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
• Organic LED Displays
• 3D/Hyper-Realistic Displays and Systems
• Applied Vision and Human Factors
• Projection and Large-Area Displays, and Their Components
• Electronic Paper
• MEMS for Future Displays and Related Electron Devices
• Display Electronic Systems

Topical Sessions on
• Display Technologies for Professional Use
• Flexible Displays

Advance Program

Toki Messe Niigata Convention Center
Niigata, Japan
December 3(Wed) –5(Fri), 2008
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Scientific and technological advances in research and development on information displays will be found at the 15th International Display Workshops (IDW '08). A feature of the IDW '08 is an integration of the following thirteen workshops. In addition, two topical sessions will focus on the recent progress of flexible displays and professional use of information displays.

**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
- Organic LED Displays
- 3D/Hyper-Realistic Displays and Systems
- Applied Vision and Human Factors
- Projection and Large-Area Displays, and Their Components
- Electronic Paper
- MEMS for Future Displays and Related Electron Devices
- Display Electronic Systems

**Topical Sessions on**
- Display Technologies for Professional Use
- Flexible Displays

The three-day conference will feature 503 papers, including 2 keynote addresses, 1 invited address, 79 invited papers, 182 oral and 239 poster presentations, and some additional late-news papers will also be arranged. Following keynote and invited addresses in the Wednesday morning, presentations will begin and continue in six parallel sessions through Friday. Poster sessions and author interviews will enable participants to discuss presented issues in detail. IDW '08 will present “IDW Best Paper” awards and “IDW Outstanding Poster Paper” awards based on their originalities and technical significance to information displays. Exhibitions from display and related industries will also be featured from Wednesday to Friday in parallel with workshops. The IDW '08 should be of interest not only to researchers and engineers, but also to those who manage companies and institutions in the display community.

**Workshop on LC Science and Technologies (LCT)**
Recent advances in LC materials and device technologies are presented. The sessions cover from fundamental studies to recent development in LCD technologies. New LC materials & modes, LC alignment processes, display measurement, fast-response LCDs and high performance LCDs are discussed. Special two sessions on advanced LC materials and LCDs are also included as 15th IDW anniversary.

**Workshop on Active Matrix Displays (AMD)**
Full of opportunities to stimulate your intellectual curiosity with interesting invited talks and contributed papers, this workshop covers various applications such as LCD and OLED for TV, and novel applications, etc. It also features TFT technologies including organic TFT, poly-Si TFT, crystallization, SOG, \(\mu\)c-Si TFT, and oxide-semiconductor TFT, etc. Come and join us in a discussion of the latest progress in active matrix displays and TFT technologies.
Workshop on FPD Manufacturing, Materials and Components (FMC)
This workshop deals with the recent developments and achievements in FPDs. The cutting-edge technologies of the optical films and color filters, LCD backlighting systems, optical components, manufacturing technologies, and measurement systems are highlighted.

Workshop on Plasma Displays (PDP)
The PDP Workshop introduces over 50 excellent papers. It should be noted that 1/3 of these papers are related to a protecting layer and exo-electron emission from the layer. Although the retail prices of PDP-TVs and LCD-TVs are similar, the number of components used in the PDP modules is an order of magnitude smaller than that used in the LCD modules, suggesting a possibility of a lot cheaper PDP-TVs in future. We have several papers introducing new fabrication technologies. One of the papers randomly selected as a possible topic of this year is a 1m x 3m curved plasma tube array (PTA). During the “Green” G8 Summit of last July held in Japan, the PTA was picked up as an official display device due to its low power consumption. The second random selection is a full-color PDP which is transparent when not in use. Although the technology is still premature, it may bring a bright future of PDPs.

Workshop on EL Displays and Phosphors (PH)
This workshop covers the latest R&D achievements in inorganic ELDs, phosphors for emissive displays and solid-state illumination as well as LEDs. The workshop consists of invited talks, contributed papers and poster papers. These will present phosphors for LEDs, PDPs, ELDs, FEDs, CCFLs and computational approaches for phosphors including interesting topics such as luminescent mechanism and synthesis techniques for phosphors.

Workshop on Field Emission Display and CRT (FED)
This workshop covers the entire field of CRT and field emission display technologies. Recent progress in various field emission displays equipped with carbon nanotube (CNT) field emitter arrays are presented. Field emission characteristics of high-efficiency electron devices (HEED) equipped with active-matrix driving circuits, and various field emitter materials, such as CNTs, ZnO, transition metal nitride and nanocrystalline silicon, are also discussed.

Workshop on Organic LED Displays (OLED)
This workshop includes recent developments in OLED materials, devices, display systems and evaluation methods. OLED technologies based on new full-color patterning methods are reported on, technologies facilitating the use of OLED in mobile and TV applications. Device architecture for highly efficient emissions and novel materials supporting these device technologies are also presented.

Workshop on 3D/Hyper-Realistic Displays and Systems (3D)
This workshop focuses on recent progress in 3D, hyper-realistic image system and related visual sciences. It also covers 3D acquisition, measurement, standardization, holography, high-fidelity color reproduction. Invited talks in this workshop include topics from the forefront of 3D imaging technologies, and recent research into advanced display systems.

Workshop on Applied Vision and Human Factors (VHF)
This workshop provides a forum for discussing the latest industrial and academic R&D in the field of applied vision and human factors associated with display technology. These include methods for improved color reproduction, contrast enhancement and the assessment and improve-
ment of the perceived quality of images. The workshop constitutes a unique opportunity to interact with world-renowned experts in the field and discuss the latest advances with them.

**Workshop on Projection and Large-Area Displays, and Their Components (LAD)**

The hottest technologies for projection displays worldwide will make this workshop exciting. Emerging technologies such as embedded and small projectors with LED and lasers will be highlighted. Ongoing progress in the fields of 3D digital cinema, light sources, light valves, screens and optical systems will be discussed as well.

**Workshop on Electronic Paper (EP)**

This workshop focuses on current topics in electronic paper including rewritable paper, paper-like displays, and flexible displays. Various novel technologies in electrophoretic, liquid crystal, and toner display systems will be reported on. Systems, devices, materials, human factors, and applications in this field are expected to be discussed.

**Workshop on MEMS for Future Displays and Related Electron Devices (MEMS)**

The workshop is unique in covering all aspects of MEMS and nanotechnologies for future displays, imaging devices, and related electron devices. It seeks to broaden the horizons of display technologies into MEMS technologies. Among all the MEMS and display conferences in the world, this is the only opportunity for MEMS researchers to gather and discuss such devices. Research areas such as materials, basic physics and fabrication process are included. Authorities in this field are invited from top research institutions around the world. Invited speakers are from Ecole Polytech., Fraunhofer IPMS, Miradia, Panasonic Elec. Works, Pixtronix, Tohoku Univ., Univ. of Tokyo, and Waseda Univ. Together with excellent contributed papers, this workshop invites participants who wish to open a new field of displays and imaging 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, in combinations with other input/output devices, applications to the new arena. In addition, the systems for a wide and high dynamic range of color reproduction, and high-fidelity systems for professional use, and exploration of future standards such as post-HDTV are specially focused.

**Topical Session on Display Technologies for Professional Use (DPU)**

As the FPDs are rapidly replacing the CRTs, some inconsistency/discontinuity with the existing technologies become apparent as the intrinsic problems on FPDs especially in the professional usages that require high fidelity of color reproduction and image representation. At the same time the FPDs are proliferating to new fields that also require similar characteristics. Though those movements have arisen independently, we must have answers to all. In this session, we will see what are happening in the fields of broadcasts and medical areas and have an opportunity to think what we should do for the future.

**Topical Session on Flexible Displays (FLX)**

Recently, there is increased attention on the flexible display technologies. The technologies are spread in a wide range of fields from material science to a practical panel. Selected papers from workshops, such as EP, AMD, FMC, LCT and OLED, are gathered in one room to wel-
come dedicated researchers in this field. These hottest sessions will cover all aspects of flexible display technologies including electronic paper, organic TFT, plastic substrate, encapsulation process, analysis of the device performance, flexible LC panel.

**IDW Best Paper Award and IDW Outstanding Poster Paper Award**

IDW will present “IDW Best Paper” and “IDW Outstanding Poster Paper” awards. The awards committee of IDW will select the most outstanding papers from those presented at IDW ’08. The award winners will be announced on the IDW website and given a plaque after the conference.

**Exhibition**

The IDW ’08 Exhibition, which will be held from December 3 through December 5, covers materials, components, manufacturing and measuring equipment, software systems and other related products for display devices. Please join-in and enjoy discussions at exhibitors’ booths.

- December 3: 12:00 – 18:00
- December 4: 10:00 – 18:00
- December 5: 10:00 – 14:00

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**EVENING GET-TOGETHER WITH WINE**

Tuesday, December 2, 2008
18:00–20:00

Room “Houou” (30F)
Hotel Nikko Niigata

See page 9 for details

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**IDW ’09**

The 16th International Display Workshops

December 9-11, 2009

World Convention Center Summit
Phoenix Seagaia Resort

Miyazaki, Japan
http://www.idw.ne.jp/
SPONSORSHIP
IDW '08 is sponsored by the Institute of Image Information and Television Engineers (ITE) and the Society for Information Display (SID).

CONFERENCE SITE
Toki Messe Niigata Convention Center
6-1, Bandaijima, Niigata, Niigata 950-0078, Japan

ON-SITE SECRETARIAT
Telephone and fax machines for IDW '08 use will be temporarily set up in the secretariat room (202) at Toki Messe Niigata Convention Center (December 2-5).
Phone: +81-25-246-8530
Fax: +81-25-246-8540

BANQUET
A buffet-style banquet will be held on December 3 from 19:30 to 21:30 in the Continental Room (4F) of Hotel Okura Niigata. As the number of tickets is limited, you are urged to make an advance reservation through the website or by completing the enclosed registration form.
A free chartered-bus from the Conference site to the Banquet site will be offered by the Organizing Committee.

EVENING GET-TOGETHER WITH WINE
A get-together will be held on December 2 from 18:00 to 20:00 in the Houou Room (30F) of Hotel Nikko Niigata with a relaxed atmosphere for informal discussion.

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

Registration Fees
The registration fee for IDW '08 includes admission to the conference, a copy of the proceedings (in book format or on a USB flash drive), and CD-ROM. The proceedings on USB flash drive can be selected only by those who have registered and paid by November 7 (Japan Standard Time).

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<td>Member of ITE/SID/ASO*</td>
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<td>Banquet</td>
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*ASO: Academic Supporting Organizations
(See p. 11 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 membership fee will be subsidized by IDW '08 committee.
See http://www.idw.ne.jp/ for more information.

***Student ID is required.

Please note that the reduced registration fee must be paid by November 7. The full fee will be charged for payments made later than November 7 even if you send the registration form by this date. Also note that the number of banquet tickets to register on site is limited.
For additional sets of the proceedings (book or USB flash drive*) and CD-ROM

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<th>Book &amp; CD-ROM</th>
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<td>At the conference site</td>
<td>¥ 8,000</td>
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<td>Airmail after the conference</td>
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<tr>
<td>Domestic mail after the conference</td>
<td>¥ 10,000</td>
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*Additional sets of USB flash drive and CD-ROM can be selected only by those applying with payment by November 7.

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 21, 2008.

(2) Mail or Fax Registration
Complete the registration form (FORM A) at the centerfold and send it to the secretariat together with all necessary payments no later than November 21, 2008.

IDW '08 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@bilingualgroup.co.jp

The registration fee should be remitted by one of the following methods.
1. Credit Card (only VISA or MasterCard accepted.)
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 2008
   Please attach a copy of the bank receipt with the registration form to avoid any confusion.

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 2 (Tue.)  17:00 – 20:00
December 3 (Wed.)  8:00 – 18:00
December 4 (Thu.)  8:00 – 17:00
December 5 (Fri.)  8:00 – 15:00

The on-site registration fee will be payable by:
1. Cash (JAPANESE YEN only)
2. Credit Card (VISA or MasterCard only)
Bank transfer, bank check, or personal/traveler's checks are not accepted. Payment by cash is recommended.

Cancellation Policy
Refunds for registration, banquet, additional sets of proceedings etc. will be made upon receipt by IDW '08 secretariat of written cancellation, by November 7. For cancellations received after November 7 or no-shows, refunds will not be made. However, after IDW '08 closes, a set of the proceedings book/USB flash drive and CD-ROM will be sent to the registrants who have paid the registration fees.
INQUIRIES
IDW '08 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@bilingualgroup.co.jp

ACADEMIC SUPPORTING ORGANIZATIONS
The Chemical Society of Japan
The Electrochemical Society of Japan (ECSJ)
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 (IEICE)
The Institute of Image Electronics Engineers of Japan
Japan Ergonomics Society (JES)
The Japanese Liquid Crystal Society (JLCS)
The Japan Society of Applied Physics
The Virtual Reality Society of Japan
The Society of Polymer Science, Japan

FUNDS
Funds for the conference are furnished in part by the following organizations:
• Niigata Prefectural Government
• Niigata Visitors & Convention Bureau (Niigata City)

Please keep an eye on the website (http://www.idw.ne.jp/) for latest information.

Late-News Papers
Due September 26, 2008
Submit a two-page camera-ready manuscript via IDW website:
http://www.idw.ne.jp/latenews.html
ACCOMMODATIONS
JTB Corp. will handle arrangements for your hotel reservations.

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

JTB Tokyo Metropolitan Corp.
Corporate Sales Office Yokohama
Yokohama Convention Center

Phone: +81-45-316-4602    Fax: +81-45-316-5701
Office Hours: 9:30-17:30 (Weekdays only)
E-mail: jtb_convention@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 a Japanese consular office or diplomatic mission in their respective country. For further details, please contact your travel agent or the local consular office in your country.
Attention: For some countries’ citizens, official documents prepared by the secretariat will be needed. Please ask the secretariat at least two months before the conference.

