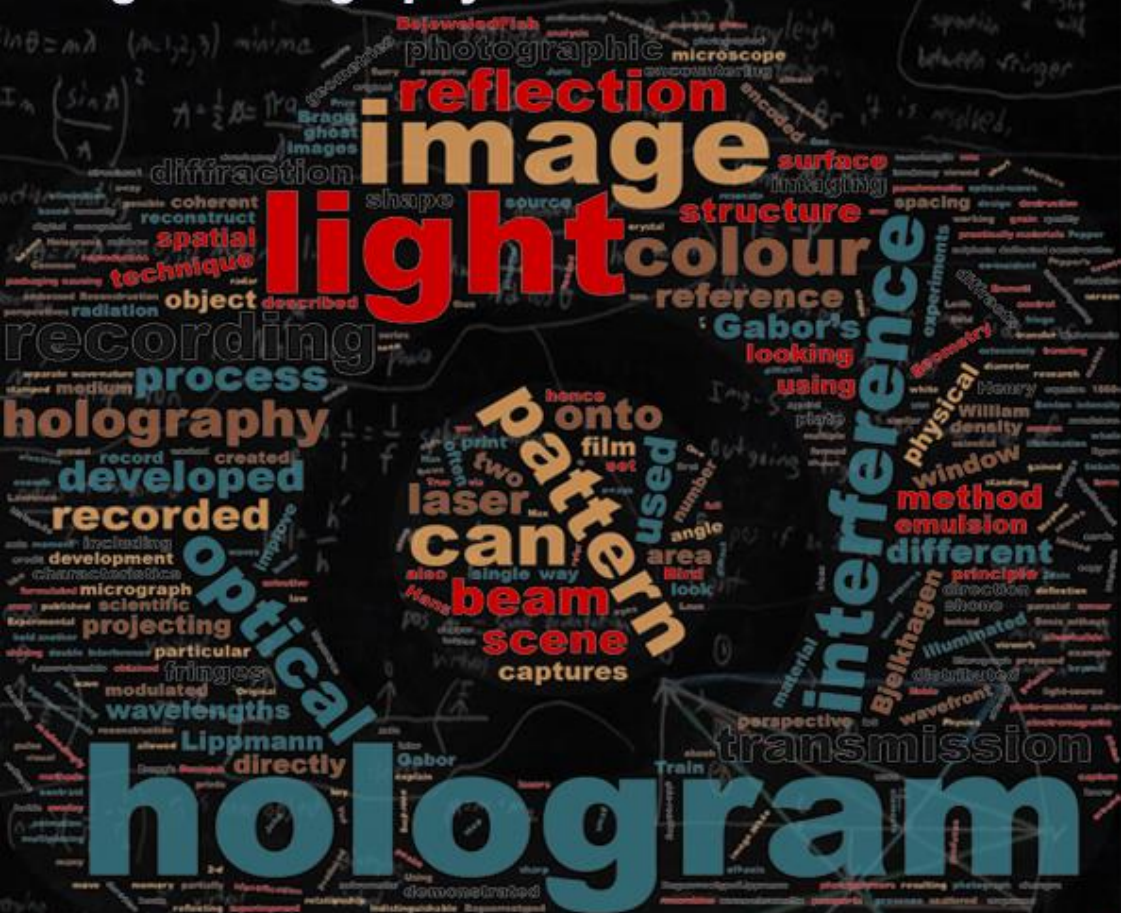


DHIP 2017

The Seventh Korea-Japan Workshop on
Digital Holography and Information Photonics



December 20-22, 2017

DGDC, Daegu, South Korea

Organizers:

Optical Society of Korea (OSK)

The Optical Society of Japan (OSJ)

School of Electronics Engineering, Kyungpook National University (KNU)

Sponsored by:

Center for Research and Development of Police Science and Technology

IIRC on Hologram Convergence Technology

Korea Photonics Technology Institute (KOPTI)

Korea Electronics Technology Institute (KETI)

ICT Fundamental Laboratory



Welcome

Welcome to Seventh Korea-Japan International Workshop on Digital Holography and Information Photonics 2017 (DHIP 2017)!

