



IDW/AD'12

**The 19th International Display Workshops
in conjunction with Asia Display 2012**



Advance Program

***Kyoto International Conference Center
Kyoto, Japan
December 4(Tue) – 7(Fri), 2012***

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PROGRAM HIGHLIGHTS

The 19th International Display Workshops in conjunction with Asia Display 2012 will be held as IDW/AD '12 for encouraging aggressive research and development of display technologies throughout the world and especially in the Asian region. IDW/AD '12 focuses on the following three special topics, which are extremely timely, as well as fifteen active workshops.

Special Topics of Interest on

- Oxide TFT
- Augmented Reality
- Lighting Technologies

Workshops on

- LC Science and Technologies
- Active Matrix Displays
- FPD Manufacturing, Materials and Components
- Plasma Displays
- EL Displays and Phosphors
- Field Emission Display and CRT
- OLED Displays and Related Technologies
- 3D/Hyper-Realistic Displays and Systems
- Applied Vision and Human Factors
- Projection and Large-Area Displays and Their Components
- Electronic Paper
- MEMS and Emerging Technologies for Future Displays and Devices
- Display Electronic Systems
- Flexible Displays
- Touch Panels and Input Technologies

The four-day conference will feature 467 papers, including four keynote addresses, 110 invited papers, 175 oral presentations, and 178 poster presentations. Following plenary session of keynote addresses in the Tuesday morning, presentations will begin and continue in 7 parallel oral sessions through Friday. Poster sessions and author interviews with demonstrations will enable participants to discuss topics in detail. IDW/AD '12 will also present "IDW Best Paper Award" and "IDW Outstanding Poster Paper Award" based on paper originality and technical significance to information displays. Exhibits by universities and display industry-related businesses will also be featured from Tuesday to Friday in parallel with workshops. IDW/AD '12 should be of interest to not only researchers and engineers, but also managers of companies and institutions in the display community.

Special Topics of Interest on Oxide TFT

Oxide TFTs have a long history going back for almost a half century, but they have been intensively investigated since the first demonstration of amorphous oxide TFTs in 2004, and have now become one of the hottest topics in backplane technologies for active-matrix FPDs. We are glad to see and touch the first commercial LCD products using the oxide TFTs this year, however, there still remain many technical issues for further evolution toward higher resolution, speed, and reliability, lower fabrication temperature, and broader applications. In IDW/AD '12, the latest achievements involved in the brand-new challenges to these issues will be found in the papers marked Special Topics "Oxide TFT" in workshops for AMD, FMC, OLED, EP, FLX and their joint sessions. Neither should you miss the brilliant invited talks given by world-leading researchers in oxide TFTs such as Prof. T. Kamiya (Tokyo Inst. of Tech.), Prof. M. Furuta (Kochi Univ. of Tech.), Prof. K. Kobayashi (Shizuoka Univ.), Prof. K. Yasui

(Nagaoka Univ. of Tech.), Prof. H. J. Kim (Yonsei Univ.), Dr. J. Steiger (Evonik), Dr. S. Jeon and Dr. J. S. Park (SAIT), Dr. N. Gong (LG Display), Dr. C.-H. Chen (AU Optronics), Dr. K. Teramoto (Sony) and Dr. H. Yamaguchi (Toshiba).

Special Topics of Interest on Augmented Reality (AR)

In recent years, augmented reality applications have been making substantial progress with high-performance display devices and tracking methods. In the session organized by the Applied Vision and Human Factors Workshop, four papers on wide-angle and head-up display human factors are presented, including an invited talk on ultra-realistic dome images. In the session organized by the 3D/Hyper-Realistic Displays and Systems Workshop, there will be a presentation on the recent activities of archiving and virtually reproducing the Yamahoko Parade at the Kyoto Gion Festival, which has been registered on the list of the "Intangible Cultural Heritage of Humanity" by UNESCO. In the session organized by the Display Electronic Systems Workshop, activities in the industrial community toward commercialization of AR systems are first presented, followed by presentations on recent trends in visual tracking methods for AR. Regarding the AR topics related to the Touch Panels and Input Technologies Workshop, we highlight one presentation by Dr. Iseki. He will review the existing technologies for data collection and analysis during a surgery at a distance. He will then discuss the roles of user interface technologies envisioned for telemedicine in the future. The sessions are organized by the 3D, VHF, DES and INP workshops.

Special Topics of Interest on Lighting Technologies (LIT)

This Lighting Technologies of Special Topics of Interest will cover all aspects of science and technologies of lighting including LED lighting, OLED lighting, flexible lighting, manufacturing of lightings, lighting materials, device structures for lightings and internal or external efficiency enhancement technologies.

Workshop on LC Science and Technologies (LCT)

This workshop covers topics from fundamental studies to recent developments in LCD technologies and LC materials. New LCD technologies, such as blue phase LCDs, 3D-LCDs, polymer stabilized LCDs and photo-alignment LCDs are extensively discussed. Novel semiconductor LCs and special novel LCD evaluation techniques are also discussed.

Workshop on Active Matrix Displays (AMD)

The AMD workshop has devoted itself to the exchange of the scientific and technological knowledge for FPD applications, covering the various technologies of Si-TFT, Oxide TFT, Organic TFT, OLED integrated sensors, flexible devices and novel applications. AMD is recognized as one of the largest workshops in IDW. Recent paper presentations tend to focus on Oxide TFTs, which may be expected to play a role in the applications for higher-definition LCD, next-generation OLED and flexible displays. This year, we highlight the oxide TFT as a special topic of interest (STI). We devote three sessions to the oxide-TFT STI, three sessions to AMD alone, and three sessions for joint sessions, which cover a wide area from device/process to applications. The presentations also promise to achieve green and sustainable technologies.

Workshop on FPD Manufacturing, Materials and Components (FMC)

The FMC workshop covers the recent developments and achievements in the field of flat panel display technologies in manufacturing, materials, measurements and components. This year, three sessions are devoted to special topics of interests, Lighting and Oxide TFT, showing recent

trends. The joint session with the FLX workshop deals with the new manufacturing technologies including Roll to Roll fabrication technologies, etc. More than 50 interesting papers including 12 invited papers will be presented. The presentations are on organic semiconductors, color switching of one dimensional photonic crystals, transparent nanofiber papers, transparent conductive films with Ag nanowires and organic-inorganic hybrid materials, etc.

Workshop on Plasma Displays (PDP)

Presentations on SUPER Hi-VISION (Ultra High Definition Television) should not be missed. A debut of the 145-in.-diagonal, 8Kx4K-pixel plasma display has been made jointly by NHK and Panasonic, with a breathtakingly high picture quality. The system was installed at the International Broadcasting Center in London Olympic Park. The outline of SUPER Hi-VISION will be presented at the DES Workshop. Also stressed is an announcement of the world first introduction into the market of the (MgCa)O protective layer, which may replace the commonly used MgO with a significant reduction of sustain voltage.

Workshop on EL Displays and Phosphors (PH)

This workshop presents the latest achievements on devices and phosphors for emissive displays, general lighting and liquid-crystal backlighting. Invited talks will present emerging technologies such as efficient powder EL, luminance enhancement with nano particle plasmon, and new phosphor materials for white LED applications and emissive displays.

Workshop on Field Emission Display and CRT (FED)

Field emission display (FED) is a vacuum device similar to the cathode ray tube (CRT) and is one of most promising flat panel displays because of several features such as high picture quality, low power consumption and fast response time. This workshop covers the entire field of CRT and field emission display technologies. Recent progress in carbon nanotube (CNT) field emitter arrays for X-ray sources and displays are presented. New devices with field emission, such as X-ray image detectors and switching devices are also presented. Furthermore, fabrication processes, field emission characteristics and various field emitter materials, such as CNTs, TiO₂, and porous silicon, are also discussed.

Workshop on OLED Displays and Related Technologies (OLED)

The OLED workshop covers all aspects of science and technologies of OLED and other organic devices, ranging from material research, basic device physics to display including backplane technologies and other applications. OLED technologies based on new full-color realizing methods are reported on, and technologies from micro display viewer to large size TV application. Material and device architecture for higher quantum efficiencies, supporting these device technologies are also presented. In addition, organic transistors for one of the optimal backplane technologies with OLEDs are also discussed.

Workshop on 3D/Hyper-Realistic Displays and Systems (3D)

This workshop focuses on recent progress in 3D, hyper-realistic display systems and related visual sciences. It covers acquisition, processing, 2D/3D conversion, two-view display, multi-view display, holography, new optical components, crosstalk, measurement, perception, standardization and so on for 3D/ hyper-reality display technologies. Invited talks in this workshop include topics from the forefront of 3D imaging technologies and recent research into advanced display systems such as multi-view

display, holography, and liquid crystal lens.

Workshop on Applied Vision and Human Factors (VHF)

The VHF workshop covers all topics on vision, human factors and image quality relating to information display. The oral sessions and a poster session, include lively discussions on the latest topics ranging from fundamental theories to applications. This year, in addition to a session on the special topic of interest in augmented reality (VHF/AR session), there are eight oral sessions and a poster session, on color reproduction, 3D vision, human factors, image formats and ergonomic design of HDTV/UHDTV displays, and display measurement. Six distinguished invited talks will be given on the latest topics in ultra-realistic dome images, color differences for images, color rendering properties of artificial illuminants, guidelines for in-vehicle displays, the SUPER Hi-VISION (SHV) image format and its standardization, and ergonomic design guidelines for flat panel displays.

Workshop on Projection and Large-Area Displays and Their Components (PRJ)

PRJ-WS covers all Projection technologies, devices and related applications. Ongoing Laser and High Reality technologies have contributed to the progress of Projectors. Papers on HUD (Head Up Display) and other displays for Automotive and Aircraft are going to be presented. Also, continuous improvements in the field of Solid State Lighting and display devices will be discussed.

Workshop on Electronic Paper (EP)

This workshop focuses on current topics in electronic paper including rewritable paper, paper-like displays and flexible displays. Developments of e-Paper technologies are now in great demand due to the emergence of applications such as the e-Book, e-Newspaper, Electronic shelf label, etc. Various novel technologies in electrophoretic, liquid crystal, electrowetting, electrochromic and twisting ball display systems will be reported. Challenging new approaches in e-Paper technologies will also be reported. Enthusiastic discussion is expected about systems, devices, materials, human factors, color evaluations and applications in this field.

Workshop on MEMS and Emerging Technologies for Future Displays and Devices (MEET)

The workshop is unique in covering all aspects of MEMS, nanotechnologies and emerging technologies concerning future displays, imaging devices, and emerging electron devices. It seeks to broaden the horizons of display and imaging technologies into cutting-edge technologies. Research areas such as materials, basic physics and fabrication process are included. Among all the MEMS and display conferences in the world, this is the only opportunity for MEMS and cutting-edge technology researchers to gather and discuss such devices. Authorities in this field are invited from top research institutions around the world. Invited speakers are from Univ. of Cambridge, Univ. of Stuttgart, Ecole Polytechnique, Kyung Hee Univ., Univ. of Oxford, Nat. Chiao Tung Univ. and Ritsumeikan Univ. Together with excellent contributed papers, this workshop invites participants who wish to open a new field of displays, imaging devices and emerging devices.

Workshop on Display Electronic Systems (DES)

This workshop covers all aspects of display systems in relation to electronics of video data processing, interface technologies, cooperative operations between display components such as cells and backlights, sensors, applications to the new arena such as 3D video and augmented

reality. We set up a new session, the SUPER Hi-VISION Public Viewing at the London 2012 Olympic Games. In addition, the wide and high dynamic range of color reproduction systems and low power consumption systems are focused on.

Workshop on Flexible Displays (FLX)

Recently, flexible display technologies are drawing much attention, and they are spread over a wide range of fields from materials science to practical applications. The hottest sessions cover all aspects of flexible device/material technologies including OLED, electronic paper, TFT fabrication, substrate, printing/roll-to-roll processes and evaluation.

Workshop on Touch Panels and Input Technologies (INP)

This workshop covers all aspects of input technologies on materials, devices and systems. We expect that INP will open up brand new fields by fusing the input and display technologies. In addition to the recent developments in the touch panel technologies, new user interface technologies and as well the most advanced 3D/2D image sensor technologies and systems are featured in this year's session.

IDW Best Paper Award and IDW Outstanding Poster Paper Award

IDW will present "IDW Best Paper Award" and "IDW Outstanding Poster Paper Award". The award committee of IDW will select the most outstanding papers from those presented at IDW/AD '12. The award winners will be announced on the IDW website and given a plaque after the conference.

Exhibition

The IDW/AD '12 Exhibition, which will be held from December 4 through December 7, covers materials, components, manufacturing and measuring equipments, software systems and other related products for display devices. Please join in and enjoy discussions at exhibitors' booths (1F, Event Hall).

December 4: 12:40 – 18:20

December 5: 10:00 – 18:00

December 6: 10:00 – 18:00

December 7: 10:00 – 14:00

Late-News Papers

Due September 28, 2012

Submit a two-page camera-ready manuscript
via IDW website:

<http://www.idw.ne.jp/latenews.html>

Final Program

The final program of IDW/AD '12 will be available
on the website (<http://www.idw.ne.jp/>)
from the middle of November.

GENERAL INFORMATION

SPONSORSHIP

IDW/AD '12 is sponsored by the Institute of Image Information and Television Engineers (ITE) and the Society for Information Display (SID).

CONFERENCE SITE

Kyoto International Conference Center

Takaragaike, Sakyo-ku,

Kyoto 606-0001

Phone: +81-75-705-1234 Fax: +81-75-705-1100

ON-SITE SECRETARIAT

Telephone and fax machines for IDW/AD '12 use will be temporarily set up in the secretariat room (Room G) at the Kyoto International Conference Center (December 3-7). Phone/Fax: +81-75-705-2001

RECEPTION

A buffet style reception will be held on December 5 from 19:00 to 21:00 at the Sakura (1F) in the Kyoto International Conference Center. As the number of tickets is limited, you are urged to make an advance reservation through the registration website.

EVENING GET-TOGETHER WITH WINE

A get-together will be held on December 3 from 18:00 to 20:00 at Restaurant Grill (1F) in the conference site. Wine (Sponsored by Merck Ltd. Japan) will be served to participants with a relaxed atmosphere for networking.

REGISTRATION

Registration is available in advance and also on-site. However, on-site registrants may not be able to obtain books, if there are an unexpectedly large number of on-site registrations. Advance registration is strongly recommended.

Registration Fees

The registration fee for IDW/AD '12 includes admission to the conference and CD-ROM of the proceedings. Additional ¥10,000 will be charged for those who prefer the proceedings in book format. Detailed information will be announced on the website.

	Paid by Nov. 2	After Nov. 2
Individual Member (ITE/SID/ASO*)	¥ 35,000	¥ 45,000
Non-Member**	¥ 45,000	¥ 55,000
Student***	¥ 8,000	¥ 10,000
Life Member of ITE/SID	¥ 8,000	¥ 10,000
Reception	¥ 8,000	¥ 10,000

*ASO: Academic Supporting Organizations

(See p.14 as well as "Supporting Organizations and Sponsors" at the end of each workshop section.)

**Non-Member: If you intend to join either ITE or SID, the one year membership fee will be subsidized by IDW/AD '12 committee.

***Photocopy of student ID is required.

Please note that the reduced registration fee must be paid by November 2. The full fee will be charged for payments made later than November 2. Also note that the number of reception tickets to register on site is limited.

Proceedings Data at the Conference Site

We will provide the data on USB flash drives for copying near the registration desk. This data can also be accessed from the web-server via the wireless network only in the Free Wi-Fi Area at the conference site.

For additional sets of the proceedings (Books and CD-ROM)

At the conference site	¥ 11,000
Airmail after the conference	¥ 18,000
Domestic mail after the conference	¥ 13,000

Additional sets of Books and CD-ROM can be purchased only those who have completed payment by November 23.

Payment

Three ways are provided for registration.

(1) e-Registration

Access the following URL.

<http://www.idw.ne.jp/regist.html>

e-Registration will be accepted until November 23, 2012.

(2) Mail or Fax Registration

Complete the registration form (download from the website) and send it to the secretariat together with all necessary payments no later than November 23, 2012.

IDW/AD '12 Secretariat

c/o Bilingual Group Ltd.

3-3-6 Kudan Minami, Chiyoda-ku, Tokyo 102-0074, Japan

Phone: +81-3-3263-1345 Fax: +81-3-3263-1264

E-mail: idw@idw.ne.jp

The registration fee should be remitted by one of the following methods.

1. Credit Card

2. Bank Transfer to:

Bank: Bank of Tokyo-Mitsubishi UFJ

(Swift Code: BOTKJPJT)

Branch: Ichigaya Branch (Branch No. 14)

Account No.: 1474095 (Ordinary Account)

Account: IDW

Please attach a copy of the bank receipt with the registration form to avoid any confusion. Please note that the remittance charge should be paid by the payer.

All above payments should be made in **JAPANESE YEN**.

Also, please note that personal and traveler's checks are not accepted.

(3) On-site Registration

Conference registration desk will be open:

December 3 (Mon.) 17:00 – 20:00

December 4 (Tue.) 8:00 – 18:00

December 5 (Wed.) 8:00 – 18:00

December 6 (Thu.) 8:00 – 18:00

December 7 (Fri.) 8:00 – 13:00

The on-site registration fee will be payable by:

1. Cash (JAPANESE YEN only)

2. Credit Card (VISA, MasterCard or Amex)

Bank transfer, bank checks, or personal/traveler's checks are not accepted.

Cancellation Policy

Refunds for registration, reception, additional sets of proceedings etc. will be made upon receipt by IDW/AD '12 secretariat of written cancellation by **November 2**. For cancellations received after November 2 or no-shows, refunds will not be made. However, after IDW/AD '12 closes, a set of the proceedings will be sent to the registrants who have paid the registration fees. If it becomes difficult to hold IDW/AD '12 due to infectious disease and other unavoidable factors, we will substitute the IDW with the mail delivery of the IDW/AD '12 proceedings at a later date to all those who have registered and completed payment.

INQUIRIES

IDW/AD '12 Secretariat

c/o Bilingual Group Ltd.

3-3-6 Kudan Minami, Chiyoda-ku, Tokyo 102-0074, Japan

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ACADEMIC SUPPORTING ORGANIZATIONS (ASO)

- The Chemical Society of Japan
- The Electrochemical Society of Japan
- The Illuminating Engineering Institute of Japan
- The Imaging Society of Japan
- The Institute of Electrical Engineers of Japan
- The Institute of Electronics, Information and Communication Engineers
- The Institute of Image Electronics Engineers of Japan
- Japan Ergonomics Society
- The Japanese Liquid Crystal Society
- The Japan Society of Applied Physics
- The Virtual Reality Society of Japan
- The Society of Polymer Science, Japan

FUNDS

- Grant-in-Aid for Scientific Research (KAKENHI: 2464002) from MEXT
- The Asahi Glass Foundation

**Please visit the website (<http://www.idw.ne.jp/>)
for the latest information.**

Evening Get-Together with Wine

Monday, December 3, 2012

18:00 – 20:00

at Restaurant Grill (1F),

Kyoto International Conference Center

(Sponsored by Merck Ltd., Japan)

See page 12 for details

TRAVEL INFORMATION

ACCOMMODATIONS

JTB Western Japan, Corp. will handle arrangements for your hotel reservations.

It will be very hard to book a hotel in Kyoto in December due to it being the peak tourist season. So we recommend you make reservations in advance at the hotels recommended by IDW.

Hotel reservations can be made at the IDW official website.
<http://www.idw.ne.jp/accommodation.html>

Hotel list and the rates are available on the Pullout of this Advance Program.

JTB Western Japan, Corp.
Communication Division, MICE Center, IDW/AD '12 Desk

Phone: +81-6-6252-2861 Fax: +81-6-6252-2862
Office Hours: 9:30-17:30 (Weekdays only)
E-mail: westec_op6@west.jtb.jp

There will be an on-site travel information desk during the conference period to handle arrangements for transportations.

VISAS

Visitors from countries whose citizens must have visas should apply to Japanese consular office or diplomatic mission in their respective country. For further details, please contact your travel agency or the local consular office in your country.

Attention: For some countries' citizens, official documents prepared by the secretariat will be needed. Please access the IDW official website for applications.

<http://www.idw.ne.jp/visa.html>

CLIMATE

The average temperature in Kyoto during the conference should be around 8°C(46°F) in the daytime and 4°C(39°F) at night.

IDW Best Paper Award

IDW Outstanding Poster Paper Award

These awards will go to the most outstanding papers selected from those presented at IDW/AD '12.

The 2012 award winners will be announced on the IDW website: <http://www.idw.ne.jp/award.html>

Kyoto - Ancient Capital

Kyoto has a population of 1.47 million, and is an ancient city with a history spanning over 1200 years. Kyoto served as Japan's capital and the emperor's residence from 794 until 1868.

Kyoto also preserves the beloved properties of its culture as testimonials of time. This is shown in the ancient temples and shrines built in styles unique to Kyoto, as well as private residences. Moreover, many festivals, ceremonies and traditional industries reveal the will of this city to transmit and maintain its 1200-year-old culture.

Kyoto's history and culture could, without exaggeration, be said to be the history and culture of Japan itself.

In addition, many tourists from all over Japan visit Kyoto in the fall to view the beautiful colored leaves. When the conference is being held, the Shimogamo and Kitano Tenmangu Shrines will be the best places to view the fall colors. Please enjoy the changing seasons in Japan.

http://www.kyoto.travel/shrines_temples/st_north/

Places of Interest

Kiyomizu-dera Temple

This is one of the most famous Buddhist temples. The name, which means "Temple of Pure Water" derives from the fact that there is a spring in the temple grounds. The expression "to jump off the stage at Kiyomizu" is the Japanese equivalent of the English expression "to take the plunge". Access: Kiyomizudera can be reached from Kyoto Station by city bus (Kyoto Transportation Bureau) number 100 or 206 (15 minutes, 220 yen). Get off at Kiyomizu-michi bus stop; from there it is a ten-minute uphill walk to the temple. Opening Hours: 6:00-18:00

Kinkaku-ji Temple

The name Kinkaku (Golden Pavilion) is derived from the gold leaf used to decorate the inside and outside of the second and third stories. It is the most widely-recognized image of Kyoto. Access: Kinkakuji can be accessed from Kyoto Station by direct Kyoto City Bus number 101 or 205 (about 40 minutes, 220 yen). Opening Hours: 9:00-17:00

Gion

Kyoto's Gion district is famous for its traditional architecture and entertainment. Located around Shijo Avenue, and it attracts tourists with its high concentration of traditional wooden *machiya* merchant houses. Gion is filled with shops, restaurants and *ochaya* (teahouses), where *geiko* (Kyoto dialect for geisha) and *maiko* (*geiko* apprentices) entertain. Access: Gion can be reached by bus from Kyoto Station (about 20 minutes, 220 yen). Take number 100 and 206 and get off at Gion bus stop. The closest train stations are Gion Shijo Station on the Keihan Line and Kawaramachi Station on the Hankyu Line.

Further information

Kyoto Visitor's Guide

<http://www.kyotoguide.com/>

Kyoto Official Travel Guide

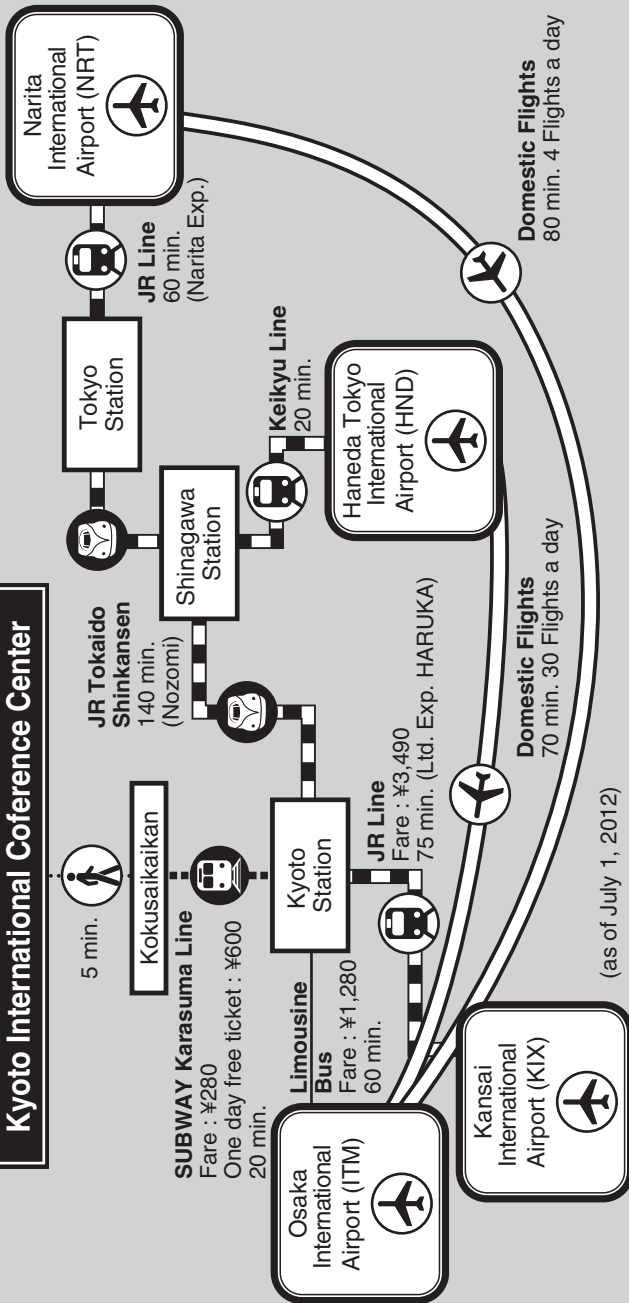
<http://www.kyoto.travel/>

Kyoto City Tourism Association

<http://www.kyoto-magonote.jp/en/>

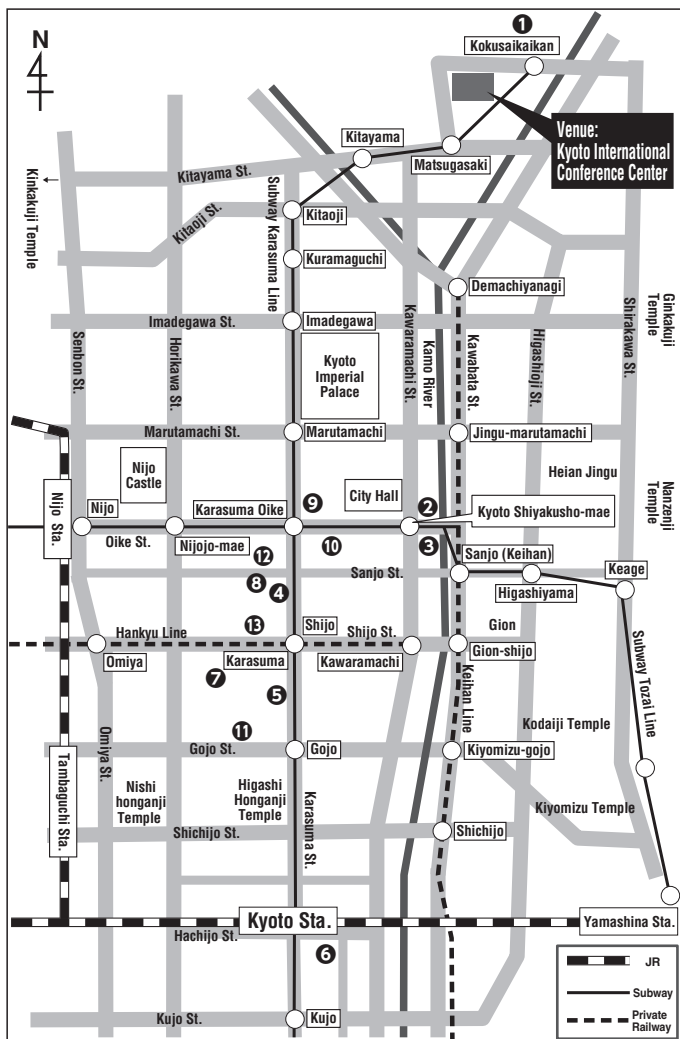
Access to Conference Site

Kyoto International Conference Center



(as of July 1, 2012)

Hotel Map



- | | |
|-----------------------------------|-----------------------------------|
| ① Grand Prince Hotel Kyoto | ⑧ Mitsui Garden Hotel Kyoto Sanjo |
| ② Kyoto Hotel Okura | ⑨ Hearton Hotel Kyoto |
| ③ Kyoto Royal Hotel & Spa | ⑩ Hotel Gimmond Kyoto |
| ④ Hotel Monterey Kyoto | ⑪ Aranvert Hotel Kyoto |
| ⑤ Karasuma Kyoto Hotel | ⑫ Kyoto Garden Hotel |
| ⑥ Hotel Keihan Kyoto | ⑬ Via Inn Kyoto Shijomuromachi |
| ⑦ Mitsui Garden Hotel Kyoto Shijo | |

For hotel rates and other information, please see the Pullout.

