

ISOT 2010 – Technical Program

ID	Session Paper Code	Title	Time
Monday Oct. 25			
Opening Farrokh Janabi-Sharifi			8:30-9:30
Plenary 1: Optomechatronics on the Nanoscale - Room 206 DF Olav Solgaard			
Session SP-SH: Optical systems for shape and deformation measurement - Room 206 DF – Date: Oct. 25 Session Chair 1: Hua Lu, Session Chair 2: Howard Yuanhao Huang			
20	SP-SH-1	Some Recent Advance on High-speed, High-resolution 3-D Shape Measurement Using Projector Defocusing Song Zhang, Yuanzheng Gong, Yajun Wang, Jacob Laughner, Igor Efimov	9:30-9:45
50	SP-SH-2	Pose-relay Videometric Method and Ship Deformation Measurement System with Camera-series Qi-feng Yu, Si-hua Fu, Guangwen Jiang, Zhi-hui Lei	9:45-10:00
105	SP-SH-3	A New Study on Projection Speckle Digital Correlation for Surface Out-of-plane Deformation Measurement Hua Lu, Cuiru Sun	10:00-10:15
77	SP-SH-4	Shape Measurement by Light-stepping Method Using LEDs Yoshiharu Morimoto, Motoharu Fujigaki, Akihiro Masaya, Yohei Oura	10:15-10:30
103	SP-SH-5	Advanced Optical Methods for Whole Field Displacement and Strain Measurement Lianxiang Yang, Yonghong Wang, Rongsheng Lu	10:30-10:45
Session SP-SH: Optical systems for shape and deformation measurement - Room 206 DF – Date: Oct. 25 Session Chair 1: Kazunori Umeda, Session Chair 2: Howard Yuanhao Huang			
108	SP-SH-6	Sinusoidal Fringe-Pattern Projection for 3-D Surface Measurement with Variable Illuminance Christopher Waddington, Jonathan Kofman	11:00-11:15
18	SP-SH-7	A 100Hz Real-time Sensing System of Textured Range Images Hidetoshi Ishiyama, Kenji Terabayashi, Kazunori Umeda	11:15-11:30
52	SP-SH-8	Fast Phase-based Stereo Matching Method for 3D Shape Measurement Dong Li, Huijie Zhao, Hongzhi Jiang	11:30-11:45
109	SP-SH-9	Saturation Avoidance by Adaptive Fringe Projection in Phase-Shifting 3D Surface-Shape Measurement Christopher Waddington, Jonathan Kofman	11:45-12:00

Session BO: Biomedical optics - Room 206 DF – Date: Oct. 25

Session Chair 1: Arsen Hajian, Session Chair 2: Beau Standish

43	BO-1	A New Type of Spectrometer for Confocal-spectral Microscopy Dukho Do, Wanhee Chun, Dae-Gab Gweon	14:00-14:15
96	BO-2	Optical Coherence Tomography: Current Biomedical Applications and Future Clinical Utility Beau Standish, Michael Leung, Adrian Mariampillai, Victor Yang	14:15-14:30
98	BO-3	Unification of Satellite and Medical Scan Methods Thomas Haylock, Andrew Cenko, Jeff Meade, Farnoud Kazemzadeh, Arsen Hajian	14:30-14:45
81	BO-4	3D Simulation of Transient Heat Transfer in Human Eye Using Finite Element Method Amin Dehghani, Aboozar Moradi, Reza Jafari	14:45-15:00
82	BO-5	A High-Order Finite Element Method for Forward Problem in Diffuse Optical Tomography Maedeh Hadinia, Reza Jafari	15:00-15:15

Session LPTI: Laser processing techniques and instrumentation - Room 206 B – Date: Oct. 25

Session Chair 1: Evgueni Bordatchev, Session Chair 2: James Fraser

84	LPTI-1	Experimental Statistical Analysis of Laser Micropolishing Process Michael Chow, Abdullah Hafiz, Remus Tutunea-Fatan, George Knopf, Evgueni Bordatchev	9:30-9:45
97	LPTI-2	Inline Coherent Imaging of Laser Micromachining Paul Webster, Joe Yu, Ben Leung, Logan Wright, Kevin Mortimer, James Fraser	9:45-10:00
32	LPTI-3	Optimization of Computer-Generated Hologram Using Second Harmonic Generation Satoshi Hasegawa, Yoshio Hayasaki	10:00-10:15
61	LPTI-4	Control of Self-organization Microporous Honeycomb Film by the Irradiation of Nano Second Laser Pulse Yukimasa Matsumura, Wataru Inami, Yoshimasa Kawata	10:15-10:30
56	LPTI-5	A Lunar Laser Ranging Retroreflector Array for the 21st Century Douglas Currie, Simone Dell’Agnello, Giovanni Delle Monache	10:30-10:45