On behalf of DHIP committee, it is our great pleasure to welcome keynote speakers, invited speakers, contributed presenters and all participants.

This workshop was born in 2011 by close cooperation between Korean and Japanese scholars in the field of digital holography and information optics and has been held every year alternating venue between Korea and Japan for the last 6 years. We believe that the DHIP is now one of the most successful models promoting cooperation and friendship between research communities of two countries.

In DHIP 2017, we have 2 keynote presentations, 26 invited oral presentations, and 44 poster presentations.

We would like to express our gratitude to the optical societies of two countries, OSK and OSJ, and many institutes supporting this workshop including School of Electronics Engineering, Kyungpook National University, Center for Research and Development of Police Science and Technology, ITRC on Hologram Convergence Technology, Korea Photonics Technology Institute (KOPTI), Korea Electronics Technology Institute (KETI) and ICT Fundamental Laboratory (IITP).

We truly hope that you will enjoy both technical and social programs of the DHIP 2017. It will be our great pleasure if this workshop could be a ground for exchanging knowledge and ideas in rapidly growing research fields of digital holography and information photonics.

Welcome to Daegu and Merry Christmas!

Sincerely,

Sung-Wook Min, General Chair
Jae-Hyeung Park, Program Chair
Joonku Hahn, Local Committee Chair

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Members

Muhan Choi (*Kyungpook National University, Korea*)

Seung-Yeol Lee (*Kyungpook National University, Korea*)

Time Table

December 20		
Session 1	9:00	Nam Kim (Keynote)
	10:00	Yusuke Ogura
		Hoonjong Kang
		Coffee Break
Session 2	11:00	Yasuhiro Mizutani
		Hwi Kim
	12:00	Yoshinori Akao
		Lunch Time
	13:00	
Session 3		Joonku Hahn
	14:00	Naoya Tate
		Seung-Yeol Lee
		Coffee Break
Session 4	15:00	Hidenobu Arimoto
		Taegeun Kim
	16:00	Samuel choi
	17:00	Poster Session
	18:00	
	19:00	
	20:00	

December 21		
Session 5	9:00	Masahiro Yamaguchi (Keynote)
	10:00	Minsik Park
		Yusuke Sando
		Coffee Break
Session 6	11:00	Sung-Kyu Kim
		Hirotsugu Yamamoto
	12:00	ByoungHo Lee
		Lunch Time
	13:00	
Session 7		Osamu Matoba
	14:00	Muhan Choi
		Tastuki Tahara
		Coffee Break
Session 8	15:00	Kwang-Hoon Lee
		Kenji Harada
	16:00	Hee-Jin Choi
	17:00	Lab Tour
	18:00	
	19:00	Banquet
	20:00	

December 22		
Session 9	9:00	Yoshio Hayasaki
		Jae-Hyeung Park
	10:00	Takanori Nomura
		Sung-Wook Min
	11:00	Tour (Gyeongju)
	12:00	
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	16:00	
	17:00	
	18:00	
	19:00	
	20:00	

Locations and Direction

Venue

Daegu-Gyeongbuk Design Center (DGDC)

461 Dongdaegu-ro, Dong-gu, Daegu, Korea



- **Bus number: 814 (from Dongdaegu Station)**

Contact number: +82 - 53-740-0077

Access to Venue

Bus and foot

- From Dongdaegu Station by bus (Number 814 / 수성4) to The Korea Chamber of Commerce & Industry (2 stops) and 1min walk (35m)

Taxi

- Say to driver “To Daegu-Gyeongbuk Design Center”, takes 3mins with around 2dollars (2,800KRW)

Save and show this image to taxi driver.