Plenary Sessions

Tuesday, December 4

9:25 - 9:40

Main Hall

Opening

Master of Ceremony: H. Okumura, Executive Chair, Toshiba, Japan

Opening Remarks

9:25

N. Ibaraki, General Chair, AIST, Japan

M. Omodani, Program Chair, Tokai Univ., Japan

9:40 - 12:40

Main Hall

Keynote Addresses

Co-Chairs: M. Omodani, Program Chair, Tokai Univ., Japan
H. Okumura, Executive Chair, Toshiba, Japan

Keynote Address - 1 Defy Gravity: The Art of Tangible Bits

9:40

H. Ishii

MIT Media Lab, USA

Keynote Address - 2 Steps Toward a Giant Leap in Mixed and Augmented Reality

10:20

H. Tamura

Ritsumeikan Univ., Japan

----- Break (11:00 - 11:20) -----

Co-Chairs: N. Ibaraki, General Chair, AIST, Japan
Y. Gotoh, Program Vice-Chair, Kyoto Univ., Japan

Keynote Address - 3 A Crystal Ball View of Smart TV for 2013 and Beyond

11:20

N. Murakami

Former VP of Google & Former President of Google Japan, Japan

Keynote Address - 4 How e-Paper and Tablets are Going to Change Books, Newspapers and Documents

12:00

S. Nordqvist

WAN-IFRA, Germany

Special Topics of Interest on Oxide TFT

Tuesday, December 4

14:20 - 15:20	Room B-1
FMC1: Manufacturing Technologies (1)	

Chair: M. Furuta, Kochi Univ. of Tech., Japan

Co-Chair: T. Tomono, Toppan Printing, Japan

FMC1 - 1: 14:20 *Invited* Preparation of Amorphous p-Type InGaZnO₄ Films by Codoping of Al and N Atoms

*K. Kobayashi, X. Zhang, Y. Kohno, Y. Tomita, Y. Maeda
Shizuoka Univ., Japan*

FMC1 - 2: 14:40 *Invited* Solution-Based Atmospheric Pressure Deposition Method for Oxide TFTs

*M. Furuta, T. Kawaharamura, D. Wang
Kochi Univ. of Tech., Japan*

FMC1 - 3: 15:00 *Invited* Zinc Oxide Film Growth Using High-Energy H₂O Generated by a Catalytic Reaction on Pt Nanoparticles

*K. Yasui
Nagaoka Univ. of Tech., Japan*

Author Interviews and Demonstrations

17:50 – 18:50

Wednesday, December 5

9:00 - 10:30	Room A
AMD3: Oxide TFT: Materials & Devices	

Chair: H. J. Kim, Yonsei Univ., Korea

Co-Chair: N. Morosawa, Sony, Japan

AMD3 - 1: 9:00 *Invited* Oxide Semiconductor: Past, Present and Future

*T. Kamiya, K. Nomura, H. Hosono
Tokyo Inst. of Tech., Japan*

AMD3 - 2: 9:25 High Performance AOS-Based Offset TFTs for Kickback Voltage Reduction

*M. Mativenga, D. H. Kang, Y. S. Ahn, J. Jang
Kyung Hee Univ., Korea*

AMD3 - 3 9:45 Effects of Multi-Gates on Performance and Stability of Self-Aligned Coplanar a-IGZO TFTs

*J. U. Han, D. H. Kang, J. Jang
Kyung Hee Univ., Korea*

AMD3 - 4: 10:05 Invited High Mobility Zinc Oxynitride (ZnON) Based Thin-Film Transistors (TFTs) for Display Applications

*J. S. Park, H.-S. Kim, T. S. Kim, K. S. Son, J.-B. Seon,
S.-J. Seo, S.-J. Kim, M. Ryu, S. Lee
Samsung Advanced Inst. of Tech., Korea*

----- Break -----

10:50 - 12:05

Room A

AMD4: Oxide TFT: Applications

Chair: H. Yamaguchi, Toshiba, Japan
Co-Chair: H. Kumomi, Tokyo Inst. of Tech., Japan

AMD4 - 1: 10:50 Invited Ultra Definition 240 Hz 55-in. LCD TV Driven by 1G1D with Oxide Semiconductor TFTs & Copper Signal Lines

*N. Gong, C. Park, J. Lee, I. Jeong, H. Han, J. Hwang,
J. Park, K. Park, H. Jeong, Y. Ha, W. Shin, S. Yeo
LG Display, Korea*

AMD4 - 2: 11:15 Invited Fabrication of Ultra High-Definition Amorphous-IGZO Liquid-Crystal Display

*C.-H. Chen, C.-Y. Hou, C.-Y. Wu, C.-N. Lin, W. Tsai
AU Optonics, Taiwan*

AMD4 - 3: 11:40 Invited Amorphous Oxide Semiconductor Thin Film Transistor for Novel Device Applications

S. Jeon^{,**}, I. Song^{*,**}, S.-E. Ahn^{*,**}, C. Kim^{*,**},
U.-I. Chung^{*,**}, J. Park^{*,**}, J. Bae^{*,**}, J. Lim^{*,**},
B. H. Kim^{*,**}, K. Kim^{*,**}*

^{*}Samsung Advanced Inst. of Tech., Korea

^{**}Samsung Elect., Korea

9:20 - 12:20

Event Hall

Poster FMCp: FPD Manufacturing, Materials & Components

FMCp - 16 Properties of Cu Doped NiO Transparent Oxide Thin Films by Sol-Gel Solution

*C. Takahashi, M. Kawamura, Y. Abe, K. H. Kim
Kitami Inst. of Tech., Japan*

- FMCP - 17** **Low Temperature Fabrication and UV Treatment of Spin Coated ZnO Films Using Partial Hydrolyzate of Diethylzinc Based Solutions**
K. Haga, K. Inaba, K. Toyota, Y. Takemoto, K. Tokudome, M. Oshima^{}, K. Yoshino^{*}*
Tosoh Finechem, Japan
^{*}*Univ. of Miyazaki, Japan*

9:20 - 12:20

Event Hall

Poster FLXp: Flexible Display Technologies

- FLXp - 3** **Flexible Non-Volatile Memory Based on Indium-Gallium-Zinc-Oxide with Excellent Reliability and Flexibility**
Y.-S. Fan, C.-H. Hsu, L.-F. Teng, C.-H. Chang, W.-H. Huang, P.-T. Liu
Nat. Chiao Tung Univ., Taiwan

----- Lunch -----

14:00 - 15:25

Room A

AMD5: Oxide TFT: Solution Process

- Chair: J. S. Park, Samsung Advanced Inst. of Tech., Korea
 Co-Chair: H. Hamada, Panasonic, Japan

- AMD5 - 1:** **Invited New Approaches for High Performance and Multi-Functional Solution-Processed Oxide TFT Technologies**
14:00
H. J. Kim
Yonsei Univ., Korea

- AMD5 - 2** **Solution-Processed Amorphous In₂O₃-Based TFT Performance Depending on the Semiconductor Film Morphology**
14:25
S. Botnaraş^{,**}, D. Weber^{*}, D.-V. Pham^{*}, J. Steiger^{*}, R. Schmechel^{**}*
^{*}*Evonik Inds., Germany*
^{**}*Duisburg-Essen Univ., Germany*

- AMD5 - 3** **Effects of Zr Doping on the Performance of Solution-Processed InZnO Thin-Film Transistors**
14:45
S.-Y. Liu, B.-Y. Su, P.-C. Kao^{}, S.-Y. Chu*
Nat. Cheng Kung Univ., Taiwan
^{*}*Nat. Chiayi Univ., Taiwan*

AMD5 - 4 Effects of Solution-Processed Al₂O₃ Gate Insulator Thickness on IGZO TFTs

15:05

S.-M. Song, J.-S. Lee, D.-W. Kang, J.-Y. Kwon,
M.-K. Han*

Seoul Nat. Univ., Korea

**Yonsei Univ., Korea*

----- Break -----

15:50 - 16:55	Room A
FLX3: Flexible Oxide TFTs	

Chair: M. Ito, Toppan Printing, Japan
Co-Chair: K. Uemura, Nippon Steel, Japan

FLX3 - 1: Invited Low Temperature Solution-Processed Metal Oxide TFT Materials

15:50

*J. Steiger, D.-V. Pham, A. Neumann, A. Hoppe,
A. Merkulov, R. Anselmann*

Evonik Inds., Germany

FLX3 - 2 Flexible AMOLED Display on Polyethylene Naphthalate (PEN) Foil with Metal-Oxide TFT Backplane

16:15

*A. K. Tripathi, B. V. der Putten, J.-L. van der Steen,
K. Tempelaars, B. Cobb, M. Ameys*, T. Huei Ke*,
K. Myny*, S. Steudel*, M. Nag*, S. Schols*, P. Vicca*,
S. Smout*, J. Genoe*, P. Heremans*, I. Yakimet*

Holst Ctr./TNO, the Netherlands

**imec, Belgium*

FLX3 - 3 Solution-Processed Low Temperature Amorphous Thin Films

16:35

*B. Singh, J. Jasieniak, T. R. Gengenbach, C. D. Easton,
L. Tozi, M. Bown*

CSIRO Material Sci. & Eng., Australia

Author Interviews and Demonstrations

17:30 – 18:30

Thursday, December 6

9:20 - 12:20	Event Hall
Poster AMDp1: Oxide TFT	

AMDp1 - 1 The Effect on the Multi-Stacked Active Layer of In-Ga-Zn-O Thin-Film Transistors under the Negative Gate Bias Stress

S. Y. Kim, D. Jong Kim, S. J. Kim, H. J. Kim

Yonsei Univ., Korea

- AMDp1 - 2 A Study of Degradation Mechanism about Bias-Temperature-Illumination Instability in a-IGZO TFTs**
H. Choi, D. Y. Park, J. W. Baek, S. J. Yu, S. H. Jeon
LG Display, Korea
- AMDp1 - 3 The Effect of Annealing Temperature in Solution-Processed In-Ga-O Thin-Film Transistors**
D. H. Yoon, H. S. Lim, S. J. Kim, J. Jung, H. J. Kim
Yonsei Univ., Korea
- AMDp1 - 4 Investigation on Effects of Composition on Transparent Aluminum Zinc Tin Oxide Thin-Film Transistors**
C.-S. Fuh, L.-F. Teng, Y.-S. Fan, C.-H. Chang, P.-T. Liu
Nat. Chiao Tung Univ., Taiwan
- AMDp1 - 5 High Performance Inverter with a-IGZO-Based Resistor Load and Self-Aligned Coplanar a-IGZO Driving TFT**
D. Geng, D. H. Kang, M. J. Seok, M. Mativenga, J. Jang
Kyung Hee Univ., Korea
- AMDp1 - 6 New IGZO-Based Oxide Semiconducting Material for Back Channel Etch Type Thin Film Transistor**
S. Morita, K. Hirose, A. Hino, H. Goto, T. Kugimiya
Kobe Steel, Japan
- AMDp1 - 7 Analysis of Electronic-Structural Change in a-InGaZnO by High Pressure Water Vapor Annealing**
Y. Ueoka, N. Maejima, H. Matsui, F. Matsui, M. Morita, S. Kitagawa, M. Fujita, K. Yasuda, H. Yamazaki, S. Urakawa, M. Horita, Y. Ishikawa, H. Daimon, Y. Uraoka
Nara Inst. of S&T, Japan
- AMDp1 - 8 The Comparison of Lithium Doping Impact to Solution-Processed ZnO/InZnO Thin Film Transistors Characteristics**
Y. W. Wang, P. H. Fang, A. C. Cheng, W. C. Su, P. R. Lin
Nat. Changhua Univ. of Education, Taiwan

----- Lunch -----

14:00 - 15:20

Room A

AMD7: Oxide TFT: Reliability

Chair: T. Kamiya, Tokyo Inst. of Tech., Japan
 Co-Chair: M. Hiramatsu, Japan Display Central, Japan

- AMD7 - 1**
14:00 **Instability of Light Illumination Stress on Amorphous InGaZnO Thin Film Transistors**
S. Park, E. N. Cho, I. Yun
Yonsei Univ., Korea
- AMD7 - 2**
14:20 **The Effects of Wavelength and Negative Bias on Light-Induced Hysteresis of In-Ga-Zn-O Thin-Film Transistors**
S.-H. Kuk, S.-Y. Lee, M.-K. Song, S. Kwon, Sang C. Youn*, M.-K. Han*
Seoul Nat. Univ., Korea
**LG Display, Korea*
- AMD7 - 3**
14:40 **The Influence of New SiN_x Gate Insulator in a-InGaZnO Thin Film Transistors**
H. Yamazaki, Y. Ueoka, Y. Ishikawa, M. Fujiwara, E. Takahashi*, Y. Andoh*, Y. Uraoka*
Nara Inst. of S&T, Japan
**Nissin Elec., Japan*
- AMD7 - 4**
15:00 **N₂O Plasma Treatment Suppressed Temperature-Dependent Point Defects Formation with Amorphous Indium-Gallium-Zinc-Oxide Thin Film Transistors**
G.-W. Chang, T.-C. Chang, J.-C. Jhu*, Y.-E. Syu*, Y.-H. Tai*
Nat. Chiao Tung Univ., Taiwan
**Nat. Sun Yat-Sen Univ., Taiwan*

----- Break -----

15:50 - 17:00**Room A****AMD8/FLX7: Oxide TFT: Flexible Displays**

Chair: C.-H. Cheng, AU Optonics, Taiwan
Co-Chair: M. Kimura, Nagaoka Univ. of Tech., Japan

- AMD8/FLX7 - 1:**
15:50 ***Invited* Flexible AMOLED Displays Driven by a-IGZO TFTs and their Applications**
H. Yamaguchi, T. Ueda, K. Miura, N. Saito, S. Nakano, T. Sakano, K. Sugi, I. Amemiya
Toshiba, Japan
- AMD8/FLX7 - 2:**
16:15 ***Invited* A 9.9-in. qHD Top-Emission Flexible OLED Display Driven by Oxide TFTs**
K. Teramoto, E. Fukumoto, T. Fukuda, K. Shimokawa, T. Saito, T. Tanikawa, M. Suzuki, G. Izumi, M. Noda, S. Kumon, T. Arai, T. Kamei, M. Kodate, S. No, T. Sasaoka, K. Nomoto
Sony, Japan

**AMD8/
FLX7 - 3
16:40**

**Flexible Top-Gate Amorphous InGaZnO TFTs on a
New Colorless Polyimide Substrate for Flexible
Display Applications**

*Y.-H. Yeh, C.-C. Cheng, M.-J. Yu, H.-C. Ku, B. C.-M. Lai,
B.-Y. Chou, E. Horii*, E. Kuribayashi*, T. Iwamoto*,
H. Inari*, M. Yamazaki*, K. Kurimoto**

ITRI, Taiwan

**Kaneka, Japan*

Author Interviews and Demonstrations

17:30 – 18:30

IDW/AD '12 Tutorial in Japanese

Organized by SID Japan Chapter

Monday, December 3, 2012

Room B-2, 2F

Kyoto International Conference Center

Detailed information will be announced in October on
<http://www.sidchapters.org/japan/>

IMID 2012

August 28-31, 2012

EXCO

Daegu, Korea

SID Display Week 2013

May 19-24, 2013

Vancouver Convention Center

Vancouver, British Columbia, Canada

Special Topics of Interest on Augmented Reality

Wednesday, December 5

14:00 - 17:00	Event Hall
Poster DESp1: Display Electronic Systems (AR)[†]	

[†]Short Presentation (See p.111)

DESp1 - 1 Image Synthesis from Illumination Estimation
T.-H. Lin
Nat. Taiwan Univ. of S&T, Taiwan

Thursday, December 6

9:00 - 10:30	Room B-1
VHF6: Wide-Angle and Head-Up Display Human Factors	

Chair: T. Kurita, NHK, Japan
 Co-Chair: A. Yoshida, Sharp, Japan

VHF6 - 1: 9:00 *Invited* Education for Disaster Prevention Using Ultra-Realistic Dome Images –Learning Through Images of the Great East Japan Earthquake–
M. Okyudo
Wakayama Univ., Japan

VHF6 - 2 9:30 Development of Perceived Depth Position Control Method with a Preceding Obstacle for Monocular Head-Up Display Images
A. Hotta, T. Sasaki, A. Moriya, H. Okumura
Toshiba, Japan

VHF6 - 3 9:50 Effect of a Head-Up Display on Reaction Time in a Skiing Simulation
R. Hoskinson, M. Lolic, H. Abdollahi
Recon Instrs., Canada

VHF6 - 4 10:10 A LC Lens Array Based Projection System for Near Eye Displays
S. Valyukh, J. De Smet^{}, H. De Smet^{*,**}*
Linköping Univ., Sweden
^{*}*imec, Belgium*
^{**}*Ghent Univ., Belgium*

----- Break -----

10:50 - 12:30

Room B-1

3D6: Digital Museum of Kyoto Gion Festival

Chair: M. Tsuchida, NTT, Japan

Co-Chair: K. Makita, AIST, Japan

3D6 - 1: 10:50 *Invited* Digital Museum of Gion Festival within Virtual Kyoto*K. Yano, T. Seto, D. Kawahara***Ritsumeikan Univ., Japan***CAD Ctr., Japan***3D6 - 2: 11:15 *Invited* A Virtual Tour of Gion Festival Yamahoko Parade***L. Li, W. Choi*, K. Hachimura, T. Nishiura, K. Yano**Ritsumeikan Univ., Japan***Gunma Nat. College of Tech., Japan***3D6 - 3: 11:40 *Invited* Particle-Based Translucent Visualization of Funeboko for the Gion Festival***S. Tanaka, M. Uemura, M. Yamamoto, K. Hasegawa, S. Nakata**Ritsumeikan Univ., Japan***3D6 - 4: 12:05 *Invited* Digital Archiving and Large-Scale Visuo-Haptic Display of Large 3D Woven Cultural Artifacts***H. T. Tanaka, M. Tsuchida*, W. Wakita**Ritsumeikan Univ., Japan***NTT, Japan*

----- Lunch -----

14:00 - 15:35

Room B-1

DES5: Recent Advances in Augmented Reality Applications

Chair: K. Makita, AIST, Japan

Co-Chair: M. Tsuchida, NTT, Japan

DES5 - 1: 14:00 *Invited* SmartAR: Integrated Augmented Reality Technology for Novel Application Creation*T. Yoshigahara**Sony, Japan***DES5 - 2: 14:25 *Invited* Mixed Reality Applications of Design Engineering & Manufacturing***T. Aso**Canon, Japan*

DES5 - 3: 14:50 *Invited* **Recent Trends on Visual Tracking for Augmented Reality**

H. Uchiyama
Toshiba, Japan

DES5 - 4 15:15 **Texture Significant Hash Function with Robust Occlusion Handling for Fast Inpainting the Virtualized-Reality Models**

K. Thangamani^{,**}, T. Ishikawa^{**}, K.Makita^{**}, T. Kurata^{*,**}*
^{}Univ. of Tsukuba, Japan*
*^{**}AIST, Japan*

----- Break -----

15:50 - 16:35	Room B-1
INP6: AR Interactive Systems	

Chair: *H. Iseki, Tokyo Women's Medical Univ., Japan*
Co-Chair: *N. Hashimoto, Citizen Holdings, Japan*

INP6 - 1: 15:50 *Invited* **SCOT (Smart Cyber Operating Theater) Project: Advanced Medical Information Analyzer for Guidance of the Surgical Procedures**

H. Iseki, Y. Muragaki, M. Tamura, T. Suzuki,
K. Yoshimitsu, S. Ikuta, J. Okamoto, M. Chernov
Tokyo Women's Medical Univ., Japan

INP6 - 2 16:15 **Laser Projection UI Robot System and Its Applications**

M. Ide, Y. Abe, T. Komiyama, S. Fukaya, T. Tamura,
K. Arakawa, T. Nozaki
Citizen Holdings, Japan

Author Interviews and Demonstrations

17:30 – 18:30

RECEPTION
Wednesday, December 5, 2012
19:00 – 21:00
Sakura (1F)
Kyoto International Conference Center
See page 12 for details

Special Topics of Interest on Lighting Technologies

Wednesday, December 5

9:20 - 12:20

Event Hall

Poster FMCp: FPD Manufacturing, Materials & Components

- FMCp - 9 An Analytical Model for Describing LED Pad Temperature in Backlight Unit**
K.-Y. Chang, C.-C. Hu, C. Xiong, W.-Y. Wei
Shenzhen China Star Optoelect. Tech., China
- FMCp - 10 The Study on Relation between Color Gamut and Luminous Efficiency Based on the Shift of Color Filter and LED Spectrum**
W. Zheng, C.-T. Kang
Shenzhen China Star Optoelect. Tech., China
- FMCp - 11 Development of a Simulation Model to Analyze the Chromaticity Variation at the Place Lit by RYGB-White-LED**
K. Misono
Miyakonojo Nat. College of Tech., Japan
- FMCp - 12 Transmittance of LED Encapsulant Containing Quantum Dot with Various Types of Ligands**
C. S. Lee^{,**}, C. J. Han^{**}, S.-K. Hong^{*}*
^{*}*Dongguk Univ., Korea*
^{**}*KETI, Korea*
- FMCp - 13 Conversion Efficiency of RGB Phosphor Array on the Lightguide**
H. J. Jeon, K. S. Lim, J. H. Kwon
Yeungnam Univ., Korea
- FMCp - 14 Solution for Eliminating Support Pin Shadow Mura in Direct LED Backlight**
K.-Y. Chang, C.-C. Hu, Z. Su
Shenzhen China Star Optoelect. Tech., China
- FMCp - 15 A Modified Color System for LED Chromaticity Ranking in a System**
C. Feng, K.-Y. Chang, C.-C. Hu, C. Ning
Shenzhen China Star Optoelect. Tech., China

Thursday, December 6

14:00 - 17:00

Event Hall

Poster OLEDp: OLED Technologies**OLEDp - 12 Materials for Enhancing External Light Out-Coupling Efficiency of Organic Light-Emitting Diodes***P.-C. Chien, I.-L. Kao, Y.-L. Hsu, P.-C. Chen**ITRI, Taiwan***OLEDp - 13 Very-High Color Rendering Index OLEDs with Natural Light-Style Spectrum***J.-H. Jou, J.-R. Tseng, F.-C. Yang, C.-T. Chen,
H.-W. Liu, S.-P. Chen*, H.-W. Hung*, J.-Y. Li*, M.-C. Liu***Nat. Tsing Hua Univ., Taiwan***ITRI, Taiwan***OLEDp - 14 Novel Carbazole-Substituted Anthracene Derivatives for Non-Doped Blue Light Emitting Diodes***R.-H. Lee, Y.-G. Chen, Y.-C. Chang, Y.-C. Chen*,
J.-T. Lin*, R.-J. Jeng****Nat. Chung Hsing Univ., Taiwan***Academia Sinica, Taiwan****Nat. Taiwan Univ., Taiwan***OLEDp - 15 Light Extraction Enhancing Buffer Layers for Organic Light-Emitting Diodes***H. J. Cho, H.-N. Lee**Soonchunhyang Univ., Korea*

Friday, December 7

9:00 - 10:25

Room A

OLED3: OLED for Lighting Application

Chair: Y. Kijima, Sony, Japan

Co-Chair: T. Ikuta, JNC Petrochem., Japan

OLED3 - 1: *Invited* Design of Backplanes and Optical Enhancement Structure for Large-Area OLED Lighting Panels

9:00

*M.-H. Ho, C.-C. Lin, Y.-C. Chin, C.-C. Chen, M.-T. Lee,
T.-Y. Cho, C.-W. Chen**AU Optronics, Taiwan*

**OLED3 - 2
9:25** **Highly Efficient White OLEDs with Single Solution-Processed Emitting Layer Consisting of Three Kinds of Dopants**

H. Sakuma, S. Nobuki, S. Ishihara, S. Aratani, A. Sano, K. Kobayashi

Hitachi, Japan

**OLED3 - 3
9:45** **Improving the Performance of Solution-Processed Green Phosphorescent OLEDs Using EL Spectra Analysis**

T. Sugizaki, Y. Shinjo, A. Amano, T. Yonehara, Y. Mizuno, S. Enomoto, A. Isao

Toshiba, Japan

**OLED3 - 4
10:05** **A New 2-Dimensional OLED Circuit Modeling for Obtaining Uniform Brightness in Large Area OLED Lighting Panels**

J.-H. Han, J. Moon, J. W. Huh, D.-H. Cho, J.-W. Shin, C. W. Joo, J. Hwang, B. J. Lee, S. K. Park, J.-T. Ahn, N. S. Cho, H. Y. Chu, J.-I. Lee

ETRI, Korea

----- Break -----

10:50 - 11:50

Room B-2

FMC9: LED Lighting Technologies

Chair: K. Käläntär, Global Optical Solutions, Japan

Co-Chair: K. Li, Wavien, USA

**FMC9 - 1
10:50** **10,000 Nits Projection-Type Recycling LED Back-Light System for Outdoor LCDs**

K. Li

Wavien, USA

**FMC9 - 2
11:10** **A Novel Design of LED Embedded Alexis Wound Retractor**

Y. -C. Su, Y.-S. Chen, J.-W. Pan*

Chi Mei Medical Ctr., Taiwan

**Nat. Chiao Tung Univ., Taiwan*

**FMC9 - 3
11:30** **“Square-Light” Technology as Novel Approach for Making Ultra-Slim LED Lighting Devices**

J. Hou, Z.-W. Koh, W.-C. Ing

LuxingTek, Taiwan

9:20 - 12:20

Event Hall

Poster PHp: Phosphors

- PHp - 16** **Effects of Phosphor Distribution and Step-Index Remote Configuration on the Luminous Efficacy of Warm White Light-Emitting Diodes**

H.-Y. Tsai, T.-H. Liu, H.-Y. Kuo, H.-Y. Lin, S.-Y. Chu

Nat. Cheng Kung Univ., Taiwan

- PHp - 17** **Selecting a White Point Using $(Y_{1-a}Gd_a)_3Al_5O_{12}:Ce^{3+}$ (Where a Is in the Range 0.3 to 0.6) Phosphors on Screens and Two Blue LEDs**

J. Silver, R. Withnall, P. J. Marsh

Brunel Univ., UK

- PHp - 18** **Recent Progress in the Development of Ce^{3+} -Activated Fluorosulfide and Fluorooxysulfide Phosphors for LED Lighting**

T.-M. Chen, Y.-C. Wu, C.-S. Lee, S.-N. Chen

Nat. Chiao Tung Univ., Taiwan

- PHp - 19** **Selecting a Red Point Using $CaS:Eu^{2+}$ and $SrS:Eu^{2+}$ Phosphors on Screens and One Blue LED**

J. Silver, R. Withnall, P. J. Marsh

Brunel Univ., UK

----- Lunch -----

14:00 - 15:10

Room B-2

PRJ4: Solid State Lighting

Chair: F. Shevlin, Dyoptyka, Ireland

Co-Chair: M. Sakai, Ushio, Japan

- PRJ4 - 1: 14:00** ***Invited* Recent Progress in Green and Blue InGaN Laser Diodes for Projection Display Applications**

J. W. Raring, M. C. Schmidt, C. Poblentz, H. Huang, C. Bai, P. Rudy, J. S. Speck, S. P. DenBaars, S. Nakamura

Soraa, USA

- PRJ4 - 2: 14:25** ***Invited* Green-to-Yellow Spectral Region CW Operation of BeZnCdSe Quantum-Well Laser Diodes**

S. Tanaka, S. Fujisaki, J. Kasai, S. Tsuji, R. Akimoto, T. Hasama*, H. Ishikawa**

Hitachi, Japan

**AIST, Japan*

PRJ4 - 3 **High Efficiency and Highly Reliable 638 nm Broad Stripe Laser Diode for Display Applications**

14:50

*T. Yagi, N. Shimada, T. Nishida, H. Mitsuyama,
M. Miyashita*

Mitsubishi Elec., Japan

----- Break -----

15:50 - 17:20

Room B-2

PH3: Phosphors for Lighting

Chair: T.-M. Chen, Nat. Chiao Tung Univ., Taiwan

Co-Chair: T. Hisamune, Mitsubishi Chem., Japan

PH3 - 1: ***Invited* Progress in Developing High-Power InGaN LEDs for Illumination**

15:50

K. Bando

Nichia, Japan

PH3 - 2 **A Phosphor Sheet Providing Wider Color Gamut for LCDs**

16:20

Y. Ito, T. Hori, H. Tani, T. Kusunoki, H. Kondo

Sony Chem. & Info. Device, Japan

PH3 - 3 **Improved Display Color Gamut by Using the β -SiAlON Green Phosphor with an Asymmetric Emission Spectrum**

16:40

*K. Yoshimura, K. Takahashi, H. Fukunaga, M. Harada,
Y. Tomomura, R.-J. Xie*, N. Hirotsuki*, T. Takeda**

Sharp, Japan

**NIMS, Japan*

PH3 - 4 **Si^{4+} and $\text{Si}^{4+}\text{-N}^{3-}$ Incorporation into $\text{YAG}:\text{Ce}^{3+}$ and Its Verification in Luminous Efficacy and Color Rendering Enhancement of Phosphor-Converted White Light-Emitting Diodes**

17:00

T.-H. Liu, H.-Y. Kuo, H.-Y. Lin, S.-Y. Chu

Nat. Cheng Kung Univ., Taiwan

Author Interviews and Demonstrations

17:30 – 18:30

Workshop on LC Science and Technologies

Tuesday, December 4

14:20 - 17:20

Event Hall

Poster LCTp1: LC Alignment

LCTp1 - 1 Substitute Effect of Fluorine-Containing Polyimides on Photo Alignment Characteristics as an Alignment Layer

S. Sato, H. Ito, T. Mizunuma, K. Nagai, H. Matsumoto, S. Matsumoto

Meiji Univ., Japan

LCTp1 - 2 Study of the Adsorption of Isopropyl Alcohol Solution on Alignment Film Surface Using Real-Time in Situ AFM

M. Kwak, J. Jeon, S. An, K. Kim, Y. Yi, S. Choi, N. Kim, B. Kim, D. Kang, Y. Choi, S. Jeon

LG Display, Korea

LCTp1 - 3 Fast Response Time Patterned Vertical Alignment Mode Using Double Step UV Exposure

D.-H. Kim, Y. Kim, J. H. Lee, Y.-J. Lee, C.-J. Yu, J.-H. Kim

Hanyang Univ., Korea

LCTp1 - 4 Response Time Characteristics Depending on the Type of Planar Alignment Material Mixed with Reactive Mesogen in Fringe Field Switching Mode

T.-H. Kim, Y. Kim, H. J. Kim, Y.-J. Lee, K. Daeseung, J.-H. Kim, C.-J. Yu*

Hanyang Univ., Korea

**Soongsil Univ., Korea*

LCTp1 - 5 Alignment of Anisotropic Micro-Structures in LC Director Field

G. Nakazawa, H. Yoshida**, K. Tagashira*, M. Ozaki**

**Osaka Univ., Japan*

***JST PRESTO, Japan*

LCTp1 - 6 The Reverse Domain Issue in High PPI Panel

*S. L. Lee**, J. H. Lu****, X. M. Jiang**, Y. Q. Lee**, C. T. Liao**, Y. W. Chiu**, T. C. Chung**, T. S. Jen***

**Infovision Optoelect., China*

***Jiangsu (IVO) Flat Panel Display Techs., China*

****Shanghai Jiao Tong Univ., China*

LCTp1 - 7 Characterization of LC Alignment with Reactive Mesogen Doped in Polyimide

*C.-C. Hsieh, C.-Y. Chiu, S. Hao, Y. Song, F. Zhao
Shenzhen China Star Optoelect. Tech., China*

LCTp1 - 8 Decrease The Reverse Domain in TN-LCD by Rubbing Process and PI-LC Matching

C. Wang^{,**}, Z. L. Chen^{*,**}, X. M. Jiang^{*,**}, Y. W. Chiu^{*,**},
D. C. Chung^{*,**}, T. S. Jen^{*,**}
^{*}Jiangsu (IVO) Flat Panel Display Techs., China
^{**}Infovision Optoelect., China*

LCTp1 - 9 Azimuthal LC Anchoring on Stacked Polyimide Layers with Overcoating Screening Layer

*S.-W. Oh, H. J. Lee, C.-S. Park, K.-I. Joo, M.-K. Park,
D. H. Park, K. Park^{*}, J.-H. Lee^{*}, B. Kim^{*}, H.-R. Kim
Kyungpook Nat. Univ., Korea
^{*}LG Display, Korea*

LCTp1 - 10 Formation of Alignment Films for N-LC with Controlled Pre-Tilt Angle by Using Novel Electro-Spray Deposition Method