Session OI: Optical imaging - Room 206 B – Date: Oct. 25

Session Chair 1: Ichiro Fujieda, Session Chair 2: Reza Jafari

13	OI-1	Detection of Touch Event with a Camera-based User Interface Ichiro Fujieda, Yasunori Inoue, Masayuki Nishino	11:00-11:15
38	OI-2	Line Scanning Confocal Microscopy with the Use of Cross Structured Illumination MyoungKi Ahn, Taejoong Kim, YoungDuk Kim, DaeGab Gweon	11:15-11:30
73	OI-3	A Hybrid EFG-FE Analysis for DOT Forward Problem Maedeh Hadinia, Reza Jafari	11:30-11:45
19	OI-4	Spectral Imaging with a Modified Document Scanner Yuuto Okuda, Koji Yamashita, Ichiro Fujieda	11:45-12:00
45	OI-5	Resolution Enhancement by Time-Multiplexed Acquisition of Sub-Pixel Shifted Images Employing a Spatial Light Modulator Alexander Hildebrand, Claas Falldorf, Christoph von Kopylow, Ralf Bergmann	14:00-14:15
75	OI-6	Open-Loop Adaptive Optics with Closed-Loop Control of Deformable Mirror Amir Badkoubeh, Guchuan Zhu, Rachid Beguenane	14:15-14:30

27	OI-7	Research on the Model of Spectral BRDF for Space Target Surface Material Chengming Sun, Yan Yuan, Xiubao Zhang, Qian Wang, Zhiliang Zhou	14:30-14:45
39	OI-8	Coordinate Measurement of Micro Groove on MEMS Device by Optically Controlled Microprobe Mitsutoshi Kobayashi, Masaki Michihata, Terutake Hayashi, Yasuhiro Takaya	14:45-15:00
46	OI-9	Edge Extraction in X-ray Image Based on COD of Materials Sung Man Cho, Hyuk-Hoon Shim, Chun-Sam Song, Jong-Hyeong Kim	15:00-15:15
Tutorial 1: Sensor Data Fusion, Principles and Applications - Room 206 DF Behzad Moshiri			15:30-17:30

Coffee breaks: 10:45-11:00, 15:15-15:30, Room 205 D.

Tuesday Oct. 26

Plenary 2: Subspace Based Methods for Phase Estimation in Interferometry- Room 206 DF Pramod Rastogi

8:30-9:30

Session OSD: Optomechatronic system design - Room 206 DF – Date: Oct. 26

Session Chair 1: Akira Ishii, Session Chair 2: Hyungsuck Cho

8	OSD-1	Measurement and Compensation of Deformations in Coordinate Measurement Arm Miha Vrhovc, Igor Kovac, Marko Munih	9:30-9:45
76	OSD-2	A Dual Wafer Prealigner and a Multiple Level Structure HyungTae Kim, SungBok Kang, YoungJun Cho	9:45-10:00
78	OSD-3	Depth-of-Field Extension through Focal Plane Oscillation and Variable Annular Pupil Deokhwa Hong, Hyungsuck Cho	10:00-10:15
44	OSD-4	Compensation of Repeatable and Nonrepeatable Disturbances in High NA SIL-based Near-Field Storage Systems Jung-Gon Kim, No-Cheol Park	10:15-10:30
37	OSD-5	Smart Wearable Robot Glasses For Human Visual Augmentation Based on Human Intention and Scene Understanding Hyun-Woo Kim, Min Young Kim, Seung-Ho Yang, Kyo-Yeol Kim, Hyung-Min Son, Yun-Jung Lee	10:30-10:45
15	OSD-6	Object Shape-based Methodology for Optical Analysis of Contaminated Engine Lubricants Hamid Aghayan, Jun Yang, Evgueni Bordatchev	10:45-11:00