JAPAN RAIL PASS AND JR EAST PASS
Japan Rail (JR) provides the following economical passes for some overseas travelers. Because purchase in Japan and usage conditions are restricted, please contact your travel agency prior to your trip.
(1) The JAPAN RAIL PASS is the most economical way to travel throughout Japan by rail and JR buses.
(2) The JR EAST PASS is an economical and flexible rail pass to travel around Eastern Japan.
    Japan Rail Pass: http://www.japanrailpass.net/eng/en001.html
    JR East Pass: http://www.jreast.co.jp/e/eastpass/

CLIMATE
The average temperature in Niigata during the period is around 5°C, with temperatures of 8°C in the daytime and 2°C at night on average.

BANQUET
Wednesday, December 3, 2008
19:30–21:30
Room “Continental” (4F)
Hotel Okura Niigata
See page 9 for details
NIIGATA CITY

Niigata City is located in the center of the Japanese Islands, 250 km north of Tokyo. The city has a long history as a port, and is distinguished for being the site of one of only five international ports opened in 1868 when Japan resumed contact with other countries after nearly 250 years of self-imposed isolation. Since that time, Niigata has developed into one of the most important modern international ports in Japan. Geographically, the city is distinctive in that it is surrounded by water. The Shinano and Agano, two of the largest rivers in Japan, run through the heart of Niigata before emptying into the sea. Until relatively recently, the city was also crisscrossed by a series of canals used to transport goods. Although the canals have been filled in to make the construction of modern roadways possible, the willows that lined these canals still remain today and now serve to lend a gentle air to the bustling downtown area.

When Niigata is mentioned, many people often think immediately of the area’s delicious rice and sake or the city’s beautiful sunsets, but the residents of Niigata themselves take pride, rather, in the spirit of hospitality and community that so distinguishes the city.

PLACES OF INTEREST

Sado Island
Sado Island lies isolated from the mainland by 35 km, and is accessible by Sado Kisen, a ferry service from Niigata City which takes two and a half hours by car ferry or only one hour by jet ferry. Sado Island has a perimeter of 263 km, and a total area of 854.6 km². It is one of the largest islands in Japan. Many tourists come from all over the country every year to visit Sado, an island rich in natural beauty and historic monuments. In the ancient and middle ages, Sado was the island of exile. Many noble or holy people, the ex-Emperor Jun-toku (1197-1242), a Buddhist priest Nichiren Shonin (1222-1282) and a Noh player Zeami (1363 - 1443), for example, were banished there. They left many historic relics as well as a strong influence on the culture of Sado.

Niigata Furusatomura
This facility displays and provides information relating to Niigata’s history, culture and sightseeing spots. There are shops selling various traditional crafts and local products, such as sake, rice and fish, for which Niigata is famous throughout the country. In addition, there is a food court serving delicious local dishes.

Bandai Bridge
The present Bandai Bridge is the third to have spanned the Shinano River (the first was built in 1887, the second in 1909 and the third in 1929). The bridge is 307 m long, 21.9 m wide and consists of 6 arches. Not only was it strong enough to survive the Niigata Earthquake during the 1960s, it has also become one of the symbols of Niigata City.

Prefectural Government Memorial Hall
Built in 1884, this building was formerly home to the Niigata Prefectural Assembly. This Western-style building fuses elements of Western and traditional Japanese architecture. It is the only prefectural assembly building dating from the early Meiji era still in existence in Japan and is designated as a nationally important cultural property.

NIIGATA INFORMATION DESK
Information concerning hotels and tours will be available during the conference period.

More information is available from these websites:
(Niigata City Online)
http://www.city.niigata.jp/e_page/e_index.html
(Niigata Visitors and Convention Bureau)
http://www.nvcb.or.jp/en/
Access to Conference Site

- **Narita Int'l Airport (NRT)**
  - JR Narita Exp. 60 min.
  - JR Haruka Exp. 50 min.

- **Shin-Osaka Station**
  - JR Tokaido Shinkansen Nozomi 160 min.

- **Tokyo Station**
  - JR Joetsu Shinkansen Toki 130 min.

- **Osaka Int'l Airport Itami (ITM)**
  - Flight 65 min. 9 flights / day

- **Incheon Int'l Airport, Korea (ICN)**
  - Flight 60 min. 2 flights / day
  - Int'l flight 115 min. 1 flight / day

- **Niigata Airport (KIJ)**
  - Taxi ¥ 3,000 / 25 min.
  - Bus ¥ 370 / 25 min.
  - Bus ¥ 370 / 30 min.

- **Niigata Station**
  - Taxi ¥ 1,000 / 5 min.
  - Bus ¥ 200 / 15 min.

- **Bandai City Bus Center**
  - 15 min. on foot
  - Bus ¥ 200 / 5-10 min.

- **Toki Messe Niigata Convention Center**

**Access Costs**

- **Narita Int'l Airport (NRT)**
  - ¥ 1,700 / 75 min.

- **Kansai Int'l Airport (KIX)**
  - Bus ¥ 1,700 / 75 min.

- **Central Japan Int'l Airport Centrair (NGO)**
  - Flight 60 min. 2 flights / day

- **Osaka Int'l Airport Itami (ITM)**
  - Flight 65 min.

- **Niigata Airport (KIJ)**
  - Taxi ¥ 1,000 / 5 min.

- **Niigata Station**
  - Taxi ¥ 1,000 / 5 min.

- **Bandai City Bus Center**
  - 15 min. on foot
  - Bus ¥ 200 / 5-10 min.

**Transportation Times**

- **JR Narita Exp.** 60 min.
- **JR Haruka Exp.** 50 min.
- **JR Joetsu Shinkansen Toki** 130 min.
- **Flight** 65 min. 9 flights / day
- **Flight** 60 min. 2 flights / day
- **Flight** 50 min.
- **Flight** 60 min. 2 flights / day
- **Flight** 65 min.

**Distances**

- ¥ 12,690 from Narita Int'l Airport
- ¥ 22,550 from Kansai Int'l Airport
- ¥ 2,000-3,000 / 20 min.
Niigata Downtown and Hotel Locations

* Only buses from Toki Messe stop.

1. Hotel Nikko Niigata (Conference Site) Phone: +81-25-240-1888
2. Hotel Okura Niigata (Banquet Site) Phone: +81-25-224-6111
3. Niigata Grand Hotel
4. Hotel Niigata Phone: +81-25-228-6111
5. Hotel Sunroute Niigata Phone: +81-25-245-3333
6. Niigata Tokyu Inn Phone: +81-25-246-6161
7. Niigata Toei Hotel Phone: +81-25-243-0109
8. Niigata Daiichi Hotel Phone: +81-25-244-7101
9. Court Hotel Niigata Phone: +81-25-243-1111

Phone: +81-25-244-7101
### IDW ’08

**Wednesday, December 3**

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<th>9:30 - 9:40</th>
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<th>Opening</th>
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Master of Ceremony: K. Betsui, Executive Chair, Hitachi, Japan

**Opening Remarks**

**9:30**

_Y. Shimodaira, General Chair, Shizuoka Univ., Japan_

_A. Mikami, Program Chair, Kanazawa Inst. of Tech., Japan_

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<th>9:40 - 11:00</th>
<th>Snow Hall</th>
<th>Keynote Addresses</th>
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**Co-Chairs:**

_A. Mikami, Program Chair, Kanazawa Inst. of Tech., Japan_

_Y. Shimodaira, General Chair, Shizuoka Univ., Japan_

**Keynote Address - 1**

_The Rise of Eco Televisions: Opportunity or Challenge?_

_T. J. M. Schoenmakers_

_Philips, the Netherlands_

**Keynote Address - 2**

_QoE Based IPTV Services_

_10:20_

_J. Kishigami_

_NTT, Japan_

----- Break -----

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<th>11:10 - 11:50</th>
<th>Snow Hall</th>
<th>Invited Address</th>
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**Co-Chairs:**

_R. Hattori, Program Vice-Chair, Kyushu Univ., Japan_

_S. Uchikoga, Program Vice-Chair, Toshiba, Japan_

**Invited Address**

_11:10_ Learning from Monet: Renown Artists and Display Design

_C. M. Falco_

_Univ. of Arizona, USA_
### Workshop on LC Science and Technologies

**Wednesday, December 3**

<table>
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<th>Time</th>
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| 13:20 - 13:30 | Opening Remarks<br>
| T Nose, Akita Pref. Univ., Japan |
| 13:30 - 14:40 | LCT1: Fascinating LC Materials<br>
| Chair: A. Götz, Merck KGaA, Germany<br>Co-Chair: A. Fujita, Chisso Petrochem., Japan |
| **LCT1 - 1: Invited** Carbon Nanotube Doped LC OCB Cells: Physical and Electro-Optical Properties<br>13:30 S.-Y. Lu, L.-C. Chien<br>Kent State Univ., USA |
| **LCT1 - 2: Invited** Structure and Dynamics of Cubic and “Isotropic” LC Phases<br>13:55 J. Yamamoto<br>Kyoto Univ., Japan |
| 15:00 - 16:05 | LCT2: Characterization of LC Alignment<br>
| Chair: M. Kimura, JSR, Japan<br>Co-Chair: I. Nishiyama, DIC, Japan |
LCT2 - 1: *Invited* Continuous Control of Pretilt Angle of LC
15:00
D. Kang
Soongsil Univ., Korea

LCT2 - 2
15:25
Characterization of High Pretilt Angle Generated by Blend Polyimide
T. Shimizu, M. Kimura, T. Akahane
Nagaoka Univ. of Tech., Japan

LCT2 - 3
15:45
Evaluation of Surface Alignment of LC Using Surface Plasmon Resonance Spectroscopy
A. Ikarashi, A. Baba, K. Shinbo, K. Kato, F. Kaneko
Niigata Univ., Japan

----- Break -----

**16:40 - 18:00**

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<th>Marine Hall</th>
<th>LCT3: Image Sticking Measurement</th>
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<td>Chair:</td>
<td>J. C. Kim, Pusan Nat. Univ., Korea</td>
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<tr>
<td>Co-Chair:</td>
<td>S. Komura, Hitachi Displays, Japan</td>
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LCT3 - 1
16:40
Influence of Ion on Voltage Holding Ratio in LCD
M. Mizusaki, Y. Nakanishi, Y. Yoshimura, Y. Yamada, K. Okamoto
Sharp, Japan

LCT3 - 2
17:00
Development of New Evaluation Method for Image Sticking
Samsung Elect., Korea

LCT3 - 3
17:20
A Novel Measurement Method of Ion Density in TFT-LCD Panels
M. Inoue
Toyo, Japan

LCT3 - 4
17:40
Precise Measurement of Very Low Retardation by Using Transmission Ellipsometry
Ajou Univ., Korea
*Samsung Elect., Korea

Author Interviews
18:00 – 19:00
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<td>LCTp1</td>
<td>Wide-View Crossed Circular Polarizers for LCDs</td>
<td>C.-H. Lin</td>
<td>Nat. Sun Yat-Sen Univ., Taiwan</td>
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<td>LCTp1</td>
<td>Optimized Cell Parameters of TN-LCD with WV-EA Film for Excellent Center Contrast Ratio and Down-Side Viewing Angle</td>
<td>X. M. Wang, L. B. Mao, Y. W. Chiu, T. C. Chung, T. S. Jen</td>
<td>Infovision Optoelec., China</td>
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<td>LCTp1</td>
<td>Extensive Study on Optical Anisotropy and Its Non-Uniformity of Wide View Film</td>
<td>J. W. Ryu, Y. S. Shin, Y. K. Kim*, S. Y. Kim</td>
<td>Ajou Univ., Korea</td>
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<td>Samsung Elect., Korea</td>
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<td>Tohoku Univ., Japan</td>
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<tr>
<td>LCTp1</td>
<td>Single Cell Gap Single Mode MTN Transflective LCD</td>
<td>T. Du, H. Y. Mak, P. Xu, C. Vladimir, H. S. Kwok</td>
<td>Hong Kong Univ. of S&amp;T, Hong Kong</td>
</tr>
<tr>
<td>LCTp1</td>
<td>An Optical Configuration of VA LC Cell for Improvement of the Viewing Angle</td>
<td>S.-H. Ji, J.-M. Choi, G.-D. Lee</td>
<td>Dong-A Univ., Korea</td>
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<tr>
<td>LCTp1</td>
<td>Transflective PVA LCD with Single Cell Gap</td>
<td>S. S. Yang, S. Y. Park, B. G. Jo, T. Won</td>
<td>Inha Univ., Korea</td>
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<td>Taiwan TFT LCD Assn., Taiwan</td>
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LCTp1 - 10 Multi-Domain Transreflective LCD Using MTN and ECB Modes by Photoalignment Technology
T. Du, H. Y. Mak, P. Xu, C. Vladimir, H. S. Kwok
Hong Kong Univ. of S&T, Hong Kong

LCTp1 - 11 A Wide Viewing Angle Advanced MVA LCD with In-Cell Retarder
P.-C. Yeh, Y.-S. Jeng, C.-J. Hu, W.-M. Huang
AU Optronics, Taiwan

LCTp1 - 12 Driving Characteristic of FLC Controlled by Using Asymmetric Alignment Method
N. Sawatari, M. Ishikawa, R. Harada, M. Okabe
Dai Nippon Printing, Japan

LCTp1 - 13 Improvement of Transient Response Characteristics of Polymer Stabilized Bend Alignment LC Cell
T. Kobayashi, Y. Asakawa, T. Takahashi, S. Saito
Kogakuin Univ., Japan

LCTp1 - 14 Electro-Optical Properties of Optically Compensated No-Bias-Bend LCD
H. Shidara, T. Takahashi, S. Saito
Kogakuin Univ., Japan

LCTp1 - 15 Chirality Induced Acceleration of Bend-Growth Rate for OCB Mode
F. Ogasawara***, K. Kuboki****, K. Wako****, T. Uchida****, A. Yoshizawa*
"Hirosaki Univ., Japan
""Tohoku Chem., Japan
""""JST, Japan
""""""Tohoku Univ., Japan