*Y. Kudoh, T. Nakano, Y. Uchida, T. Takahashi
Kogakuin Univ., Japan*

14:20 - 17:20

Event Hall

Poster LCTp2: LC Evaluation

LCTp2 - 1 Evaluation of Azimuthal Anchoring Energy for LC Device with Low and High Pretilt Angles Equipped with Color Filter

*K. Goda, M. Kimura, T. Akahane
Nagaoka Univ. of Tech., Japan*

LCTp2 - 2 Comparison of Correlation between Ion Density and VHR on Real TFT-LCD Panels

*M. Kwak, J. Jeon, S. An, K. Kim, Y. Yi, S. Choi, N. Kim,
B. Kim, D. Kang, Y. Choi, S. Jeon
LG Display, Korea*

LCTp2 - 3 Morphology Investigation of Spectrum and Temperature Effect on Polymer-Stabilized Alignment

*Y. Song, F. Zhao, S. Hao, H.-C. Lu, C.-C. Hsieh,
C.-Y. Chiu
Shenzhen China Star Optoelect. Tech., China*

14:20 - 17:20

Event Hall

Poster LCTp3: Display Mode

- LCTp3 - 1 Study on Reducing the Light Leakage in Horizontal Viewing Angle**
B. Hai, C.-T. Kang, Y. Dai
Shenzhen China Star Optoelect. Tech., China
- LCTp3 - 2 High Transmittance with Less the Light Leakage Appearance Use Single Compensation Construction**
C.-T. Kang, B. Hai, X. Ye
Shenzhen China Star Optoelect. Tech., China
- LCTp3 - 3 Improved Optical and Pressure-Resistant Characteristics by Using Negative LC in FFS-LCD**
Z. F. Zou, B. Y. Si, N. J. Yu, X. Z. Tang, T. C. Chung, T. S. Jen
Infovision Optoelect., China
- LCTp3 - 4 Improvement of Gray Scale Inversion in Electrically Controlled Birefringence Mode**
S. H. Yu, J. H. Kwon, J. S. Gwang
Yeungnam Univ., Korea
- LCTp3 - 5 Characteristics on ECB Mode Designed for Phase Modulation Using New LC Materials**
M. Shin, S. Kim, M. Yoon, S. Lee, K. Lim
LG Display, Korea
- LCTp3 - 6 A New Low Power and Wide-Viewing Angle OCB-LCD Compensated with A-Plate and C-Plate**
I. Fukuda, Y. Sakamoto, T. Ishinabe^{}, T. Uchida^{*,**}*
Kanazawa Inst. of Tech., Japan
^{*}*Tohoku Univ., Japan*
^{**}*Sendai Nat. College of Tech., Japan*
- LCTp3 - 7 Multicolor Polymer-Dispersed Cholesteric LC Device in a Single Layered Configuration**
T.-Y. Youn, K.-S. Bae, J.-Y. Hwang, C.-J. Yu, J.-H. Kim
Hanyang Univ., Korea
- LCTp3 - 8 Polarization-Dependence on Light Absorption in Dye-Doped Twisted Nematic LC Mode without Polarizers**
H. J. Lee, C. S. Park, K.-W. Park, J.-S. Park, S.-W. Oh, H.-R. Kim
Kyungpook Nat. Univ., Korea

- LCTp3 - 9 Polymer Stabilization of Reverse Twisted Nematic LCD with UV Curable LC Monomer**
M. Akimoto, N. Atomi, M. Nishitatenno, M. Sannomiya, K. Takatoh, S. Kobayashi
Tokyo Univ. of Sci. Yamaguchi, Japan
- LCTp3 - 10 Fabrication of Coatable Polarizer Based on Lyotropic Chromonic LC for Flexible Display**
S. Yoon, Y. Jeong, H. Yang, M. Lee
Chonbuk Nat. Univ., Korea
- LCTp3 - 11 Blue Phase Temperature Range Depending on Core Group in Cyano Chiral Nematic LC Mixtures**
Y.-J. Um, H. Kikuchi, S.-K. Hong*
Dongguk Univ., Korea
**Kyushu Univ., Japan*

14:20 - 17:20	Event Hall
Poster LCTp4: LC Application	

- LCTp4 - 1 Hybrid-Aligned Dual-Frequency LC Lenses**
*C.-H. Lin, R.-H. Chiang, C.-H. Chen, I.-M. Jiang, C.-T. Kuo, C.-Y. Huang**
Nat. Sun Yat-Sen Univ., Taiwan
**Nat. Changhua Univ. of Education, Taiwan*
- LCTp4 - 2 Resolution and MTF of Imaging System with LC Lens as Focusing Element**
M. Ye, B. Wang, M. Uchida, S. Yanase, S. Takahashi, S. Sato
Akita Ind. Tech. Ctr., Japan
- LCTp4 - 3 The Applications of ASDDL for Controlling the Diffraction of Laser Beam**
Y.-H. Huang, S.-W. Ko, A. Y.-G. Fuh
Nat. Cheng Kung Univ., Taiwan

Wednesday, December 5

9:00 - 9:50	Room D
LCT1: LC Semiconductors	

Chair: H. Okada, Univ. of Toyama, Japan
 Co-Chair: M. Suzuki, Merck, Japan

LCT1 - 1: 9:00 Invited High Carrier Mobility of np-Phthalocyanine LC Semiconductors

Y. Miyake^{,**}, F. Nekelson^{*,**}, M. Yoneya^{*}, H. Monobe^{*},
H. Yoshida^{**}, A. Fujii^{**}, M. Ozaki^{**}, Y. Shimizu^{*}*

^{}AIST, Japan*

*^{**}Osaka Univ., Japan*

LCT1 - 2: 9:25 Invited Molecular Design and Electronic Functions of Nanostructured LC Semiconductors

M. Funahashi

Kagawa Univ., Japan

----- Break -----

10:50 - 12:10

Room D

LCT2: New Functional LC Devices

Chair: Y. Shimizu, AIST, Japan

Co-Chair: T. Yamaguchi, JNC Petrochem., Japan

LCT2 - 1 10:50 A Fast-Tuning of Bragg Reflection Band in Cholesteric LCs

Y. Inoue^{}, H. Yoshida^{*,**}, H. Kubo^{*}, M. Ozaki^{*}*

^{}Osaka Univ., Japan*

*^{**}JST PRESTO, Japan*

LCT2 - 2 11:10 Relationship Between Refractive Index Distribution and Electrode Structure in the LC Lens for 3D Displays

T. Naganuma, S. Oka, S. Komura

Japan Display East, Japan

LCT2 - 3 11:30 Index Distribution Analysis of LC Lens with Low Voltage Drive and Simple Structure Design for 3D Display Application

*K.-T. Huang, Y.-W. Hong, R.-X. Fang, T.-C. Ou,
Y.-T. Chao, C. Lee*

HannStar Display, Taiwan

LCT2 - 4 11:50 Fast Switchable 2-D Structure Ferroelectric LC Grating

*Y. Ma, Q. Guo, Ab. Srivastava, V. G. Chigrinov,
H. S. Kwok*

Hong Kong Univ. of S&T, Hong Kong

----- Lunch -----

14:00 - 15:20

Room D

LCT3: Blue Phase

Chair: M. Funahashi, Kagawa Univ., Japan

Co-Chair: M. Ozaki, Osaka Univ., Japan

LCT3 - 1 Progress of Blue-Phase LC Applications

14:00

D. Kubota, T. Ishitani, A. Yamashita, T. Nishi, K. Okazaki,
M. Katayama*, H. Shishido, H. Miyake, J. Koyama,
Y. Hirakata, S. Yamazaki*

Semiconductor Energy Lab., Japan

**Advanced Film Device, Japan*

LCT3 - 2 Polymer-Network Blue Phase Device: Effects of Monomers

14:20

*C.-S. Chen, Y.-C. Hsieh, C.-K. Wu, K.-H. Chou,
H.-Y. Chen*

Feng Chia Univ., Taiwan

LCT3 - 3 Relationship between the Temperature Range and the Storage Modulus in Polymer-Stabilized Blue Phase

14:40

M. Oiwa, S. Takeda, S. Komura*

Japan Display East, Japan

**Hitachi, Japan*

LCT3 - 4 Unusual Electro-Optical Behavior of Wide-Temperature Blue Phase II Device

15:00

N.-A. Chang, C.-H. Tseng, H.-Y. Chen

Feng Chia Univ., Taiwan

----- Break -----

15:50 - 17:10

Room D

LCT4: Wide Viewing Angle and Fast Switching

Chair: D. Kubota, Semiconductor Energy Lab., Japan

Co-Chair: T. Ishinabe, Tohoku Univ., Japan

LCT4 - 1 Room-Temperature Optical-Isotropic LCD without Polymer Network

15:50

S.-F. Lu, Y.-C. Hsieh, H.-Y. Chen

Feng Chia Univ., Taiwan

LCT4 - 2 Novel Pixel Structure in IPS-LCD to Improve Transmittance Using Wall Electrodes

16:10

T. Hiratsuka, O. Itou, D. Sonoda, T. Ishigaki, S. Komura

Japan Display East, Japan

LCT4 - 3 **Optimize Pixel Design and LC for Better Process Margin and Increasing Transmittance in FFS Technology**

16:30

W.-H. Chang, H.-W. Cheng, S.-C. F. Jiang, J.-J. Su
AU Optronics, Taiwan

LCT4 - 4 **Fast LCD Modes**

16:50

*L. Komitov, G. Hegde**
Univ. of Gothenburg, Sweden
**Univ. of Malaysia, Malaysia*

Author Interviews and Demonstrations

17:30 – 18:30

Friday, December 7

10:50 - 12:15

Room D

LCT5: Emerging Display Mode

Chair: T. Koda, Yamagata Univ., Japan

Co-Chair: T. Nose, Akita Pref. Univ., Japan

LCT5 - 1: ***Invited* Towards Guest-Host Displays Composed of LC Dispersions of Plasmonic Metal Nanoparticles**

10:50

Q. Liu, **, M. Campbell*, I. I. Smalyukh**
**Univ. of Colorado, USA*
***Zhejiang Univ., China*

LCT5 - 2 **Transparent LC Panel by Dye Doped Liquid Crystal (DDLCC) Gel**

11:15

C.-S. Hsieh, J.-T. Lien, S.-M. Fu
Chunghwa Picture Tubes, Taiwan

LCT5 - 3 **A New Polymer Dispersed LC Applied in Active-Matrix TFT Transparent Display**

11:35

C.-W. Su, J.-T. Lien
Chunghwa Picture Tubes, Taiwan

LCT5 - 4 **Scattering Mode LC Light Shutter Based on Double-Side Poly(N-Vinyl Carbazole) Films**

11:55

K.-T. Cheng, Y.-D. Chen, A. Y.-G. Fuh
Nat. Cheng Kung Univ., Taiwan

----- Lunch -----

14:00 - 15:00

Room D

LCT6: Photo Alignment

Chair: S. Ishihara, Osaka Inst. of Tech., Japan

Co-Chair: I. Hirose, JASRI, Japan

LCT6 - 1 **The World's First Photo-Aligned IPS-LCDs for a TV Use**
14:00

*H. Matsukawa, Y. Shimano, M. Suefuji, Y. Umeda,
 K. Mimura*

Panasonic Liquid Crystal Display, Japan

LCT6 - 2 **The Study of Different Types Photo-Alignment LCD in Practical Conditions**
14:20

H.-M. Fu, C.-S. Hsieh, J.-T. Lien

Chunghwa Picture Tubes, Taiwan

LCT6 - 3 **The New Analysis Method of Photo-Alignment Layers via Reflection Spectrometry**
14:40

C. Huang, M.-D. Lai, Y.-L. Chen

Chunghwa Picture Tubes, Taiwan

----- Break -----

15:50 - 16:55

Room D

LCT7: LC Alignment Technology

Chair: I. Smalyukh, Univ. of Colorado, USA

Co-Chair: S. Shibahara, Sony, Japan

LCT7 - 1: ***Invited* Polyimide-Less Alignment by Dendrimers Dissolved in LC**
15:50

*T. Sakuma, N. Funakoshi, Y. Takahashi, M. Uchida,
 T. Koda, O. Haba, K. Yonetake, M. Kwak*, Y. Momoi*,
 J. Jeon*, S. An*, D. Choi*, D. Kang*, Y. Choi*, S. Jeon**

Yamagata Univ., Japan

**LG Display, Korea*

LCT7 - 2 **Study of Polymer Bumps Formation and Influence in PS-VA LCD**
16:15

*X. Zhong, H. J. Huang, X. Ma, C.-S. Li, W. Yu, S.-W. Yeh,
 K.-C. Lee*

Shenzhen China Star Optoelect. Tech., China

LCT7 - 3 **Study of LC Ripple Caused by Tactile Force Acting on Display**
16:35

Y. J. Lee, T. S. Liu, M.-H. Lin, K.-F. Huang**

Nat. Chiao Tung Univ., Taiwan

**Chimei Innolux, Taiwan*

Author Interviews and Demonstrations

17:30 – 18:30

Supporting Organization:

The Japanese Liquid Crystal Society (JLCS)

Workshop on Active Matrix Displays

Tuesday, December 4

14:20 - 15:30

Room A

AMD1: Organic & Carbon TFT

Chair: K. Nomoto, Sony, Japan

Co-Chair: Y. Fujisaki, NHK, Japan

AMD1 - 1: *Invited* Inkjet Printing of Single Crystal Films for Organic TFTs

14:20

*H. Minemawari, Y. Noda, T. Yamada, T. Hasegawa
AIST, Japan*

AMD1 - 2: *Invited* New Generation of Flexible GHz Graphene Transistor

14:45

H. Happy^{}, C. Sire, F. Ardiaca, S. Lepilliet^{*}, J.-W. T. Seo^{**},
M. C. Hersam^{**}, G. Dambrine^{*}, V. Derycke
IRAMIS, France
^{*}IEMN, France
^{**}Northwestern Univ., USA*

AMD1 - 3: Quantitative Extraction of Contact Resistance at Organic Semiconductor – Metal Electrode Interface and Impact of Treatment on the Contact Resistance

15:10

*K. Sasai, Y. Okumoto, A. Miyamoto, K. Morita,
Y. Fujisaki^{*}, T. Yamamoto^{*}
Panasonic, Japan
^{*}NHK, Japan*

----- Break -----

16:10 - 17:20

Room A

FLX1/AMD2: Flexible Active Matrix Devices

Chair: H. Maeda, DNP, Japan

Co-Chair: H. Happy, IEMN, France

FLX1/AMD2 - 1: *Invited* Transfer Printing Electronic Devices on Non-Si Substrates

16:15

*X. Zheng
Stanford Univ., USA*

**FLX1/
AMD2 - 2
16:40** **Solution-Processed and Low-Temperature ZnO-Based N-Channel TFTs on Polyethylene Naphthalate Foil, Suited for Hybrid Complementary Circuitry**

M. Rockelé^{, **}, M. Nag^{*, **}, T. H. Ke^{*}, S. Botnaraş^{***},
D. Weber^{***}, D.-V. Pham^{***}, J. Steiger^{***}, S. Steudel^{*},
K. Myny^{*, **}, S. Schols^{*}, B. V. D. Putten^{****}, J. Genoe^{*},
P. Heremans^{*}*

^{}imec, Belgium
^{**}Katholieke Univ. Leuven, Belgium
^{***}Evonik Inds., Germany
^{****}Holst Ctr., the Netherlands*

**FLX1/
AMD2 - 3
17:00** **Formation of Polycrystalline Silicon Films on Plastic Films by Underwater Laser Annealing at Super Low-Temperature**

E. Machida^{}, M. Horita^{*, **}, Y. Ishikawa^{*, **}, Y. Uraoka^{*, **},
T. Okuyama^{***}, H. Ikenoue^{****}*

^{}Nara Inst. of S&T, Japan
^{**}JST, Japan
^{***}TOYOBO, Japan
^{****}Kyushu Univ., Japan*

**Author Interviews and Demonstrations
17:50 – 18:50**

Wednesday, December 5

9:00 - 10:30	Room A
AMD3: Oxide TFT: Materials & Devices	

Chair: H. J. Kim, Yonsei Univ., Korea
Co-Chair: N. Morosawa, Sony, Japan

AMD3 - 1: 9:00 ***Invited* Oxide Semiconductor: Past, Present and Future**

*T. Kamiya, K. Nomura, H. Hosono
Tokyo Inst. of Tech., Japan*

AMD3 - 2 9:25 **High Performance AOS-Based Offset TFTs for Kickback Voltage Reduction**

*M. Mativenga, D. H. Kang, Y. S. Ahn, J. Jang
Kyung Hee Univ., Korea*

AMD3 - 3 9:45 **Effects of Multi-Gates on Performance and Stability of Self-Aligned Coplanar a-IGZO TFTs**

*J. U. Han, D. H. Kang, J. Jang
Kyung Hee Univ., Korea*

AMD3 - 4: 10:05 *Invited* High Mobility Zinc Oxynitride (ZnON) Based Thin-Film Transistors (TFTs) for Display Applications

J. S. Park, H.-S. Kim, T. S. Kim, K. S. Son, J.-B. Seon, S.-J. Seo, S.-J. Kim, M. Ryu, S. Lee

Samsung Advanced Inst. of Tech., Korea

----- Break -----

10:50 - 12:05

Room A

AMD4: Oxide TFT: Applications

Chair: H. Yamaguchi, Toshiba, Japan

Co-Chair: H. Kumomi, Tokyo Inst. of Tech., Japan

AMD4 - 1: 10:50 *Invited* Ultra Definition 240 Hz 55-in. LCD TV Driven by 1G1D with Oxide Semiconductor TFTs & Copper Signal Lines

N. Gong, C. Park, J. Lee, I. Jeong, H. Han, J. Hwang, J. Park, K. Park, H. Jeong, Y. Ha, W. Shin, S. Yeo

LG Display, Korea

AMD4 - 2: 11:15 *Invited* Fabrication of Ultra High-Definition Amorphous-IGZO Liquid-Crystal Display

C.-H. Chen, C.-Y. Hou, C.-Y. Wu, C.-N. Lin, W. Tsai

AU Optronics, Taiwan

AMD4 - 3: 11:40 *Invited* Amorphous Oxide Semiconductor Thin Film Transistor for Novel Device Applications

S. Jeon^{,**}, I. Song^{*,**}, S.-E. Ahn^{*,**}, C. Kim^{*,**}, U.-I. Chung^{*,**}, J. Park^{*,**}, J. Bae^{*,**}, J. Lim^{*,**}, B. H. Kim^{*,**}, K. Kim^{*,**}*

^{}Samsung Advanced Inst. of Tech., Korea*

*^{**}Samsung Elect., Korea*

----- Lunch -----

14:00 - 15:25

Room A

AMD5: Oxide TFT: Solution Process

Chair: J. S. Park, Samsung Advanced Inst. of Tech., Korea

Co-Chair: H. Hamada, Panasonic, Japan

AMD5 - 1: 14:00 *Invited* New Approaches for High Performance and Multi-Functional Solution-Processed Oxide TFT Technologies

H. J. Kim

Yonsei Univ., Korea

AMD5 - 2 **Solution-Processed Amorphous In₂O₃-Based TFT Performance Depending on the Semiconductor Film Morphology**

14:25

S. Botnaraş^{,**}, D. Weber^{*}, D.-V. Pham^{*}, J. Steiger^{*}, R. Schmechel^{**}*

^{}Evonik Inds., Germany*

*^{**}Duisburg-Essen Univ., Germany*

AMD5 - 3 **Effects of Zr Doping on the Performance of Solution-Processed InZnO Thin-Film Transistors**

14:45

S.-Y. Liu, B.-Y. Su, P.-C. Kao^{}, S.-Y. Chu*

Nat. Cheng Kung Univ., Taiwan

^{}Nat. Chiayi Univ., Taiwan*

AMD5 - 4 **Effects of Solution-Processed Al₂O₃ Gate Insulator Thickness on IGZO TFTs**

15:05

S.-M. Song, J.-S. Lee, D.-W. Kang, J.-Y. Kwon^{}, M.-K. Han*

Seoul Nat. Univ., Korea

^{}Yonsei Univ., Korea*

----- Break -----

15:50 - 17:20

Room E

INP3/AMD6: Touch Panel (2)

Chair: K. Noguchi, Japan Display West, Japan

Co-Chair: H. Katoh, Sharp, Japan

INP3/ ***Invited* Newly Developed In-Cell Capacitive Touch**
AMD6 - 1: **Panel Technology in a Wide Viewing Angle IPS-Mode**
15:50 **Display**

K. Noguchi, Y. Kida, K. Ishizaki, K. Azumi, H. Mizuhashi

Japan Display West, Japan

INP3/ **A Novel Design of Capacitive In-Cell Touch Sensor**
AMD6 - 2 **Circuit Using a-Si TFT**

16:15

C.-T. Hsieh, S.-K. Hsu

Chimei-Innolux, Taiwan

INP3/ ***Invited* In-Cell Projected Capacitive Touch Panel**
AMD6 - 3: **Technology**

16:35

Y. Sugita, K. Kida, S. Yamagishi

Sharp, Japan

INP3/ **Active Photo-Sensing Array of Thin Film Transistor**
AMD6 - 4 **with Threshold Voltage Compensation**

17:00

L.-S. Chou, B.-C. Chen, Y.-H. Tai, I. Chan^{}, M.-H. Yeh^{*}*

Nat. Chiao Tung Univ., Taiwan

^{}ITRI, Taiwan*

Author Interviews and Demonstrations

17:30 – 18:30

Thursday, December 6

9:20 - 12:20

Event Hall

Poster AMDp1: Oxide TFT

- AMDp1 - 1 The Effect on the Multi-Stacked Active Layer of In-Ga-Zn-O Thin-Film Transistors under the Negative Gate Bias Stress**
S. Y. Kim, D. Jong Kim, S. J. Kim, H. J. Kim
Yonsei Univ., Korea
- AMDp1 - 2 A Study of Degradation Mechanism about Bias-Temperature-Illumination Instability in a-IGZO TFTs**
H. Choi, D. Y. Park, J. W. Baek, S. J. Yu, S. H. Jeon
LG Display, Korea
- AMDp1 - 3 The Effect of Annealing Temperature in Solution-Processed In-Ga-O Thin-Film Transistors**
D. H. Yoon, H. S. Lim, S. J. Kim, J. Jung, H. J. Kim
Yonsei Univ., Korea
- AMDp1 - 4 Investigation on Effects of Composition on Transparent Aluminum Zinc Tin Oxide Thin-Film Transistors**
C.-S. Fuh, L.-F. Teng, Y.-S. Fan, C.-H. Chang, P.-T. Liu
Nat. Chiao Tung Univ., Taiwan
- AMDp1 - 5 High Performance Inverter with a-IGZO-Based Resistor Load and Self-Aligned Coplanar a-IGZO Driving TFT**
D. Geng, D. H. Kang, M. J. Seok, M. Mativenga, J. Jang
Kyung Hee Univ., Korea
- AMDp1 - 6 New IGZO-Based Oxide Semiconducting Material for Back Channel Etch Type Thin Film Transistor**
S. Morita, K. Hirose, A. Hino, H. Goto, T. Kugimiya
Kobe Steel, Japan
- AMDp1 - 7 Analysis of Electronic-Structural Change in a-InGaZnO by High Pressure Water Vapor Annealing**
Y. Ueoka, N. Maejima, H. Matsui, F. Matsui, M. Morita, S. Kitagawa, M. Fujita, K. Yasuda, H. Yamazaki, S. Urakawa, M. Horita, Y. Ishikawa, H. Daimon, Y. Uraoka
Nara Inst. of S&T, Japan

- AMDp1 - 8 The Comparison of Lithium Doping Impact to Solution-Processed ZnO/InZnO Thin Film Transistors Characteristics**
Y. W. Wang, P. H. Fang, A. C. Cheng, W. C. Su, P. R. Lin
Nat. Changhua Univ. of Education, Taiwan

9:20 - 12:20

Event Hall

Poster AMDp2: Active-Matrix Devices

- AMDp2 - 1 Device Performance of Benzothienobenzothiophene-Based Top-Gate Organic Field-Effect Transistors with Embedded Electrodes**
Y. Kimura, F. Mochizuki, T. Nagase, T. Kobayashi, K. Takimiya^{}, M. Ikeda^{**,***}, H. Naito*
Osaka Pref. Univ., Japan
^{}Hiroshima Univ., Japan*
*^{**}Nippon Kayaku, Japan*
*^{***}Kyushu Univ., Japan*
- AMDp2 - 2 Charge Transport in Solution-Processed Top-Gate Organic Thin-Film Transistors with Different Gate Insulators**
K. Takagi^{}, T. Nagase^{**,*}, T. Kobayashi^{*,**}, H. Naito^{*,**}*
^{}Osaka Pref. Univ., Japan*
*^{**}Res. Inst. for Molecular Elect. Devices, Japan*
- AMDp2 - 3 Temperature Sensor Employing 1-Transistor 1-Capacitor Circuit Consisting of p-Type Poly-Si Thin-Film Transistor**
T. Mukuda^{}, J. Taya^{*}, A. Nakashima^{*}, M. Kimura^{*,**,*}*
^{}Ryukoku Univ., Japan*
*^{**}Joint Res. Ctr. for S&T, Japan*
*^{***}High-Tech Res. Ctr., Japan*
- AMDp2 - 4 Suppression of Atom-Migration Effect and Recovery by SR Soft X-Ray Irradiation**
T. Fukuoka, A. Heya, N. Matsuo, Y. Haruyama, K. Kanda, T. Noguchi^{}*
Univ. of Hyogo, Japan
^{}Univ. of the Ryukyus, Japan*

- AMDp2 - 5 High-Performance and Low-Temperature-Compatible Solid Phase Crystallized Polycrystalline Silicon Thin Film Transistors Using Thermal Oxide Buffered Aluminum Oxide as Gate Dielectric**
M. Zhang, W. Zhou, R. Chen, J. Ho, M. Wong, H.-S. Kwok
The Hong Kong Univ. of S&T, Hong Kong
- AMDp2 - 6 Design of Vcom Driver Circuit with Poly-Si Technology for TFT-LCD Applications**
C.-C. Hung, M.-H. Cheng, C.-D. Tu, C.-L. Lin
Nat. Cheng Kung Univ., Taiwan
- AMDp2 - 7 Electrical Characterization of Nitrogen-Excess SiNx Films Deposited by Surface Wave Plasma Chemical Vapor Deposition**
*K. Yagi, T. Okada, T. Noguchi, K. Azuma**
Univ. of the Ryukyus, Japan
**Shimadzu, Japan*
- AMDp2 - 8 Proposal of μ -Poly Si Film Structure with High Photo-Sensitive PIN-Diode for Advanced FPD**
K. Sugihara, S. Chinen, H. Goga, K. Shirai, T. Okada, T. Noguchi*
Univ. of the Ryukyus, Japan
**Okinawa Scale Inspection Office, Japan*
- AMDp2 - 9 The Latest IPS Pixel Structure Suitable for High Resolution LCDs**
K. Ono, I. Hiyama
Panasonic Liquid Crystal Display, Japan
- AMDp2 - 10 The Impact of Polarity Inversion on Interlace Image Sticking at ADS-Mode**
Y. T. Yang, H. Z. Liang, D. Q. Zhang, Y. B. Lee, G. Y. Tian, Y. B. Xu, S. K. Lee
Hefei BOE Optoelect. Tech., China
- AMDp2 - 11 A Novel Coupled Charge-Shared Structure on Polymer Sustained Alignment Mode**
T.-L. Ting, Y.-C. Wu, K.-C. Tien, C.-H. Liao, W.-H. Hsu, J.-J. Su
AU Optronics, Taiwan

AMDp2 - 12 An Application of New TFT Driving Method for 47-in. Diagonal IPS LCDs with Resolutions of QFHD and FHD

R. Oke, T. Nakai, G. Toshima, D. Kajita, J. Maruyama, Y. Ooishi, T. Kobayashi, I. Mori, I. Hiyama

Panasonic Liquid Crystal Display, Japan

AMDp2 - 13 Development of 5 μ m-Pixel Pitch Active-Matrix for Transmissive LCD Picoprojector

F. Templier, U. Rossini, J. S.-Puchades, L. Clerc, T. Flahaut, D. Sarrasin, V. Larrey, H. W.-Alause, J. Marty**

CEA LETI, France

**ST Microelect., France*

AMDp2 - 14 A Low Power Consumption Level Shifter Using LTPS-TFT

M. Yamashita, M. Yoshida

Tokai Univ., Japan

----- Lunch -----

14:00 - 15:20

Room A

AMD7: Oxide TFT: Reliability

Chair: T. Kamiya, Tokyo Inst. of Tech., Japan

Co-Chair: M. Hiramatsu, Japan Display Central, Japan

AMD7 - 1 Instability of Light Illumination Stress on Amorphous InGaZnO Thin Film Transistors

14:00

S. Park, E. N. Cho, I. Yun

Yonsei Univ., Korea

AMD7 - 2 The Effects of Wavelength and Negative Bias on Light-Induced Hysteresis of In-Ga-Zn-O Thin-Film Transistors

14:20

S.-H. Kuk, S.-Y. Lee, M.-K. Song, S. Kwon, Sang C. Youn*, M.-K. Han*

Seoul Nat. Univ., Korea

**LG Display, Korea*

AMD7 - 3 The Influence of New SiN_x Gate Insulator in a-InGaZnO Thin Film Transistors

14:40

H. Yamazaki, Y. Ueoka, Y. Ishikawa, M. Fujiwara, E. Takahashi*, Y. Andoh*, Y. Uraoka*

Nara Inst. of S&T, Japan

**Nissin Elec., Japan*

AMD7 - 4
15:00 **N₂O Plasma Treatment Suppressed Temperature-Dependent Point Defects Formation with Amorphous Indium-Gallium-Zinc-Oxide Thin Film Transistors**
G.-W. Chang, T.-C. Chang, J.-C. Jhu*, Y.-E. Syu*, Y.-H. Tai*
Nat. Chiao Tung Univ., Taiwan
**Nat. Sun Yat-Sen Univ., Taiwan*

----- Break -----

15:50 - 17:00	Room A
AMD8/FLX7: Oxide TFT: Flexible Displays	

Chair: C.-H. Cheng, AU Optronics, Taiwan
 Co-Chair: M. Kimura, Nagaoka Univ. of Tech., Japan

AMD8/ ***Invited* Flexible AMOLED Displays Driven by a-IGZO**
FLX7 - 1: **TFTs and their Applications**
15:50 *H. Yamaguchi, T. Ueda, K. Miura, N. Saito, S. Nakano, T. Sakano, K. Sugi, I. Amemiya*
 Toshiba, Japan