Session MVI: Machine vision and inspection - Room 206 DF – Date: Oct. 26

Session Chair 1: Kazunori Umeda, Session Chair 2: Didier Coquin

35	MVI-1	Model Shape Oriented Robust Matching of Dot Cloud Data Based and its Application to Defect Recognition Hiroyuki Kayaba, Hidenori Takauji, Shunichi Kaneko, Masataka Toda, Kouji Kuno, Hiroyuki Suganuma	11:30-11:45
83	MVI-2	A Patterned Illumination and Phase Integration Imaging Method for High-Glossy Surface Evaluation YoungJun Roh, SeongHoon Kim, HeungBo Shim, DaeCheol Lim, DaeHwa Jeong	11:45-12:00
64	MVI-3	Extraction of Unique Pixels Based on Co-occurrence Probability for High-speed Template Matching Manabu Hashimoto, Takayuki Fujiwara, Hiroyasu Koshimizu, Haruhisa Okuda, Kazuhiko Sumi	12:00-12:15
90	MVI-4	Development of Alignment Inspection System for Ball Grid Array Packaging Hyunki Lee, Jeong Yul Jeong, Kwang III Ko, Hyungsuck Cho, Min Young Kim	12:15-12:30

Session PS: Photonic Sensors - Room 206 DF – Date: Oct. 26

Session Chair 1: Hooman Akhavan, Session Chair 2: Marenori Kawamura

72	PS-1	Novel Noncontact Temperature Fiber Sensor for Multi-Spot Field Measurements Marius Jurca, C. Urs	13:30-13:45
57	PS-2	Development of a Polymer Based Fiberoptic Magnetostrictive Metal Detector System Wei Shu Hua, Joshua Rosenberg Hooks, Wen Jong Wu, Wei Chih Wang	13:45-14:00
79	PS-3	Mechanical Sensitivity Enhancement of Silicon Based Photonic Crystal Micro-Pressure Sensor Aref Bakhtazad, Jayshri Sabarinathan, Jeff Hutter	14:00-14:15

66	PS-4	Nano-fabrication Dependent Quality Factor in Photonic Crystal Slab Biosensors Hooman Akhavan, Mohamed El-Beheiry, Ofer Levi	14:15-14:30
10	PS-5	Liquid Crystal Lens with Two Divided and Double Circularly Hole-patterned Electrodes Marenori Kawamura, Hisashi Goto	14:30-14:45
Session 3DSI: 3D sensing and imaging - Room 206B – Date: Oct. 26 Session Chair 1: Didier Coquin, Session Chair 2: George Knopf			
36	3DSI-1	A Separability Index Based on Earth Mover's Distance for Local Evaluation of Fusion Systems Abdellah Lamallem, Lionel Valet, Didier Coquin	9:45-10:00
67	3DSI-2	A Real-time Stereo Vision Sensor based on FPGA Realization of Orientation Code Matching Isao Ohmura, Tomoyuki Mitamura, Hedenori Takauji, Shun'ichi Kaneko	10:00-10:15
69	3DSI-3	Rapid Clustering of Colorized 3D Point Cloud Data for Reconstructing Building Interiors Kuldeep Sareen, George Knopf, Robert Canas	10:15-10:30
51	3DSI-4	Modeling Stereo Measurement Error by Considering Camera Vibration Shin'ya Okazaki, Takayuki Tanaka, Shun'ichi Kaneko, Hidenori Takauji, Nobuo Kochi, Mitsuharu Yamada	10:30-10:45
53	3DSI-5	An Obstacle Segmentation and Classification System for the Visually Impaired Kieran O' Callaghan, Michael J. O' Mahony	10:45-11:00
Session IAPR: Image Analysis and Pattern Recognition - Room 206 B – Date: Oct. 26 Session Chair 1: George Knopf, Session Chair 2: Claudio Perez			
71	IAPR-1	Illumination Compensation Method for Local Matching Gabor Face Classifier Claudio Perez, Luis Castillo, Leonardo Cament	11:30-11:45
74	IAPR-2	Development of an Interface Based on Face Orientations for Operation of Auto-Wheelchair Nobuaki Nakazawa, Ilhwan Kim, Yasuaki Shibamiya, Toshikazu Matsui, Tomoyuki Iwata Kou Yamada	11:45-12:00
55	IAPR-3	Adaptive Color Enhancement Based on Multi-scaled Retinex Using Local Contrast of the Input Image In-Su Jang, Ho-Gun Ha, Tae-Hyoung Lee, Yeong-Ho Ha	12:00-12:15
93	IAPR-4	Robot Task Planning and Trajectory Learning Based on Programming by Demonstration Peter Scheer, Amer Alhalabi, Iraj Mantegh	12:15-12:30
Session VTSC: Vision-based tracking, servoing, control - Room 206 B – Date: Oct. 26 Session Chair 1: Wei-chih Wang, Session Chair 2: Charles Tremblay			
40	VTSC-1	Robotic Platform for Real-Time Tracking of a Single Fast Swimming Bacterium Charles Tremblay, Joscelyn Jean, Laurence Marchand, Ali Turki, Philippe Chouinard-Gaouette, Mathieu Brousseau, Mahmood Mohammadi, Sylvain Martel	13:30-13:45
48	VTSC-2	Gesture Recognition Based on the Detection of Periodic Motion Masahito Takahashi, Kota Irie, Kenji Terabayashi, Kazunori Umeda	13:45-14:00
85	VTSC-3	Adaptive Particle Filter Based Pose Estimation Using a Monocular Camera Model Mohammad Goli, Ahmad Ghanbari, Farrokh Janabi-Sharifi, Ghader Karimian Khosroshahi	14:00-14:15
47	VTSC-4	Sensor System for Linear Defect Tracking by Using Cone-shaped Laser Beam Hyuk-Hoon Shim, Sung Man Cho, Chun-Sam Song, Jong-Hyeong Kim	14:15-14:30

