for Optics

Presiders: Minoru Takeda (Kyoto Institute of Technology, Japan)
Yuichi Nakamura (Toyohashi Univ. of Tech., Japan)

We-A-01 Invited
8:40 Flexible and Stretchable Terahertz/Infrared Imagers for Multi-View Visualization and Inspection 161

Yukio Kawano[1,2]
[1]Chuo University, [2]National Institute of Informatics (Japan)

We-A-02
9:05 Gd^{3+}-doped $YAlO_3$ Perovskite Luminescent Film on $LaAlO_3$ Buffer Layer as Optical Probe for EXA Microscopy 163

Kei Hosomi[1,2], Wataru Inami[1,2] and Yoshimasa Kawata[1,2]
[1]Shizuoka University, [2]Japan Science and Technology Agency (Japan)

We-A-03
9:25 Reflection Characteristics of Guided-Mode Resonance Mirror with Compound Waveguide Cavity 165

Shunsuke Teranishi[1], Akari Watanabe[1], Junichi Inoue1, Kenji Kintaka[2], and Shogo Ura[1]
[1]Kyoto Institute of Technology, [2]National Institute of Advanced Industrial Science and Technology (Japan)

We-A-04
9:45 Design of Single-Layer Grating for Flat-Top Bandpass Filter 167

Seita Ishioka[1], Zhiyu Yang[1], Junichi Inoue[1], Kenji Kintaka[2], and Shogo Ura[1]
[1]Kyoto Institute of Technology, [2]National Institute of Advanced Industrial Science and Technology (Japan)

10:05 - 10:25 Break

We-B: Medical and Bio-systems

Presider: Satoru Higashino (Sony Semiconductor Solutions, Japan)

We-B-01
10:25 Mid-infrared passive spectroscopic imaging for non-invasive blood glucose sensor..... 169

Ichiro Ishimaru, Daichi Anabuki, Shiori Tahara, Akira Nishiyama, Kenji Wada, and Akiko Nishimura
Kagawa University (Japan)

We-B-02
10:45 Influence of Fall Distance of Urine Flow on Measurement Accuracy of Three-dimensional Uroflowmetry 171

Tamaki Hamato[1], Shigeru Murata[1], Yasuyuki Naitoh[2], and Osamu Ukimura[2]
[1]Kyoto Institute of Technology, [2]Kyoto Prefectural University of Medicine (Japan)

11:05 - 11:10 Short Break

We-C: Holographic Memory I

Presiders: Takanori Nomura (Wakayama University, Japan)
Tetsuhiko Muroi (NHK, Japan)

We-C-01
11:10 Bach Reading and Decoding of SQAM Signal for Holographic Data Storage.....173

Satoshi Honma, Yunosuke Shimizu, and Hironori Ito
University of Yamanashi (Japan)

We-C-02
11:30 A novel method of developing Wollaston prisms using tensor polarization holography theory 175

Peiliang Qi, Xinyi Yuan, Jinyu Wang, Di Zhang, Yiping Liu, Zaijing Chen, Hong Cheng, Xiao Lin, Yi Yang, and Xiaodi Tan
Fujian Normal University (P.R.China)

We-C-03
11:50 Brute-force attack characteristics of random phase encrypted collinear holographic data storage system 177

Dakui Lin, Jianan Li, Haiyang Song, Xiao Lin, Kun Wang, and Xiaodi Tan
Fujian Normal University (P.R.China)

12:10- 13:30 Lunch

We-D: Holographic Memory II

Presider: Shuhei Yoshida (Kindai University, Japan)

We-D-01 Invited
13:30 Self-Referential Holography and Its Fusion with AI Technologies.....179

Masanori Takabayashi
Kyushu Institute of Technology (Japan)

We-D-02 Invited
13:55 Holographic Data Storage with Complex Amplitude Modulation.....181

Masatoshi Bunsen
Fukuoka University (Japan)

We-PD: Post Deadline

Presider: Yuichi Nakamura (Toyohashi Univ. of Tech., Japan)

We-PD-01
14:20 Hexagonal Boron Nitride – a Two Dimensional Platform for Quantum Sensing.....183

Katarzyna Ludwiczak, Johannes Binder, Aleksandra Krystyna Dąbrowska, Piotr Tatarczak, Roman Stępniewski and Andrzej Wysmołek
University of Warsaw (Poland)

We-PD-02
14:35 Fabrication and Evaluation of Narrow-Band Near-UV Light Absorber Using Fano Resonance in Al Nanohole Array Structure.....185

Karen Akatsuka, Kazumasa Hiramatsu and Atsushi Motogaito
Mie University (Japan)

14:50 - 15:05 Award & Closing