AMD8/ ***Invited* A 9.9-in. qHD Top-Emission Flexible OLED**
FLX7 - 2: **Display Driven by Oxide TFTs**
16:15 *K. Teramoto, E. Fukumoto, T. Fukuda, K. Shimokawa, T. Saito, T. Tanikawa, M. Suzuki, G. Izumi, M. Noda, S. Kumon, T. Arai, T. Kamei, M. Kodate, S. No, T. Sasaoka, K. Nomoto*
 Sony, Japan

AMD8/ **Flexible Top-Gate Amorphous InGaZnO TFTs on a**
FLX7 - 3 **New Colorless Polyimide Substrate for Flexible**
16:40 **Display Applications**
 Y.-H. Yeh, C.-C. Cheng, M.-J. Yu, H.-C. Ku, B. C.-M. Lai, B.-Y. Chou, E. Horii, E. Kuribayashi*, T. Iwamoto*, H. Inari*, M. Yamazaki*, K. Kurimoto**
 ITRI, Taiwan
 **Kaneka, Japan*

Author Interviews and Demonstrations
17:30 – 18:30

Friday, December 7

14:00 - 15:20	Room B-1
AMD9: Active-Matrix Circuits	

Chair: S. Jeon, Samsung Advanced Inst. of Tech., Korea
 Co-Chair: M. Inoue, Chimei Innolux, Japan

- AMD9 - 1**
14:00 **New Pixel Circuit Based on a-IGZO TFTs Compensating OLED Degradation for 3D AMOLED Displays**
W.-Y. Chang, P.-Y. Kuo, C.-C. Hung, C.-D. Tu, C.-L. Lin
Nat. Cheng Kung Univ., Taiwan
- AMD9 - 2**
14:20 **Highly Reliable Gate Driver Circuit with Modulated Gate Bias for Threshold Voltage Amelioration**
M. H. Cheng, C. D. Tu, C. L. Lin
Nat. Cheng Kung Univ., Taiwan
- AMD9 - 3**
14:40 **A Novel Design Methodology for On-Glass Integrated Shift Register Circuits Using Hydrogenated Amorphous-Si Thin Film Transistors**
H. Bang, J.-S. Kang, K.-H. Lee
LG Display, Korea
- AMD9 - 4**
15:00 **High Resolution Active Photo-Sensing Circuit Using Dual-Scanning Compensation**
*L.-S. Chou, C.-D. Yang, Y.-H. Tai, M.-H. Yeh**
Nat. Chiao Tung Univ., Taiwan
**ITRI, Taiwan*

Author Interviews and Demonstrations

17:30 – 18:30

Supporting Organization:

Thin Film Materials & Devices Meeting

EXHIBITION

12:40 – 18:20 Tuesday, Dec. 4, 2012

10:00 – 18:00 Wednesday, Dec. 5, 2012

10:00 – 18:00 Thursday, Dec. 6, 2012

10:00 – 14:00 Friday, Dec. 7, 2012

Event Hall, 1F

Kyoto International Conference Center

Free admission with your registration name tag

Workshop on FPD Manufacturing, Materials and Components

Tuesday, December 4

14:20 - 15:20

Room B-1

FMC1: Manufacturing Technologies (1)

Chair: M. Furuta, Kochi Univ. of Tech., Japan

Co-Chair: T. Tomono, Toppan Printing, Japan

FMC1 - 1: *Invited* Preparation of Amorphous P-Type InGaZnO₄ Films by Codoping of Al and N Atoms

14:20

*K. Kobayashi, X. Zhang, Y. Kohno, Y. Tomita, Y. Maeda
Shizuoka Univ., Japan*

FMC1 - 2: *Invited* Solution-Based Atmospheric Pressure Deposition Method for Oxide TFTs

14:40

*M. Furuta, T. Kawaharamura, D. Wang
Kochi Univ. of Tech., Japan*

FMC1 - 3: *Invited* Zinc Oxide Film Growth Using High-Energy H₂O Generated by a Catalytic Reaction on Pt Nanoparticles

15:00

*K. Yasui
Nagaoka Univ. of Tech., Japan*

----- Break -----

16:10 - 17:30

Room B-1

FMC2: Manufacturing Technologies (2)

Chair: J. Hanna, Tokyo Inst. of Tech., Japan

Co-Chair: T. Miyashita, Tohoku Inst. of Tech., Japan

FMC2 - 1: *Invited* Solution-Crystallized High-Mobility Organic Active Matrices and Display Panels

16:10

J. Takeya^{,**}, T. Uemura^{*}, M. Uno^{***}, Y. Kanaoka^{***}*

^{}Osaka Univ., Japan*

*^{**}Ctr. for High-End Molecular Semiconductors, Japan*

*^{***}TRI Osaka, Japan*

FMC2 - 2: *Invited* High Thermal Stability and High Performance in OFETs Fabricated with Smectic LC Materials

16:30

*J. Hanna, H. Iino
Tokyo Inst. of Tech., Japan*

FMC2 - 3: 16:50 *Invited* **Development of Novel Piezo Inkjet Print Head Utilizing MEMS Technology for Printed Electronics Applications**

Y. Nishi, S. Sakai, K. Higashino, Y. Machida, K. Yoshida*
Konica Minolta IJ Techs., Japan
**Konica Minolta Tech. Ctr., Japan*

FMC2 - 4 17:10 **Optimization of the Surface Treatment on Cover Glass for Automotive TFT-LCDs**

T. Kiyohara, Y. Morii, M. Kawano, K. Itoga, A. Yuki, T. Satake
Mitsubishi Elec., Japan

Author Interviews and Demonstrations
 17:50 – 18:50

Wednesday, December 5

9:20 - 12:20	Event Hall
Poster FMCp: FPD Manufacturing, Materials & Components	

FMCp - 1 **Wet Etching and Striper Characterization for H₂O₂ and Non-H₂O₂ Etchant and Amine and Non-Amine Stripper of Cu-Based TFT Application**
H. Kou, C. Zhang, Y. Chen, X. Zhong, G. Li
Shenzhen China Star Optoelect. Tech., China

FMCp - 2 **Research on Thinning Technology with Wing Pattern**
D. Shi, X. Jiang, J. Guo, L. Qu, X. Ji, Z. Tian
BOE Optoelect. Tech., China

FMCp - 3 **Fabrication of Multi Nozzle Dispenser for RGB Phosphor Light Source**
G. Lim, H. J. Jeon, J. S. Gwag, G. Park, J. H. Kwon*
Yeungnam Univ., Korea
**Sunlin Univ., Korea*

FMCp - 4 **Low Power Consumption TFT-LCD Using Si-C Resin as Passivation Layer**
C. Yan, Z. Xie, J. Guo, X. Chen, T. Min, X. Chen, Q. Shen, W. Zhang, T. Li, S. Xu, K. Lu, X. Hou, X. Jiang, T. Wu, S. Su, J. Wang
BOE Optoelect. Tech., China

- FMCP - 5 Study on Photo Process for Low-k Non-Photoactive Acrylic Resin TFT-LCD**
X. Hou, J. Guo, X. Chen, T. Wu, Q. Shen, K. Lu, T. Min
BOE Optoelect. Tech., China
- FMCP - 6 Cellulose Ether Polymers as Optical Compensation Films for LCDs - High Birefringence and Tunable Optics**
Z. Wang, J. Folkenroth, W. Zhou**, Y. Zhang, S. Xiuqin*
Dow Chem., China
**Dow Wolff Cellulosics, USA*
***Dow Materials Sci., USA*
- FMCP - 7 TFT Characteristics Improvement by Using Single Slit Mask**
L. Qu, J. Guo, X. Chen, Z. Xie, W. Zhang, T. Min
BOE Optoelect. Tech., China
- FMCP - 8 An Inspection System for Transparent Circuits with the Use of a PDLC/ITO Film**
C.-H. Chan, **, Y.-T. Zou*, C.-T. Chen**, T.-K. Liu*, C.-H. Chen**, H.-W. Wang**, S.-C. Lin**
**Nat. Tsing Hua Univ., Taiwan*
***ITRI, Taiwan*
- FMCP - 9 An Analytical Model for Describing LED Pad Temperature in Backlight Unit**
K.-Y. Chang, C.-C. Hu, C. Xiong, W.-Y. Wei
Shenzhen China Star Optoelect. Tech., China
- FMCP - 10 The Study on Relation between Color Gamut and Luminous Efficiency Based on the Shift of Color Filter and LED Spectrum**
W. Zheng, C.-T. Kang
Shenzhen China Star Optoelect. Tech., China
- FMCP - 11 Development of a Simulation Model to Analyze the Chromaticity Variation at the Place Lit by RYGB-White-LED**
K. Misono
Miyakonojo Nat. College of Tech., Japan
- FMCP - 12 Transmittance of LED Encapsulant Containing Quantum Dot with Various Types of Ligands**
C. S. Lee, **, C. J. Han**, S.-K. Hong**
**Dongguk Univ., Korea*
***KETI, Korea*

- FMCP - 13 Conversion Efficiency of RGB Phosphor Array on the Lightguide**
H. J. Jeon, K. S. Lim, J. H. Kwon
Yeungnam Univ., Korea
- FMCP - 14 Solution for Eliminating Support Pin Shadow Mura in Direct LED Backlight**
K.-Y. Chang, C.-C. Hu, Z. Su
Shenzhen China Star Optoelect. Tech., China
- FMCP - 15 A Modified Color System for LED Chromaticity Ranking in a System**
C. Feng, K.-Y. Chang, C.-C. Hu, C. Ning
Shenzhen China Star Optoelect. Tech., China
- FMCP - 16 Properties of Cu Doped NiO Transparent Oxide Thin Films by Sol-Gel Solution**
C. Takahashi, M. Kawamura, Y. Abe, K. H. Kim
Kitami Inst. of Tech., Japan
- FMCP - 17 Low Temperature Fabrication and UV Treatment of Spin Coated ZnO Films Using Partial Hydrolyzate of Diethylzinc Based Solutions**
K. Haga, K. Inaba, K. Toyota, Y. Takemoto, K. Tokudome, M. Oshima, K. Yoshino**
Tosoh Finechem, Japan
**Univ. of Miyazaki, Japan*

----- Lunch -----

14:00 - 15:00	Room B-2
FMC3: Materials (1)	

Chair: K. Suganuma, Osaka Univ., Japan
 Co-Chair: T. Hotta, DNP, Japan

- FMC3 - 1: 14:00 *Invited* Fabrication of Transparent Conductive Films with Ag Nanowires on Plastic Films**
K. Suganuma, T. Tokuno, T. Araki, J. Jiu, T. Sugahara, M. Nogi, H. Uchida, K. Shinozuka**
Osaka Univ., Japan
**Showa Denko, Japan*

- FMC3 - 2: 14:20 *Invited* Optically Transparent Nanofiber Papers for Printed Electronics**
M. Nogi, H. Koga, M. Karawaka, K. Suganuma
Osaka Univ., Japan

**FMC3 - 3 Development of Dielectric Materials and Cu Inks for
14:40 a Fine Pitch Wiring in Printing Process**

*M. Ito, K. Tsuruoka, M. Fukuda, Y. Kuwana, Y. Nagai,
S. Kashiwabara*

Asahi Glass, Japan

----- Break -----

15:50 - 17:10

Room B-2

FMC4: Materials (2)

Chair: R. Yamaguchi, Akita Univ., Japan

Co-Chair: S. Kurihara, Kumamoto Univ., Japan

**FMC4 - 1: *Invited* History and Future of FPD's and
15:50 Semiconductors**

Y. Todokoro^{, **}, S. Imai^{*}, T. Unate^{***}*

^{}Osaka Univ., Japan*

*^{**}Nara Inst. of S&T, Japan*

*^{***}UNATE, Japan*

**FMC4 - 2: *Invited* Color Switching of One Dimensional
16:10 Photonic Crystals Consisting of Azobenzene-
Functionalized Polymer LCs and Polyvinylalcohol**

S. Kurihara, Y. Kuwahara, T. Ogata, M. Moritsugu^{}*

Kumamoto Univ., Japan

^{}Kinki Univ., Japan*

**FMC4 - 3: *Invited* A Novel Mechanism to Give Photosensitivity
16:30 to Engineering Plastics: Reaction Development
Patterning**

T. Oyama

Yokohama Nat. Univ., Japan

**FMC4 - 4 A Frame Work of New Design for Bending Test to the
16:50 Non-Planar Glass**

C.-Y. Chiu, K.-C. Chang, Y.-C. Liu

G-tech Optoelect., Taiwan

Author Interviews and Demonstrations

17:30 – 18:30

Thursday, December 6

10:50 - 11:50	Room E
FLX5/FMC5: Flexible Materials and Fabrication Processes	

Chair: Y. Mishima, FUJIFILM, Japan

Co-Chair: A. Fujita, JNC, Japan

**FLX5/
FMC5 - 1
10:50** **Roll-to-Roll Deposition of ITO Film on a Flexible Glass Substrate**

Y. Ikari, H. Tamagaki

Kobe Steel, Japan

**FLX5/
FMC5 - 2
11:10** **Ultra Thin Glass for Flexible Display**

C. C. Kuo, Y. C. Chen, B. S. Chiou, J. Y. Chiou, Y. T. Lee, Y. Y. Huang

Chunghwa Picture Tubes, Taiwan

**FLX5/
FMC5 - 3
11:30** **Flexible LCD Fabricated with a Slit Coater**

M. Kimura, K. Ohtsuka, Y. Nagataki, T. N. Oo, M. Mori, H. Hirata*, T. Akahane*

Nagaoka Univ. of Tech., Japan

**Toray Eng., Japan*

----- Lunch -----

14:00 - 15:00	Room B-2
FMC6: Materials (3)	

Chair: K. Matsukawa, Osaka Municipal Tech. Res. Inst., Japan

Co-Chair: T. Unate, UNATE, Japan

FMC6 - 1: 14:00 ***Invited* High Refractive Index Thin Film Prepared from Organic-Inorganic Hybrid Materials**

K. Matsukawa, S. Watase

Osaka Municipal Tech. Res. Inst., Japan

**FMC6 - 2
14:20** **High Reliability of Oxide TFT Using Solution-Processed Photosensitive Passivation Layer**

A. Tanabe, T. Kojiri, M. Hanmura

ZEON, Japan

**FMC6 - 3
14:40** **Spatial Distribution of Properties of a-IGZO Films Deposited by Rotation Magnet Sputtering Incorporating Dual Target Structure**

T. Goto, S. Sugawa, T. Ohmi

Tohoku Univ., Japan

----- Break -----

15:50 - 16:50	Room B-2
FMC7: Backlight	

Chair: S. Banerjee, Sumitomo Chem., Japan
 Co-Chair: K. Kälantär, Global Optical Solutions, Japan

FMC7 - 1 **Slim Block Backlight System with Local Dimming**
15:50 *S. Yamamoto, J. Yokoyama, M. Nagayoshi, S. Ouchi*
 Hitachi, Japan

FMC7 - 2 **The Design of Novel Wedge Structure with High**
16:10 **Efficiency LGP**
 Y.-W. Chang, F.-C. Fan, H.-P. Kuo
 AU Optonics, Taiwan

FMC7 - 3 **Multilayer Wavelength-Selective Reflector Films for**
16:30 **LCD Applications**
 S. Banerjee
 Sumitomo Chem., Japan

Author Interviews and Demonstrations

17:30 – 18:30

Friday, December 7

9:00 - 10:20	Room B-2
FMC8: Manufacturing Technologies (3)	

Chair: Y. Iimura, Tokyo Univ. of A&T, Japan
 Co-Chair: T. Nonaka, AZ Elec. Materials, Japan

FMC8 - 1 **Barrier Properties of Ultra High Barrier Coating**
9:00 **Prepared by Roll to Roll PECVD Process and**
 Analysis of Gas Leakage Mechanism
 H. Tamagaki, T. Okimoto
 Kobe Steel, Japan

FMC8 - 2 **Low Temperature Crystallization Technology of**
9:20 **Extremely Thin TCO for Next Generation Panels**
 T. Yukawa, M. Takei, Y. Oono, A. Ota, M. Arai, J. Kiyota,
 S. Ishibashi, K. Saito
 ULVAC, Japan

**FMC8 - 3
9:40** **Optical Properties of Nanostructured ZnO Films Influenced by Different Gas Ratio Deposition with Radio Frequency Magnetron Sputtering**

C. Li, X. Li, D. Wang, T. Kawaharamura, M. Furuta, A. Hatta

Kochi Univ. of Tech., Japan

**FMC8 - 4
10:00** **Rotary Sintered Ceramic ITO Sputtering Targets for the Flat Panel Display Industry**

T. Miyata, P. Lippens, D. Chiu***

Umicore Japan, Japan

**Umicore Thin Film Prods., Liechtenstein*

***Umicore Thin Film Prods., Taiwan*

----- Break -----

10:50 - 11:50

Room B-2

FMC9: LED Lighting Technologies

Chair: K. Käläntär, Global Optical Solutions, Japan

Co-Chair: K. Li, Wavien, USA

**FMC9 - 1
10:50** **10,000 Nits Projection-Type Recycling LED Back-Light System for Outdoor LCDs**

K. Li

Wavien, USA

**FMC9 - 2
11:10** **A Novel Design of LED Embedded Alexis Wound Retractor**

Y. -C. Su, Y.-S. Chen, J.-W. Pan*

Chi Mei Medical Ctr., Taiwan

**Nat. Chiao Tung Univ., Taiwan*

**FMC9 - 3
11:30** **“Square-Light” Technology as Novel Approach for Making Ultra-Slim LED Lighting Devices**

J. Hou, Z.-W. Koh, W.-C. Ing

LuxingTek, Taiwan

Author Interviews and Demonstrations

17:30 – 18:30

Supporting Organizations:

Japan Electronics Packaging and Circuits Association

Japan Society of Colour Material

RadTech Japan

The Japanese Research Association for Organic Electronics Materials

The Japanese Society of Printing Science and Technology

The Society of Photography and Imaging of Japan

The Technical Association of Photopolymers, Japan

Workshop on Plasma Displays

Wednesday, December 5

14:00 - 17:00	Event Hall
Poster PDPp: PDP	

- PDPp - 1 Study on Seamless and Large-Cell PDPs**
T. J. Kweon, J. N. Kim, H. H. Kim, D. H. Choe
Samsung SDI, Korea
- PDPp - 2 Characteristics of High Efficient Two Level Sustain Waveforms in AC PDPs**
J.-Y. Jeong, J.-S. Park, J.-W. Kang
Dankook Univ., Korea
- PDPp - 3 Characteristics of a Gas Type X-Ray Detector Based on Plasma Display Technology**
H.-H. Park, S.-H. Eom, J.-W. Kang, H.-J. Lee, K.-S. Lee**
Dankook Univ., Korea
**Korea Univ., Korea*

Thursday, December 6

10:50 - 11:50	Room C-2
PDP1: Driving	

- Chair: Q. Yan, COC Display Device, China
 Co-Chair: R. Murai, Panasonic, Japan
- PDP1 - 1 High Speed, Low Voltage Write Addressing of PDPs by Use of Extremely Weak Discharge for Priming**
 10:50
M. Yoshita, T. Shiga
Univ. of Electro-Commun., Japan
- PDP1 - 2 Adaptive Subfield Data Optimization for Low Address Power in PDPs**
 11:10
F. Han, X. Zhang, Z. Tu, W. Wang, Z. Liang
Xi'an Jiaotong Univ., China
- PDP1 - 3 Effect of Transparent Electrode with High Resistance on PDP Luminance and Efficacy**
 11:30
S. Nagano
Samsung SDI, Korea

----- Lunch -----

14:00 - 15:00

Room C-2

PDP2: Ultra HDTV

Chair: Y.-S. Kim, Hongik Univ., Korea

Co-Chair: H. Kajiyama, Tokushima Bunri Univ., Japan

PDP2 - 1: Invited Development of 145-in. Diagonal SUPER Hi-VISION PDPs

14:00

*R. Murai, K. Ishii***Panasonic, Japan***NHK, Japan***PDP2 - 2: Invited Image Quality of 145-in. Diagonal SUPER Hi-VISION PDPs**

14:20

*K. Ishii, R. Murai***NHK, Japan***Panasonic, Japan***PDP2 - 3 Driving Characteristics of Ultrahigh Resolution PDPs with Twin-Path Coplanar Discharge Cells**

14:40

K. Ishii, Y. Hirano, T. Usui, T. Shiga, Y. Murakami**NHK, Japan***Univ. of Electro-Commun., Japan*

----- Break -----

15:50 - 17:10

Room C-2

PDP3: Protective Layer

Chair: L. F. Weber, Consultant, USA

Co-Chair: K. Ishii, NHK, Japan

PDP3 - 1: Invited Mechanism of Seed Electron Emission from MgO Nano-Crystals for AC PDPs

15:50

Y.-S. Kim, J.-K. Kim, L. F. Weber****Hongik Univ., Korea***Seoul Nat. Univ. of S&T, Korea****Consultant, USA***PDP3 - 2: Invited Manufacture Issues of Implementing $\text{Ca}_x\text{Mg}_{1-x}\text{O}$ Protecting Layer for High Efficiency AC PDPs**

16:10

*Q. Yan**COC Display Device, China***PDP3 - 3 Effect of Space between Rib and MgO Film on Temporal Image Sticking**

16:30

*S. Nagano**Samsung SDI, Korea*

PDP3 - 4 Electron Trap Formation with UV Irradiation

16:50

H. Kajiyama, H. Tanaka, A. Otomo, S. Inoue**

Tokushima Bunri Univ., Japan

**Hiroshima Univ., Japan*

Author Interviews and Demonstrations

17:30 – 18:30

Sponsor:

Plasma Display Technical Meeting

LatinDisplay 2012 IDRC 2012

November 26-30, 2012

Mackenzie University

São Paulo, Brazil

Final Program

The final program of IDW/AD '12 will be available
on the website (<http://www.idw.ne.jp/>)
from the middle of November.

EXHIBITION

12:40 – 18:20 Tuesday, Dec. 4, 2012

10:00 – 18:00 Wednesday, Dec. 5, 2012

10:00 – 18:00 Thursday, Dec. 6, 2012

10:00 – 14:00 Friday, Dec. 7, 2012

Event Hall, 1F

Kyoto International Conference Center

Free admission with your registration name tag

Workshop on EL Displays and Phosphors

Thursday, December 6

14:00 - 15:20

Room C-1

PH1: Phosphors in EL

Chair: J. Silver, Brunel Univ., UK
Co-Chair: K. Ohmi, Tottori Univ., Japan

PH1 - 1: *Invited* Potential of SiC as a Rare-Earth-Free Fluorescent Material

14:00

S. Kamiyama
Meijo Univ., Japan

PH1 - 2: *Invited* Design Considerations of Phosphor Layer for a High Efficacy AC Powder EL

14:30

K. Wani, T. Kanda, E. Hashimoto
TAZMO, Japan

PH1 - 3: *Eco-Friendly AC Electroluminescent Lamps*

15:00

R. Withnall, J. Silver, P. G. Harris
Brunel Univ., UK

----- Break -----

15:50 - 17:30

Room C-1

PH2: Phosphors in General

Chair: K.-S. Sohn, Sunchon Nat. Univ., Korea
Co-Chair: R. J. Xie, NIMS, Japan

PH2 - 1: *Invited* Phosphors for High Quality LED Lighting

15:50

H. Winkler, A. Benker, C. Hampel, R. Petry, A. Zych
Merck KGaA, Germany

PH2 - 2: *Invited* Novel Plasmonic Hybrid Phosphor for White Light Emitting Diodes

16:20

K. C. Choi, S. M. Lee, M. Kim
KAIST, Korea

PH2 - 3: *Suppression of SrGa₂S₄:Eu Phosphor Degradation by Glass Coating and Adding ZnO Nanosize Particles*

16:50

M. Daimon, T. Yamasuge, T. Kusunoki
Sony Chem. & Info. Device, Japan

PH2 - 4 **Synthesis and Luminescent Properties of Eu²⁺-Doped La₂Si₆O₃N₈ Phosphors Prepared by Spark Plasma Sintering**

B. Kim, E.-H. Kang, S.-H. Hong

Seoul Nat. Univ., Korea

Author Interviews and Demonstrations

17:30 – 18:30

Friday, December 7

9:20 - 12:20

Event Hall

Poster PHp: Phosphors

PHp - 1 **Novel Oxynitride Phosphors; La_{4-x}Ca_xSi₁₂O_{3+x}N_{18-x}:Eu²⁺ and Ce_{4-x}Ca_xSi₁₂O_{3+x}N_{18-x}:Eu²⁺**

W. B. Park, Y. Jeong, K.-S. Sohn

Sunchon Nat. Univ., Korea

PHp - 2 **Solid-State Combinatorial Screening of (Sr, Ba, Ca)(Y, La, Lu)Si₄N₇:Eu²⁺ Phosphors**

Y. Jeong, W. B. Park, K. H. Son, K.-S. Sohn

Sunchon Nat. Univ., Korea

PHp - 3 **Particle Swarm Optimization-Assisted Discovery of a Novel Oxynitride Phosphor for Use in Light Emitting Diodes and Its Structural Determination**

Y. Song, K. H. Son, W. B. Park, K.-S. Sohn

Sunchon Nat. Univ., Korea

PHp - 4 **A New Paradigm for Phosphor Discovery**

*K.-S. Sohn, W. B. Park, M. Ibukiyama**

Sunchon Nat. Univ., Korea

**Denki Kagaku Kogyo, Japan*

PHp - 5 **Synthesis of SrGa₂S₄:Eu Phosphors by Solvothermal Sulfurization Method**

K. Taniguchi, Y. Nishikata, A. Kato

Nagaoka Univ. of Tech., Japan

PHp - 6 **Preparation of SrGa₂S₄:Eu Films by Spray Pyrolysis Sulfurization Method**

Y. Tani, A. Kato

Nagaoka Univ. of Tech., Japan

- PHp - 7** **Coating Method of ZnS Layer for InP Quantum Dot by Solvothermal Method**
S. Akiyama, N. Funaki, T. Kurabayashi, T. Fukuda, N. Kamata, Y. Ishimaru
Saitama Univ., Japan
- PHp - 8** **Temperature Dependence of PL Excitation Spectra of BaMgAl₁₀O₁₇:Eu in VUV Region**
K. Nakamura, T. Kunimoto, K. Ohmi*
Tottori Univ., Japan
**Tokushima Bunri Univ., Japan*
- PHp - 9** **Synthesis and Luminescence Properties of Stoichiometry-Controlled YAGG:Ce Phosphors under Vacuum UV Excitation**
M. Wu, S. Choi, H.-K. Jung
Korea Res. Inst. of Chem. Tech., Korea
- PHp - 10** **Problem-Solving Methods of Design and Research of the Thin Film Electroluminescent Element in Indicator Devices**
D. A. Evsevichev, O. V. Maksimova, S. M. Maksimov, M. K. Samokhvalov
Ulyanovsk State Tech. Univ., Russia
- PHp - 11** **Thin Film Perovskite Electroluminescence with Ferroelectric BaTiO₃ Films as Insulating Layers**
*H. Takashima, N. Miura**
AIST, Japan
**Meiji Univ., Japan*
- PHp - 12** **Preparation and PL/EL Property of Rare-Earth Doped Perovskite Metal Oxide Nano Crystals Using Supercritical Water Method**
Y. Hakuta, M. Aoki, M. Ohara, K. Sue, Y. Takebayashi, S. Yoda, H. Takashima
AIST, Japan
- PHp - 13** **High Flexibility ACEL Lamps Printed Directly onto Cloths**
R. Withnall, J. Silver, P. G. Harris
Brunel Univ., UK
- PHp - 14** **Utilising Wavelength Converting Phosphor Nanoparticles for Applications in Solar Cells**
J. Silver, R. Withnall, T. G. Ireland, P. W. Reip, S. Subbiah**
Brunel Univ., UK
**Intrinsiq Materials, UK*

- PHp - 15 Accelerated Ageing Studies of CaS:Eu^{2+} and SrS:Eu^{2+} Phosphors**
R. Withnall, J. Silver, M. Ghazli, C. Catherall, J. J. Ojeda
Brunel Univ., UK
- PHp - 16 Effects of Phosphor Distribution and Step-Index Remote Configuration on the Luminous Efficacy of Warm White Light-Emitting Diodes**
H.-Y. Tsai, T.-H. Liu, H.-Y. Kuo, H.-Y. Lin, S.-Y. Chu
Nat. Cheng Kung Univ., Taiwan
- PHp - 17 Selecting a White Point Using $(\text{Y}_{1-a}\text{Gd}_a)_3\text{Al}_5\text{O}_{12}:\text{Ce}^{3+}$ (Where a Is in the Range 0.3 to 0.6) Phosphors on Screens and Two Blue LEDs**
J. Silver, R. Withnall, P. J. Marsh
Brunel Univ., UK
- PHp - 18 Recent Progress in the Development of Ce^{3+} -Activated Fluorosulfide and Fluorooxysulfide Phosphors for LED Lighting**
T.-M. Chen, Y.-C. Wu, C.-S. Lee, S.-N. Chen
Nat. Chiao Tung Univ., Taiwan
- PHp - 19 Selecting a Red Point Using CaS:Eu^{2+} and SrS:Eu^{2+} Phosphors on Screens and One Blue LED**
J. Silver, R. Withnall, P. J. Marsh
Brunel Univ., UK

----- Lunch -----

15:50 - 17:20	Room B-2
PH3: Phosphors for Lighting	

Chair: T.-M. Chen, Nat. Chiao Tung Univ., Taiwan
 Co-Chair: T. Hisamune, Mitsubishi Chem., Japan

- PH3 - 1: 15:50 *Invited* Progress in Developing High-Power InGaN LEDs for Illumination**
K. Bando
Nichia, Japan
- PH3 - 2 16:20 A Phosphor Sheet Providing Wider Color Gamut for LCDs**
Y. Ito, T. Hori, H. Tani, T. Kusunoki, H. Kondo
Sony Chem. & Info. Device, Japan

PH3 - 3
16:40

Improved Display Color Gamut by Using the β -SiAlON Green Phosphor with an Asymmetric Emission Spectrum

K. Yoshimura, K. Takahashi, H. Fukunaga, M. Harada, Y. Tomomura, R.-J. Xie, N. Hirotsaki*, T. Takeda**

Sharp, Japan

**NIMS, Japan*

PH3 - 4
17:00

Si^{4+} and $\text{Si}^{4+}\text{-N}^{3-}$ Incorporation into $\text{YAG}:\text{Ce}^{3+}$ and Its Verification in Luminous Efficacy and Color Rendering Enhancement of Phosphor-Converted White Light-Emitting Diodes

T.-H. Liu, H.-Y. Kuo, H.-Y. Lin, S.-Y. Chu

Nat. Cheng Kung Univ., Taiwan

Author Interviews and Demonstrations

17:30 – 18:30

Supporting Organizations:

Phosphor Research Society, The Electrochemical Society of Japan
The 125th Research Committee on Mutual Conversion between
Light and Electricity, Japan Society for Promotion of Science

Evening Get-Together with Wine

Monday, December 3, 2012

18:00 – 20:00

at Restaurant Grill (1F),

Kyoto International Conference Center

(Sponsored by Merck Ltd., Japan)

See page 12 for details

SID Display Week 2013

May 19-24, 2013

Vancouver Convention Center

Vancouver, British Columbia, Canada

Workshop on Field Emission Display and CRT

Friday, December 7

9:00 - 9:10

Room C-1

Opening

Opening Remarks

9:00

M. Takai, Osaka Univ., Japan

9:10 - 10:40

Room C-1

FED1: CNT Emitters & Applications

Chair: H. Mimura, Shizuoka Univ., Japan

Co-Chair: H. Shimawaki, Hachinohe Inst. of Tech., Japan

FED1 - 1: *Invited* High Performance Field Emission from CNT Based Point Emitters

9:10

D. H. Shin, Y. N. Song, Y. Sun, Y. M. Hwang, S. Y. Lee, K.-N. Yun, C. J. Lee

Korea Univ., Korea

FED1 - 2 Evaluations for Processed Graphite Field Emitters and Its Applications

9:40

Y. Iwai, A. Jyouzuka, T. Koike, Y. Hayama, T. Nakamura, Y. Onizuka, H. Mimura

Onizuka Glass, Japan

**Shizuoka Univ., Japan*

FED1 - 3 Field Emission Property of Carbon Nanotube Electron Source Using Side-Gate Electrode

10:00

S. Nitta, S. Abo, F. Wakaya, M. Takai

Osaka Univ., Japan

FED1 - 4 Enhanced Field Emission Display with Carbon Nanotube Emitters Grown by Resist-Assisted Patterning Process

10:20

S. W. Lee, Y. J. Eom, C. Y. Kim, C.-R. Lee*, J. Jang, K. C. Park*

Kyung Hee Univ., Korea

**SNDisplay, Korea*

----- Break -----

10:50 - 12:10	Room C-1
FED2: Applications & New Materials	

Chair: M. Sasaki, Univ. of Tsukuba, Japan

Co-Chair: F. Wakaya, Osaka Univ., Japan

FED2 - 1 X-Ray Imaging Using an Electron Beam
10:50

Y. Neo, R. Suzuki, T. Aoki, H. Mimura

Shizuoka Univ., Japan

FED2 - 2 Vacuum Switch with Negative Electron Affinity of
11:10 Diamond p-i-n Electron Emitter

D. Takeuchi^{,***,****}, S. Koizumi^{**}, T. Makino^{*,***,****},
H. Kato^{*,***,****}, M. Ogura^{*,***,****}, H. Okushi^{*,***,****},
H. Ohashi^{*,***,****}, S. Yamasaki^{*,***,****}*

^{}AIST, Japan*

*^{**}NIMS, Japan*

*^{***}ALCA-JST, Japan*

*^{****}CREST-JST, Japan*

FED2 - 3 Observation of Cathodoluminescence of
11:30 Germanium-Implanted Quartz Glass Excited by
Low-Energy Electrons Emitted from Silicon Field
Emitter Array

H. Tsuji, A. Sakata, G. Miyagawa, Y. Yasutomo, Y. Gotoh

Kyoto Univ., Japan

FED2 - 4 Cathodoluminescence in ((Ca_{0.6}Sr_{0.4})_{0.997}Pr_{0.002})TiO₃
11:50 Perovskite Films

H. Takashima, M. Nagao

AIST, Japan

----- Lunch -----

14:00 - 15:20	Room C-1
FED3: Fabrication Processes	

Chair: C. J. Lee, Korea Univ., Korea

Co-Chair: Y. Gotoh, Kyoto Univ., Japan

FED3 - 1 Vertical Thin Film FEA for Large-Sized Applications
14:00

T. Yoshida, T. Nishi, M. Nagao

AIST, Japan

FED3 - 2 Spindt-Emitter Fabrication without E-Beam
14:20 Deposition

T. Yoshida, M. Nagao, T. Nishi, N. Koda, T. Nakano^{}*

AIST, Japan

^{}Seikei Univ., Japan*

**FED3 - 3
14:40** **Selective-Area Growth and Field Emission Properties of Titanium-Oxide Nanowires on Glass Substrate**

*T. Nakatani, F. Wakaya, S. Abo, M. Takai
Osaka Univ., Japan*

**FED3 - 4
15:00** **Effect of H₂SO₄ Concentration on Nano-Porous Silicon Morphology and Electron Emission Characteristic**

*X. Duan, X. Zhang, W. Wang
Xi'an Jiaotong Univ., China*

----- Break -----

15:50 - 16:50	Room C-1
FED4: Fundamental Mechanisms	

Chair: M. Takai, Osaka Univ., Japan
Co-Chair: Y. Neo, Shizuoka Univ., Japan

**FED4 - 1
15:50** **Work Function Measurements of W(100) Surface Modified by Scandium Oxide by Using Photoemission Electron Microscopy and Field Emission Microscopy**

T. Kawakubo, H. Takeda, H. Nakane*
Kagawa Nat. College of Tech., Japan
Muroran Inst. of Tech., Japan

**FED4 - 2
16:10** **Field Emission from the Arc-Prepared Carbon Films**

*S. Horie, T. Endo, Y. Yamada, M. Sasaki
Univ. of Tsukuba, Japan*

**FED4 - 3
16:30** **Photoassisted Electron Emission from MOS Cathodes Based on Nanocrystalline Silicon**

H. Shimawaki, Y. Neo, H. Mimura*, F. Wakaya**, M. Takai**
Hachinohe Inst. of Tech., Japan
*Shizuoka Univ., Japan
**Osaka Univ., Japan*

**Author Interviews and Demonstrations
17:30 – 18:30**

Sponsor:
JSPS 158th Committee on Vacuum Nanoelectronics

Workshop on OLED Displays and Related Technologies

Thursday, December 6

9:00 - 10:30

Room A

OLED1: Keynote and Future Trend

Chair: S. Naka, Univ. of Toyama, Japan

Co-Chair: T. Komatsu, Panasonic, Japan

OLED1 - 1: *Invited* OLED Display Market: What Is the Killer Application?

9:00

J. Masuda

IHS-iSuppli, Japan

OLED1 - 2: *Invited* OLEDs Heading Towards Ultra-High Efficiency and New Applications

9:30

M. C. Gather

TU Dresden, Germany

OLED1 - 3: *Invited* Light Extraction from OLEDs with Plasmonic Structures

10:00

T. Okamoto

RIKEN, Japan

----- Break -----

10:50 - 12:00

Room A

OLED2: Micro OLED Display

Chair: K. Monzen, Nissan Chem., Japan

Co-Chair: Y. Kijima, Sony, Japan

OLED2 - 1: *Invited* High-Brightness and High Resolution AMOLED Microdisplay

10:50

A. Ghosh, I. Wacyk, T. Ali, I. Khayrullin, O. Prache, S. Zeisner

eMagin, USA

OLED2 - 2: *Invited* High Resolution OLED Microdisplays for Electronic Vision Systems

11:15

G. Haas, E. Marcellin-Dibon

MICROOLED, France

OLED2 - 3 Organic Microdisplays for Interactive Head-Mounted Applications
11:40

*K. Fehse, C. Schmidt, M. Thomschke, R. Herold,
 B. Richter, U. Vogel*

Fraunhofer IPMS, Germany

----- Lunch -----

14:00 - 17:00

Event Hall

Poster OLEDp: OLED Technologies

OLEDp - 1 The Effect of Inorganic/Organic Hybrid Quantum-Well Structure on Efficient White Organic Light Emitting Devices

*Y.-C. Chen, M.-H. Wu, S.-Y. Chu, P.-C. Kao**

Nat. Cheng Kung Univ., Taiwan

**Nat. Chiayi Univ., Taiwan*

OLEDp - 2 Ultra Violet OLED with Organic Fluorescent Down-Conversion Layer: Fabrication of White OLED

H.-W. Lu, P.-C. Kuo, S.-Y. Chu*

Nat. Cheng Kung Univ., Taiwan

**Nat. Chiayi Univ., Taiwan*

OLEDp - 3 High Efficiency and Low Efficiency Roll-Off White Phosphorescent Organic Light-Emitting Devices with Double Emissive Layers

B. Y. Lin, J. H. Lee, C. F. Lin, T. L. Chiu***

Nat. Taiwan Univ., Taiwan

**Nat. United Univ., Taiwan*

***Yuan Ze Univ., Taiwan*

OLEDp - 4 TRZ-Based Material as the Host of Blue Phosphorescent Organic Light-Emitting Device

T. Y. Hung, Y. H. Lan, B. Y. Lin, P. Yin, T. L. Chiu**,
 M. K. Leung, C. F. Lin*, J. H. Lee*

Nat. Taiwan Univ., Taiwan

**Nat. United Univ., Taiwan*

***Yuan Ze Univ., Taiwan*

OLEDp - 5 Durable Ag Alloy Reflective Anode Electrodes for Top Emission Organic Light-Emitting Diodes

H. Goto, Y. Shida, Y. Iwanari, Y. Tauchi, E. Kusumoto,
 T. Kugimiya*

Kobe Steel, Japan

**Kobelco Res. Inst., Japan*

- OLEDp - 6 Study of Luminance and Thermal Distribution in OLEDs**
M. Shibasaki, T. Tamura, M. Inui, Y. Azuma, T. Satoh, T. Uchida
Tokyo Polytechnic Univ., Japan
- OLEDp - 7 Comparison among Various Hole-Injection Layers in Blue Organic Light Emitting Diode**
*Y.-T. Chuang, T.-L. Chiu, J. H. Lee**
Yuan Ze Univ., Taiwan
**Nat. Taiwan Univ., Taiwan*
- OLEDp - 8 Luminance Enhancements in OLEDs Using a TiO₂ Electron Injection Buffer**
T. Matsuzaki, Y. Seki, Y. Yasuda, Y. Sawada, Y. Hoshi, T. Uchida
Tokyo Polytechnic Univ., Japan
- OLEDp - 9 Deposition of Thin Film of Benzene or Naphthalene by Plasma Polymerization and Application to Organic Light Emitting Devices**
Y. Takahashi, H. Kanai, Y. Sato, S. Yoshikado
Doshisha Univ., Japan
- OLEDp - 10 Design of Insulator Material for Stable Operation of Organic Field Effect Transistors**
K. Suemori, T. Kamata
AIST, Japan
- OLEDp - 11 Effect of MoO₃ Hole-Injection Layers on the Performance of Top-Gate Organic Transistors Based on Soluble Benzothienobenzothiophene Derivatives**
F. Mochizuki, Y. Miyata, T. Nagase, T. Kobayashi, K. Takimiya, M. Ikeda**,***, H. Naito*
Osaka Pref. Univ., Japan
**Hiroshima Univ., Japan*
***Nippon Kayaku, Japan*
****Kyusyu Univ., Japan*
- OLEDp - 12 Materials for Enhancing External Light Out-Coupling Efficiency of Organic Light-Emitting Diodes**
P.-C. Chien, I.-L. Kao, Y.-L. Hsu, P.-C. Chen
ITRI, Taiwan
- OLEDp - 13 Very-High Color Rendering Index OLEDs with Natural Light-Style Spectrum**
J.-H. Jou, J.-R. Tseng, F.-C. Yang, C.-T. Chen, H.-W. Liu, S.-P. Chen, H.-W. Hung*, J.-Y. Li*, M.-C. Liu**
Nat. Tsing Hua Univ., Taiwan
**ITRI, Taiwan*

OLEDp - 14 Novel Carbazole-Substituted Anthracene Derivatives for Non-Doped Blue Light Emitting Diodes

R.-H. Lee, Y.-G. Chen, Y.-C. Chang, Y.-C. Chen^{},
J.-T. Lin^{*}, R.-J. Jeng^{**}*

Nat. Chung Hsing Univ., Taiwan

^{}Academia Sinica, Taiwan*

*^{**}Nat. Taiwan Univ., Taiwan*

OLEDp - 15 Light Extraction Enhancing Buffer Layers for Organic Light-Emitting Diodes

H. J. Cho, H.-N. Lee

Soonchunhyang Univ., Korea

Author Interviews and Demonstrations

17:30 – 18:30

Friday, December 7

9:00 - 10:25

Room A

OLED3: OLED for Lighting Application

Chair: Y. Kijima, Sony, Japan

Co-Chair: T. Ikuta, JNC Petrochem., Japan

OLED3 - 1: *Invited* Design of Backplanes and Optical Enhancement Structure for Large-Area OLED Lighting Panels

9:00

*M.-H. Ho, C.-C. Lin, Y.-C. Chin, C.-C. Chen, M.-T. Lee,
T.-Y. Cho, C.-W. Chen*

AU Optronics, Taiwan

OLED3 - 2 Highly Efficient White OLEDs with Single Solution-Processed Emitting Layer Consisting of Three Kinds of Dopants

9:25

*H. Sakuma, S. Nobuki, S. Ishihara, S. Aratani, A. Sano,
K. Kobayashi*

Hitachi, Japan

OLED3 - 3 Improving the Performance of Solution-Processed Green Phosphorescent OLEDs Using EL Spectra Analysis

9:45

*T. Sugizaki, Y. Shinjo, A. Amano, T. Yonehara, Y. Mizuno,
S. Enomoto, A. Isao*

Toshiba, Japan

OLED3 - 4 **A New 2-Dimensional OLED Circuit Modeling for Obtaining Uniform Brightness in Large Area OLED Lighting Panels**

10:05

J.-H. Han, J. Moon, J. W. Huh, D.-H. Cho, J.-W. Shin, C. W. Joo, J. Hwang, B. J. Lee, S. K. Park, J.-T. Ahn, N. S. Cho, H. Y. Chu, J.-I. Lee

ETRI, Korea

----- Break -----

10:50 - 12:15

Room A

OLED4: Materials and Devices

Chair: T. Wakimoto, Merck, Japan

Co-Chair: H. Kuma, Idemitsu Kosan, Japan

OLED4 - 1: *Invited* Recent Progress on Polymer LED Materials

10:50

T. Yamada, Y. Tsubata, K. Ohuchi, D. Fukushima, N. Akino, R. Wilson, M. Roberts*, I. Grizzi**

Sumitomo Chem., Japan

**Cambridge Display Tech., UK*

OLED4 - 2 **New Hole Transport Materials for Solution Processing and Vacuum Deposition**

11:15

J. Birnstock, M. Zöllner, T. Canzler, Z. Wang, U. Denker, K. Lederer

Novald AG, Germany

OLED4 - 3 **Mixed Host Concepts in Triplet Green Applications**

11:35

A. Jatsch, C. Pflumm, J. Kröber, A. Parham, P. Stöbel, T. Eberle, E. Böhm, H. Buchholz

Merck KGaA, Germany

OLED4 - 4 **Oxadiazole Derivatives for Blue Phosphorescent Organic Light-Emitting Diode by Partially Doping Techniques**

11:55

Y. H. Liu, Y. H. Lan, W. H. Yang**, M. K. Leung**, M. K. Wei, T. L. Chiu***, C. F. Lin*, J. H. Lee***

Nat. Dong Hwa Univ., Taiwan

**Nat. United Univ., Taiwan*

***Nat. Taiwan Univ., Taiwan*

****Yuan Ze Univ., Taiwan*

----- Lunch -----

14:00 - 15:05

Room A

OLED5: Display Technologies (1)

Chair: K. Nakayama, Yamagata Univ., Japan

Co-Chair: T. Uchida, Tokyo Polytechnic Univ., Japan

OLED5 - 1: *Invited* Crystalline Organic TFTs for Active-Matrix Display Panels

14:00

J. Takeya^{,**}, T. Uemura^{*}, M. Uno^{***}, Y. Kanaoka^{***}*

^{}Osaka Univ., Japan*

*^{**}Ctr. for High-End Molecular Semiconductors, Japan*

*^{***}TRI Osaka, Japan*

OLED5 - 2 Electrical Modeling of a Full Stack Fluorescent Dual Emitter White PIN OLED

14:25

K. Bouzid, H. Doyeux, H. Kanaan

CEA LETI, France

OLED5 - 3 Detection of a Space-Charge Region in an Organic Photoconductive Sensor

14:45

W. Woestenborghs, P. D. Visschere, F. Beunis, K. Neyts, A. Vetsuypens^{}*

Ghent Univ., Belgium

^{}Barco, Belgium*

----- Break -----

15:50 - 17:15

Room A

OLED6: Display Technologies (2)

Chair: S. Enomoto, Toshiba, Japan

Co-Chair: T. Shimizu, NHK, Japan

OLED6 - 1: *Invited* TFT Backplane Technologies with Low Temperature Process for Flexible AMOLED

15:50

H.-H. Hsieh, C.-S. Yang, C.-J. Liu, C.-H. Tsai, C.-H. Fang, C.-S. Chuang

AU Optronics, Taiwan

OLED6 - 2 Flexible AMOLED Encapsulation Architecture Design Integrating with Stress Simulation Profile

16:15

S.-T. Yeh, G. Chen, C.-H. Tsai, Y.-H. Peng, J.-L. Wu, K.-Y. Cheng, L.-Y. Jiang

ITRI, Taiwan

OLED6 - 3 Low Power Consumption of OLED Displays with Highly Efficient Sky Blue

16:35

Y. Kim, H. Kim, J. Yoo, K. Lee, J. Lee, B. Lee, S. Yoon, I. Kang

LG Display, Korea

**OLED6 - 4
16:55**

OLED Based 3D Eyetracking See-Through Data-Glasses

*R. Herold, J. Baumgarten, K. Fehse, U. Vogel,
S. Weber*, U. Heinrich**

Fraunhofer IPMS, Germany

**Interactive Minds, Germany*

Author Interviews and Demonstrations

17:30 – 18:30

IDW/AD '12 Tutorial in Japanese

Organized by SID Japan Chapter

Monday, December 3, 2012

Room B-2, 2F

Kyoto International Conference Center

Detailed information will be announced in October on

<http://www.sidchapters.org/japan/>

Late-News Papers

Due September 28, 2012

Submit a two-page camera-ready manuscript
via IDW website:

<http://www.idw.ne.jp/latenews.html>

IDW '13

The 20th International Display Workshops

December 4-6, 2013

Sapporo Convention Center

Sapporo, Japan

<http://www.idw.ne.jp>

Workshop on 3D/Hyper-Realistic Displays and Systems

Tuesday, December 4

14:20 - 15:50	Room B-2
3D1: Ray-Space Analysis	

Chair: Y. Takaki, Tokyo Univ. of A&T, Japan
Co-Chair: M. Tsuchida, NTT, Japan

3D1 - 1: *Invited* **Light Field Analysis of Autostereoscopic Three-Dimensional Displays**
14:20
J.-H. Park
Chungbuk Nat. Univ., Korea

3D1 - 2 **Stereoscopic Viewing Space Analysis Based on Interocular Differences in Contrast**
14:50
T. Horikoshi, S. Kimura
NTT DoCoMo, Japan

3D1 - 3 **Viewing Space Diagrams to Evaluate Auto-Stereoscopic 3D Displays**
15:10
K. Nakao, T. Higano, N. Kanda, H. Wakemoto
Japan Display Central, Japan

3D1 - 4 **Depth Resolution in 3-D Image**
15:30
J.-Y. Son, M.-C. Park, C.-H. Lee**, O. O. Chernyshov*
Konyang Univ., Korea
**KIST, Korea*
***Joongbu Univ., Korea*

----- Break -----

16:10 - 17:50	Room B-2
3D2: Holography	

Chair: J.-Y. Son, Konyang Univ., Korea
Co-Chair: M. Tsuboi, NTT DoCoMo, Japan

3D2 - 1: *Invited* **Holographic Display Module Using 4k2k-SLM**
16:10
Y. Takaki
Tokyo Univ. of A&T, Japan

3D2 - 2: *Invited* **Fully Updatable Three-Dimensional Holographic Display Device Using Photorefractive Compounds**
16:40
N. Tsutsumi, K. Kinashi, W. Sakai
Kyoto Inst. of Tech., Japan

- 3D2 - 3**
17:10 **Wavefront-Type 3D Display with 8k × 8k Binary Phase Distribution from CG Data**
O. Matoba, N. Ueda, K. Nitta, K. Fukue, M. Sasada*, K. Ueta**
Kobe Univ., Japan
**Dainippon Screen Mfg., Japan*
- 3D2 - 4**
17:30 **Complex Modulation Using a Phase Only SLM**
G. Y. Sung, H. Song, S. Choi, K. Won, H. Kim*, H.-S. Lee*
Samsung Advanced Inst. of Tech., Korea
**Korea Univ., Korea*

Author Interviews and Demonstrations
17:50 – 18:50

Wednesday, December 5

9:00 - 10:20	Room B-1
3D3/VHF3: 3D Crosstalk Evaluation	

Chair: J.-H. Park, Chungbuk Nat. Univ., Korea
Co-Chair: T. Kurita, NHK, Japan

- 3D3/**
VHF3 - 1
9:00 **Perceptual Correspondence of Gray-to-Gray Crosstalk Equations for Stereoscopic Displays**
*Z. Xia, X. Li, Y. Cui, L. Chen, K. Teunissen**
Southeast Univ., China
**TP Vision, the Netherlands*
- 3D3/**
VHF3 - 2
9:20 **Visibility Thresholds for Crosstalk on Stereoscopic Displays**
Y.-Y. Ko, Y.-L. Chen, Y.-J. Chang, C.-W. Chen, R.-L. Rong
AU Optronics, Taiwan
- 3D3/**
VHF3 - 3
9:40 **Camera-Based Cross-Talk and Uniformity Measurement of Multi-View Autostereoscopic 3D Display**
C.-F. Hung, F.-C. Tsai, C.-P. Ho
AU Optronics, Taiwan
- 3D3/**
VHF3 - 4
10:00 **A Novel Method to Evaluate the 3D Crosstalk of Stereoscopic 3D Display**
H.-T. Lin, S.-C. Lin, C.-C. Chiu
Chunghwa Picture Tubes, Taiwan

----- Break -----

10:50 - 11:50	Room B-1
3D4/VHF4: 3D Image Quality (1)	

Chair: T. Horikoshi, NTT DoCoMo, Japan
 Co-Chair: A. Yoshida, Sharp, Japan

**3D4/
VHF4 - 1
10:50** **Quality Control of Active Glass 3D Displays Using
Temporal Measurements**
*P. Boher, T. Leroux, T. Bignon, P. Blanc**
ELDIM, France
**Labs. d'Essais de la FNAC, France*

**3D4/
VHF4 - 2
11:10** **New Crosstalk Index of Shutter Glasses 3D Display**
C. W. Chen, Q. Liao, C. C. Hsiao
Shenzen China Star Optoelect. Tech., China

**3D4/
VHF4 - 3
11:30** **The Use of a Small-Sized Autostereoscopic Display:
Context Influence on User Experiences**
M. Pölönen, M. Salmimaa
Nokia, Finland

----- Lunch -----

15:50 - 17:10	Room B-1
VHF5/3D5: 3D Image Quality (2)	

Chair: N. Hiruma, NHK, Japan
 Co-Chair: K. Yamamoto, NICT, Japan

**VHF5/
3D5 - 1
15:50** **Stereo-Resolution Analysis Based on Reading
Performance**
Y.-Y. Lai, S.-F. Y. Mao
ITRI, Taiwan

**VHF5/
3D5 - 2
16:10** **The Quantization of 3D Resolution Based on Human
Perception**
Y.-L. Chen, C.-W. Chen, R.-L. Dong
AU Optronics, Taiwan

**VHF5/
3D5 - 3
16:30** **3D Depth Detection in Multi-View Displays**
*S.-F. Yang-Mao, Y.-T. Lin, T.-M. Wang, C.-H. Ho,
H.-W. Chen, C.-S. Wu*
ITRI, Taiwan

**VHF5/
3D5 - 4
16:50** **Accommodation Response of Super Multi-View
Display Using Directional Light in Monocular
Condition**

J.-H. Jung, J. Kim, S.-G. Park, S. Y. Choi, D. Nam*,
B. Lee*

Seoul Nat. Univ., Korea

**Samsung Advanced Inst. of Tech., Korea*

Author Interviews and Demonstrations

17:30 – 18:30

Thursday, December 6

10:50 - 12:30	Room B-1
3D6: Digital Museum of Kyoto Gion Festival	

Chair: M. Tsuchida, NTT, Japan

Co-Chair: K. Makita, AIST, Japan

**3D6 - 1:
10:50** ***Invited* Digital Museum of Gion Festival within
Virtual Kyoto**

*K. Yano, T. Seto, D. Kawahara**

Ritsumeikan Univ., Japan

**CAD Ctr., Japan*

**3D6 - 2:
11:15** ***Invited* A Virtual Tour of Gion Festival Yamahoko
Parade**

L. Li, W. Choi, K. Hachimura, T. Nishiura, K. Yano*

Ritsumeikan Univ., Japan

**Gunma Nat. College of Tech., Japan*

**3D6 - 3:
11:40** ***Invited* Particle-Based Translucent Visualization of
Funeboko for the Gion Festival**

*S. Tanaka, M. Uemura, M. Yamamoto, K. Hasegawa,
S. Nakata*

Ritsumeikan Univ., Japan

**3D6 - 4:
12:05** ***Invited* Digital Archiving and Large-Scale Visuo-
Haptic Display of Large 3D Woven Cultural Artifacts**

H. T. Tanaka, M. Tsuchida, W. Wakita*

Ritsumeikan Univ., Japan

**NTT, Japan*

----- Lunch -----

14:00 - 17:00

Event Hall

Poster 3Dp: 3D/Hyper-Realistic Displays and Systems

- 3Dp - 1** **Perceived Depth Change of Depth-Fused 3D Display by Changing Distance between Front and Rear Plane**
A. Tsunakawa, T. Soumiya, Y. Horikawa, H. Yamamoto, S. Suyama
Univ. of Tokushima, Japan
- 3Dp - 2** **Interference Experiment for 3D and 2D Discernment**
J.-H. Gu, J.-K. Liao, J.-W. Huang, Y.-L. Wang, H.-Y. Chen
Nat. Kaohsiung First Univ. of S&T, Taiwan
- 3Dp - 3** **An Evaluation Method for 3D Flicker**
Q. Liu, C. Lin, Y. Li
AU Optronics Trade, China
- 3Dp - 4** **To Reduce the Flicker and Crosstalk by Outputting the Data Frame Rate of 130 Hz on the Shutter-Type 3D Display**
L. Liao, P. Lin, C. Y. Hung
Shenzhen China Star Optoelect. Tech., China
- 3Dp - 5** **While Viewing 3D Video-Clips, Accommodative Focus and Convergence are in Harmony with Virtual Image Position**
M. Miyao, T. Shiomi, T. Kojima, K. Uemoto, H. Ishio, H. Takada***
Nagoya Univ., Japan
**Fukuyama City Univ., Japan*
***Univ. of Fukui, Japan*
- 3Dp - 6** **Evaluate Visual Comfort of 2D/3D Mixing Contents on 3D Glasses-Free Panel**
Y.-J. Li, H.-S. Chen, C.-W. Chen, Y.-L. Chen*, R.-L. Dong**
Nat. Taiwan Univ. of S&T, Taiwan
**AU Optronics, Taiwan*
- 3Dp - 7** **A Study of Visual Fatigue When Viewing 3D Images with Pseudoscopic Vision**
H. Isono
Tokyo Denki Univ., Japan

- 3Dp - 8 3D Quality Evaluation and Measurement Standard of Film Patterned Retarder Stereoscopic Display**
H. Cui, C. Pan, D. Li, J. Wang, F. Tong, W. Zhang, B. Si, T.-C. Chung, T.-S. Jen
Infovision Optoelect., China
- 3Dp - 9 Color Analysis for Lens Type 3D Display**
C.-T. Chang, W.-L. Chen, C.-H. Shih, W.-M. Huang
AU Optronics, Taiwan
- 3Dp - 10 New Applications of Viewing Angle Polarization Analysis for Characterization of Displays**
P. M. Boher, T. Leroux, T. Bignon, V. Collomb-Patton
ELDIM, France
- 3Dp - 11 Full Screen 3D Visual Uniformity Design for the Multi-View Slant LC Barrier autostereoscopic Display**
C. Pan, B. Li, D. Li, H. G. Cui, J. Wang, B. Si, T. S. Jen
Infovision Optoelect., China
- 3Dp - 12 Still Gamma and Single Eye Overdrive for Eliminating Crosstalk in Shutter-Type 3D Display**
Y. Chen
Shenzhen China Star Optoelect. Tech., China
- 3Dp - 13 An Integrated Back-End System Design for Autostereoscopic Display**
M.-C. Weng, Y.-C. Chen, H.-H. Chen, H.-M. Su
Chunghwa Picture Tubes, Taiwan
- 3Dp - 14 Lighting Position Dependence and Observation Angle Dependence of Perceived Depth in Arc 3-D Display**
N. Yamada, C. Maeda, S. Suyama, H. Yamamoto
Univ. of Tokushima, Japan
- 3Dp - 15 Active Retarder 3D Display Technology**
C.-W. Li, C.-H. Hsu, C.-Y. Fang, C.-H. Yeh, W.-T. Liao, W.-J. Tsai, F.-C. Wu, W.-C. Wang, L.-H. Tsai
WINTEK, Taiwan
- 3Dp - 16 Dynamic Wavefront Changes by a Liquid-Crystal Prism**
F. Kimura, T. Yamamoto, S. Toyama, S. Suyama, I. Ishii, H. Yamamoto*
Univ. of Tokushima, Japan
**Hiroshima Univ., Japan*

- 3Dp - 17 Optimized Double LC Layer Configuration Design for LC Barrier Auto-Stereoscopic Display**
D. Li, H. Cui, C. Pan, J. Wang, B. Si, T. S. Jen
Infovision Optoelect., China
- 3Dp - 18 Full Resolution Auto-Stereoscopic Active Barrier 3D Liquid Crystal Display**
H.-C. Tseng, M.-K. Kang, I.-F. Wang, K.-C. Lee, C.-H. Yu
HannStar Display, Taiwan
- 3Dp - 19 An Adaptive Adjustment System for Achieving Liquid Crystal Lens with High Performance**
X. Z. Tang, Z. F. Zou, B. Y. Si, N. J. Yu, T. C. Chung, T. S. Jen, J. G. Lu, H. P. D. Shieh***
Infovision Optoelect., China
**Shanghai Jiao Tong Univ., China*
***Nat. Chiao Tung Univ., China*
- 3Dp - 20 Experimental Estimation of the Dihedral Corner Reflector Array for Floating Imaging**
*K. Nitta, K. Ogawa, T. Akashi, O. Matoba, S. Maekawa**
Kobe Univ., Japan
**Nat. Inst. of Info. & Commun. Tech., Japan*
- 3Dp - 21 Thermal and Visual 3D Display by Use of Crossed-Mirror Array**
R. Kujime, S. Suyama, H. Yamamoto
Univ. of Tokushima, Japan
- 3Dp - 22 Volumetric Display Based on Three-Dimensional Optical Scanning of an Inclined Image Plane Using an Image Rotator**
Y. Maeda, D. Miyazaki, T. Mukai
Osaka City Univ., Japan
- 3Dp - 23 Autostereoscopic 3D Pictures on Optically Rewritable Electronic Paper**
X. Wang, L. Wang, J. Sun, A. Srivastava, V. G. Chigrinov, H.-S. Kwok
Hong Kong Univ. of S&T, Hong Kong
- 3Dp - 24 3D Display by Wavefront Reconstruction Using 1D Binary Spatial Light Modulator with Rectangle-Shape Pixel**
A. Ueno, K. Kobayashi, K. Nitta, O. Matoba, K. Fukue, M. Sasada*, K. Ueta**
Kobe Univ., Japan
**Dainippon Screen Mfg., Japan*