LCTp2 - 1 Reflective Configuration of a Bistable Twisted Nematic LCD with Left- and Right-Handed $\pi$-twist States for High Contrast Ratio
Pusan Nat. Univ., Korea

LCTp2 - 2 Transition from U-State to T-State through an Over-Twisted State in Bi-Nem LC Cell
Y. Uchiyama, H. Terashi, T. Takahashi, S. Saito
Kogakuin Univ., Japan

LCTp2 - 3 Novel Bistable LCD Switching between Two Twisted Directions
T. Kobayashi, K. Suzuki, S. Saito, T. Takahashi
Kogakuin Univ., Japan
LCTp2 - 4  
**Numerical Studies of Fringe Field Effect Depending on Pretilt Angel in LCOS Microdisplay**  
H. B. Son*, M. S. Kim**, M. H. Oh*, J. J. Kang*  
*Dankook Univ., Korea  
**Unin-Display, Korea

LCTp2 - 5  
**Electric-Optic Characteristics of Nematic LC with Chiral Dopant in Fringe-Field Switching Mode**  
O.-S. Son, S.-Y. Choi, Y.-I. Park, D.-H. Suh, G. Son  
BOE HYDIS Tech., Korea

LCTp2 - 6  
**Study of LC Alignment Films Anisotropy by Near-Edge X-Ray Absorption Fine Structure Spectroscopy**  
M. S. Kwak, H. R. Chung, H. M. Kwon, J. H. Kim,  
D. K. Han, S. M. Lee, C. G. Lee, S. Y. Cha  
LG Display, Korea

LCTp2 - 7  
**Novel Cholesteric LCs with Dual-Chirality toward High Reflectivity**  
C.-M. Wu, S.-H. Liu, C.-L. Chin, A.-C. Chen, Y.-C. Liao,  
K.-L. Cheng  
ITRI, Taiwan

LCTp2 - 8  
**See-Through LCDs Using Transparent Light-Guide Plates**  
KAIST, Korea

LCTp2 - 9  
**Low Power LCD with Low Supply Voltage**  
A. R. Shashidhara, T. N. Ruckmangathan  
Raman Res. Inst., India

LCTp2 - 10  
**Switching Responses and Morphological Development in PDLC Composite Films**  
P. Malik, K. K. Raina*  
Dr. B. R. Ambedkar Nat. Inst. of Tech. Jalandhar, India  
*Thapar Univ., India

LCTp2 - 11  
**Electro-Optical Device Using Electrospun Cellulose-Based Nanofibres**  
S. Kundu*, P. L. Almeida***, J. P. Borges****,  
M. H. Godinho****, J. L. Figueirinhas*****  
*CENIMAT, Portugal  
***EST/IPS, Portugal  
****New Univ. of Lisbon, Portugal  
*****CFMC-UL, Portugal  
******Instituto Superior Técnico, Portugal
LCTp3 - 1 Effects of Thermal Modulation on Anisotropic Diffraction in Orientation-Controlled LC Composite Volume Gratings
Takamatsu Nat. College of Tech., Japan
*Nat. Inst. of Advanced Ind. S&T, Japan
**Nagaoka Univ. of Tech., Japan

LCTp3 - 2 Luminance Improvement in LC Electrochemiluminescent Cells by Heating Stir Process
T. Horiuchi, M. Honma, T. Nose
Akita Pref. Univ., Japan

LCTp3 - 3 Effect of Concentration of Embedded LC Director in Electrolyte on Power Conversion Efficiency in DSSC
H. K. Kim, S.-H. Jin*, G.-D. Lee
Dong-A Univ., Korea
*Pusan Nat. Univ., Korea

LCTp3 - 4 Relationship between Electric Properties of LC Devices and Structures of Hybrid Nanoparticles Used as a Dopant
N. Nishida, S. Ohta, Y. Shiraishi, S. Kobayashi, N. Toshima
Tokyo Univ. of Sci., Yamaguchi, Japan
LCTp4 - 5 Determinations of Twist Angle, Pretilt Angle, and Cell Gap of a TN LC Cell by Phase-Sensitive Heterodyne Interferometry

H.-C. Tseng, R.-B. Li, W.-C. Chen, K.-H. Yang, S.-F. Wang*
HannStar Display, Taiwan
*Ching Yun Univ., Taiwan

LCTp4 - 6 Leslie Viscosity Coefficients of Nematic LCs with Negative Dielectric Anisotropy Determined by Transient Current Technique

Osaka Pref. Univ., Japan
*Toyo, Japan
**Merck, Japan
***Merck KGaA, Germany

LCTp4 - 7 Electrical and Surface Characteristics of Polyimide Film on ITO Coated Glass Substrate

*Tokyo Univ. of Sci., Yamaguchi, Japan
**Toyo, Japan
***Nissan Chem. Ind., Japan

LCTp4 - 8 Two Photon Fluorescence Microscopy Technique for Three-Dimensional Imaging of LC Director

Osaka Univ., Japan

LCTp4 - 9 Polar Anchoring Energy Measurement of Pre-imidized Polyimide with Low Temperature Process

ITRI, Taiwan
*Nat. United Univ., Taiwan

LCTp5 - 1 Adjustable Pretilt Angle Generated by Ion Beam Exposure and Followed by Rubbing Treatment

D. J. Chen, Z. Y. Yen, F. Y. Lien, J. L. Chen
Taiwan TFT LCD Assn., Taiwan
Thursday

LCTp5 - 2  LC Alignment on SiO$_x$ Film Surfaces by Using Ion Beam Scanning Method
Pusan Nat. Univ., Korea
*Samsung Elect., Korea

LCTp5 - 3  Tunable LC Pretilt Angles Generated by Nanoparticles
ITRI, Taiwan
*Nat. Formosa Univ., Taiwan
**Nat. United Univ., Taiwan

LCTp5 - 4  Temperature Dependence of Photoalignment of Dye-Doped LCs
C.-Y. Huang, C.-D. Lin, T.-S. Mo*, C.-R. Lee
Nat. Cheng Kung Univ., Taiwan
*Kun Shan Univ. of Tech., Taiwan

LCTp5 - 5  Optical Properties of Polyimide(CBDA-BAPP) Thin Films
T. Mizunuma, H. Shitomi*, S. Matsumoto
Meiji Univ, Japan
*AIST, Japan

LCTp5 - 6  Orientation Measurement of LC Molecule Deposited on Rubbed Polyimide Film Used by Grazing-Incidence X-Ray Diffraction
T. Koganezawa, I. Hirosawa, H. Nameki, H. Ishii*
Japan Synchrotron Radiation Res. Inst., Japan
*Nissan Chem. Ind., Japan

LCTp5 - 7  Comparison of Friction Characteristics on Alignment Films with Frictional Force Microscopy
LG Display, Korea

LCTp5 - 8  Surface Crystallization of Rubbed Polyimide Film for LC Alignment by Annealing
I. Hirosawa, T. Koganezawa, T. Sakai*, H. Ishii*
Japan Synchrotron Radiation Res. Inst., Japan
*Nissan Chem. Ind., Japan
LCTp5 - 9 Rubbing Alignment Using Pre-imidized Polyimide as an Alignment Material

*I TRI, Taiwan
**Nat. Chaio Tung Univ., Taiwan

13:20 - 14:45 Snow Hall B

LCT4: LC Alignment Patterning

Chair: M. Kimura, Nagaoka Univ. of Tech., Japan
Co-Chair: I. Hirosawa, Japan Synchrotron Radiation Res. Inst., Japan

LCT4 - 1: Invited LC Alignment on Patterned Structure Fabricated by Laser Lithography
13:20

Y. Shimizu**
*Osaka Univ., Japan
**AIST, Japan

LCT4 - 2 Photo-Aligning and Photo-Patterning by Photosensitive Azo-Dye Layers
13:45

V. G. Chigrinov, H. S. Kwok, H. Hasebe*, H. Takatsu*
Hong Kong Univ. of S&T, Hong Kong
*DIC, Japan

LCT4 - 3 Self-Organized Microwrinkles for LC Alignment
14:05

T. Ohzono, H. Monobe, Y. Shimizu
AIST, Japan

LCT4 - 4 New Method of Vertical Alignment by Using Nano-Structure
14:25

T. Kawamura, Y. Yoshimura, Y. Yamada, K. Okamoto
Sharp, Japan

----- Break -----
Time Resolved Photometric and Colorimetric 2D Measurements of both Dynamic and Static Luminance and Colour Artifacts in FPD

J. J. Jensen, S. Kobayashi*, M. Inoue**, Y. Kaneko**
DELTA, Light & Optics, Denmark
*Tokyo Univ. of Sci., Yamaguchi, Japan
**Toyo, Japan

Analysis of Image Distortion Phenomena Induced by External Force on LCD

LG Display, Korea

Author Interviews
18:00 – 19:00

Friday, December 5

9:00 - 10:30 Snow Hall B
LCT6: 15th Anniversary: Progress of LC Materials

Chair: L. C. Chien, Kent State Univ., USA
Co-Chair: M. Suzuki, Merck, Japan

LCT6 - 1: Invited Innovations in the LC Material Developments and the Prospects towards the Future
9:00
Y. Gotoh
Chisso, Japan

LCT6 - 2: Invited Syntheses and Physical Properties of New LCs with Negative Dielectric Anisotropy
9:30
H. Takatsu, S. Kawakami, G. Sudo, T. Kusumoto, Y. Nagashima, M. Negishi, T. Matsumoto
DIC, Japan

LCT6 - 3: Invited Advanced LC Materials for Fast Switching Display Modes
10:00
A. Götz, M. Klasen-Memmer, M. Bremer, A. Taugerbeck, K. Tarumi, D. Pauluth
Merck KGaA, Germany

----- Break -----
--- Lunch ---

LCT7 - 1: **Invited** Progress of the High Performance LCDs  
10:40  
T. Uchida and T. Ishinabe  
Tohoku Univ., Japan

LCT7 - 2: **Invited** VA Mode: Promising Candidate for Upcoming New Imaging Era  
11:10  
K. Okamoto  
Sharp, Japan

LCT7 - 3: **Invited** The Latest IPS-Pro Technology for LCD-TVs  
11:40  
K. Ono, I. Hiyama  
Hitachi Displays, Japan

LCT7 - 4: **Invited** Development of Optically Compensated Bend Mode LCDs  
12:10  
H. Wakemoto, K. Nakao, K. Nishiyama, A. Takimoto  
Toshiba Matsushita Display Tech., Japan

--- Lunch ---

LCT8 - 1: **Invited** Fundamental Performance of PSS-LCDs  
13:40  
A. Mochizuki  
Nano Loa USA, USA

LCT8 - 2  
14:05  
Dual Mode LCDs with Multistable and Dynamic Modes  
C.-Y. Huang, C.-C. Lai, Y.-H. Tseng, Y.-T. Yang, C.-J. Tien, K.-Y. Lo*  
Nat. Changhua Univ. of Education, Taiwan  
*Nat. Chiayi Univ., Taiwan

LCT8 - 3  
14:25  
An Anisotropic Polymer-Networked Vertical-Aligned LC Cell with Fast Response  
Pusan Nat. Univ., Korea

--- Break ---

LCT9: High Performance LCDs (1)  
15:00 - 16:10  
Snow Hall B

Chair: A. Mochizuki, Nano Loa USA, USA  
Co-Chair: H. Fujikake, NHK, Japan
LCT9 - 1:  
15:00  
*Invited* Developments of FLCDs and Applications Utilizing Memory Effect  
H. Amakawa, S. Kondoh  
Citizen Holdings, Japan

LCT9 - 2:  
15:25  
*Invited* V-Shaped E-O Properties of Polymer Stabilized FLCD Free from Conventional Surface Stabilization: Advanced Color Sequential LCDs  
DIC, Japan  
*Tokyo Univ. of Sci., Yamaguchi, Japan

LCT9 - 3:  
15:50  
Low Driving Voltage, Molecular Arrangement and Stability of Reverse TN Mode  
K. Takatoh, M. Akimoto, H. Kaneko, K. Kawashima, S. Kobayashi  
Tokyo Univ. of Sci., Yamaguchi, Japan

----- Break -----

16:40 - 17:40  
Snow Hall B  
LCT10: High Performance LCDs (2)

Chair: K. Ishikawa, Tokyo Inst. of Tech., Japan  
Co-Chair: H. Amakawa, Citizen Holdings, Japan

LCT10 - 1:  
16:40  
Novel Advanced MVA Technology for Mobile Application  
Y.-P. Kuo, S.-C. F. Jiang, L.-P. Liu, C.-H. Lin, C.-C. Lin, C.-J. Hu, W.-M. Huang  
AU Optronics, Taiwan

LCT10 - 2:  
17:00  
Optimum Design Parameters of Transflective MVA LCD  
K. H. Huang, Y. Y. Huang, C. C. Lin, C. R. Lee, H. T. Yu  
Chunghwa Picture Tubes, Taiwan

LCT10 - 3:  
17:20  
Advanced Transflective MVA LCD with Micro Bump Technology  
AU Optronics, Taiwan

Author Interviews  
17:40 – 18:40

Supporting Organization:  
The Japanese Liquid Crystal Society (JLCS)
Workshop on Active Matrix Displays

Wednesday, December 3

13:20 - 14:25  Snow Hall A

AMD1: Organic TFT

Chair: M. Kitamura, Univ. of Tokyo, Japan
Co-Chair: Y. Fujisaki, NHK, Japan

**AMD1 - 1**: Invited Organic Semiconductors for Stable, High-Performance Thin-Film Transistors
13:20
K. Takimiya, E. Miyazaki, T. Yamamoto
Hiroshima Univ., Japan

**AMD1 - 2**: Self-Aligned Thin Film Transistors with Ink-Jet Printing Process
13:45
K. T. Lin, C. F. Sung, W. C. Chen, M. H. Yang, Y. Z. Lee
ITRI, Taiwan