기사님,
상공회의소 옆,
대구경북디자인센터로 가주세요.
대구 동구 동대구로 461 (신천3동)

Lab. Tour

- Date: 17:00-, December 21, 2017
- Prof. Joonku Hahn., Prof. Muhan Choi Lab., (College of IT Engineering Bldg.2, Kyungpook National University)

Banquet

- Date: 18:00-, December 21, 2017
- Location: Renaissance SkyView
- Address: **16F Global-Plaza** in KNU, 80, Daehak-ro, Buk-gu, Daegu
- Tel: +82 - 53-958-2221



Program

December 20(Wed)

Session 1: 9:00 – 10:40

Chair: Jae-Hyeung Park, Inha University

Key20a-1 **Research and development of holographic optical element for three-dimensional display and microscopy**
9:00 | Nam Kim, Munkh-Uchral Erdenebat, Ki-Chul Kwon, and Young-Tae Lim
9:50 | Chungbuk National University01

Inv20a-1 **Three dimensional structure of subdiffraction limit optical patterns**
9:50 | Yusuke Ogura and Jun Tanida
10:15 | Osaka University02

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10:15 | Hoonjong Kang
10:40 | Korea Electronics Technology Institute03

Session 2: 11:00 – 12:15

Chair: Naoya Tate, Kyushu University

Inv20a-3 **Ghost imaging for single photon counting**
11:00 | Yasuhiro Mizutani^{1,2}, Hiroki Taguchi¹, Yasuhiro Takaya¹
11:25 | ¹Osaka University,
²JST/ERATO MINOSHIMA Intelligent Optical Synthesizer Project04

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11:25 | Hwi Kim, Sungjae Park, and Jonghyun Lee
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Lunch Time

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Chair: Yusuke Ogura, Osaka University

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15:05		
	Hidenobu Arimoto ¹ , Keiichiro Kagawa ² , Yoji Sanomura ³ , Shigeto Yoshida ⁴ , and Shinji Tanaka ³	
15:30	¹ National Institute of Advanced Industrial Science and Technology, ² Shizuoka University, ³ Hiroshima University Hospital, ⁴ JR Hiroshima Hospital10
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Chair: Yoshio Hayasaki, Utsunomiya University

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Chair: Kwang-Hoon Lee, Korea Photonics Technology Institute (KOPTI)

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Lunch Time

Session 7: 13:30 – 14:45

Chair: Hee-Jin Choi, Sejong University

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Chair: Minsik Park, Electronics and Telecommunications Research Institute (ETRI)

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Chair: Hirotsugu Yamamoto, Utsunomiya University

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MEMO



Unified Optical Design Software

독일 LightTrans 회사에서 개발한 VirtualLab Fusion은 Ray Tracing과 Wave Optics에 이르는 다양한 광학 현상들을 하나의 플랫폼에서 구현할 수 있는 소프트웨어입니다. VirtualLab은 DOE, HOE, Grating을 비롯한 다양한 소자 및 시스템 설계를 위한 최적의 사용 환경을 제공하며, Field Tracing 시뮬레이션 엔진을 이용하여 나노스케일에서 매크로스케일에 이르는 광학 현상들을 모두 반영한 시뮬레이션이 가능합니다.

Applications

LIGHT SHAPING



Refractive optics
Diffractive optics
Diffusers
Microlens array

VIRTUAL & MIXED REALITY



Near-eye displays
Waveguide HUDs
Freeform surfaces
Pattern generation

IMAGING SYSTEMS



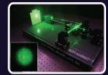
Diffractive lenses
Advanced PSF/MTF
Ghost images
Inclusion of gratings

LASER SYSTEMS



Beam delivery
Scanning systems
fs pulse modeling
Crystal modeling

OPTICAL METROLOGY



Interferometry
Microscopy
Monochromators
Spectrometers



Multiphysics Photonic Design Software

Lumerical Solutions는 포토닉스 분야의 소자 설계 및 분석용 소프트웨어 업계의 세계적인 선두 업체입니다. Lumerical Solutions 아래의 제품들을 바탕으로 광, 전기, 열 해석이 결합된 다중물리 시뮬레이션을 지원하며 나노 포토닉스와 관련된 다양한 응용 분야에서 최첨단 기술 개발을 돕고 있습니다.



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Design and Simulator

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