- 3Dp - 25 Holographic Collimator for Reconstruction of Display Holograms**
H. T. Lin, W.-C. Su, Y.-W. Wang
Nat. Changhua Univ. of Education, Taiwan
- 3Dp - 26 Special-Purpose Computer HORN-7 with FPGA Technology for Phase Modulation Type Electro-Holography**
N. Okada, D. Hirai, Y. Ichihashi, A. Shiraki **, T. Kakue , T. Shimobaba, N. Masuda, T. Ito*
Chiba Univ., Japan
**NICT, Japan*
***Kisarazu Nat. College of Tech., Japan*
- 3Dp - 27 Accelerating Computational Time of Image Reconstruction Process of Parallel Phase-Shifting Digital Holography by GPU with CUDA**
T. Kakue, T. Shimobaba, N. Masuda, T. Ito
Chiba Univ., Japan
- 3Dp - 28 Stereo Video Rectification by Using Interpolated Homography Matrixes**
T.-H. Lin
Nat. Taiwan Univ. of S&T, Taiwan
- 3Dp - 29 Augmented Reality Head-Up-Display**
S.-W. Cheng, C.-B. Chiang, Y.-F. Su, J.-T. Hsu
Automotive Res. & Testing Ctr., Taiwan
- 3Dp - 30 Fatigue-Proof Intelligent Shoot-Right 3D Video Recording System-AUOSOME-3D**
C. P. Chen, C. P. Lin, T. I. Wu, C. C. Yu, H. Li, I. H. Chen, J. L. Tung, C. W. Chen*, N. W. Chang*, I. L. Chen*, C. H. Wen**, P. L. Sun**, H. H. Chen***
Nat. Taiwan Univ., Taiwan
**AU Optronics, Taiwan*
***Nat. Taiwan Univ. of S&T, Taiwan*

Author Interviews and Demonstrations

17:30 – 18:30

Friday, December 7

9:00 - 10:20	Room E
3D7: Novel 3D Approach	

Chair: Y.-P. Huang, Nat. Chiao Tung Univ., Taiwan
 Co-Chair: Y. Ichihashi, NICT, Japan

- 3D7 - 1**
9:00 **A Moiré Display**
V. Saveljev, S.-K. Kim
KIST, Korea
- 3D7 - 2**
9:20 **Reconstruction of Dynamic Digital Holographic Image Using Modified Gerchberg-Saxton Algorithm**
G.-S. Huang, Q.-L. Deng, H.-T. Chang, H.-E. Hwang**, C.-Y. Chen*
Nat. Yunlin Univ. of S&T, Taiwan
**Nat. Chiao Tung Univ., Taiwan*
***Chung Chou Univ. of S&T, Taiwan*
- 3D7 - 3**
9:40 **Analysis on the Characteristics of Multi-View Display System and Eye Detection-Based Crosstalk Reduction**
J. Park, D. Nam
Samsung Elect., Korea
- 3D7 - 4**
10:00 **EEG Measurement of 3D Cognitive Fatigue Caused by Viewing Mobile 3D Content**
S. Mun, **, M.-C. Park*, ***
**Univ. of S&T, Korea*
***KIST, Korea*

----- Break -----

10:50 - 12:20	Room E
3D8: Device and Approach for 3D Display	

Chair: S. Iwasawa, NICT, Japan
Co-Chair: H. Yamamoto, Tokushima Univ., Japan

- 3D8 - 1:**
10:50 **Invited Development of Time-Multiplexed Backlight on Auto-Stereoscopic LCD for Multi-User and Wide-Viewing Angle Function**
Y.-P. Huang, C.-H. Ting, C.-Y. Hsu, C.-H. Yang
Nat. Chiao Tung Univ., Taiwan
- 3D8 - 2**
11:20 **A High Resolution Multi-View 3D Display Using Switchable Liquid Crystal Lens**
Y. Yang, T. Koito, N. Takasaki
Japan Display West, Japan
- 3D8 - 3**
11:40 **Study on Crosstalk Improvement of TN-LC Parallax Barrier Type Autostereoscopic Display**
C.-Y. Chen, B.-S. Lin, Q.-L. Deng*, J.-K. Siao, H.-W. Lin*
Nat. Yunlin Univ. of S&T, Taiwan
**Nat. Chiao Tung Univ., Taiwan*

3D8 - 4 **A Method of Improving the Flicker in Low Frequency Time-Sequential 3D Display**
12:00 *C. Ye, C.-K. Chang, B. Fang, J. Qiu, C.-C. Lin*
Shenzhen China Star Optoelect. Tech., China

----- Lunch -----

14:00 - 15:30	Room E
3D9: Ray-Based Realistic 3D Display	

Chair: M.-C. Park, KIST, Korea
 Co-Chair: T. Koike, Hitachi, Japan

3D9 - 1: ***Invited* Behind the Screen of NICT's 200-in. Automultiscopic Display**
14:00 *S. Iwasawa, M. Kawakita*
NICT, Japan

3D9 - 2 **Autostereoscopic Display with Parallel Light Rays Using Multi-Projectors and Lenticular Screen**
14:30 *C.-Y. Chen, C.-J. Chou, S.-C. Cheng, C.-S. Wu, Y.-H. Chen, Y.-H. Chou, C.-H. Tsai*
ITRI, Taiwan

3D9 - 3 **Reduction of Moiré in Multilayer Integral Imaging Display**
14:50 *Y. Ueda, H. Kakeya*
Univ. of Tsukuba, Japan

3D9 - 4 **Hybrid Full-Resolution 3D Display Using Time-Sequential 8.0-in. WVGA OCB-LCD**
15:10 *H. Miki, D. Suzuki, N. Kanda, S. Araki, E. Higano, K. Nishiyama, K. Nakao*
Japan Display Central, Japan

----- Break -----

15:50 - 16:50	Room E
3D10: Quality Evaluation	

Chair: C.-Y. Chen, ITRI, Taiwan
 Co-Chair: T. Mishina, NHK, Japan

3D10 - 1 **Empirical Investigation Based on Depth Cues for 2D-to-3D Conversion Evaluations**
15:50 *C.-H. Wen, Y.-H. Li, S.-L. Tsai, Y.-L. Chen*, C.-W. Chen*, R.-L. Dong**
Nat. Taiwan Univ. of S&T, Taiwan
**AU Optronics, Taiwan*

**3D10 - 2 Optical Simulation of Crosstalk and Viewing Angle
16:10 for 3D Patterned Retarder Display**

*C. C. Hsiao, Z. Yang, C. W. Chen
Shenzen China Star Optoelect. Tech., China*

**3D10 - 3 3D Image Quality Assessments for Auto-
16:30 Stereoscopic Displays**

K.-H. Yen, C. Sato, C. Wang
Underwriters Labs. Taiwan, Taiwan
UL LLC, USA

Author Interviews and Demonstrations

17:30 – 18:30

Supporting Organizations:

3-D Image Technology Research Group, ITE
Holographic Display Artists and Engineers Club

Late-News Papers

Due September 28, 2012

Submit a two-page camera-ready manuscript
via IDW website:

<http://www.idw.ne.jp/latenews.html>

Workshop on Applied Vision and Human Factors

Tuesday, December 4

14:20 - 15:50	Room C-1
VHF1: Color (1)	

Chair: N. Ohta, Rochester Inst. of Tech., USA
Co-Chair: T. Matsumoto, Sony, Japan

VHF1 - 1: *Invited* Assessing Colour Difference for Images
14:20
M. R. Luo
Univ. of Leeds, UK

VHF1 - 2
14:50
Image Enhancement Based on Perceptual Correlates of Lightness/Chroma in CIECAM02 Color Space
M.-C. Lo, J.-L. Lin, W.-B. Li
Shih Hsin Univ., Taiwan

VHF1 - 3
15:10
Possible Color Reproduction Methods to Obtain High Luminance and Wide Gamut on Reflective Displays
M. Kanazawa
NHK-ES, Japan

VHF1 - 4
15:30
An Analytical Strategy for Colour Vision Deficiency Using a Digital Colour Vision Test Plate
*Y.-C. Tsai, H.-S. Chen, M. R. Luo**
Nat. Taiwan Univ. of S&T, Taiwan
**Univ. of Leeds, UK*

----- Break -----

16:10 - 17:30	Room C-1
DES2/VHF2: Color (2)	

Chair: M. R. Luo, Univ. of Leeds, UK
Co-Chair: T. Fujine, Sharp, Japan

DES2/
VHF2 - 1:
16:10
***Invited* Measuring Light and Color: Defining Color Rendering Property of Artificial Illuminants**
N. Ohta
Rochester Inst. of Tech., USA

**DES2/
VHF2 - 2:
16:40** ***Invited* Development of Laser Backlighting LCD
Television**
*E. Niikura, R. Murase, S. Kagawa, N. Nakano,
A. Nagase, H. Sakamoto, T. Sasagawa, K. Minami,
H. Sugiura, K. Shimizu, M. Hanai
Mitsubishi Elec., Japan*

**DES2/
VHF2 - 3
17:10** **The Effect of Lightness Component on Preferred
Skin Color Reproduction of a Display**
S.-H. Chen, H.-S. Chen, N. Ohta, R. Luo**, N.-C. Hu
Nat. Taiwan Univ. of S&T, Taiwan
*Rochester Inst. of Tech., USA
**Univ. of Leeds, UK*

Author Interviews and Demonstrations
17:50 – 18:50

Wednesday, December 5

9:00 - 10:20	Room B-1
3D3/VHF3: 3D Crosstalk Evaluation	

Chair: J.-H. Park, Chungbuk Nat. Univ., Korea
Co-Chair: T. Kurita, NHK, Japan

**3D3/
VHF3 - 1
9:00** **Perceptual Correspondence of Gray-to-Gray
Crosstalk Equations for Stereoscopic Displays**
Z. Xia, X. Li, Y. Cui, L. Chen, K. Teunissen
Southeast Univ., China
TP Vision, the Netherlands

**3D3/
VHF3 - 2
9:20** **Visibility Thresholds for Crosstalk on Stereoscopic
Displays**
*Y.-Y. Ko, Y.-L. Chen, Y.-J. Chang, C.-W. Chen, R.-L. Rong
AU Optronics, Taiwan*

**3D3/
VHF3 - 3
9:40** **Camera-Based Cross-Talk and Uniformity
Measurement of Multi-View Autostereoscopic 3D
Display**
*C.-F. Hung, F.-C. Tsai, C.-P. Ho
AU Optronics, Taiwan*

**3D3/
VHF3 - 4
10:00** **A Novel Method to Evaluate the 3D Crosstalk of
Stereoscopic 3D Display**
*H.-T. Lin, S.-C. Lin, C.-C. Chiu
Chunghwa Picture Tubes, Taiwan*

----- Break -----

10:50 - 11:50	Room B-1
3D4/VHF4: 3D Image Quality (1)	

Chair: T. Horikoshi, NTT DoCoMo, Japan
 Co-Chair: A. Yoshida, Sharp, Japan

**3D4/
VHF4 - 1
10:50** **Quality Control of Active Glass 3D Displays Using
Temporal Measurements**
*P. Boher, T. Leroux, T. Bignon, P. Blanc**
ELDIM, France
**Labs. d'Essais de la FNAC, France*

**3D4/
VHF4 - 2
11:10** **New Crosstalk Index of Shutter Glasses 3D Display**
C. W. Chen, Q. Liao, C. C. Hsiao
Shenzen China Star Optoelect. Tech., China

**3D4/
VHF4 - 3
11:30** **The Use of a Small-Sized Autostereoscopic Display:
Context Influence on User Experiences**
M. Pölönen, M. Salmimaa
Nokia, Finland

----- Lunch -----

15:50 - 17:10	Room B-1
VHF5/3D5: 3D Image Quality (2)	

Chair: N. Hiruma, NHK, Japan
 Co-Chair: K. Yamamoto, NICT, Japan

**VHF5/
3D5 - 1
15:50** **Stereo-Resolution Analysis Based on Reading
Performance**
Y.-Y. Lai, S.-F. Y. Mao
ITRI, Taiwan

**VHF5/
3D5 - 2
16:10** **The Quantization of 3D Resolution Based on Human
Perception**
Y.-L. Chen, C.-W. Chen, R.-L. Dong
AU Optronics, Taiwan

**VHF5/
3D5 - 3
16:30** **3D Depth Detection in Multi-View Displays**
*S.-F. Yang-Mao, Y.-T. Lin, T.-M. Wang, C.-H. Ho,
H.-W. Chen, C.-S. Wu*
ITRI, Taiwan

**VHF5/
3D5 - 4
16:50** **Accommodation Response of Super Multi-View
Display Using Directional Light in Monocular
Condition**

J.-H. Jung, J. Kim, S.-G. Park, S. Y. Choi, D. Nam*,
B. Lee*

Seoul Nat. Univ., Korea

**Samsung Advanced Inst. of Tech., Korea*

Author Interviews and Demonstrations

17:30 – 18:30

Thursday, December 6

9:00 - 10:30	Room B-1
VHF6: Wide-Angle and Head-Up Display Human Factors	

Chair: T. Kurita, NHK, Japan
Co-Chair: A. Yoshida, Sharp, Japan

VHF6 - 1: 9:00 ***Invited* Education for Disaster Prevention Using
Ultra-Realistic Dome Images –Learning Through
Images of the Great East Japan Earthquake–**

M. Okyudo
Wakayama Univ., Japan

VHF6 - 2 9:30 **Development of Perceived Depth Position Control
Method with a Preceding Obstacle for Monocular
Head-Up Display Images**

A. Hotta, T. Sasaki, A. Moriya, H. Okumura
Toshiba, Japan

VHF6 - 3 9:50 **Effect of a Head-Up Display on Reaction Time in a
Skiing Simulation**

R. Hoskinson, M. Lolic, H. Abdollahi
Recon Instrs., Canada

VHF6 - 4 10:10 **A LC Lens Array Based Projection System for Near
Eye Displays**

S. Valyukh, J. De Smet, H. De Smet*,***
Linköping Univ., Sweden
**imec, Belgium*
***Ghent Univ., Belgium*

----- Break -----

14:00 - 17:00

Event Hall

Poster VHFp: Applied Vision and Human Factors

- VHFp - 1** **Detection of Analog Meter Indicator Using Combinational Hough Transform**
J. Mizutani, F. Saitoh
Gifu Univ., Japan
- VHFp - 2** **Fast Detection Method for Perceptive Curves**
T. Takagi, F. Saitoh
Gifu Univ., Japan
- VHFp - 3** **Reliable Image Template Matching Using Adaptive Block Separation**
A. Hirose, F. Saitoh
Gifu Univ., Japan
- VHFp - 4** **High-Speed Image Matching Using Templates with Detection History Learning**
S. Nakamura, F. Saitoh
Gifu Univ., Japan
- VHFp - 5** **Correspondence between Subjective Assessment and Objective Computational Metric for Viewing Angle**
Y.-Y. Lin, Ch.-H. Wen, P.-C. Huang, T.-W. Hsu*, K.-C. Chang**
Nat. Taiwan Univ. of S&T, Taiwan
**AU Optronics, Taiwan*
- VHFp - 6** **Three-Layered Secure Display Based on Polarization Modulation**
K. Uchida, S. Suyama, H. Yamamoto
Univ. of Tokushima, Japan
- VHFp - 7** **Analysis of Drop Mura in Fringe Field Switching Liquid Crystal Display**
W. Zhang, S. H. Song, X. Chen, T. Y. Min
BOE Optoelect. Tech., China
- VHFp - 8** **Plural Image Areas Searching by Immune System Type Genetic Algorithm with Two Memory Mechanisms**
Y. Shimohira, F. Saitoh
Gifu Univ., Japan

- VHFp - 9** **Curved Mirror Detection Using Edge Pre-Processing Based on Curvature**
T. Kawamoto, F. Saitoh
Gifu Univ., Japan
- VHFp - 10** **Resolution of Patterned Retarder 3D Displays**
S. Ge, C. Lin
AU Optronics Trade, China
- VHFp - 11** **The Comfort Zone and Fusion Limit of a Foreground Object with Its Background on a Large Format 3D Display**
P.-L. Sun, T.-H. Tseng, Y.-L. Chen, C.-W. Chen*, R.-L. Dong**
Nat. Taiwan Univ. of S&T, Taiwan
**AU Optronics, Taiwan*

Author Interviews and Demonstrations

17:30 – 18:30

Friday, December 7

10:50 - 12:20	Room C-2
VHF7: Human Factors and Visual Cognition	

Chair: S. Clippingdale, NHK, Japan
 Co-Chair: K. Sakamoto, Panasonic, Japan

- VHF7 - 1: 10:50** ***Invited* JAMA Guidelines for In-Vehicle Display Systems**
Y. Nakamura
Honda R&D, Japan
- VHF7 - 2 11:20** **Study on User Interface for Flexible Displays**
S.-P. Wang, M.-Y. Lu, S.-H. Wu, C.-C. Liang
ITRI, Taiwan
- VHF7 - 3 11:40** **Visual Comfort for Older People Reading on a Tablet Computer under Dark Conditions**
H.-P. Huang, Y.-H. Bai, L.-C. Ou
Nat. Taiwan Univ. of S&T, Taiwan
- VHF7 - 4 12:00** **The Influence of Recognition of Illumination upon Depth Perception**
K. Oba, K. Nagai, H. Kaji, T. Ishikawa, M. Ayama
Univ. of Utsunomiya, Japan

----- Lunch -----

14:00 - 15:20	Room C-2
VHF8: Image Format and Ergonomic Design of HD/UHDTV	

Chair: Y. Shimodaira, Shizuoka Univ., Japan
 Co-Chair: K. Masaoka, NHK, Japan

VHF8 - 1: 14:00 *Invited* SUPER Hi-VISION Image Format and Its Standardization

*M. Sugawara, K. Masaoka, M. Emoto, Y. Nishida,
 Y. Shishikui
 NHK, Japan*

VHF8 - 2: 14:30 *Invited* Summary and Impact of the Ergonomic Design Guidelines for Flat Panel Display Televisions Issued by the Japan Ergonomics Society

*Y. Hisatake, S. Kubota**
Japan Display Central, Japan
**Seikei Univ., Japan*

VHF8 - 3: 15:00 *Size Effect Revisited : Subjective Image Quality of HDTV Images as a Function of Visual Angle and Display Size*

*T. Kanda, T. Fujine, M. Sugino
 Sharp, Japan*

----- Break -----

15:50 - 16:50	Room C-2
VHF9: Display Measurement	

Chair: Y. Hisatake, Japan Display Central, Japan
 Co-Chair: J. Bergquist, Nokia Japan, Japan

VHF9 - 1: 15:50 *Image Quality Evaluation for LCD by Employing Local Dimming Backlight*

*M.-H. Yang, S.-Y. Pan, K.-C. Chang, C.-Y. Lee
 AU Optronics, Taiwan*

VHF9 - 2: 16:10 *A Novel Method of Display Evaluation through Development of Image-Measurement-Based Metric*

*S.-A. K. Ha, H.-H. Park, M.-W. Lee, J.-H. Kim, H.-G. Bae
 Samsung Elect., Korea*

VHF9 - 3: 16:30 *Improved Picture Quality on Multi-Domain Polymer Sustained Alignment LCD Technology*

*K.-C. Tien, C.-H. Liao, M.-H. Wu, S.-M. Gong,
 J.-Y. Chung, W.-H. Hsu, J.-J. Su
 AU Optronics, Taiwan*

Author Interviews and Demonstrations

17:30 – 18:30

Supporting Organizations:

Information Display Research Committee, ITE

Technical Committee on Electronic Information Displays, Electronics Society, IEICE

IDW Best Paper Award

IDW Outstanding Poster Paper Award

These awards will go to the most outstanding papers selected from those presented at IDW/AD '12.

The 2012 award winners will be announced on the IDW website: <http://www.idw.ne.jp/award.html>

RECEPTION

Wednesday, December 5, 2012

19:00 – 21:00

Sakura (1F)

Kyoto International Conference Center

See page 12 for details

IDW '13

The 20th International Display Workshops

December 4-6, 2013

Sapporo Convention Center

Sapporo, Japan

<http://www.idw.ne.jp>

Workshop on Projection and Large-Area Displays and Their Components

Thursday, December 6

9:00 - 10:35	Room B-2
PRJ1: High Reality	

Chair: Y. W. Li, Himax Display, Taiwan
 Co-Chair: T. Suzuki, JVC Kenwood, Japan

PRJ1 - 1: 9:00 *Invited* **New Markets for Projection System and Ongoing Breakthrough Technology**
J. Kimura, M. Takaso
Techno Syss. Res., Japan

PRJ1 - 2: 9:25 *Invited* **Realistic Image Display Based on High-Fidelity and Wide-Gamut Color Reproduction**
M. Yamaguchi
Tokyo Inst. of Tech., Japan

PRJ1 - 3: 9:50 *Invited* **Autostereoscopic AR Display Based on Overlaid Multi-Projection 3D Display**
T. Koike, K. Utsugi, M. Oikawa, M. Yamasaki
Hitachi, Japan

PRJ1 - 4: 10:15 **Ultra-High Native Contrast 4K LCOS Projector Using e-Shift Technology**
Y. Kojima
JVC Kenwood, Japan

----- Break -----

10:50 - 11:11	Room B-2
Short Presentation PRJp: Projection and Optics	

Chair: H. Kanayama, Panasonic, Japan
 Co-Chair: H. Sugiura, Mitsubishi, Japan

All authors of poster papers for the PRJp session will give brief oral presentations of 3 minutes in advance.

----- Lunch -----

14:00 - 17:00	Event Hall
Poster PRJp: Projection and Optics	

- PRJp - 1** **Compact Liquid Crystal Circular Polarization Switch for 3D Laser Pico-Projectors**
S. Kato, T. Takeishi, T. Nozaki, M. Ide
Citizen Holdings, Japan
- PRJp - 2** **Integrated Waveguide-Type Red-Green-Blue Beam Combiners for Compact Projection-Type Displays**
Y. Kato, Y. Kakinoki, R. Morimoto, T. Katsuyama
Univ. of Fukui, Japan
- PRJp - 3** **Novel Illumination Architecture with LED Pump Source and Remote Phosphor for High Brightness Data Projection Systems**
A. Kazmierski, M. Lim, S. Bellosguardo
Luminus Devices, USA
- PRJp - 4** **Liquid Cooled Recycling LED Array for Digital Projectors**
K. Li
Wavien, USA
- PRJp - 5** **Zoomable Color Holographic Projection Method without a Zoom Lens**
T. Shimobaba, T. Kakue, N. Masuda, T. Ito
Chiba Univ., Japan
- PRJp - 6** **Optical Lens Design for a Virtual Image Projector in a Helmet**
H. T. Lin, W.-C. Su, P.-K. Chang, Y.-W. Wang
Nat. Changhua Univ. of Education, Taiwan
- PRJp - 7** **Optics-Based Dielectrophoretic Technology for Cells Manipulating**
H.-H. Chen, H.-H. Lo, C.-C. Lin, J.-C. Chen
ITRI, Taiwan

Author Interviews and Demonstrations
 17:30 – 18:30

Friday, December 7

9:00 - 10:25	Room B-1
PRJ2: Vehicle Displays	

Chair: D. Cuypers, imec, Belgium
 Co-Chair: K. Ohara, Texas Instrs., Japan

PRJ2 - 1: Invited Development of a Rear Projection Free-Form Display

9:00
*S. Nakahara, M. Kuwata, T. Kumagai, W. Yamazaki,
 T. Yagisawa, T. Matsubara, K. Kojima, A. Michimori,
 K. Minami, H. Sugiura
 Mitsubishi Elec., Japan*

PRJ2 - 2 Development of Full-Color Laser Head-Up Display

9:25
*Y. Tanahashi, O. Kasono, T. Yanagisawa, T. Nomoto,
 I. Kikuchi, T. Ezuka, K. Nakamura, H. Takahashi,
 Y. Imasaka, Y. Tsuchida, T. Shimizu
 Pioneer, Japan*

PRJ2 - 3 Combiner for Head-up Displays Using Partial Transparent Fresnel Reflector

9:45
*K. Horiuchi, S. Shimakawa, M. Inomoto, N. Okada,
 T. Sasaki, H. Okumura
 Toshiba, Japan*

PRJ2 - 4 Projection Technology for Future Airplane Cockpits

10:05
D. Cuypers^{}, H. D. Smet^{**}, X. Hugel^{***}, G. Dubroca^{***}
^{*}imec, Belgium
^{**}Ghent Univ., Belgium
^{***}Optinvent, France*

----- Break -----

10:50 - 12:15	Room B-1
PRJ3: Components	

Chair: P. Rudy, Soraa, USA
 Co-Chair: S. Shikama, Setsunan Univ., Japan

PRJ3 - 1: Invited New Progress of LCOS Using a Fringe-Field Color Filter

10:50
*Y. W. Li, K.-H. Fanchiang, H.-C. Kuo, H.-C. Tsai
 Himax Display, Taiwan*

PRJ3 - 2
11:15 **Speckle Contrast as Low as LED for High Luminance Phosphor-Converted Lamp Excited by InGaN/GaN Blue Laser Diodes**

J. Kinoshita, Y. Ikeda, Y. Takeda, Y. Kawasaki, M. Ueno, Y. Matsuba, A. Heike

Harison Toshiba Lighting, Japan

PRJ3 - 3
11:35 **Speckle Reduction Within a Single One Microsecond Laser Pulse**

F. Shevlin

Dyoptyka, Ireland

PRJ3 - 4
11:55 **Single and Dual Lamp System Using DPR for Digital Cinema Projectors**

K. Li

Wavien, USA

----- Lunch -----

14:00 - 15:10	Room B-2
PRJ4: Solid State Lighting	

Chair: F. Shevlin, Dyoptyka, Ireland

Co-Chair: M. Sakai, Ushio, Japan

PRJ4 - 1: ***Invited* Recent Progress in Green and Blue InGaN Laser Diodes for Projection Display Applications**
14:00

J. W. Raring, M. C. Schmidt, C. Poblenz, H. Huang, C. Bai, P. Rudy, J. S. Speck, S. P. DenBaars, S. Nakamura

Soraa, USA

PRJ4 - 2: ***Invited* Green-to-Yellow Spectral Region CW Operation of BeZnCdSe Quantum-Well Laser Diodes**
14:25

S. Tanaka, S. Fujisaki, J. Kasai, S. Tsuji, R. Akimoto, T. Hasama*, H. Ishikawa**

Hitachi, Japan

**AIST, Japan*

PRJ4 - 3
14:50 **High Efficiency and Highly Reliable 638 nm Broad Stripe Laser Diode for Display Applications**

T. Yagi, N. Shimada, T. Nishida, H. Mitsuyama, M. Miyashita

Mitsubishi Elec., Japan

Author Interviews and Demonstrations

17:30 – 18:30

Supporting Organizations:

Information Display Research Committee, ITE

Laser Display Technology Research Group, Optical Society of Japan

Workshop on Electronic Paper

Tuesday, December 4

14:20 - 15:55

Room D

EP1: Electrophoretic Displays

Chair: T. Kitamura, Chiba Univ., Japan

Co-Chair: M. Tsuchiya, E-ink, Japan

EP1 - 1: *Invited* Color Electrophoretic e-Paper Using Independently Movable Colored Particles

14:20

*N. Hiji, Y. Machida, Y. Yasuo, K. Shigemura**

Fuji Xerox, Japan

**NLT Techs., Japan*

EP1 - 2: *Invited* Bright e-Skin Technology and Applications

14:45

K.-M. H. Lenssen

Philips Res., the Netherlands

EP1 - 3: *Invited* High Performance Particle Materials and Fluids for Colour Filter Free, Colour Electrophoretic Displays

15:10

M. Goulding, L. Farrand, A. Smith, H. Wilson, R. Kemp, T. Schwalm, E. Thomas, C. Topping, C. Berger, M. Hesselbach, M. Koch*, N. Greinert*, T. Bauer**

Merck Chems., UK

**Merck KGaA, Germany*

EP1 - 4: 150 to 225 ppi Large Area Flexible OTFT Backplanes for Monochrome and Colour Electrophoretic Displays

15:35

P. A. Cain, J. D. Watts, S. Norval

Plastic Logic, UK

----- Break -----

16:10 - 17:20

Room D

EP2: Reflective Displays and Evaluations

Chair: N.-S. Roh, Samusung Elect., Korea

Co-Chair: A. Suzuki, Chiba Univ., Japan

EP2 - 1: *Invited* Ambient Light Reflectivity and Readability of Flat and Curved (Reflective) Displays

16:10

K. Blankenbach, A. Sycev, S. Kurbatfinski

Pforzheim Univ., Germany

EP2 - 2: 16:35 *Invited* Driving Colorants for Print-Like Color – Beyond Electrophoresis

J.-S. Yeo

Yonsei Univ., Korea

EP2 - 3 17:00 Advanced Driving Techniques in Electrowetting Display

*Y. J. Jang, N. G. Choi, J. W. Jeong, G. J. Park,
H. S. Hwang, C. W. Park, B. H. You*

Samsung Display, Korea

Author Interviews and Demonstrations

17:50 – 18:50

Wednesday, December 5

9:00 - 10:05

Room B-2

EP3: Electrochromic Displays and Others (1)

Chair: H. Higuchi, NIMS, Japan

Co-Chair: S. Maeda, Tokai Univ., Japan

EP3 - 1: 9:00 *Invited* Electrochromism and Electrochemiluminescence as Novel Display Technology

N. Kobayashi

Chiba Univ., Japan

EP3 - 2 9:25 High Resolution Technology for Multi-Layered Electrochromic Display

*Y. Okada, T. Yashiro, Y. Naitoh, S. Hirano, S. Kim, K. Tsuchi,
H. Takahashi, K. Fujimura, H. Kondoh*

Ricoh, Japan

EP3 - 3 9:45 Multicolor Electrochromic Device with Electrochemically Size-Controlled Silver Nanoparticles

A. Tsuboi, K. Nakamura, N. Kobayashi

Chiba Univ., Japan

----- Break -----

10:50 - 11:30

Room B-2

EP4: Electrochromic Displays and Others (2)

Chair: N. Kobayashi, Chiba Univ., Japan

Co-Chair: Y. Toko, Stanley Elec., Japan

- EP4 - 1** **New Paper Displays Using Electrochromic / Vapoluminescent Organic-Metallic Hybrid Polymer Films**
10:50

M. Higuchi^{,**}, J. Zhang^{*,**}, T. Sato^{*,**}*

^{}NIMS, Japan*

*^{**}JST-CREST, Japan*

- EP4 - 2** **Novel Image Displaying Medium Enabling Thermo-Switchable Emission and Coloration by Using Lanthanide(III) Complex and Leuco Dye**
11:10

K. Nakamura, Y. Kobayashi, K. Kanazawa, N. Kobayashi

Chiba Univ., Japan

11:30 - 12:06

Room B-2

Short Presentation EPp: Electronic Paper

All authors of poster papers for the EPp session will give brief oral presentations of 3 minutes in advance.