**AMD1 - 3**: Evaluation of Trap Density in Organic Transistors by Applying Drain Pulse Voltage
14:05
K. Nishita, H. Yajima, S. Naka, H. Okada
Univ. of Toyama, Japan

----- Break -----

15:00 - 16:30  Snow Hall A

AMD2: LCD Applications

Chair: M. Kimura, Ryukoku Univ., Japan
Co-Chair: S. Hirota, Hitachi, Japan

**AMD2 - 1**: Invited Essential Technologies for Next Generation LCD-TVs
15:00
Y. Yoshida, S. Imai, M. Teragawa
Sharp, Japan

**AMD2 - 2**: A LCD Novel Design for High Contrast Ratio
15:25
W. H. Lu, C. W. Chen, M. F. Tien, P. Su, T. J. Chang,
W. L. Liao, A. Lien
AU Optronics, Taiwan

**AMD2 - 3**: Invited Multi-Bit Memory in Pixel Circuit for Ultra Low Power LTPS TFT-LCD
15:45
K. Yamashita, T.-H. Wu, Y. Matsui, M.-C. Lee, S. Kawata,
M. Yoshiga, N. Sumi, M. Shibazaki, Y.-C. Tsai, K. Sano
TPO Displays, Taiwan
Novel Half-Triple-Rate-Driving Method for High Resolution TFT-LCDs with an Integrated a-Si Gate Driver

LG Display, Korea

--- Break ---

Author Interviews
18:00 – 19:00

Thursday, December 4

10:40 - 11:50 Snow Hall B

**AMD3/OLED4: AM-OLED**

Chair: S. Horita, JAIST, Japan
Co-Chair: K. Takatori, NEC LCD Techs., Japan

**AMD3/OLED4 - 1:** 10:40

*Invited* Amorphous Oxide TFT Backplanes for Large Size AMOLED Displays

Y. G. Mo, J. K. Jeong, H. D. Kim
Samsung SDI, Korea

**AMD3/OLED4 - 2:** 11:05

*Invited* Issues of a-Si:H TFTs & LTPS TFTs for an AMOLED Backplane

M.-K. Han
Seoul Nat. Univ., Korea

**AMD3/OLED4 - 3:** 11:30

High Flexibility of AMOLED Displays on Colorless PI Substrate


*ITRI, Taiwan
**Nat. Taiwan Normal Univ., Taiwan

--- Lunch ---
**AMDp1 - 1** Improved Stability of Organic Thin Film Transistors for OLED Backplane Application


ITRI, Taiwan

**AMDp1 - 2** Post-Annealing Effects of Al₂O₃ Gate Dielectric Fabricated with E-Beam Process in Organic Thin-Film Transistors


Hongik Univ., Korea

*Kyungwon Univ., Korea

---

**AMDp2 - 1** Low Power Consumption IPS/FFS TFT-LCD Structure


InfoVision OptoElect., China

**AMDp2 - 2** A Simple Process to Manufacture a-Si TFT LCDs with High Aperture Ratio and Low Power Consumption

H. L. Lin, C. H. Lin, C. J. Hu, W. M. Huang

AU Optronics, Taiwan

**AMDp2 - 3** Low Power Consumption for FHD TFT-LCDs with 2Z-Inversion Pixel Structures


HannStar Display, Taiwan

**AMDp2 - 4** Analysis of Horizontal Crosstalk for HFFS Mode TFTLCDs

Y.-C. Chang, S. Yan, T.-H. Hsieh, C. Yang, J.-P. Pang

InnoLux Display, Taiwan

**AMDp2 - 5** Novel Method for DC Offset Measurement and Compensation to Improve the Image-Sticking of TFT-LCDs


InfoVision OptoElect., China

**AMDp2 - 6** 3-in. WVGA LTPS TFT LCD with Narrow Border Design


Chunghwa Picture Tubes, Taiwan
AMDp2 - 7 Application of Laser Direct Writing to Organic-Based Passivation a-Si:H TFT LCD
Taiwan TFT LCD Assn., Taiwan

13:20 - 16:20 Exhibition Hall B
Poster AMDp3: AM-OLED

AMDp3 - 1 Power Decoupled Driving Method for Large Size AMOLED Displays
Samsung SDI, Korea

AMDp4 - 1 Dehydrogenation and Lateral Crystallization of Nanocrystalline Silicon Film Using Solid-State Continuous-Wave Green Laser
T. Sato, W. Umezu, K. Yamamoto*, A. Hara, K. Kitahara*
Tohoku-Gakuin Univ., Japan
*Shimane Univ., Japan

AMDp4 - 2 Effect of Y₂O₃ Content in a YSZ Seed Layer on Crystallization of a Low-Temperature-Deposited Si Film
S. Hana, S. Horita
JAIST, Japan

AMDp4 - 3 Influence of Laser Plasma Soft X-Ray Irradiation on Nucleation of Crystal Grain in a-Si Film
Y. Takanashi, K. Masuda, A. Heya, S. Amano, S. Miyamoto, N. Matsuo, T. Mochizuki
Univ. of Hyogo, Japan

AMDp4 - 4 Suppression of Short Channel Effect of Thin-Film Transistor by Very Thin SiNx Film Formed at Source and Drain Region
T. Kobayashi, K. Ohkura*, N. Matsuo, A. Fukushima, A. Heya, S. Yokoyama*
Univ. of Hyogo, Japan
*Hiroshima Univ., Japan

AMDp4 - 5 Performance Enhancement of Multi-Gate Poly-Si TFTs with Gate-Overlap Structure
Y. C. Hsu, C. C. Shih, J. S. Chen, W. M. Huang
AU Optronics, Taiwan
AMDp4 - 6 Potential Barrier and Carrier Transport at Grain Boundary in Poly-Si Thin-Film

M. Kimura
*Ryukoku Univ., Japan
**Thin Film Materials & Devices Meeting, Japan

AMDp4 - 7 Complete Extraction of Trap Density in Poly-Si TFTs

T. Yoshino, K. Harada, T. Yasuhara, M. Kimura
Ryukoku Univ., Japan

AMDp4 - 8 A New NBTI Characterization Method on Polycrystalline Silicon Thin-Film Transistors

H.-C. Sun, C.-F. Huang, Y.-T. Chen, C. W. Liu, Y.-C. Hsu*, C.-C. Shih*, J.-S. Chen
Nat. Taiwan Univ., Taiwan
*AU Optronics, Taiwan

AMDp4 - 9 The Characteristics of the Asymmetric-Offset Structure N-Type Polycrystalline Thin-Film Transistors Fabricated by Alternating Magnetic-Field-Enhanced Rapid Thermal Annealing

*Seoul Nat. Univ., Korea
**Samsung Elect., Korea

AMDp5 - 1 Colloidal ZnO Nanocrystals-Based Transparent Field-Effect Transistors

J. J. Lee, G. W. Hyung, J. S. Lee, Y. K. Kim, H. Yang
Hongik Univ., Korea

AMDp5 - 2 A Study of Solution Based In-Ga-Zn Oxide Nano-Particle Thin Film Transistor Devices

Y. H. Yang, S. S. Yang, C. Y. Kao, K. S. Chou
Nat. Tsing Hua Univ., Taiwan

AMDp6 - 1 Stability of Low Temperature Hydrogenated Amorphous Silicon Thin Film Transistors on Generation II Size Colorless Polyimide Substrate

ITRI, Taiwan
The Self-Heating Behavior in a-Si:H Thin Film Transistors Liquid Crystal Display under Transient Current Measurement

Nat. Tsing Hua Univ., Taiwan
AU Optronics, Taiwan
Nat. Sun Yat-Sen Univ., Taiwan
Ctr. for NanoSci. & Nat. Sun Yat-Sen Univ., Taiwan

Effect of Mechanical and Electrical Stresses on the Performance of an a-Si:H TFT on Flexible Tungsten Foil

Kyung Hee Univ., Korea

The Influence of Self-Heating Effect on the Electrical Instability of Hydrogenated Amorphous Silicon TFTs

C. C. Chiu, C. C. Shih, J. S. Chen, W. M. Huang
AU Optronics, Taiwan

Stability Influence with Various Back-Channel Etch Type of a-Si:H TFT

C. S. Wei, Y. S. Lee, P. M. Chen, T. Z. Peng, M. S. Chen, W. M. Huang
AU Optronics, Taiwan

Energy Spectral Characteristics of Various Backlights in Terms of Photocurrent of a-Si:H Thin Film Transistor

K. M. Choi, S. J. Kwon, E. S. Cho
Kyungwon Univ., Korea

The Effect of Light under Electrical Bias Stresses on Amorphous Silicon Thin Film Transistors as Photo Sensor

T.-J. Ha, H.-S. Park, S.-H. Kuk, D.-W. Kang, M.-K. Han
Seoul Nat. Univ., Korea

15:00 - 16:05 Room 201
MEMS4/AMD4: MEMS Displays and Imaging

Chair: M. Scholles, Fraunhofer IPMS, Germany
Co-Chair: M. Bellis, Meradia, USA

Invited MEMS-Based Direct View Displays Using Digital Micro Shutters

N. W. Hagood, L. Steyn, J. Fijol, J. Gandhi, T. Brosnihan, S. Lewis, G. Fike, R. Barton, M. Halfman, R. S. Payne
Pixtronix, USA
Novel Printed MEMS Membrane Switches Backplane for Matrix Driven Large Sign Display
K. Senda, M. Esashi*  
Sumitomo Precision Prod., Japan  
*Tohoku Univ., Japan

Active Matrix Flexible Display Array Fabricated by MEMS Printing Techniques
Univ. of Tokyo, Japan  
*VTT Tech. Res. Ctr. of Finland, Finland

Large-Scale Non-Contact Electric Field Sensor Array, Fabricated by TFT
M. Ikeda, T. Miyashita*, H. Kawano**, K. Nakamura  
Micronics Japan, Japan  
*NES, Japan  
**FPD Solutions, Japan

----- Break -----
Plasma Processing in the Fabrication of Silicon-on-Glass (SiOG) Thin-Film Transistors

Corning, USA  
*Kyung Hee Univ., Korea

10:40 - 12:05  AMD6: System On Glass  

Chair: K. Yamashita, TPO Displays, Taiwan  
Co-Chair: M. Hiramatsu, TMD, Japan

AMD6 - 1:  

**Invited** In-Cell Touch Panel with Embedded Active Matrix Capacitive Sensors by Using LTPS Technology  

E. Kanda, T. Eguchi, Y. Hiyoshi, T. Chino, Y. Tsuchiya, T. Iwashita, T. Ozawa, T. Miyazawa, T. Matsumoto  
Seiko Epson, Japan

AMD6 - 2  

A New Touch Sensitive Active Matrix Display with Embedded Light Sensors  

Seoul Nat. Univ., Korea  
*Samsung Elect., Korea

AMD6 - 3  

Static Sequential Logic Circuit Using CMOS Dynamic Technology for LTPS TFT  

Y. Suga, Y. Suzuki, S. Imai*, T. Satoh  
Tokai Univ., Japan  
*Sharp, Japan

AMD6 - 4  

Novel a-Si:H Gate Driver with Highly Reliable Center-Offset TFTs  

Kyung Hee Univ., Korea

13:20 - 14:45  AMD7: Amorphous Oxide TFT

Chair: Y. G. Mo, Samsung SDI, Korea  
Co-Chair: H. Hamada, Sanyo Elec., Japan
AMD7 - 1: Invited Application of Transparent Amorphous Oxide TFT to Electronic Paper
13:20
M. Ito, C. Miyazaki, N. Ikeda, K. Murata, M. Ishizaki, Y. Kokubo, Y. Ugajin
Toppan Printing, Japan

AMD7 - 2 Bias Temperature Stress Study of RF Sputter Amorphous In-Ga-Zn-O TFTs
13:45
T.-C. Fung, C. Chen, K. Abe, H. Kumomi, J. Kanicki
Univ. of Michigan, USA
'Canon, Japan

AMD7 - 3 Al-Zn-Sn-O Thin Film Transistors with Top and Bottom Gate Structure for AMOLED
14:05
ETRI, Korea

AMD7 - 4 Investigation of Amorphous In-Ga-Zn-O Based TFT Interface Properties with Synchrotron Radiation Analysis
14:25
M. H. Joo, J. K. Choi, K. H. Park, K. W. Ihm, K. J. Kim, T. H. Kang
'LG Elect., Korea
"POSTECH, Korea

----- Break -----

AMD8: Crystalline Oxide TFT

Chair: N. D. Young, Philips Res. Lab., UK
Co-Chair: Y. Yamamoto, Sharp, Japan

AMD8 - 1 Investigation of Instability Mechanisms in Zinc Oxide Thin-Film Transistors under Bias Stress
15:00
M. Furuta, T. Hiramatsu, H. Nitta, T. Hirao, Y. Kamada
S. Fujita
Kochi Univ. of Tech., Japan
"Kyoto Univ., Japan

AMD8 - 2 Theoretical Analysis of IGZO Transparent Amorphous Oxide Semiconductor
15:20
M. Takahashi, H. Kishida, A. Miyazaki, S. Yamazaki
Semiconductor Energy Lab., Japan
New Challenge to Oxide TFT Backplane Technology: Using n-Type TiO$_2$ Active Channel Layers

J.-W. Park, N. Jeon, J. Jang, S.-W. Han*, S. Yoo
KAIST, Korea
Techno-Semichem., Korea

Author Interviews
17:40 – 18:40

Supporting Organizations:
LC Physics and Condensed Matter Forum, JLCS
Chemistry and LC Material Forum, JLCS
Liquid Crystal Display Forum, JLCS
Technical Group on Information Display, ITE
Technical Committee on Electronic Information Displays, Electronics Society, IEICE
Thin Film Materials & Devices Meeting

SID 2009
International Symposium, Seminar and Exhibition
May 31 – June 5, 2009
San Antonio, Texas, USA