33	VTSC-5	Diamagnetically Levitating Motor with Improved Optical Feedback Reference Tracking Shrey Khanna, Wei-chih Wang, Joe Nhut Ho	14:30-14:45
89	VTSC-6	A Data Fusion Approach for Mutli-Camera Based Visual Servoing Akbar Assa, Farrokh Janabi-Sharifi, Behzad Moshiri, Iraj Mantegh	14:45-15:00
Tutorial 2: Introduction to Optical Metrology - Room 206 DF Vincent Chan, Howard Yuanhao Huang			15:30-17:30

Coffee breaks: 11:00-11:30, 15:00-15:30, Room 205 D.

Wednesday Oct. 27

Plenary 3: Shearography and Applications in Measurement and Nondestructive Evaluation - Room 206 DF Michael Hung

8:30-9:30

Session SP-LI: Laser interferometry, phase retrieval - Room 206 DF – Date: Oct. 27

Session Chair 1: Howard Yuanhao Huang, Session Chair 2: Arsen Hajian

104	SP-LI-1	Quantitative Phase Retrieval George Barbastathis	9:30-9:45
49	SP-LI-2	Utilization of Full Spectrum Space in Single-sensor-based Optical Dynamic Measurement Yu Fu, Min Guo, Poh Boon Phua	9:45-10:00
94	SP-LI-3	Characterization on all Effective Parameters of Anisotropic Optical Material Using Stokes Polarimeter - Theory and Experiment Yu-Lung Lo, Thi Thu Hien Pham	10:00-10:15
88	SP-LI-4	Optical System for Fast Inspection of Hermetic Seals in Electronic Packages S. Y. Hung, Yuanhao (Howard) Huang, L. Liu	10:15-10:30
87	SP-LI-5	Dynamic Phase Measurement by Clustering Method Yuanhao (Howard) Huang, S. Y. Hung, Y.S. Chen, L. Liu, S.P. Ng	10:30-10:45
21	SP-LI-6	Measurement of Thermally Induced Deformations by Means of Phase Retrieval Claas Falldorf, Christoph von Kopylow, Ralf Bergmann, Mostafa Agour	10:45-11:00

Session A: Actuators - Room 206 DF – Date: Oct. 27

Session Chair 1: Yasuhiro Mizutani, Session Chair 2: Yukitoshi Otani

16	A-1	Design and Primitive Study of a Cylindrical Traveling Wave Ultrasonic Motor Using Outer Excitation Junkao Liu, Shengjun Shi, Weishan Chen, Huijun Dong	11:30-11:45
62	A-2	Light Driven Motor Using Shape Memory Alloy Hideki Okamura	11:45-12:00
63	A-3	Thermal Diffusion Simulations for Photothermal Oscillators Kotomi Kawakami, Hideki Okamura, Atsushi Mitani	12:00-12:15
70	A-4	Design and Analysis of Resonant Drive Circuit for Electrostatic Actuators Sangtak Park, Yanhui Bai, John Yeow	12:15-12:30
60	A-5	Optically Driven Method for Magnetically Levitating a Diamagnetic Material Using the Photothermal Effect Yasuhiro Mizutani, Akihiro Tsutsumi, Yukitoshi Otani	12:30-12:45