----- Lunch -----

14:00 - 17:00

Event Hall

Poster EPp: Electronic Paper

- EPp - 1** **Molecular Design of Particles for Electrophoretic Displays by Using I/O Value**

R. Nakazawa, S. Maeda

Tokai Univ., Japan

- EPp - 2** **Monte Carlo Simulation of Coloration by Mixture of Pigment Particles**

Y. Kurimoto, T. Koda, A. Nishioka, K. Miyata

Yamagata Univ., Japan

- EPp - 3** **Principal Component Analysis of Multi-Pigments Transposition in Full-Color Electrophoretic Display**

Y.-H. Lu, Y.-H. Chiu, C.-H. Tien

Nat. Chiao Tung Univ., Taiwan

- EPp - 4** **Black and White Particles Movement in Electrophoretic Image Display by Low Driving Voltage**

Y. Yagi, T. Shimogata, S. Nakamura, T. Kitamura

Chiba Univ., Japan

- EPp - 5 A Novel Imaging Process for Modified Encapsulated Ch LCD**
M. H. Yang, W.-T. Chen, C.-Y. Wu
ITRI, Taiwan
- EPp - 6 The Relationship between Manufacturing Process and Optical Performance in Polymer-Stabilized Cholesteric Texture**
Y.-S. Tsai, H.-Y. Tseng, T.-H. Lin*, K.-T. Chen, W.-W. Chiu, C.-C. Lai, P.-W. Liu, Y.-J. Chao*
ITRI, Taiwan
**Nat. Sun Yat-Sen Univ., Taiwan*
- EPp - 7 Thermal Stability of Gray-Scale Levels on Optical Rewritable Electronic Paper**
J. Sun, Y. Ma, X. Wang, V. Chigrinov
Hong Kong Univ. of S&T, Hong Kong
- EPp - 8 Improvement of Pixel Structure in Electrowetting Display for Display Memory**
*S. Tatsuya, F. Kiyohito, T. Taiju, T. Yasuo**
Kogakuin Univ., Japan
**Stanley Elec., Japan*
- EPp - 9 Model Experiment Intended to Lower Driving Voltage of Twisting Ball Electronic Paper**
K. Yamazaki, S. Maeda
Tokai Univ., Japan
- EPp - 10 Immobilization of Phthalate Derivatives on ITO Electrode Prepared by Using Silane Coupling Agent and Their Electrochromic Properties**
N. Ura, K. Nakamura, N. Kobayashi
Chiba Univ., Japan
- EPp - 11 The Effect of Illuminance on Visibility during Reading e-Books by Age Groups**
S. Sano, T. Kojima, M. Miyao
Nagoya Univ., Japan
- EPp - 12 Batteryless Electronic Paper Using Wireless Power Transfer with Resonant Capacitive Coupling**
T. Takahashi, R. Hattori, A. Watanabe, H. Ishinishi**
Kyushu Univ., Japan
**Network Appl. Eng. Labs., Japan*

Author Interviews and Demonstrations

17:30 – 18:30

Supporting Organization:

The Imaging Society of Japan

Workshop on MEMS and Emerging Technologies for Future Displays and Devices

Thursday, December 6

9:00 - 9:05

Room D

Opening

Opening Remarks

9:00

M. Nakamoto, Shizuoka Univ., Japan

9:05 - 10:40

Room D

MEET1: MEMS Imaging and Sensing

Chair: D. Pribat, Sungkyunkwan Univ., Korea
Co-Chair: N. Fruehauf, Univ. of Stuttgart, Germany

MEET1 - 1: *Invited* Nanotechnology Convergence for Electronics Applications

9:05

J. M. Kim

Univ. of Oxford, UK

MEET1 - 2: *Invited* MEMS-Based Uncooled Infrared Sensors

9:30

M. Kimata

Ritsumeikan Univ., Japan

MEET1 - 3: *Invited* Design of a Novel Integrated Light Guiding Plate without the Reflective Sheet for Backlight Module Application

9:55

Y.-W. Hu^{}, B.-T. Chen^{*}, J.-W. Pan^{*,**}*

^{}Nat. Chiao Tung Univ., Taiwan*

*^{**}Chi Mei Medical Ctr., Taiwan*

MEET1 - 4 Micro-Oscillator for Non-Contact Voltage Sensing

10:20

S. Hasegawa, S. Kumagai, M. Sasaki

Toyota Tech. Inst., Japan

----- Break -----

10:50 - 12:20

Room D

MEET2: Fundamental Components and Process Technologies

Chair: Y. Aoyagi, Ritsumeikan Univ., Japan
Co-Chair: Y. Bonnassieux, Ecole Polytechnique, France

MEET2 - 1: *Invited* CNT and Graphene for Field Emission Applications

10:50

W. I. Milne, S. Iacobucci, M. Fratini*, Y. Zhang*, L. Wei**, C. Li, M. Cole**

Univ. of Cambridge, UK

**CNR-Istituto Fotonica e Nanotecnologie, Italy*

***Southeast Univ., China*

MEET2 - 2: *Invited* Fabrication of Stable CNT Emitters for Lighting Devices

11:15

K. C. Park, Y. J. Eom, S. W. Lee, H. N. Won, J. S. Kang, J. Jang

Kyung Hee Univ., Korea

MEET2 - 3 Vacuum Sealed X-Ray Tubes with Nano Emitter and Built-in Control Circuit for Stable Emission Current

11:40

J.-W. Jeong, S. Choi*, J.-T. Kang*, J.-W. Kim*, **, Y.-H. Song*, ***

**ETRI, Korea*

***UST, Korea*

MEET2 - 4 Fabrication of Small Area CNT Emitters for High Current Density X-Ray Source

12:00

Y. J. Eom, S. W. Lee, H. N. Won, J. S. Kang, J. Jang, K. C. Park

Kyung Hee Univ., Korea

----- Lunch -----

14:00 - 15:35

Room D

MEET3: Emerging Technologies

Chair: W. I. Milne, Univ. of Cambridge, UK

Co-Chair: J. M. Kim, Univ. of Oxford, UK

MEET3 - 1: *Invited* Si and Al Nanostructures for Advanced Li-ion Battery Anodes

14:00

D. Pribat, T. H. Nguyen

Sungkyunkwan Univ., Korea

MEET3 - 2: *Invited* Large Area Microplasma Excited AlGaN Deep Ultraviolet Light Emitter

14:25

Y. Aoyagi, N. Kurose

Ritsumeikan Univ., Japan

MEET3 - 3: *Invited* Nanotechnology Oriented Displays

14:50

J. Jang

Kyung Hee Univ., Korea

**MEET3 - 4 Technology Development of Ultra-High Resolution
15:15 Image Transfer to Glasses by Photolithographic
Nanofabrication**

Y. H. Choi, S. H. Park, H.-S. Jeong

TES21, Korea

----- Break -----

15:50 - 17:40

Room D

MEET4: Display and Imaging

Chair: J. Jang, Kyung Hee Univ., Korea

Co-Chair: M. Kimata, Ritsumeikan Univ., Japan

**MEET4 - 1: *Invited* Applications of Thin Film Oxide to Display
15:50 Technologies**

N. Fruehauf

Univ. of Stuttgart, Germany

**MEET4 - 2: *Invited* Organic Electronics for Displays
16:15**

Y. Bonnassieux

Ecole Polytechnique, France

**MEET4 - 3 Liquid Based Optical Switch by Tuning Aperture
16:40**

M. Xu, L. C. Ren, H. W. Ren

Chonbuk Nat. Univ., Korea

**MEET4 - 4 Tunable Color Device of Cellulose Aqueous
17:00 Solution**

Y. Kimbara, K. Sano, S. Ishihara, S. Uto

Osaka Inst. of Tech., Japan

**MEET4 - 5 Enhancing the Reliability of Electrowetting Display
17:20 by Improving the Structure and Materials**

*K.-W. Lan, Y.-S. Ku, K.-L. Lo, S.-W. Kuo, Y.-H. Tsai,
K.-C. Lee, P.-P. Cheng, C.-Y. Wu, J.-L. Chen,
W.-Y. Cheng*

ITRI, Taiwan

Author Interviews and Demonstrations

17:30 – 18:30

Workshop on Display Electronic Systems

Tuesday, December 4

14:15 - 14:20

Room C-2

Opening

Opening Remarks

14:15

T. Fujine, Sharp, Japan

14:20 - 15:55

Room C-2

DES1: SUPER Hi-VISION Public Viewing

Chair: T. Yamamoto, NHK, Japan

Co-Chair: S. Ono, Panasonic, Japan

DES1 - 1: *Invited* Outlines of SUPER Hi-VISION Public Viewing at the London 2012 Olympic Games

14:20

K. Ishii, M. Sugawara, Y. Shishikui, T. Ito

NHK, Japan

DES1 - 2: *Invited* The 8K LCD for SUPER Hi-VISION

14:40

*T. Kumakura, M. Shiomi, K. Shirai, M. Takahashi,
M. Onoue, N. Hojo, A. Inoue, S. Horino, Y. Yoshida*

Sharp, Japan

DES1 - 3: *Invited* Development of a 145-in. Diagonal SUPER Hi-VISION PDP and Its Public Viewing in London 2012 Olympic Games

15:05

R. Murai, H. Abe, I. Horiuchi, K. Nishimura,
N. Nakamura*, N. Shimidzu**, N. Saito**, K. Ishii*,
Y. Murakami**, T. Usui***

Panasonic, Japan

**Panasonic Plasma Display, Japan*

***NHK, Japan*

DES1 - 4: *Invited* SUPER Hi-VISION Projectors Used in Public Viewing of London 2012 Olympic Games

15:30

Y. Kusakabe, Y. Nishida

NHK, Japan

----- Break -----

16:10 - 17:30

Room C-1

DES2/VHF2: Color (2)

Chair: M. R. Luo, Univ. of Leeds, UK

Co-Chair: T. Fujine, Sharp, Japan

DES2/VHF2 - 1: Invited Measuring Light and Color: Defining Color Rendering Property of Artificial Illuminants

16:10

*N. Ohta**Rochester Inst. of Tech., USA***DES2/VHF2 - 2: Invited Development of Laser Backlighting LCD Television**

16:40

*E. Niikura, R. Murase, S. Kagawa, N. Nakano,
A. Nagase, H. Sakamoto, T. Sasagawa, K. Minami,
H. Sugiura, K. Shimizu, M. Hanai**Mitsubishi Elec., Japan***DES2/VHF2 - 3: The Effect of Lightness Component on Preferred Skin Color Reproduction of a Display**

17:10

S.-H. Chen, H.-S. Chen, N. Ohta^{}, R. Luo^{**}, N.-C. Hu**Nat. Taiwan Univ. of S&T, Taiwan**^{*}Rochester Inst. of Tech., USA**^{**}Univ. of Leeds, UK***Author Interviews and Demonstrations**

17:50 – 18:50

Wednesday, December 5

9:00 - 10:10

Room C-2

DES3: Low Power Consumption

Chair: S. Takamura, NTT, Japan

Co-Chair: H. Okumura, Toshiba, Japan

DES3 - 1: Invited Low Power Consumption Technology for Ultra-High Resolution Mobile Display by Using RGBW System

9:00

*A. Sakaigawa, M. Kabe, T. Harada, F. Goto, N. Takasaki,
M. Mitsui, T. Nakahara, K. Ikeda, K. Seki, T. Nagatsuma,
A. Higashi**Japan Display West, Japan***DES3 - 2: High-Efficiency and Low-Cost Passive Matrix Cholesteric ESL Prototype System**

9:30

*C.-C. Hsu, C.-H. Wu, H.-Y. Hsieh, C.-C. Wu, T.-H. Yu,
C.-J. Chen, H.-S. Hsu^{*}**ITRI, Taiwan**^{*}GiantPlus Tech., Taiwan*

DES3 - 3 **A Novel Power Control by Modulated Power Algorithm (MPA) for AM-OLED Application**

9:50

C.-C. Chiu, S.-M. Chang

Chunghwa Picture Tubes, Taiwan

----- Break -----

10:50 - 11:30

Room C-2

DES4: Display Electronic Systems

Chair: A. Sakaigawa, Japan Display West, Japan

Co-Chair: A. Nagase, Mitsubishi Elec., Japan

DES4 - 1 **Image Denoising Method Based on Non-Local Means Filter and Noise Estimation**

10:50

J. S. Lim, S. I. Cho, Y. H. Kim

Pohang Univ. of S&T, Korea

DES4 - 2 **Integrated 3D System with Multi-Touch**

11:10

C.-L. Li, J.-S. Liao, H.-H. Chen, D.-W. Kuo, H.-M. Su

Chunghwa Picture Tubes, Taiwan

11:30 - 12:00

Room C-2

Short Presentation DESp: Display Electronic Systems

All authors of poster papers for the DESp session will give brief oral presentations of 3 minutes in advance.

----- Lunch -----

14:00 - 17:00

Event Hall

Poster DESp1: Display Electronic Systems (AR)

DESp1 - 1 **Image Synthesis from Illumination Estimation**

T.-H. Lin

Nat. Taiwan Univ. of S&T, Taiwan

14:00 - 17:00

Event Hall

Poster DESp2: Display Electronic Systems

DESp2 - 1 **TFT-LCD Auto-Adjust Gamma Curve System**

S.-S. Syu, Y.-Y. Chen

Shenzhen China Star Optoelect. Tech., China

DESp2 - 2 An Image Quality Model for Optimizing Color Performance of Display System

H.-T. Yang, P.-L. Sun, R. M. Luo
Nat. Taiwan Univ. of S&T, Taiwan

Author Interviews and Demonstrations

17:30 – 18:30

Thursday, December 6

14:00 - 15:35	Room B-1
DES5: Recent Advances in Augmented Reality Applications	

Chair: K. Makita, AIST, Japan
Co-Chair: M. Tsuchida, NTT, Japan

DES5 - 1: Invited SmartAR: Integrated Augmented Reality Technology for Novel Application Creation

14:00
T. Yoshigahara
Sony, Japan

DES5 - 2: Invited Mixed Reality Applications of Design Engineering & Manufacturing

14:25
T. Aso
Canon, Japan

DES5 - 3: Invited Recent Trends on Visual Tracking for Augmented Reality

14:50
H. Uchiyama
Toshiba, Japan

DES5 - 4 Texture Significant Hash Function with Robust Occlusion Handling for Fast Inpainting the Virtualized-Reality Models

15:15
K. Thangamani^{,**}, T. Ishikawa^{**}, K.Makita^{**}, T. Kurata^{*,**}*
^{}Univ. of Tsukuba, Japan*
*^{**}AIST, Japan*

Author Interviews and Demonstrations

17:30 – 18:30

Supporting Organizations:

- Information Display Research Committee, ITE
- Information Sensing Research Committee, ITE
- Special Interest Group on Mixed Reality, The Virtual Reality Society of Japan
- Technical Committee on Electronic Information Displays, Electronics Society, IEICE
- Technical Committee on Image Engineering, Information and Systems Society, IEICE

Workshop on Flexible Displays

Tuesday, December 4

16:10 - 16:15

Room A

Opening

Opening Remarks

16:10

M. Ito, Toppan Printing, Japan

16:15 - 17:20

Room A

FLX1/AMD2: Flexible Active Matrix Devices

Chair: H. Maeda, DNP, Japan

Co-Chair: H. Happy, IEMN, France

FLX1/ AMD2 - 1: *Invited* Transfer Printing Electronic Devices on Non-Si Substrates

16:15

X. Zheng

Stanford Univ., USA

FLX1/ AMD2 - 2 16:40

Solution-Processed and Low-Temperature ZnO- Based N-Channel TFTs on Polyethylene Naphthalate Foil, Suited for Hybrid Complementary Circuitry

M. Rockelé^{,**}, M. Nag^{*,**}, T. H. Ke^{*}, S. Botnaraş^{***},
D. Weber^{***}, D.-V. Pham^{***}, J. Steiger^{***}, S. Steudel^{*},
K. Myny^{*,**}, S. Schols^{*}, B. V. D. Putten^{****}, J. Genoe^{*},
P. Heremans^{*}*

^{}imec, Belgium*

*^{**}Katholieke Univ. Leuven, Belgium*

*^{***}Evonik Inds., Germany*

*^{****}Holst Ctr., the Netherlands*

FLX1/ AMD2 - 3 17:00

Formation of Polycrystalline Silicon Films on Plastic Films by Underwater Laser Annealing at Super Low-Temperature

E. Machida^{}, M. Horita^{*,**}, Y. Ishikawa^{*,**}, Y. Uraoka^{*,**},
T. Okuyama^{***}, H. Ikenoue^{****}*

^{}Nara Inst. of S&T, Japan*

*^{**}JST, Japan*

*^{***}TOYOCO, Japan*

*^{****}Kyushu Univ., Japan*

Author Interviews and Demonstrations

17:50 – 18:50

Wednesday, December 5

9:20 - 12:20

Event Hall

Poster FLXp: Flexible Display Technologies**FLXp - 1 Electro-Optical Properties of LCD Fabricated by Slit Coater**

K. Ohtsuka, Y. Nagataki, K. Miyashita, H. Hirata*,
T. N. Oo, M. Kimura, T. Akahane*

Nagaoka Univ. of Tech., Japan

**Toray Eng., Japan*

FLXp - 2 The Dielectrophoresis Alignment of Silver Nanowire for Application in Electrode Conductivity Enhancement

*K.-W. Lai, C. Wei, W.-H. Sun**

Tatung Univ., Taiwan

**ITRI, Taiwan*

FLXp - 3 Flexible Non-Volatile Memory Based on Indium-Gallium-Zinc-Oxide with Excellent Reliability and Flexibility

*Y.-S. Fan, C.-H. Hsu, L.-F. Teng, C.-H. Chang,
W.-H. Huang, P.-T. Liu*

Nat. Chiao Tung Univ., Taiwan

----- Lunch -----

14:00 - 15:35

Room B-1

FLX2: Organic TFTs and Related Materials

Chair: T. Sekitani, Univ. of Tokyo, Japan

Co-Chair: H. Fujikake, Tohoku Univ., Japan

FLX2 - 1: Invited High-Mobility Organic Active Matrices Based on Solution-Crystallized TFT Arrays

14:00

T. Uemura, M. Uno**, Y. Kanaoka**, J. Takeya**

**Osaka Univ., Japan*

***TRI Osaka, Japan*

FLX2 - 2: Invited Low Voltage High Mobility Organic Semiconductors for Flexible Display Applications

14:25

*K. L. McCall, S. D. Ogier, B. A. Brown, S. R. Rutter,
M. Palumbo, Y. U. Lee, L. A. Evans, T. J. Pease*

Ctr. for Process Innovation, UK

FLX2 - 3 14:50 Solution Processable Organic Semiconductor with a Wide Process Margin for TFT Devices

*C. J. Newsome, K. Zalewski, J. H. Burroughes
Cambridge Display Tech., UK*

FLX2 - 4: 15:10 *Invited* Gas Barrier Testing Methods of Higher-Barrier Films for Flexible Electronics Devices

*K. Nagai
Meiji Univ., Japan*

----- Break -----

15:50 - 16:55

Room A

FLX3: Flexible Oxide TFTs

Chair: M. Ito, Toppan Printing, Japan
Co-Chair: K. Uemura, Nippon Steel, Japan

FLX3 - 1: 15:50 *Invited* Low Temperature Solution-Processed Metal Oxide TFT Materials

*J. Steiger, D.-V. Pham, A. Neumann, A. Hoppe,
A. Merkulov, R. Anselmann
Evonik Inds., Germany*

FLX3 - 2 16:15 Flexible AMOLED Display on Polyethylene Naphthalate (PEN) Foil with Metal-Oxide TFT Backplane

*A. K. Tripathi, B. V. der Putten, J.-L. van der Steen,
K. Tempelaars, B. Cobb, M. Ameys*, T. Huei Ke*,
K. Myny*, S. Steudel*, M. Nag*, S. Schols*, P. Vicca*,
S. Smout*, J. Genoe*, P. Heremans*, I. Yakimet
Holst Ctr./TNO, the Netherlands
imec, Belgium

FLX3 - 3 16:35 Solution-Processed Low Temperature Amorphous Thin Films

*B. Singh, J. Jasieniak, T. R. Gengenbach, C. D. Easton,
L. Tozi, M. Bown
CSIRO Material Sci. & Eng., Australia*

Author Interviews and Demonstrations

17:30 – 18:30

Thursday, December 6

9:00 - 9:20

Room E

FLX4: Materials and Evaluation for Flexible Devices

Chair: T. Furukawa, Yamagata Univ., Japan

Co-Chair: T. Shiro, Teijin, Japan

FLX4 - 1 Display Aspect Computation Using Viewing Angle Measurements: Application to the Flexible Displays

9:00

*P. M. Boher, T. Leroux, T. Bignon, V. Collomb-Patton
ELDIM, France*

----- Break -----

10:50 - 11:50

Room E

FLX5/FMC5: Flexible Materials and Fabrication Processes

Chair: Y. Mishima, FUJIFILM, Japan

Co-Chair: A. Fujita, JNC, Japan

**FLX5/
FMC5 - 1 Roll-to-Roll Deposition of ITO Film on a Flexible Glass Substrate**

10:50

*Y. Ikari, H. Tamagaki
Kobe Steel, Japan***FLX5/
FMC5 - 2 Ultra Thin Glass for Flexible Display**

11:10

*C. C. Kuo, Y. C. Chen, B. S. Chiou, J. Y. Chiou, Y. T. Lee,
Y. Y. Huang
Chunghwa Picture Tubes, Taiwan***FLX5/
FMC5 - 3 Flexible LCD Fabricated with a Slit Coater**

11:30

M. Kimura, K. Ohtsuka, Y. Nagataki, T. N. Oo, M. Mori,
H. Hirata*, T. Akahane
Nagaoka Univ. of Tech., Japan
Toray Eng., Japan

----- Lunch -----

14:00 - 14:45

Room E

FLX6: Fabrication for Flexible Devices

Chair: H. Hirata, Toray Eng., Japan

Co-Chair: K. Akamatsu, Sony, Japan

FLX6 - 1: Invited Printed Memory for Printed System Electronics

14:00

J. Kasahara,*****Thin Film Elect., Norway****Hokkaido Univ., Japan*

**FLX6 - 2
14:25 Self-Aligned Manufacturing Process of the
Electrode and Bank Pattern for Flexible ChLC
Panels**

*P.-W. Liu, J.-P. Lu, K.-T. Chen, Y.-S. Tsai
ITRI, Taiwan*

----- Break -----

15:50 - 17:00

Room A

AMD8/FLX7: Oxide TFT: Flexible Displays

Chair: C.-H. Cheng, AU Optonics, Taiwan
Co-Chair: M. Kimura, Nagaoka Univ. of Tech., Japan

**AMD8/
FLX7 - 1:
15:50 *Invited* Flexible AMOLED Displays Driven by a-IGZO
TFTs and their Applications**

*H. Yamaguchi, T. Ueda, K. Miura, N. Saito, S. Nakano,
T. Sakano, K. Sugi, I. Amemiya
Toshiba, Japan*

**AMD8/
FLX7 - 2:
16:15 *Invited* A 9.9-in. qHD Top-Emission Flexible OLED
Display Driven by Oxide TFTs**

*K. Teramoto, E. Fukumoto, T. Fukuda, K. Shimokawa,
T. Saito, T. Tanikawa, M. Suzuki, G. Izumi, M. Noda,
S. Kumon, T. Arai, T. Kamei, M. Kodate, S. No,
T. Sasaoka, K. Nomoto
Sony, Japan*

**AMD8/
FLX7 - 3
16:40 Flexible Top-Gate Amorphous InGaZnO TFTs on a
New Colorless Polyimide Substrate for Flexible
Display Applications**

*Y.-H. Yeh, C.-C. Cheng, M.-J. Yu, H.-C. Ku, B. C.-M. Lai,
B.-Y. Chou, E. Horii*, E. Kuribayashi*, T. Iwamoto*,
H. Inari*, M. Yamazaki*, K. Kurimoto*
ITRI, Taiwan
Kaneka, Japan

Author Interviews and Demonstrations

17:30 – 18:30

Supporting Organizations:

Information Display Research Committee, ITE
Technical Committee on Electronic Information Displays, IEICE

Workshop on Touch Panels and Input Technologies

Tuesday, December 4

14:20 - 17:20

Event Hall

Poster INPp: Touch Panel & Input Technologies

- INPp - 1** **Position Smoothing with Fuzzy Kalman Filter for Capacitive Touch Panels**
Y.-M. Chang, C.-S. Li, C.-L. Lin
Nat. Cheng Kung Univ., Taiwan
- INPp - 2** **Improvement of Detection Linearity on the Capacitive Touch Panel Using Transient Electrical Response**
K. Kyoung, R. Hattori
Kyushu Univ., Japan
- INPp - 3** **The Optical System Design of Integrated Optical Touch**
T. L. Niu, H. W. Tseng, H. P. Kuo
AU Optronics, Taiwan
- INPp - 4** **High Efficient Anti-Noise System for Embedded Advanced Touch On-Cell Display**
S.-Z. Peng, Y.-C. Li, C.-C. Chang, S.-H. Huang, H.-H. Chen
Chunghwa Picture Tubes, Taiwan
- INPp - 5** **Discussion and Improvement of Signal to Noise Ratio on Projected Capacitive Touch Screen**
S. Yang, C.-W. Wu, H. Wang, X. Dong
BOE Tech. Group, China
- INPp - 6** **The Proposal for Improving the Image Quality of LCD with Touch Panel for Outdoor Use**
*H. Ohtsuki, T. Imamura, S. Mori, T. Nakamura, M. Hayashi**
Mitsubishi Elec., Japan
**Melco Display Tech., Japan*
- INPp - 7** **Force Sensor Touch Technology**
H.-H. Liao, T.-Y. Chang, C.-H. Hsu, Y.-C. Fang, K.-W. Li, C.-F. Hsu, W.-C. Wang
WINTEK, Taiwan

- INPp - 8 A Study of Performance Measurement of Digital Imaging System**
S.-Y. Tseng, Z.- W. Huang, Z.-Z. Xue, X.-H. Ma, Y.-C. Fang
Nat. Kaohsiung First Univ. of S&T, Taiwan
- INPp - 9 Index Matching of ITO-PET Film and ITO Glass by Organic Coating and Performance**
S. J. Park, H. H. Kim, E. H. Kim, S. M. Lee, L. S. Park
Kyungpook Nat. Univ., Korea

Wednesday, December 5

10:50 - 12:25	Room E
INP1: Interaction	

Chair: M. Doi, Toshiba, Japan
 Co-Chair: I. E. Yairi, Sophia Univ., Japan

- INP1 - 1: 10:50 *Invited* Displaying Contents, Knowledge and Experiences**
M. Doi
Toshiba, Japan
- INP1 - 2: 11:15 *Invited* Touch Panel Interaction for Visually Impaired People : Toward the Universal Design of Interactive Contents**
I. E. Yairi
Sophia Univ., Japan
- INP1 - 3: 11:40 *Invited* Rapid Development of EAP Haptics Using a Mobile Device Simulator**
*S. J. Biggs, R. N. Hitchcock, K. Kakinuma**
Artificial Muscle, USA
**Bayer MaterialSci., Japan*
- INP1 - 4 12:05 A Hybrid Interaction for Touchable Flexible AMOLED**
M.-Y. Lu, H.-Y. Chen, S.-P. Wang, S.-H. Wu, C.-C. Liang
ITRI, Taiwan

----- Lunch -----

14:00 - 15:10	Room E
INP2: Touch Panel (1)	

Chair: F. Soilhi, Nanomade Concept, France
 Co-Chair: N. Nakatani, Touch Panel Labs., Japan

- INP2 - 1: 14:00** *Invited* **Current Technology Trends in Touch Panel Sensing**
K. Nakatani
Touch Panel Labs., Japan
- INP2 - 2 14:25** **Design of a Projected-Capacitive Touch Controller for Environment Noise Suppression**
B. Li, T. Wei, X. Wei, S. Zhan
Northwestern Polytechnical Univ., China
- INP2 - 3: 14:45** *Invited* **Flexible Touch Panel Based on Nanoparticles Strain Gauges**
F. Soilihi, N. Decorde, L. Ressier, B. Viallet**
Nanomade Concept, France
**Univ. de Toulouse, France*

----- Break -----

15:50 - 17:20

Room E

INP3/AMD6: Touch Panel (2)

Chair: K. Noguchi, Japan Display West, Japan
 Co-Chair: H. Katoh, Sharp, Japan

- INP3/AMD6 - 1: 15:50** *Invited* **Newly Developed In-Cell Capacitive Touch Panel Technology in a Wide Viewing Angle IPS-Mode Display**
K. Noguchi, Y. Kida, K. Ishizaki, K. Azumi, H. Mizuhasi
Japan Display West, Japan
- INP3/AMD6 - 2 16:15** **A Novel Design of Capacitive In-Cell Touch Sensor Circuit Using a-Si TFT**
C.-T. Hsieh, S.-K. Hsu
Chimei-Innolux, Taiwan
- INP3/AMD6 - 3: 16:35** *Invited* **In-Cell Projected Capacitive Touch Panel Technology**
Y. Sugita, K. Kida, S. Yamagishi
Sharp, Japan
- INP3/AMD6 - 4 17:00** **Active Photo-Sensing Array of Thin Film Transistor with Threshold Voltage Compensation**
L.-S. Chou, B.-C. Chen, Y.-H. Tai, I. Chan, M.-H. Yeh**
Nat. Chiao Tung Univ., Taiwan
**ITRI, Taiwan*

Author Interviews and Demonstrations

17:30 – 18:30

Thursday, December 6

9:00 - 10:10	Room C-1
INP4: 3D/2D Imaging Systems (1)	

Chair: H. Watanabe, Panasonic, Japan
 Co-Chair: K. Kagawa, Shizuoka Univ., Japan

INP4 - 1: 9:00 *Invited* A 1.5 Mpixel RGBZ CMOS Image Sensor for User Interface and 3D Image Capture

W. Kim, J. Yun, S.-H. Lee, Y. Wang, I. Ovsianikov*,
 Y. Park, C. Chung*

*Samsung Elect., Korea
 Samsung Semiconductor, USA

INP4 - 2: 9:25 *Invited* Evolution of Eyes and Image Sensors

*H. Watanabe
 Panasonic, Japan*

INP4 - 3: 9:50 Low Noise Readout Circuits Interface Using a Capacitive-Feedback Frontend Amplifier for High Output Impedance Sensors

*K. Mars, S. Kawahito
 Shizuoka Univ., Japan*

----- Break -----

10:50 - 12:20	Room C-1
INP5: 3D/2D Imaging Systems (2)	

Chair: S.-J. Kim, Samsung Advanced Inst. of Tech., Korea
 Co-Chair: C.-C. Hsieh, Nat. Tsing Hua Univ., Taiwan

INP5 - 1: 10:50 *Invited* A Full-HD CMOS Image Sensor with Time-Multiplexed 2D/3D Image Acquisition

*S.-J. Kim, J. Shin, J. D. K. Kim, B. Kang, K. Lee
 Samsung Advanced Inst. of Tech., Korea*

INP5 - 2: 11:15 *Invited* An Ultra-Low Voltage CMOS Imager with Novel Pulse-Width-Modulation Readout

*C.-C. Hsieh, M.-T. Chung
 Nat. Tsing Hua Univ., Taiwan*

INP5 - 3: 11:40 Discussing Pixel Circuits for Hybrid Sensor and Display Pixel Arrays

*N. Papadopoulos, M. Yang, M. Esmaeili-Rad,
 M. Sachdev, W. S. Wong
 Univ. of Waterloo, Canada*

INP5 - 4
12:00

**Color Image Reconstruction from a Depth-Aware
LCD Display Based on Coded Aperture Imaging**

S. Suh, C. Choi, D. Park, C. Kim

Samsung Advanced Inst. of Tech., Korea

----- Lunch -----

15:50 - 16:35

Room B-1

INP6: AR Interactive Systems

Chair: H. Iseki, Tokyo Women's Medical Univ., Japan

Co-Chair: N. Hashimoto, Citizen Holdings, Japan

INP6 - 1:
15:50

***Invited* SCOT (Smart Cyber Operating Theater)
Project: Advanced Medical Information Analyzer for
Guidance of the Surgical Procedures**

*H. Iseki, Y. Muragaki, M. Tamura, T. Suzuki,
K. Yoshimitsu, S. Ikuta, J. Okamoto, M. Chernov*

Tokyo Women's Medical Univ., Japan

INP6 - 2
16:15

**Laser Projection UI Robot System and Its
Applications**

*M. Ide, Y. Abe, T. Komiyama, S. Fukaya, T. Tamura,
K. Arakawa, T. Nozaki*

Citizen Holdings, Japan

Author Interviews and Demonstrations

17:30 – 18:30

Supporting Organizations:

Human Interface Society

Information Sensing Research Committee, ITE

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Workshop on Plasma Displays

Workshop Chair:	H. Kajiyama	Tokushima Bunri Univ.
Program Chair:	R. Murai	Panasonic
General Secretary:	T. Shiga	Univ. of Electro-Commun.
Program Committee:	K. Ishii	NHK
	S. Mikoshiba	Univ. of Electro-Commun.
	T. Nagatomi	Osaka Univ.
	Y. Nakao	Asahi Glass
	T. Shinoda	Shinoda Plasma
	M. Uchidoi	Sichuan COC Display Device

Workshop on EL Displays and Phosphors

Workshop Chair:	Y. Nakanishi	Shizuoka Univ.
Program Chair:	N. Miura	Meiji Univ.
General Secretary:	N. Matsuda	Toshiba
Program Committee:	K. Hara	Shizuoka Univ.
	T. Hisamune	Mitsubishi Chem.
	S. Itoh	Futaba

D. Jeon	KAIST
M. Katayama	Denso
H. Kobayashi	Tottori Univ.
T. Kusunoki	Sony Chem. & Info. Device
T. Miyata	Kanazawa Inst. of Tech.
M. Niboshi	Sharp
K. Ohmi	Tottori Univ.
D. Poelman	Ghent Univ.
M. Shiiki	Hitachi
M. Sumitomo	Nichia Chem. Ind.
K. Wani	TAZMO
R. Xie	NIMS
A. Yamamoto	Tokyo Univ. of Tech.