EXHIBITION
12:00–18:00 Wednesday, Dec. 3, 2008
10:00–18:00 Thursday, Dec. 4, 2008
10:00–14:00 Friday, Dec. 5, 2008
Exhibition Hall B
Toki Messe Niigata Convention Center
Free admission with your registration name tag.
Workshop on FPD Manufacturing, Materials and Components

Wednesday, December 3

13:20 - 14:40 Room 301

**FMC1: Manufacturing I**

Chair: I. Bita, Qualcomm MEMS Techs., USA
Co-Chair: N. Miyatake, Mitsui Eng.& Shipbuilding, Japan

**FMC1 - 1:** Invited Mirasol Displays: Technology and Manufacturing of Interferometric MEMS on Large Area Glass Substrates

13:20

I. Bita
Qualcomm MEMS Techs., USA

**FMC1 - 2:** Study of the Multi-Layer Metal 4 Mask Array Technology for TFT-LCD Manufactory

13:40

*Graduate Univ. of the Chinese Ac. of Sci., China
**BOE Tech. Group, China

**FMC1 - 3:** Cu Wiring Process for TFT-LCD

14:00

S. Takasawa, S. Ishibashi, T. Masuda*
ULVAC, Japan
*ULVAC Materials, Japan

**FMC1 - 4:** Deposition of Microcrystalline Si$_{1-x}$Ge$_x$ by Magnetron Sputtering

14:20

A. Hiroe, T. Goto, A. Teramoto, T. Ohmi
Tohoku Univ., Japan

----- Break -----
FMC2 - 2  
15:20  
Innovated Linear Atmospheric Plasma for Liquid Crystal Alignment on Polyimide Films  
ITRI, Taiwan

FMC2 - 3  
15:40  
Development of Ink-Jet Equipment for Energy Saving and High Frequency Jetting  
T. Tsuruoka  
Shibaura Mechatronics, Japan

----- Break -----
FMC4 - 1: *Invited*  Wideband Motheye Optical Devices Utilizing Blue-ray Disc Mastering Technology
9:00
S. Endoh, K. Hayashibe
Sony, Japan

FMC4 - 2  In-Cell Viewing Angle Compensation Using Pixelated Biaxial Retarders for VA-LCDs with No Color Shift
9:20
I. Amimori, S. Suzuki, H. Kaneiwa, M. Nakajima, K. Ito, H. Yoshino, W. Kaneko
FUJIFILM, Japan

FMC4 - 3  Advanced Wideband Coatable LCD Retarder with Anomalous Dispersion of Optical Anisotropy
9:40
A. Geivandov*, A. Lazarev**, E. Kharatiyan*, A. Manko*, S. Palto***
*Kontrakt, Russia
**Crysoptix, Japan
***Inst. of Crystallography RAS, Russia

FMC4 - 4  Hybrid-Dyeing-Process Improved Properties of Polarizers on LCD Panels
10:00
*Chunghwa Picture Tubes, Taiwan
**Nat. Taiwan Ocean Univ., Taiwan

----- Break -----
Author Interviews
18:00 – 19:00

Friday, December 5

9:00 - 12:00 Exhibition Hall B

Poster FMCp: FPD Manufacturing, Materials & Components

FMCp - 1 Light Plate with Metallic Nanostructures for Color Filterless Display
P. K. Wei**, T. P. Lin***, C. N. Mo****
Tatung Univ., Taiwan
* Nat. Taipei Univ. of Tech., Taiwan
** Academia Sinica, Taiwan
**** Chunghwa Picture Tubes, Taiwan

FMCp - 2 Characteristics of Pyramid and Cone Sheets with Self-Aligning Apertures
B. G. Kim*, B. C. Ahn*, J. G. Shim*
Yeungnam Univ., Korea
* LG Display, Korea

FMCp - 3 ITO Etching Properties of a Compacted In-Line Wet Etch/Cleaning System by Using a Reverse Moving System
S. H. Im, M. H. Ahn, K. M. Choi, E. S. Cho, S. J. Kwon
Kyungwon Univ., Korea

FMCp - 4 Ampere Particle Current Beams of Boron and Phosphorus for the Ion Implantation of Very Large FPDs Using Multiple Ribbon Beam Permanent Magnet Mass Separation
D. Aitken
Superion, UK
FMCp - 5  Arc Discharge Optimization to Obtain High Current of Boron and Phosphorus Ion Beam from a Multi-Cusp Ion Source
Y. Inouchi, G. Takahashi, S. Dohi, M. Tanii, M. Konishi, M. Naito
Nissin Ion Equipment, Japan

FMCp - 6  Functions-Integrated Liquid Crystal Polymer Layer with Surface Grating Made by Nanoimprint Lithography Process
S.-W. Lin, Y.-Y. Lai, H.-L. Kuo, P.-C. Chen, M.-C. Peng, Y.-P. Hsieh
ITRI, Taiwan

FMCp - 7  Methodology of Reliability Characterization and Yield Optimization for TFTs in AM-LCDs
AU Optronics, Taiwan

FMCp - 8  A Stress Measurement and Inspection System for Flexible Display Substrates and LCD Glasses
ITRI, Taiwan

FMCp - 9  Novel Material for Coatable Negative C-Plate Retarder
T. Yamashita, S. Yoshida, M. Eguchi, J. Tsukamoto
Toray Ind., Japan

FMCp - 10 Reactive Mesogen (RM) Technology of Zero Retardation for In-Plane Switching (IPS) Mode
Hyosung, Korea

FMCp - 11 Retardation Films with In-Plane Oblique Slow-Axis
M. Hirota, T. Asada, T. Hori, K. Miyagi, K. Arakawa
ZEON, Japan

FMCp - 12 Novel Patterned LC Polymer Retarders for Prevention of Wavelength Dispersion
J. Ahn, M. K. Kim, A.-R. Han, Y. C. Kim, S.-H. Paek
Kyunghee Univ., Korea

FMCp - 13 Single-Layer Retarder for LCD
A. Lazarev, A. Geivandov*, I. Kasianova*, E. Kharatiyan*, P. Lazarev*, A. Manko*, S. Palto**
Crysoptix, Japan
*Kontrakt, Russia
**Inst. of Crystallography RAS, Russia
FMCp - 14  Polyvinyl Alcohol-Iodine Complexes Formation in Aqueous Solution for Improvement of Polarizing Properties of Polarizer  
D. Ogomi, M. Miyazaki, H. Mizushima, M. Miyatake  
Nitto Denko, Japan

FMCp - 15  New Method to Evaluate and Quantify Possibility of Dent Issue on Polarizer  
M. T. Weng, W. F. Sung, P. J. Yeh  
AU Optronics, Taiwan

FMCp - 16  Brightness-Enhancement Film Using a Single Cholesteric Liquid Crystal Layer  
K. Tamura, K. Harai, Y. Fujino, K. Kawabata, K. Arakawa  
ZEON, Japan

FMCp - 17  Optimized Light-Guide Design for Thin Direct Backlight  
C. S. Chu, Y. T. Li, H. H. Chen  
Elect. & Opto-Elect. Res. Labs., Taiwan

FMCp - 18  Film-Bonded Light-Guide Plate Without Using Optical Films  
Y.-Y. Chang, C.-J. Ting, W.-H. Yang  
ITRI, Taiwan

FMCp - 19  Highly light Collimating Backlighting System  
Y.-Y. Chang, C.-S. Hsu, C.-J. Ting, C.-P. Chou  
ITRI, Taiwan  
* Nat. Chiao Tung Univ., Taiwan

FMCp - 20  A Novel Simplified Light Guide Plate Design  
C. H. Chien, W. T. Hsu, H. C. Wang  
Nat. Sun Yat-Sen Univ., Taiwan

FMCp - 21  Automatic Pattern Design for Light Guide Used in Edge-Lit Backlight  
M. Chen, R. Chen, D. Chen  
AU Optronics, Taiwan

FMCp - 22  Enhancement of Value Added on Backlight Module by Diffuser Plate with Pattern  
Y. Takahashi, K. Tsukada, K. Kusano, I. Konishi  
ZEON, Japan

FMCp - 23  A Multi Structure Diffuser Plate for Direct LCD TV Backlight  
Y. Luo, Y. C. Cheng, L. C. Chang  
Innolux, Foxconn Tech. Group, China
FMCp - 24  A Simulation Study on the Optimization of Optical Films for Edge-Lit Backlight
Hallym Univ., Korea
*Samsung Elect., Korea

FMCp - 25  Anti-Scrape Luminance Enhancement Film
ITRI, Taiwan
*Toplux Tech., Taiwan

FMCp - 26  White Reflection Molding Compound for Surface Mount LEDs
N. Urasaki, M. Mizutani, H. Kotani
Hitachi Chem., Japan

FMCp - 27  Binning Analysis of Phosphor-Based Light Emitting Diode Used in Direct-Lit Backlight
Y. H. Chang
AU Optronics, Taiwan

FMCp - 28  A Novel Full-Color-LED-Backlight Design in TFT-LCD
Chunghwa Picture Tubes, Taiwan

FMCp - 29  Optical Characteristics of Direct-Lit Flat-Lamp Backlights for LCD Applications
Hallym Univ., Korea
*Korea Polytechnic Univ., Korea

FMCp - 30  New Driving Method and Circuit for Low Cost Local Dimming Xe Backlight Unit
J. N. Heo, J. K. Lim, J. Y. Kim, H. S. Tae, J. H. Seo*, K. S. Lee**
Kyungpook Nat. Univ., Korea
*Incheon Univ., Korea
**Samsung Corning Precision Glass, Korea

FMCp - 31  Nanostructure Arrays for Backlight Luminance Enhancement
Nat. Taipei Univ. of Tech., Taiwan
*Tatung Univ., Taiwan
**Chunghwa Picture Tubes, Taiwan
FMCp - 32  
Smart Omni-Directional Viewing-Angle-Switching Backlight  
Nat. Chiao Tung Univ., Taiwan  
*Chunghwa Picture Tubes, Taiwan

FMCp - 33  
Photosensitive Spin-on Glass Material with Phenyl Silsesquioxane (PSQ) Derivatives  
Y. Tashiro, T. Iwata, T. Sekito, D. Yokoyama, T. Nonaka  
AZ Elect. Materials Japan, Japan

FMCp - 34  
Aminosilane Silicon Oxide Gas Barrier Coating on Plastic Substrates  
H. G. Kim**, M. J. Kim*, S. S. Kim***  
*Kyung Hee Univ., Korea  
**Regional Innovation Center-Component and Material for Inf. Display, Korea

FMCp - 35  
Optical and Electric Conductivity Properties of Optimized ZnO-Based Multilayer Thin Films  
J. Dong, S. L. Wu, F. Wang, H. F. Liang, F. G. Zhao, L. G. Meng, J. T. Zhang  
Xi'an JiaoTong Univ., China

FMCp - 36  
The Electrical Properties of Al, Ga-Codoped ZnO Thin Films: The Effect of Film Thickness and Oxygen Partial Pressure  
LG Display, Korea  
*Heesung Metal, Korea

FMCp - 37  
Preparation of Impurity-Doped ZnO Transparent Electrodes Suitable for LCD Applications by Magnetron Sputtering  
J. Nomoto, M. Konagai, H. Fukada, T. Miyata, T. Minami  
Kanazawa Inst. of Tech., Japan

FMCp - 38  
Development of a New Environmentally-Friendly LCD Glass Substrate: OA-10G  
T. Yanase, Y. Kato, S. Miwa, H. Yamazaki  
Nippon Elec. Glass, Japan

FMCp - 39  
Development of Silica-Dispersed Composite Substrates for Flat Panel Displays  
*ETRI, Korea  
**KITECH, Korea
FMCp - 40 Investigation on Photo-Resist Crack in the Thin-Film-Transistor 4-Mask Fabrication Process
Z. T. Wang, T. Y. Min, H. J. Qiu, J. G. Zhao, W. B. Gao,
S. K. Lee, S. Y. Cho
BOE OptoElect. Tech. Group, China
*DongJin Semichem, Korea

13:20 - 14:40 Room 301
FMC6: Materials I

Chair: D. Allan, Corning, USA
Co-Chair: K. Miyazawa, Chisso, Japan

FMC6 - 1 Novel Photorefractive Material Development for New Updatable Holographic Three-Dimensional Display
13:20
L. Guoqiang, P. Blanche, R. Voorakaranam, A. Tunc
P. Hilaire, J. Thomas, R. Norwood, N. Peyghambarian
Nitto Denko Tech., USA
*Univ. of Arizona, USA

FMC6 - 2 Thermal Creep and Warp Performance of Jade-like High Viscosity Glasses
13:40
D. Allan, M. Potuzak
Corning, USA

FMC6 - 3 Mechanical Attributes of Jade Glass for Advanced Displays
14:00
S. T. Gulati, J. D. Helfinstine, T. Ono
Corning, USA
*Corning Tech. Ctr., Japan

FMC6 - 4 Photo Degradation Properties in Oriented Liquid Crystal Modes
14:20
R. Yamaguchi, M. Ogura, S. Sato
Akita Univ., Japan
*Akita Pref. R&D Ctr., Japan

----- Break -----
FMC7 - 1: Invited  Chemical Design of Polysilsesquioxane as a Gate Insulator for Organic Thin-Film Transistors

**Osaka Pref. Univ., Japan
***Tech. Res. Inst. of Osaka Pref., Japan
****Osaka Municipal Tech. Res. Inst., Japan

FMC7 - 2: Invited  Integration of Transparent Carbon Nanotube Electrodes into a Color 5.5-in. AMLCD

Unidym, USA
*Si-Display Tech, Korea

FMC7 - 3  Engineered Nanoparticles for Display Optics and Electronics

N. Kambe, H. Du, G. Liu, A.-L. Chu, I. S. Altman, S. Chiruvolu
NanoGram, USA

FMC7 - 4  Structure-Correlated Stability of Thin Films of Pentacene Formed by Liquid Process

T. Minakata, Y. Natsume
Asahi-KASEI, Japan

FMC8: Materials III

Chair: K. Fujishiro, Nippon Steel Chem., Japan
Co-Chair: D. Aoki, Dai Nippon Printing, Japan