Session SP-MNM: Micro/nano manipulation - Room 206 DF – Date: Oct. 27

Session Chair 1: Hyungsuck Cho, Session Chair 2: Yukitoshi Otani

7	SP-MNM-1	A Vision Based Micro-Assembly System for Assembling Components in Mechanical Watch Movements Qifeng Qi, Ruxu Du	13:45-14:00
14	SP-MNM-2	Automatic Stitching of Micrographs using Local Features	14:00-14:15

		Tim Wortmann	
11	SP-MNM-3	Autofocusing-based Visual Servoing: Application to MEMS Micromanipulation Guillaume Duceux, Brahim Tamadazte, Nadine Le-Fort Piat, Sounkalo Dembélé, Eric Marchand, Guillaume Fortier	14:15-14:30
41	SP-MNM-4	Recognition and Tracking of Magnetic Nanobots using MRI Tim Wortmann, Christian Dahmen, Christian Geldmann, Sergej Fatikow	14:30-14:45
80	SP-MNM-5	Manipulation of Droplet and Crystal Growth by Paul Effect Yukitoshi Otani, Yasuaki Yamabe, Yasuhiro Mizutani	14:45-15:00
Session MN: Micro/nano devices and systems - Room 206 DF – Date: Oct. 27 Session Chair 1: Ali Rostami, Session Chair 2: Wei-chih Wang			
59	MN-1	Design and fabrication of 2x2 and 4x4 biaxial micromirror array Yanhui Bai, John Yeow, Brian Wilson	15:30-15:45
58	MN-2	2-D Mechanically Resonating Fiberoptic Scanning Display System Wei-Chih Wang, Chi Leung Tsui	15:45-16:00
23	MN-3	Finite Difference Modeling of Bipolar OLED Ali Rostami, Parisa Naghinejad, Farrokh Janabi-Sharifi	16:00-16:15
25	MN-4	Proposal for 1x4 Ultracompact Arrayed Waveguide Grating Based on Si-Nanowire Spirals Ali Rostami, Hamed Sattari, Farrokh Janabi-Sharifi	16:15-16:30
29	MN-5	All-optical Switching Using Microring Resonators including Quantum-Dots Ali Rostami, H. Baghban, A. Khalafi, H. Rasooli, Ahmad Ghanbari, Farrokh Janabi-Sharifi	16:30-16:45
54	MN-6	Laser-Assisted Active Microfluidic Mixer Pun-Pang Shiu, George Knopf, Mile Ostojic, Suwas Nikumb	16:45-17:00
26	MN-7	Performance Enhancement of Organic Solar Cells using Plasmonic Effects Ali Rostami, H. Rasooli, Shabnam Andalibi, Farrokh Janabi-Sharifi	17:00-17:15
31	MN-8	Quantum-wire Conductance Manipulating by Asymmetric Quantum Dot-Molecules Ali Rostami, H. Rasooli, Ahmad Ghanbari, S.P. Zabihi, Farrokh Janabi-Sharifi	17:15-17:30
Session FOD: Fiber optic devices - Room 206 DF – Date: Oct. 27 Session Chair 1: Ali Rostami, Session Chair 2: Ahmad Ghanbari			
24	FOD-1	Zero-dispersion Wavelength and Mode Field Diameter Managements of ZDSF by Optimization Technique Ali Rostami, Somayeh Makouei, Farrokh Janabi-Sharifi	17:30-17:45
28	FOD-2	Enlarging Effective Mode Area of Photonic Crystal Fibers Using Defected Core Structures Ali Rostami, Ahmad Ghanbari, Hadi Soofi, Farrokh Janabi-Sharifi	17:45-18:00
30	FOD-3	Design and Temperature Analysis of ZDSF Based on Triangular Graded-Index Single-Mode Optical Fiber Ali Rostami, Somayeh Makouei, Farrokh Janabi-Sharifi	18:00-18:15

Coffee breaks: 11:00-11:30, 15:00-15:30, Room 205 D.