Workshop on Field Emission Display and CRT

Workshop Chair:	M. Takai	Osaka Univ.
Program Chair:	H. Mimura	Shizuoka Univ.
General Secretary:	M. Namba	NHK-ES
Program Committee:	T. Asano	Kyusyu Univ.
	Y. Gotoh	Kyoto Univ.
	J. Ishikawa	Chubu Univ.
	K. Koga	Panasonic Healthcare
	M. Nagao	AIST
	M. Nakamoto	Shizuoka Univ.
	S. Okuda	Okuda Ind.

Workshop on OLED Displays and Related Technologies

Workshop Chair:	S. Naka	Univ. of Toyama
Program Chair:	T. Wakimoto	Merck
Program Vice-Chair:	K. Monzen	Nissan Chem. Inds.
General Secretary:	N. Takada	AIST
Vice-Secretary:	T. Ikuta	JNC Petrochem.
Program Committee:	C. Adachi	Kyushu Univ.
	S. Aratani	Hitachi
	S. Enomoto	Toshiba
	Y. Fujita	Sharp
	T. Fukuda	Saitama Univ.
	R. Hattori	Kyushu Univ.
	T. Inoue	TDK
	Y. Kijima	Sony
	T. Komatsu	Panasonic
	H. Kuma	Idemitsu Kosan
	A. Mikami	Kanazawa Inst. of Tech.
	H. Miyazaki	Kyushu Univ.
	H. Murata	JAIST
	K. Nakayama	Yamagata Univ.
	Y. Sato	Mitsubishi Chem. S&T Rec. Ctr.
	T. Shimizu	NHK
	S. Tokito	Yamagata Univ.
	T. Tsuji	Pioneer
	T. Uchida	Tokyo Polytechnic Univ.

Workshop on 3D/Hyper-Realistic Displays and Systems

Workshop Chair:	S. Yano	Shimane Univ.
Program Chair:	M. Tsuchida	NTT
General Secretary:	K. Yamamoto	NICT
Program Committee:	T. Fujii	Nagoya Univ.
	T. Koike	Hitachi
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S. Ohtsuka	Kagoshima Univ.
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C.-H. Tsai	ITRI
M. Tsuboi	NTT DoCoMo
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Workshop on Applied Vision and Human Factors

Workshop Chair:	T. Kurita	NHK
Program Chair:	K. Masaoka	NHK
General Secretary:	T. Matsumoto	Sony
Program Committee:	J. Bergquist	Nokia
	S. Clippingdale	NHK
	N. Hiruma	NHK
	M. Idesawa	Univ. of Electro-Commun.
	H. Isono	Tokyo Denki Univ.
	A. Morishita	Toshiba
	K. Sakamoto	Panasonic
	Y. Shimodaira	Shizuoka Univ.
	J. Someya	Mitsubishi Elec.
	T. Tamura	Tokyo Polytech. Univ
	A. Yoshida	Sharp
	R. Yoshitake	IBM Japan

Workshop on Projection and Large-Area Displays and Their Components

Workshop Chair:	H. Kanayama	Panasonic
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Program Vice-Chair:	J. Park	AIST
	S. Shikama	Setsunan Univ.
General Secretary:	T. Suzuki	JVC Kenwood
Program Committee:	O. Akimoto	Sony
	Y. Asakura	Nittoh Kogaku
	H. Kikuchi	NHK
	S. Koike	Seiko Epson
	H. Nakano	Barco
	T. Ogura	Shincron
	K. Ohara	Texas Instr. Japan
	S. Ouchi	Hitachi
	M. Sakai	Ushio
	H. Sugiura	Mitsubishi Elec.
	Z. Tajima	Mobara Atecs
	M. Takaso	Techno Sys. Res.
	K. Takeda	

Workshop on Electronic Paper

Workshop Chair:	H. Arisawa	Fuji Xerox
Program Chair:	T. Fujisawa	DIC
Program Vice-Chair:	N. Kobayashi	Chiba Univ.
General Secretary:	Y. Toko	Stanley Elec.
Program Committee:	M. Higuchi	NIMS
	Y. Hotta	Ricoh
	T. Kitamura	Chiba Univ.
	S. Maeda	Tokai Univ.
	Y. Masuda	Bridgestone
	M. Omodani	Tokai Univ.
	N.-S. Roh	Samsung Elect.
	A. Suzuki	Chiba Univ.
	M. Tsuchiya	E-ink
	G. Zhou	Philips Res.

Workshop on MEMS and Emerging Technologies for Future Displays and Devices

Workshop Chair:	M. Nakamoto	Shizuoka Univ.
Program Chair:	Y. Nakai	Toshiba
General Secretary:	T. Komoda	Panasonic
Program Committee:	T. Akinwande	MIT
	G. Barbastathis	MIT
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	H. Fujita	Univ. of Tokyo
	J. Jang	Kyung Hee Univ.
	H. Kikuchi	NHK
	J. Kim	Univ. of Oxford
	K. Matsumoto	Olympus
	W. Milne	Univ. of Cambridge
	T. Ooasa	Tokyo Electron
	S. Sugiyama	Ritsumeikan Univ.
	H. Tuller	MIT
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	J.-B. Yoon	KAIST
	Y. Yoshida	BEANS Lab.

Workshop on Display Electronic Systems

Workshop Chair:	T. Fujine	Sharp
Program Chair:	T. Yamamoto	NHK
General Secretary:	S. Takamura	NTT
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	L. Kerofsky	Sharp Lab. of America
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	O.-K. Kwon	Hanyang Univ.
	K. Makita	AIST
	K. Morita	National Traffic Safety and Environment Lab.
	A. Nagase	Mitsubishi Elec.
	H. Nitta	Hitachi
	H. Okumura	Toshiba
	S. Ono	Panasonic
	A. Sakaigawa	Japan Display
	H. Sasaki	Toshiba Semiconductor & Storage Prod.
	K. Sekiya	

Workshop on Flexible Displays

Workshop Chair:	H. Fujikake	Tohoku Univ.
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General Secretary:	T. Shiro	Teijin
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	Y. Mishima	FUJIFILM
	T. Sekitani	Univ. of Tokyo
	K. Takimiya	Hiroshima Univ.
	T. Tomono	Toppan Printing
	K. Uemura	Nippon Steel

Workshop on Touch Panels and Input Technologies

Workshop Chair:	I. Fujieda	Ritsumeikan Univ.
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General Secretary:	I. Mihara	Toshiba
Program Committee:	H. Haga	NLT Techs.
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	H. Kato	Sharp
	Y. Mizushima	Corning Holding Japan
	T. Nakamura	Japan Display
	Y. Nakatani	Ritsumeikan Univ.
	H. Noma	ATR Intelligent Robotics and Commu. Labs.
	H. Okumura	Toshiba
	Y. Sasaki	Mitsubishi Elec.
	K. Takatori	NLT Techs.

Special Topics of Interest on Oxide TFT

Facilitator:	K. Takatori	NLT Techs.
Program Committee:		
AMD:	H. Kumomi	Tokyo Inst. of Tech.
FMC:	R. Yamaguchi	Akita Univ.
OLED:	T. Uchida	Tokyo Polytechnic Univ.
EP:	Y. Toko	Stanley Elec.
FLX:	T. Sekitani	Univ. of Tokyo

Special Topics of Interest on Augmented Reality

Facilitator:	M. Date	NTT COMWARE
Program Committee:		
3D:	M. Tsuchida	NTT
VHF:	T. Matsumoto	Sony
DES:	K. Makita	AIST
INP:	I. Mihara	Toshiba

Special Topics of Interest on Lighting Technologies

Facilitator:	Y. Kijima	Sony
Program Committee:		
FMC:	M. Shinohara	Omron
PH:	K. Hara	Shizuoka Univ.
OLED:	T. Ikuta	JNC Petrochem.
PRJ:	M. Sakai	Ushio

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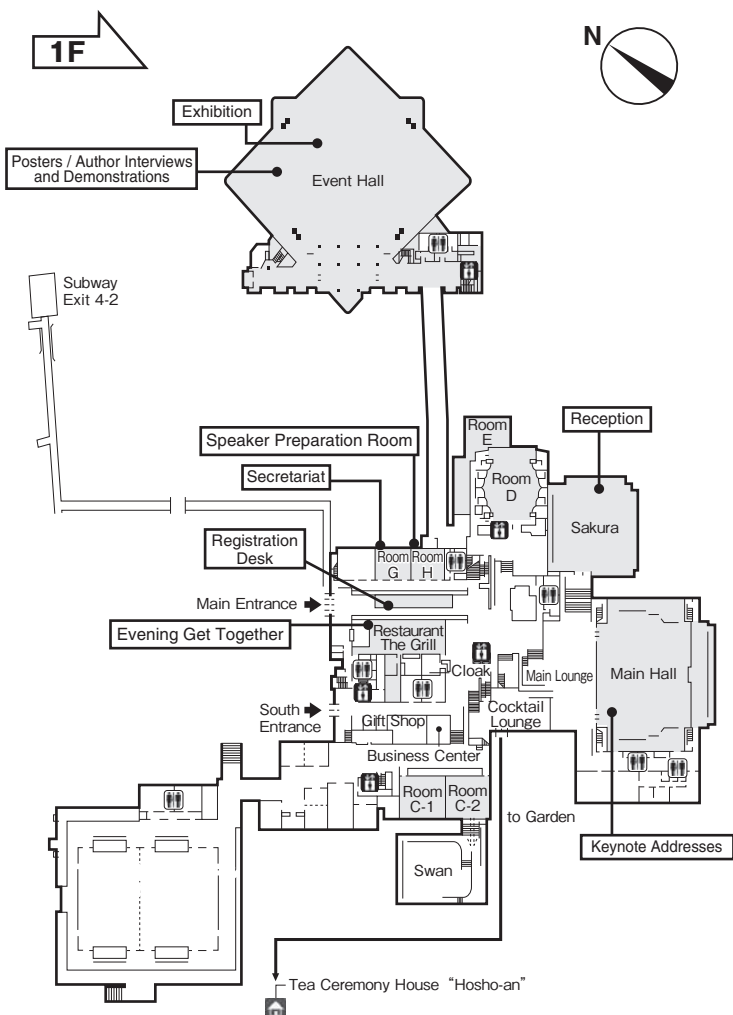
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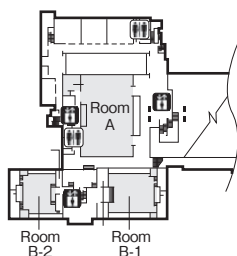
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NLT Technologies, Ltd.
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FLOOR MAP

1F



2F



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IDW '13

The 20th International Display Workshops

December 4-6, 2013

Sapporo Convention Center

Sapporo, Japan

<http://www.idw.ne.jp>

IDW/AD '12 Timetable

Date	Main Entrance	1F					2F			1F		
		Main Hall	Room C-1	Room C-2	Room D	Room E	Room A	Room B-1	Room B-2	Event Hall		
Mon., Dec. 3	Registration 17:00-20:00	Evening Get-Together at Restaurant Grill (1F) 18:00-20:00										
Tuesday, December 4	Registration 8:00-18:00	Opening, Keynote Addresses 9:25-12:40 (p.19)									LCTp, INPp 14:20-17:20	Exhibition 12:40-18:20
		Lunch										
		VHF1 (p.90) 14:20-15:50	DES1 (p.109) 14:15-15:55	EP1 (p.102) 14:20-15:55		AMD1 (p.43) 14:20-15:30	FMC1 (p.53) 14:20-15:20	3D1 (p.79) 14:20-15:50				
		Break										
		DES2/VHF2 (p.110) 16:10-17:30		EP2 (p.102) 16:10-17:20		FLX1/AMD2 (p.113) 16:10-17:20	FMC2 (p.53) 16:10-17:30	3D2 (p.79) 16:10-17:50				
										Author Interviews & Demonstrations 17:50-18:50		
Wednesday, December 5	Registration 8:00-18:00			DES3 (p.110) 9:00-10:10	LCT1 (p.38) 9:00-9:50		AMD3 (p.44) 9:00-10:30	3D3/VHF3 (p.80) 9:00-10:20	EP3 (p.103) 9:00-10:05	FMCp, FLXp 9:20-12:20	Exhibition 10:00-18:00	
		Break										
				DES4/DESp† (p.111) 10:50-12:00	LCT2 (p.39) 10:50-12:10	INP1 (p.119) 10:50-12:25	AMD4 (p.45) 10:50-12:05	3D4/VHF4 (p.81) 10:50-11:50	EP4/EPp† (p.103) 10:50-12:06			
		Lunch										
					LCT3 (p.40) 14:00-15:20	INP2 (p.119) 14:00-15:10	AMD5 (p.45) 14:00-15:25	FLX2 (p.114) 14:00-15:35	FMC3 (p.56) 14:00-15:00			
		Break										
				LCT4 (p.40) 15:50-17:10	INP3/AMD6 (p.120) 15:50-17:20	FLX3 (p.115) 15:50-16:55	VHF5/3D5 (p.92) 15:50-17:10	FMC4 (p.57) 15:50-17:10				
											Author Interviews & Demonstrations 17:30-18:30	
Thursday, December 6	Registration 8:00-18:00	Reception at Sakura (1F) 19:00-21:00										
			INP4 (p.121) 9:00-10:10		MEET1 (p.106) 9:00-10:40	FLX4 (p.116) 9:00-9:20	OLED1 (p.72) 9:00-10:30	VHF6 (p.93) 9:00-10:30	PRJ1 (p.98) 9:00-10:35	AMDp 9:20-12:20	Exhibition 10:00-18:00	
		Break										
			INP5 (p.121) 10:50-12:20	PDP1 (p.61) 10:50-11:50	MEET2 (p.106) 10:50-12:20	FLX5/FMC5 (p.116) 10:50-11:50	OLED2 (p.72) 10:50-12:00	3D6 (p.82) 10:50-12:30	PRJp† (p.98) 10:50-11:11			
		Lunch										
			PH1 (p.64) 14:00-15:20	PDP2 (p.62) 14:00-15:00	MEET3 (p.107) 14:00-15:35	FLX6 (p.116) 14:00-14:45	AMD7 (p.50) 14:00-15:20	DES5 (p.112) 14:00-15:35	FMC6 (p.58) 14:00-15:00			
	Break											
		PH2 (p.64) 15:50-17:30	PDP3 (p.62) 15:50-17:10	MEET4 (p.108) 15:50-17:40		AMD8/FLX7 (p.51) 15:50-17:00	INP6 (p.122) 15:50-16:35	FMC7 (p.59) 15:50-16:50				
										Author Interviews & Demonstrations 17:30-18:30		
Friday, December 7	Registration 8:00-13:00		FED1 (p.69) 9:00-10:40			3D7 (p.86) 9:00-10:20	OLED3 (p.75) 9:00-10:25	PRJ2 (p.100) 9:00-10:25	FMC8 (p.59) 9:00-10:20	PHp 9:20-12:20	Exhibition 10:00-14:00	
		Break										
			FED2 (p.70) 10:50-12:10	VHF7 (p.95) 10:50-12:20	LCT5 (p.41) 10:50-12:15	3D8 (p.87) 10:50-12:20	OLED4 (p.76) 10:50-12:15	PRJ3 (p.100) 10:50-12:15	FMC9 (p.60) 10:50-11:50			
		Lunch										
			FED3 (p.70) 14:00-15:20	VHF8 (p.96) 14:00-15:20	LCT6 (p.41) 14:00-15:00	3D9 (p.88) 14:00-15:30	OLED5 (p.76) 14:00-15:05	AMD9 (p.51) 14:00-15:20	PRJ4 (p.101) 14:00-15:10			
		Break										
		FED4 (p.71) 15:50-16:50	VHF9 (p.96) 15:50-16:50	LCT7 (p.42) 15:50-16:55	3D10 (p.88) 15:50-16:50	OLED6 (p.77) 15:50-17:15		PH3 (p.67) 15:50-17:20				
											Author Interviews & Demonstrations 17:30-18:30	

†Short Presentations

IDW/AD '12 Special Topics of Interest Navigator

Date	Oxide TFT			Augmented Reality (AR)		Lighting Technologies (LIT)		
	Room A	Room B-1	Event Hall	Room B-1	Event Hall	Room A	Room B-2	Event Hall
Tue., Dec. 4		FMC1: Manufacturing Technologies (†) 14:20-15:20 (p.20)						
Wednesday, December 5	AMD3: Oxide TFT: Materials & Devices 9:00-10:30 (p.20)		FMCp, FLXp: Poster 9:20-12:20 (p.21, p.22)		DESp† Room C-2 (p.111)			FMCp: Poster 9:20-12:20 (p.30)
	AMD4: Oxide TFT: Applications 10:50-12:05 (p.21)							
	AMD5: Oxide TFT: Solution Process 14:00-15:25 (p.22)				DESp1: Poster 14:00-17:00 (p.27)			
	FLX3: Flexible Oxide TFTs 15:50-16:55 (p.23)							
Thursday, December 6			AMDp1: Poster 9:20-12:20 (p.23)	VHF6: Wide-Angle and Head-Up Display Human Factors 9:00-10:30 (p.27)				
				3D6: Digital Museum of Kyoto Gion Festival 10:50-12:30 (p.28)				
	AMD7: Oxide TFT: Reliability 14:00-15:20 (p.24)			DES5: Recent Advances in Augmented Reality Applications 14:00-15:35 (p.28)				OLEDp: Poster 14:00-17:00 (p.31)
	AMD8/FLX7: Oxide TFT: Flexible Displays 15:50-17:00 (p.25)			INP6: AR Interactive Systems 15:50-16:35 (p.29)				
Friday, December 7						OLED3: OLED for Lighting Application 9:00-10:25 (p.31)		PHp: Poster 9:20-12:20 (p.33)
							FMC9: LED Lighting Technologies 10:50-11:50 (p.32)	
							PRJ4: Solid State Lighting 14:00-15:10 (p.33)	
							PH3: Phosphors for Lighting 15:50-17:20 (p.34)	

IDW/AD '12 Session Navigator

	Tuesday, Dec. 4				Wednesday, Dec. 5				Thursday, Dec. 6				Friday, Dec. 7						
	9:25-12:40	PM		17:50-18:50	AM		PM		17:30-18:30	AM		PM		17:30-18:30	AM		PM		17:30-18:30
Keynote	Main Hall																		
	Opening, Keynote Addresses																		
LCT		Event Hall			Room D				Event Hall						Room D			Event Hall	
		Posters			LC Semiconductors	New Functional LC Devices	Blue Phase	Wide Viewing Angle & Fast Switching	A.I.						Emerging Display Mode	Photo Alignment	LC Alignment Technology	A.I.	
AMD		Room A		Event Hall	Room A			Room E	Event Hall	Event Hall		Room A		Event Hall		Room B-1		Event Hall	
		Organic & Carbon TFT	Flexible Active Matrix Devices*	A.I.	Oxide TFT: Materials & Devices	Oxide TFT: Applications	Oxide TFT: Solution Process	Touch Panel (2)*	A.I.	Posters		Oxide TFT: Reliability	Oxide TFT: Flexible Displays*	A.I.			Active-Matrix Circuits	A.I.	
FMC		Room B-1		Event Hall	Event Hall		Room B-2		Event Hall		Room E	Room B-2		Event Hall	Room B-2			Event Hall	
		Manufacturing Technologies (1)	Manufacturing Technologies (2)	A.I.	Posters		Materials (1)	Materials (2)	A.I.		Flexible Materials & Fabrication Processes*	Materials (3)	Backlight	A.I.	Manufacturing Technologies (3)	LED Lighting Technologies		A.I.	
PDP						Event Hall				Room C-2			Event Hall						
						Posters				Driving	Ultra HDTV	Protective Layer	A.I.						
PH											Room C-1		Event Hall	Event Hall			Room B-2	Event Hall	
											Phosphors in EL	Phosphors in General	A.I.	Posters			Phosphors for Lighting	A.I.	
FED														Room C-1			Event Hall		
														CNT Emitters & Applications	Applications & New Materials	Fabrication Processes	Fundamental Mechanisms	A.I.	
OLED										Room A		Event Hall		Room A				Event Hall	
										Keynote & Future Trend	Micro OLED Display	Posters		A.I.	OLED for Lighting Application	Materials & Devices	Display Technologies (1)	Display Technologies (2)	A.I.
3D		Room B-2		Event Hall	Room B-1			Room B-1	Event Hall		Room B-1	Event Hall		Room E				Event Hall	
		Ray-Space Analysis	Holography	A.I.	3D Crosstalk Evaluation*	3D Image Quality (1)*		3D Image Quality (2)*	A.I.		Digital Museum of Kyoto Gion Festival	Posters		A.I.	Novel 3D Approach	Device & Approach for 3D Display	Ray-Based Realistic 3D Display	Quality Evaluation	A.I.
VHF		Room C-1		Event Hall	Room B-1			Room B-1	Event Hall	Room B-1	Event Hall				Room C-2			Event Hall	
		Color (1)	Color (2)*	A.I.	3D Crosstalk Evaluation*	3D Image Quality (1)*		3D Image Quality (2)*	A.I.	Wide-Angle & Head-Up Display Human Factors	Posters		A.I.		Human Factors & Visual Cognition	Image Format & Ergonomic Design of HD/ UHDTV	Display Measurement	A.I.	
PRJ										Room B-2		Event Hall		Room B-1		Room B-2		Event Hall	
										High Reality	Short Presentation	Posters		A.I.	Vehicle Displays	Components	Solid State Lighting		A.I.
EP		Room D		Event Hall	Room B-2			Event Hall											
		Electrophoretic Displays	Reflective Displays & Evaluations	A.I.	Electrochromic Displays & Others (1)	Electrochromic Displays & Others (2) + Short Presentation	Posters		A.I.										
MEET										Room D			Event Hall						
										MEMS Imaging & Sensing	Fundamental Components & Process Technologies	Emerging Technologies	Display & Imaging	A.I.					
DES		Room C-2		Room C-1	Event Hall	Room C-2			Event Hall				Room B-1	Event Hall					
		SUPER HI-VISION Public Viewing	Color (2)*	A.I.	Low Power Consumption	Display Electronic Systems + Short Presentation	Posters		A.I.			Recent Advances in Augmented Reality Applications		A.I.					
FLX			Room A	Event Hall	Event Hall		Room B-1	Room A	Event Hall	Room E			Room A	Event Hall					
			Flexible Active Matrix Devices*	A.I.	Posters		Organic TFTs & Related Materials	Flexible Oxide TFTs	A.I.	Materials & Evaluation for Flexible Devices	Flexible Materials & Fabrication Processes*	Fabrication for Flexible Devices	Oxide TFT: Flexible Displays*	A.I.					
INP		Event Hall				Room E			Event Hall	Room C-1				Room B-1	Event Hall				
		Posters				Interaction	Touch Panel (1)	Touch Panel (2)*	A.I.	3D/2D Imaging Systems (1)	3D/2D Imaging Systems (2)		AR Interactive Systems	A.I.					

LCT: Workshop on LC Science & Technologies
 AMD: Workshop on Active Matrix Displays
 FMC: Workshop on FPD Manufacturing, Materials & Components
 PDP: Workshop on Plasma Displays
 PH: Workshop on EL Displays & Phosphors
 FED: Workshop on Field Emission Display & CRT
 OLED: Workshop on OLED Displays & Related Technologies
 3D: Workshop on 3D/Hyper-Realistic Displays & Systems

VHF: Workshop on Applied Vision & Human Factors
 PRJ: Workshop on Projection & Large-Area Displays & Their Components
 EP: Workshop on Electronic Paper
 MEET: Workshop on MEMS & Emerging Technologies for Future Displays & Devices
 DES: Workshop on Display Electronic Systems
 FLX: Workshop on Flexible Displays
 INP: Workshop on Touch Panels & Input Technologies

A.I.: Author Interviews & Demonstrations
 *: Joint Session

IDW/AD '12 The 19th International Display Workshops in conjunction with Asia Display 2012

December 4-7, 2012 Kyoto International Conference Center, Kyoto, Japan

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(2) Mail or Fax (Deadline: November 23, 2012)

Registration Form is available via <http://www.idw.ne.jp/regist.html>

(3) On-site

Early-Bird Fee: until Nov. 2

Deadline of Advance Registration: Nov. 23

Accommodations

JTB Western Japan, Corp. will handle arrangements for your hotel reservations.

Room rates include breakfast, service charge, and 5% consumption tax.

It will be very hard to book a hotel in Kyoto in December due to it being the peak tourist season.

So we recommend you make reservations in advance at the hotels recommended by IDW through the website below.

Reservation

Access <http://www.idw.ne.jp/accommodation.html>

No. in map (p.18)	Hotel Name / Phone	Rates (per person * per night)	
		Single	Twin (Single Use) Twin
1	Grand Prince Hotel Kyoto / +81-75-712-1111		¥19,000 ¥11,000
2	Kyoto Hotel Okura / +81-75-211-5111	¥20,300	¥18,000
3	Kyoto Royal Hotel & Spa / +81-75-223-1234	¥12,500	¥10,500
4	Hotel Monterey Kyoto / +81-75-251-7111	¥11,550	¥8,400
5	Karasuma Kyoto Hotel / +81-75-371-0111	¥9,500	¥8,000
6	Hotel Keihan Kyoto / +81-75-661-0321	¥8,900	¥6,400
7	Mitsui Garden Hotel Kyoto Shijo / +81-75-361-5531	¥9,500	
8	Mitsui Garden Hotel Kyoto Sanjo / +81-75-256-3331	¥9,500	
9	Hearton Hotel Kyoto / +81-75-222-1300	¥8,500	¥7,000
10	Hotel Gimmond Kyoto / +81-75-221-4111	¥8,500	¥7,500
11	Aranvert Hotel Kyoto / +81-75-365-5111	¥9,500	¥7,500
12	Kyoto Garden Hotel / +81-75-255-2000	¥7,800	¥6,800
13	Via Inn Kyoto Shijomurumachi / +81-75-256-6111	¥7,000	

Cancellation Policy

6 days or more days prior to the first night of stay No charge
 1 to 5 days before the first night of stay 20% of total room charge
 The first night of stay (notice given) 50% of total room charge
 No notice given 100% of total room charge

Deadline of Hotel Reservation:

Nov. 16

IDW/AD '12 Secretariat:
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JNC CORPORATION



NLT Technologies



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