FMC8 - 1  Development of New Green Pigment, Polyhalogenated Zinc Phthalocyanine for Color Filter

S. Funakura, Y. Tachikawa, A. Kudo, I. Yao, K. Shimada
DIC, Japan

FMC8 - 2  Optical-Electrical Transport Characteristics, UV-Visible Enhanced Photo Response with Embedding Si-Rich SiOx Photonic Sensor in LCD Panel

AU Optronics, Taiwan
The Syntheses of Divinylbenzene-Based Soluble Copolymers with Reactive Terminal Groups and Highly Branched Structures, and the Development of Novel High Refractive Index Optical Materials for Fine-Patterned Optical Sheets

M. Kawabe, H. Kitajima, N. Nishio, I. Akiba

Nippon Steel Chem., Japan

Univ. of Kitakyushu, Japan

Author Interviews

17:40 – 18:40

Supporting Organizations:
The Japan Society for Printing Science and Technology
Japan Society of Colour Material
The Technical Association of Photopolymers, Japan
Society of Photographic Science and Technology of Japan
The Society of Radtech, Japan
The Japanese Research Association of Organic Electronics Materials
Japan Electronics Packaging and Circuits Association

IDW Best Paper Award
This award will go to the most outstanding paper selected from those presented at IDW ’08. The 2008 award winners will be announced on the IDW website:
http://www.idw.ne.jp/award.html

IDW Tutorial in Japanese
Tuesday, December 2, 2008
Room 301
Toki Messe Niigata Convention Center

Detailed information will be available in October:
http://www.sidchapters.org/japan/index.htm

Contact Address:idw.tutorial.wz@hitachi.com
## Workshop on Plasma Displays

### Thursday, December 4

#### Room 302

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<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Title</th>
<th>Authors</th>
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<tbody>
<tr>
<td>9:00</td>
<td>PDP1: Cell Technology</td>
<td>LaB₆: New Cathode Material for AC PDP TVs</td>
<td>M. Ono, S. Hara, T. Shiga, Y. Amano*</td>
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<td>Univ. of Electro-Commun., Japan</td>
<td>TT&amp;T, Japan</td>
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<td>9:20</td>
<td>PDP1</td>
<td>Effects of Solution Synthesized Thin-Film Phosphor Layer on the Characteristics of Transparent AC PDPs</td>
<td>H. N. Choi, S. Y. Lee, Y. S. Kim</td>
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<td>Hongik Univ., Korea</td>
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<td>Samtel Color, India</td>
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<td>10:00</td>
<td>PDP1</td>
<td>Variation of Auxiliary Electrode Width in an AC PDP</td>
<td>S.-M. Lee, C. S. Choi, K. C. Choi</td>
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<td>KAIST, Korea</td>
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<td>----- Break -----</td>
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<tr>
<td>10:40</td>
<td>PDP2: Driving &amp; Discharge</td>
<td>Observation of Vacuum Ultraviolet Radiation from SrO- and SrCaO-PDP Operated at Lower Voltage</td>
<td>G. Uchida, F. Xing, S. Uchida*, T. Yano, N. Awaji,</td>
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<td>Hiroshima Univ., Japan</td>
<td>H. Kajiyama, T. Shinoda</td>
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<td>Tokyo Metropolitan Univ., Japan</td>
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<td>11:00</td>
<td>PDP2</td>
<td>Reduction of Address Delay Time Degradation by Discharge Transition from Priming Cell to Display Cell in AC PDPs</td>
<td>S. Nobuki, N. Uemura, S. Ho, M. Shiiki, K. Suzuki</td>
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<td>Hitachi, Japan</td>
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Effects of Wall Charge Leakage and Address Discharge Characteristics under Variously Sputtered MgO States in AC PDP

C.-S. Park, S.-K. Jang, H.-S. Tae, E.-Y. Jung*, E. G. Heo*
Kyungpook Nat. Univ., Korea
*Samsung SDI, Korea

New Energy Recovery Circuit with Asymmetric Inductance for AC PDP

M. Yoo*, E. G. Heo*
Kyungpook Nat. Univ., Korea
*Samsung SDI, Korea

----- Lunch -----
PDPp - 4 Influence of Substrate Temperature on Secondary Electron Coefficient ($\gamma$) of MgO Protective Layer and Discharge Characteristics in AC PDP
S. H. Hong, C. G. Son, B. H. Hong, E. H. Choi
Kwangwoon Univ., Korea

PDPp - 5 Improvement of Discharge Characteristics in PDP Using Lead-Free and Low Permittivity Rear Dielectric Layer
*Kyungpook Nat. Univ., Korea
**Samsung SDI, Korea

PDPp - 6 Investigation on Address Discharge Characteristics for R, G, and B Cells and Effects of Phosphor Thickness on Address Discharge Delay in AC PDP
H. D. Park, H.-S. Tae, H.-S. Jung*, M. Hur*, M. Yoo*
*Kyungpook Nat. Univ., Korea
*Samsung SDI, Korea

PDPp - 7 Effect of a Pair of Annular Electrodes Buried in Rib on Coplanar Discharge in AC PDP
M. Kawamoto, K. Tachibana
Kyoto Univ., Japan

PDPp - 8 Discharge Characteristics in Accordance with Various Indium Tin Oxide (ITO) Sustaining Electrodes in AC PDP
Kwangwoon Univ., Korea

PDPp - 9 Effects of Aluminum Fence-Electrode Design on Characteristics of AC PDP
Hongik Univ., Korea
*Int. Metal Inst., Korea

PDPp - 10 Effects of Xe Gas Composition Change in 4K Panel
Samsung SDI, Korea

PDPp - 11 Optimization of He-Ne-Xe Gas Mixtures for High Speed and Low Voltage Performance in AC PDPs
E. Y. Jung, K. J. Suh, J. C. Ahn, M. S. Yoo, E. G. Heo, S. K. Jang*, C. S. Park*
*Kyungpook Nat. Univ., Korea
PDPp - 12 A Study on Temporal Dark and Bright Image Sticking Characteristics under Various Panel Gas Pressures in AC PDP
J. H. Kim, C.-S. Park, H.-S. Tae
Kyungpook Nat. Univ., Korea

PDPp - 13 Explanation for Wall Charge Leakage in PDP
T. Kurai, Y. Kim
Samsung SDI, Korea

PDPp - 14 Design of Erase Waveform for Stabilizing Reset Discharge in Sustain Gap of 200 \( \mu \)m
S. H. Yoon, C. S. Min, J. H. Seo
Univ. of Incheon, Korea

PDPp - 15 Driving Characteristics of Negative Waveform in AC PDPs during Reset and Address Periods
S. H. Moon*
Dankook Univ., Korea
*LG Elect., Korea

PDPp - 16 Effects of Initial Wall Charge Distribution in Reset Period on Wall Voltage Variation in Address Period in AC PDP
B.-T. Choi, H.-S. Tae
Kyungpook Nat. Univ., Korea

PDPp - 17 Modified Reset Waveform for Stable Address Discharge under Variable Ambient Temperature in AC PDP
S.-K. Jang, H.-S. Tae
Kyungpook Nat. Univ., Korea

PDPp - 18 A Novel Driving Waveform for Improving Address Time Lag in PDP
Nat. Dong-Hwa Univ., Taiwan

PDPp - 19 Improvement of the Luminance with a New Single Sustain Waveform in AC PDP
Dankook Univ., Korea

PDPp - 20 Adaptive Address Energy Recover Circuit for Reducing Address Power in Color PDPs
Xi’an Jiaotong Univ., China
Friday December 5

PDPp - 21  PDP Barrier Ribs by Molding Process Using Reinforced Soft Mold and Demoldable UV Curable Paste
S. M. Ryu, D. Y. Yang, J. Y. So*, H. Y. Kwon*, L. S. Park*
KAIST, Korea
*Kyungpook Nat. Univ., Korea

PDPp - 22  Laser Patterning of Rectangular-Shaped ITO Electrode for High Luminous Efficient AC PDP
Z. H. Li, S. H. Im, E. S. Cho, S. J. Kwon
Kyungwon Univ., Korea

PDPp - 23  Addressable Coplanar Electrodes Microplasma Display Devices
L. G. Meng, H. F. Liang, Z. H. Liang, C. L. Liu, H. Wang,
Y. J. Zhang
Xi’an Jiaotong Univ., China

13:20 - 14:40  Room 201

PDP3: Protective Layer (1)

Chair: H. Tolner, South East Univ., China
Co-Chair: H. Kajiyama, Hiroshima Univ., Japan

PDP3 - 1  A Computational Study on Protecting Layer of PDP: Secondary Electron Emission Property and Surface Structure
K. Serizawa, I. Yamashita, H. Onuma, H. Kikuchi,
M. Kitagaki*, A. Suzuki, R. Sahnoun, M. Koyama,
Tohoku Univ., Japan
*Hiroshima Univ., Japan
**Tezpur Univ., India

PDP3 - 2  MgO Sputtering Yields by Noble Gas Ions at Relatively Low Injection Energies
S. Yoshimura*, K. Hine*, M. Matsukuma*, K. Ikuse*,
M. Kiuchi***, J. Hashimoto***, M. Terauchi***,
M. Nishitani***, S. Hamaguchi*
Osaka Univ., Japan
***Nat. Inst. of Advanced Ind. S&T, Japan

PDP3 - 3  Numerical Analysis of Density of Energy States for Electron Emission Sources in MgO
S. Ho, S. Nobuki, N. Uemura, S. Mori, T. Miyake,
K. Suzuki, Y. Mikami, M. Shiiki, S. Kubo*
Hitachi, Japan
*Hitachi ULSI Syss., Japan
### PDP4 - 1: Invited Factors Affecting Emission of Exo-Electrons from MgO Thin Films of AC PDPs

**15:00**

**Y. S. Kim, S. H. Yoon**  
Hongik Univ., Korea

### PDP4 - 2: Analysis of Deterioration of Secondary Electron Emission Coefficient of Protective Layers Formed by Alkaline-Earth Oxides for PDPs

**15:20**

**M. Sakai, S. Hatta, Y. Fukui, Y. Honda, M. Okafuji, Y. Yamauchi, M. Nishitani, Y. Takata**  
Panasonic, Japan

### PDP4 - 3: Effects of \((\text{Mg}_x\text{Zn}_{1-x})\text{O}\) Electron Emission Layer on Firing Voltages of AC PDPs

**15:40**

**S. G. Ahn, S. H. Yoon, Y. S. Kim**  
Hongik Univ., Korea

### PDP5 - 1: Invited Ultra-Large Area Film Display by Plasma Tube Array Technology

**16:40**

**M. Ishimoto, H. Hiirakawa, K. Awamoto, K. Shinode, T. Shinoda**  
Shinoda Plasma, Japan
A Comparative Study of Different Getter Configurations on PDP Performances

M. Riva, A. Bonucci, S. Tominetti, Y. Han*, S. H. Hong*,
E.-H. Choi*
SAES Getters, Italy
*Kwangwoon Univ., Korea

PDP Manufacturing System under Vacuum Condition

K. Uchida, G. Uchida*, H. Kajiyama*, T. Shinoda*
ULVAC, Japan
*Hiroshima Univ., Japan

Author Interviews
17:40 – 18:40

Sponsor:
Plasma Display Technical Meeting

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This award will go to the most outstanding paper selected from those presented at IDW '08 poster presentation.
The 2008 award winners will be announced on the IDW website:
http://www.idw.ne.jp/award.html

PDP International Forum ’08

Saturday, December 6, 2008
10:30–16:30
Toki Messe Niigata Convention Center
(IDW ’08 Venue)

For further information, visit www.pdptm.org/forum/
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<td><strong>W. S. Song, D. K. Lee, J. U. Kim, H. Yang</strong></td>
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<td><strong>Hongik Univ., Korea</strong></td>
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<td><strong>PHp - 2</strong></td>
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<tr>
<td><em><em>C.-H. Chiu, T.-M. Chen</em>, C.-N. Mo</em>*</td>
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<td><strong>Chunghwa Picture Tubes, Taiwan</strong></td>
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<td><strong>Nat. Chiao Tung Univ., Taiwan</strong></td>
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<td><strong>PHp - 3</strong></td>
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<td><strong>H. S. Yoo, S. Vaidyanathan, S. W. Kim, J. Y. Han, D. Y. Jeon</strong></td>
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<td><strong>KAIST, Korea</strong></td>
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<td><strong>PHp - 4</strong></td>
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<td><strong>T. Ishigaki, T. Hatsumori, K. Uematsu, K. Toda, M. Sato</strong></td>
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<td><strong>Niigata Univ., Japan</strong></td>
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<td><strong>PHp - 5</strong></td>
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<td><em><em>B. S. Park, S. W. Kim, S. G. Lee</em>, S. I. Son</em>, C. J. Kim**</td>
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<td><strong>Univ. of Seoul, Korea</strong></td>
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<td><strong>Pantech, Korea</strong></td>
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<td><strong>PHp - 6</strong></td>
</tr>
<tr>
<td><strong>S. Vaidyanathan, S. W. Kim, H. S. Yoo, D. Y. Jeon</strong></td>
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<tr>
<td><strong>KAIST, Korea</strong></td>
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</tbody>
</table>
PHp - 7  Temperature Dependence of Photoluminescence Spectroscopy and Thermoluminescence Property on Eu-Doped BaMgAl_{10}O_{17} and SrMgAl_{10}O_{17}

*Hiroshima Univ., Japan
**Dyden, Japan

PHp - 8  Comparative Study of Photoluminescence Properties in YPO\textsubscript{4}:Mn\textsuperscript{2+} Doped with Various Tetravalent Cations

Y. Inada, M. Kawahara, M. Kitaura*, K. Fukui
Univ. of Fukui, Japan
*Fukui Nat. College of Tech., Japan

PHp - 9  Ba\textsubscript{4}Gd\textsubscript{6}Si\textsubscript{6}O\textsubscript{24}F\textsubscript{2}:Tb Green Phosphor for VUV Excitation

A. Kobayashi, T. Kunimoto*, K. Ohmi
Tottori Univ., Japan
*Tokushima Bunri Univ., Japan

PHp - 10  Luminance Uniformity of Organic-Dye-Dispersed Hybrid Inorganic Electroluminescent Device

Tokyo Polytechnic Univ., Japan

PHp - 11  Blue-Emitting Bi-Activated La\textsubscript{2}O\textsubscript{3} Thin-Film Electroluminescent Devices

K. Ueda, S. Matsui, H. Fukada, T. Miyami, T. Minami
Kanazawa Inst. of Tech., Japan

PHp - 12  Bendable Inorganic Thin-Film EL Devices Fabricated on Sapphire Sheets

K. Sahara, H. Fukada, T. Miyami, T. Minami
Kanazawa Inst. of Tech., Japan

PHp - 13  Dispersed-Type Inorganic Electroluminescent Device on Printed Conductive Polymer Electrode

T. Homma, Y. Nakamura, S. Ohmura, T. Uchida, T. Satoh
Tokyo Polytechnic Univ., Japan

PHp - 14  Spectral Characteristics of Dispersion-Type Inorganic EL Device Dispersed with Organic and Inorganic Phosphors

N. Taguchi, T. Matsumura-Inoue**, Y. Uraoka**, Y. Hasegawa**
Image Tech, Japan
*Minerva Light Lab., Japan
**Nara Inst. of S&T, Japan
PHp - 15 Highly Thermal Stability of Europium(III) Chelate Encapsulated by Sol-Gel Glass

Saitama Univ., Japan
Mitsubishi Chem. Group, S&T Res. Ctr., Japan

PHp - 16 Characterization of Phosphors Prepared by Planetary Ball Milling

*Seoul Nat. Univ., Korea
**Nano Syss. Inst.-Nat. Core Res. Ctr., Korea

PHp - 17 Structural Properties of Coated Nanoparticles: the ZnS/ZnO Nanostructure

P. Verma, A. Pandey
Allahabad Univ., India

PHp - 18 The Variation of the Enhanced Photoluminescence Efficiency of Sol-Gel Derived Y2O3:Eu3+ Films with Thickness to the Photonic Crystal Layer

J. R. Oh, H. K. Park, J. H. Park, Y. R. Do
Univ. of Kookmin, Korea

PHp - 19 Enhanced Photoluminescence Properties of SrGa2S4:Eu2+ Thin-Film Phosphors on 2D Photonic Crystal Substrate

K. N. Lee, K.-Y. Ko, J. H. Moon, Y. R. Do
Univ. of Kookmin, Korea

PHp - 20 Dependence of Strucual and Luminescent Characteristics of SrGa2S4:Eu Thin Film Phosphors on Preparation Conditions

Shizuoka Univ., Japan
*Japan Steel Works, Japan
**Aichi Univ. of Tech., Japan

PHp - 21 Substrate Bias Voltage Influence on Optical and Structural Characteristics of Zinc Oxide Films Prepared by Radio Frequency Magnetron Sputtering

C. Li, T. Matsuda, T. Hiramatsu, H. Furuta, T. Kawaharamura, M. Furuta, T. Hirao
Kochi Univ. of Tech., Japan

Chair: K.-S. Sohn, Suchon Nat. Univ., Korea
Co-Chair: R. J. Xie, NIMS, Japan
PH1 - 1: 13:20
Invited  Progress in Nitride and Oxynitride Phosphors

H. Yamamoto, K. Uheda
Tokyo Univ. of Tech., Japan
*Mitsubishi Chem. Group, S&T Res. Ctr., Japan

PH1 - 2 13:50
Luminescence Properties of Eu$^{2+}$-Doped Green-Emitting Sr-Sialon Phosphor and Its Application in White LEDs

Y. Fukuda, I. Mitsuishi, S. Nunoue
Toshiba, Japan

PH1 - 3 14:10
Three Band White Light from the White LEDs Using Inorganic Phosphor and Semiconducting Nanocrystal

KAIST, Korea
*Hongik Univ., Korea

PH1 - 4 14:30
Luminescent Characteristics of Alkali-Earth Orthosilicate Phosphors Doubly Doped with Terbium and Europium

R. Hiramatsu, Y. Fukuda, F. Aiga, K. Ishida, N. Matsuda, H. Asai
Toshiba, Japan

----- Break -----}

Chair: T. Hisamune, Kasei Optonix, Japan
Co-Chair: N. Matsuda, Toshiba, Japan

PH2 - 1: 15:00
Invited  High Performance Phosphors for Advanced PDPs

Samsung SDI, Korea

PH2 - 2 15:30
Nano-Structured BAM Blue with High Aging Resistance: Magnetoplumbite Phase on β-Alumina (MP on β)

Daejoo Elect. Materials, Korea
*LG Chem. Res. Park, Korea
**Inha Univ., Korea
Excitation Energy Transfer by Vacuum Ultra Violet Excitation in Eu-Doped BaMgAl$_{10}$O$_{17}$ and NaAl$_{11}$O$_{17}$: a Theoretical Study

Tohoku Univ., Japan
*Hiroshima Univ., Japan

Study of Eu Luminescent Centers Located Near the Surface of BAM Phosphors by Conversion Electron Yield XAFS

Japan Synchrotron Radiation Res. Inst., Japan
*Tokushima Bunri Univ., Japan
**Hiroshima Univ., Japan
***Tottori Univ., Japan

----- Break -----
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<th>Time</th>
<th>Session</th>
<th>Title</th>
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<td>10:40</td>
<td>FED2/PH4 - 1</td>
<td>Development of New Blue Phosphor for FED</td>
<td>Y. Yasuoka, M. Kitada, Y. Obara, T. Mori, Y. Naito, K. Tamura</td>
</tr>
<tr>
<td>11:10</td>
<td>FED2/PH4 - 2</td>
<td>Luminescence and Structure of Europium Doped Aluminum Nitride Phosphor</td>
<td>T. Takeda, N. Hirosaki, R.-J. Xie, K. Kimoto, M. Saito*</td>
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<td>NIMS, Japan</td>
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<td>*Tohoku Univ., Japan</td>
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<tr>
<td>11:40</td>
<td>FED2/PH4 - 3</td>
<td>Preparation of Sulfide Phosphors Using Liquid Phase Process</td>
<td>H. Kominami, Y. Nakanishi, K. Hara</td>
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<td>Shizuoka Univ., Japan</td>
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<td>12:00</td>
<td>FED2/PH4 - 4</td>
<td>Undoped ZnO Phosphor with High Luminescence Efficiency Grown by Thermal Oxidation</td>
<td>Z. Y. Xiao, M. Okada, M. Ichimiya*, T. Itoh*, G. Han, Y. Neo, T. Aoki, H. Mimura</td>
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<td>Shizuoka Univ., Japan</td>
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<td></td>
<td>*Osaka Univ., Japan</td>
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----- Lunch -----
# Workshop on Field Emission Display and CRT

**Friday, December 5**

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<tr>
<th>Time</th>
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<td>9:00 - 9:10</td>
<td>Opening</td>
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<td>9:10 - 10:30</td>
<td>FED1: FEDs</td>
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<tr>
<td>Chair: F. Wakaya, Osaka Univ., Japan</td>
<td>Co-Chair: M. Nakane, Muroran Inst. of Tech., Japan</td>
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<tr>
<td><strong>FED1 - 1</strong> Characteristics of CNT-FED for Color Character-Displays</td>
<td>9:10</td>
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<tr>
<td><strong>FED1 - 2</strong> Ultra-High Luminance FED</td>
<td>9:30</td>
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<td><strong>FED1 - 3</strong> 15-in. Dynamic Field Emission BLU for LCD</td>
<td>9:50</td>
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<td><strong>FED1 - 4</strong> A 20-in. High Uniform FED Fabricated by Self-Aligned Structure</td>
<td>10:10</td>
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<td><strong>MIMIV Res., UK</strong></td>
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</table>
Friday December 5

10:40 - 12:20 Room 302

**FED2/PH4: Phosphors for FEDs**

**Chair:** M. Takai, Osaka Univ., Japan  
**Co-Chair:** S. Okamoto, NHK, Japan

---

**FED2/PH4 - 1**  
**10:40**  
**Development of New Blue Phosphor for FED**  
Y. Yasuoka, M. Kitada, Y. Obara, T. Mori, Y. Naito, K. Tamura  
Futaba, Japan

---

**FED2/PH4 - 2**  
**11:10**  
**Luminescence and Structure of Europium Doped Aluminum Nitride Phosphor**  
T. Takeda, N. Hirosaki, R.-J. Xie, K. Kimoto, M. Saito*  
NIMS, Japan  
*Tohoku Univ., Japan

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**FED2/PH4 - 3**  
**11:40**  
**Preparation of Sulfide Phosphors Using Liquid Phase Process**  
H. Kominami, Y. Nakanishi, K. Hara  
Shizuoka Univ., Japan

---

**FED2/PH4 - 4**  
**12:00**  
**Undoped ZnO Phosphor with High Luminescence Efficiency Grown by Thermal Oxidation**  
Z. Y. Xiao, M. Okada, M. Ichimiya*, T. Itoh*, G. Han, Y. Neo, T. Aoki, H. Mimura  
Shizuoka Univ., Japan  
*Osaka Univ., Japan

----- Lunch -----
FED3 - 3  14:00  Evaluations of Field Electron Emission from a Carbon Nanotube
H. Nakahara, Y. Kusano, T. Kono, Y. Saito
Nagoya Univ., Japan

FED3 - 4  14:20  Field Emission Microscopy of Methane Molecules Adsorbed on Multiwalled Carbon Nanotube Field Emitters
Nagoya Univ., Japan
*Noritake, Japan

FED3 - 5  14:40  Implementation of Highly Reliable CNT Emitter for Various Field Emission Applications
D.-J. Kim, K.-B. Kim, J.-W. Jeong*, Y.-H. Song*
Kumho Elec., Korea
*ETRI, Korea

----- Break -----

Chair: H. Mimura, Shizuoka Univ., Japan
Co-Chair: M. Namba, NHK, Japan

FED4 - 1  15:10  Emission Properties of the Ti-DLC Films Prepared by Unbalanced Magnetron Sputtering
H. F. Liang, C. L. Liu, L. G. Meng
Xi’an Jiaotong Univ., China

FED4 - 2  15:30  Field Emission Property of TiO2 Cathodes after Field Enhanced Surface Treatment
Osaka Univ., Japan
*Ishihara Sangyo, Japan

FED4 - 3  15:50  Work Function Measurements of Pr-Oxide/W(100) Surface by Using of the Retarding Potential
J. Yoshihara, T. Kawakubo, H. Nakane
Muroran Inst. of Tech., Japan

FED4 - 4  16:10  Nanometer Scale Distributions of Field Emission Current from Carbon Materials Without Nano-Protrusions
S. Nagashima, S. Ogata, M. Sasaki
Univ. of Tsukuba, Japan
Improvement of in-situ Analyzer of Field Emission Properties
Y. Gotoh, M. Kawasaki, H. Tsuji, J. Ishikawa
Kyoto Univ., Japan

----- Break -----
### Wednesday, December 3

#### Workshop on Organic LED Displays

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<td>13:20 - 14:15</td>
<td>Snow Hall B</td>
<td><strong>OLED1: OLED Materials</strong></td>
<td>Chair: S. Son, LG Chem., Korea Co-Chair: A. Mikami, Kanazawa Inst. of Tech., Japan</td>
</tr>
<tr>
<td><strong>OLED1 - 1: Invited</strong> New Singlet Blue and Green Emitter for OLED Applications</td>
<td>13:20</td>
<td>E. Böhm</td>
<td>Merck KGaA, Germany</td>
</tr>
<tr>
<td><strong>OLED1 - 2</strong> Novel Host Material Based on Benzodifuran with Ambipolar Charge Transport Properties</td>
<td>13:45</td>
<td>Y. Sato*, C. Mitsui**, H. Tsuji**, E. Nakamura***</td>
<td>JST, Japan Univ. of Tokyo, Japan</td>
</tr>
<tr>
<td><strong>OLED1 - 3</strong> Systematic Development of Soluble OLED Materials at Merck</td>
<td>14:00</td>
<td>A. Hayer, H. Buchholz</td>
<td>Merck KGaA, Germany</td>
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<td>----- Break -----</td>
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<tr>
<td>14:50 - 16:00</td>
<td>Snow Hall B</td>
<td><strong>OLED2: OLED Device Technologies (1)</strong></td>
<td>Chair: E. Böhm, Merck KGaA, Germany Co-Chair: Y. Kijima, Sony, Japan</td>
</tr>
<tr>
<td><strong>OLED2 - 1: Invited</strong> Scalable AMOLED Technologies for TV Application</td>
<td>14:50</td>
<td>T. Tsujimura, S. Mizukoshi, N. Mori, K. Miwa, Y. Maekawa, M. Kohno, K. Onomura, K. Mameno, S. Vanslyke*</td>
<td>Kodak Japan, Japan Eastman Kodak, USA</td>
</tr>
<tr>
<td><strong>OLED2 - 2</strong> Development of High Performance Organic Evaporation Source and Manufacturing System for Large-Sized AMOLED Devices</td>
<td>15:15</td>
<td>H.-W. Kim, Y.-T. Won, S.-Y. Han, J. Patrin*, R. Bresnahan*, C. Conroy*</td>
<td>Doosan Mecatec, Korea Veeco Instrs., USA</td>
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</table>
OLED2 - 3 15:30 Degradation Analysis of the Blue Phosphorescent Organic Light Emitting Diode by Impedance Spectroscopy and Transient Electroluminescence Spectroscopy
T. Ogiwara, J. Takahashi, H. Kuma, Y. Kawamura, T. Iwakuma, C. Hosokawa
IDEMITSU Kosan, Japan

OLED2 - 4 15:45 The Quality of Electrically Doped Structures Studied by Capacitance Spectroscopy
A. Werner, C. Rothe, L. Limmert, O. Fadhel, S. Murano, A. Lux
Novaled AG, Germany

----- Break -----
## Thursday, December 4

### AMD3/OLED4: AM-OLED

**Chair:** S. Horita, JAIST, Japan  
**Co-Chair:** K. Takatori, NEC LCD Techs., Japan

#### AMD3/OLED4 - 1: 10:40

**Invited Amorphous Oxide TFT Backplanes for Large Size AMOLED Displays**

Y. G. Mo, J. K. Jeong, H. D. Kim  
Samsung SDI, Korea

#### AMD3/OLED4 - 2: 11:05

**Invited Issues of a-Si:H TFTs & LTPS TFTs for an AMOLED Backplane**

M.-K. Han  
Seoul Nat. Univ., Korea

#### AMD3/OLED4 - 3: 11:30

**High Flexibility of AMOLED Displays on Colorless PI Substrate**

ITRI, Taiwan  
*Nat. Taiwan Normal Univ., Taiwan

----- Lunch -----
OLEDp - 4 Fabrication of Thin Film by Plasma Polymerization and Application to Organic Light Emitting Device
R. Koyama, K. Fukuyori, S. Tanaka, S. Yoshikado
Doshisha Univ., Japan

OLEDp - 5 High Efficient Red Phosphorescent OLEDs Using the Intermixed Double Host System of TCTA/TCTA0.5TPBI0.5/TPBI
J. G. Jang, H. K. Shin, W. K. Kim
Dankook Univ., Korea

OLEDp - 6 SAXS Study of Polyfluorene in the Solution for PLED
Kyungpook Nat. Univ., Korea
*Pohang Accelerator Lab., Korea

OLEDp - 7 Impedance Spectroscopy of Multilayer Organic Light-Emitting Diode
Y. Terao, K. Kawaguchi, M. Nishiura, H. Kimura
Fuji Elec. Advanced Tech., Japan

OLEDp - 8 Development of Inverted Organic Light-Emitting Diode Device Applied Multilayer Transparent Anode
J. Y. Lee, H. W. Choi, H. S. Yang, J. H. Park,
N. H. Myoung, J. H. Lee, H. D. Bae, Y. H. Tak
LG Display, Korea

OLEDp - 9 Effect of Hole Transport Layer Doping on the Organic Light Emitting Diode Performance
G. Chauhan, R. Srivastava, P. C. Srivastava*, M. N. Kamalasanan
Nat. Physical Lab., India
*Banaras Hindu Univ., India

OLEDp - 10 A Novel Active-Matrix Driving Scheme with Buffer Circuitry for WOLED Lighting Application
H. Yang, S.-C. Chen
Nat. Taipei Univ. of Tech., Taiwan

OLEDp - 11 Large Area White Organic Light-Emitting Devices with Two Emission Bands
Nat. Chiao Tung Univ., Taiwan
*ULVAC, Japan

OLEDp - 12 Large-Area OLED Lighting with Metal Grid Electrode
J. H. Park, J. W. Park, J. S. Ahn, G. S. Heo, T. W. Kim,
KITECH, Korea
OLEDp - 13 White OLEDs with Blue and Yellow Emitting Layers: Effects of Doping and Interface Engineering
Ajou Univ., Korea

OLEDp - 14 Low Driving Voltage and High Efficiency for Green Phosphorescent Organic Light Emitting Devices
H. L. Huang, M. R. Tseng
ITRI, Taiwan

OLEDp - 15 Power Efficient OLED with a Novel P-Doped Layer
Nat. Chiao Tung Univ., Taiwan

OLEDp - 16 High Performance Color Conversion Polymers and Their Application to OLED Devices
Fuji Elec. Advanced Tech., Japan

OLEDp - 17 Efficiency Improvement and Long Lifetime of Transparent Organic Light-Emitting Diodes Using 8-Hydroxy-Quinolinato Lithium as Passivation Layer by Thermal Annealing
K. P. Na*,**, C. P. Lee**, B. K. Ju*, J. I. Han**
*Korea Univ., Korea
**KETI, Korea

OLEDp - 18 Simultaneous Determination of Localized-State Distributions and Charge-Carrier Mobility in Organic Light-Emitting Diodes by Impedance Spectroscopy
T. Okachi, T. Nagase, T. Kobayashi, H. Naito
Osaka Pref. Univ., Japan

OLEDp - 19 Enhancement of Out-Coupling Efficiency in Organic Light Emitting Devices Stacked with High Refractive Index of Porous Light Scattering Layers
T. Koyanagi, A. Mikami
Kanazawa Inst. of Tech., Japan

OLEDp - 20 A Simple Structure P-I-N Phosphorescent OLED
Kyung Hee Univ., Korea

OLEDp - 21 Optical Analysis on the Influence of Anode Structure upon Luminance in Thin Film Stacked Organic Light Emitting Devices
M. Yamana, M. Nakamura, N. Ito, Y. Mitsutake, T. Yamaki, A. Mikami
Panasonic Elec. Works, Japan
*Kanazawa Inst. of Tech., Japan
OLEDp - 22  Horizontal Dipping Method for Simple Fabricating OLEDs
   B. Park, M.-Y. Han, M. Kim, C. H. Park, Y. I. Lee
   Kwangwoon Univ., Korea

OLEDp - 23  Laser Beam Delivering and Shaping Device for Transfer of Organic Film
   G. I. Yi, J. H. Kwon, J. H. Yi
   Yeungnam Univ., Korea

OLEDp - 24  Ink-Jet Printed Small Molecular Electrophosphorescent OLEDs
   B. Park, M. Kim, M.-Y. Han, C. H. Park, Y. I. Lee
   Kwangwoon Univ., Korea

OLEDp - 25  Image Reversal Photoresist for OLEDs
   S. Yi, Y. S. Shin, D. Ihm, K.-H. Choi
   Hoseo Univ., Korea
   *Dongjin Semichem, Korea

OLEDp - 26  Plasma-Polymerized Insulator for Flexible Passive-Matrix Organic Light-Emitting Diode Displays
   K. Akedo, A. Miura, K. Noda, H. Fujikawa
   TOYOTA Central R&D Labs., Japan

OLEDp - 27  Out-Coupling Efficiency Enhanced Organic Light-Emitting Diodes on the Flexible Substrate
   W. Lee, Y.-W. Lim, S.-D. Lee
   Seoul Nat. Univ., Korea

OLEDp - 28  Gas Property of Inorganic Mg-Zn-F Heterointerface
   B. H. Kang, S. H. Kim, D. E. Kim, S. M. Hong, S. Y. Lee,
   Kyungpook Nat. Univ., Korea
   *Kyungil Univ., Korea

Author Interviews
18:00 – 19:00

SID 2009
International Symposium, Seminar and Exhibition
May 31 – June 5, 2009
San Antonio, Texas, USA
### Workshop on 3D/Hyper-Realistic Displays and Systems

**Thursday, December 4**

<table>
<thead>
<tr>
<th>9:00 - 12:00</th>
<th>3Dp: Hyper Realistic and 3D Display</th>
<th>Exhibit Hall B</th>
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</thead>
</table>

**Poster 3Dp**

### 3Dp - 1
**A Novel Autostereoscopic 2D/3D Switchable Display by Switching Barrier**

M.-D. Chou, C.-C. Chang, J.-T. Lien, C.-C. Tsai, C.-P. Su, Y.-I. Chao, C.-L. Tsou, C.-N. Mo

Chunghwa Picture Tubes, Taiwan

### 3Dp - 2
**Volumetric Display System Based on Inclined-Plane Scanning Using Digital Micromirror Device**

D. Miyazaki, K. Ohno, T. Mukai

Osaka City Univ., Japan

### 3Dp - 3
**Design and Application of a Scent-Emitting Video Display System**

A. Tomono, T. Tomono, S. Otake

Tokai Univ., Japan

### 3Dp - 4
**Image Distortion and Its Correction Method According to Observer’s Rotation Movement in Stereoscopic Display**

D.-W. Kim, K.-H. Lee, S.-K. Kim

KIST, Korea

### 3Dp - 5
**Crosstalk of Stereoscopic Display Using Patterned Retarder and Corresponding Glasses**

Y. Yoshihara*, H. Ujike*, T. Tanabe**

*Japan Ergonomics Nat. Committee, Japan

**Arisawa Manufacturing, Japan

### 3Dp - 6
**Depth Perception for Moving Pictures Shown on a Large LED Display with an Aperture Grille**


*Univ. of Tokushima, Japan

**Toshiba, Japan

***Victor of Japan, Japan

****Matsushita Elec. Ind., Japan

*****Utsunomiya Univ., Japan

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3Dp - 7  A Method for Hologram Generation in a Three-Dimensional Imaging System Based on Multi Vision Data Acquisition and Holographic Display
T. Kurahashi, K. Nitta, O. Matoba
Kobe Univ., Japan

3Dp - 8  A System of Wavefront Recording and Reconstruction of Moving Three-Dimensional Objects for Wide Angle
Y. Kitamura, M. Tanaka, K. Nitta, O. Matoba, Y. Awatsuji
Kobe Univ., Japan
Kyoto Inst. of Tech., Japan

3Dp - 9  Expansion of the Illumination and Reconstruction Area in the Reflection-Type Digital Holography Microscope System
K. H. Choi∗∗∗, S. K. Kim∗, J.-Y. Son∗∗∗∗
KIST, Korea
Korea Univ., Korea
Daegu Univ., Korea

3Dp - 10  A Real-Time Color Electroholography Using the Space-Division Method and a GPU Cluster
Yamagata Univ., Japan
Chiba Univ., Japan
Kisarazu Nat. College of Tech., Japan
Shohoku College, Japan

3Dp - 11  Highly Parallelized Special-Purpose Computer System for Flow Velocity Measurement by Digital Holography
Chiba Univ., Japan
Tokyo Univ. of Sci., Japan
Kyoto Univ., Japan
Toyota Inds., Japan
I. Yuyama, Utsunomiya Univ., Japan

Chair: I. Yuyama, Utsunomiya Univ., Japan
Co-Chair: T. Mishina, NICT, Japan

3D1 - 1: Invited Comparison Between Perceived Size of a Real 3D Object and That of Its 2D Image

H. Kaneko
Tokyo Inst. of Tech., Japan

3D1 - 2
Appearance Reproduction by High-Density Directional Display: Influence of Ray Sampling and Comparisons to High-Resolution 2D Display

M. Oguma, Y. Takaki
Tokyo Univ. of A&T, Japan

3D1 - 3
Subjective Evaluation of the Depth Feeling in Ray Reconstruction 3D Image

Sony, Japan
*Sony Elect. Pte., Singapore

3D1 - 4
A Subjective Evaluation about the Difference of Perceived Resolution between 2D and 3D Images

M. Tsuboi, S. Kimura, T. Horikoshi, Y. Takaki
NTT DOCOMO, Japan
*Tokyo Univ. of A&T, Japan

----- Break -----
3D2 - 1:  **Invited**  Ergonomics for 3D Displays and Their Standardization

*Japan Ergonomics Nat. Committee, Japan
*2Seiko Epson, Japan
*3Toshiba, Japan
*43D Consortium, Japan
*5NEC LCD Techs., Japan
*6Sharp, Japan
*7Sanyo Elec., Japan
*8NAMCO BANDAI Games, Japan
*9Hitachi, Japan
*10Univ. of Tokyo, Japan
*11Mitsubishi Elec., Japan
*12NTT DoCoMo, Japan
*13Arisawa Manufacturing, Japan
*14Toshiba Matsushita Display Tech., Japan
*15AIST, Japan

3D2 - 2:  **Invited**  Variation of Autostereoscopic Displays and Their Measurements

*Japan Ergonomics Nat. Committee, Japan
*2Toshiba, Japan
*3Seiko Epson, Japan
*43D Consortium, Japan
*5NEC LCD Techs., Japan
*6Sharp, Japan
*7Sanyo Elec., Japan
*8NAMCO BANDAI Games, Japan
*9Hitachi, Japan
*10Univ. of Tokyo, Japan
*11Mitsubishi Elec., Japan
*12NTT DoCoMo, Japan
*13Toshiba Matsushita Display Tech., Japan
*14AIST, Japan
Invited Methodology of Optical Measurement for Autostereoscopic Displays

H. Ujike*,13

*Japan Ergonomics Nat. Committee, Japan
2NEC LCD Techs., Japan
3Toshiba, Japan
4Seiko Epson, Japan
53D Consortium, Japan
6Sharp, Japan
7Sanyo Elec., Japan
8NAMCO BANDAI Games, Japan
9Hitachi, Japan
10Univ. of Tokyo, Japan
11Mitsubishi Elec., Japan
12NTT DoCoMo, Japan
13AIST, Japan

Invited Viewing Zones of Autostereoscopic Displays and Their Measurement Methods

H. Ujike*,13

*Japan Ergonomics Nat. Committee, Japan
2Mitsubishi Elec., Japan
3NEC LCD Techs., Japan
4Toshiba, Japan
5Seiko Epson, Japan
63D Consortium, Japan
7Sharp, Japan
8Sanyo Elec., Japan
9NAMCO BANDAI Games, Japan
10Hitachi, Japan
11Univ. of Tokyo, Japan
12NTT DoCoMo, Japan
13AIST, Japan
3D2 - 5: Invited Measurement of Multiview and Integral Photography Displays Based on Sampling in Ray Space


*Japan Ergonomics Nat. Committee, Japan
*2Hitachi, Japan
*3Univ. of Tokyo, Japan
*4Mitsubishi Elec., Japan
*5NEC LCD Techs., Japan
*6Toshiba, Japan
*7Seiko Epson, Japan
*83D Consortium, Japan
*9Sharp, Japan
*10Sanyo Elec., Japan
*11NAMCO BANDAI Games, Japan
*12NTT DoCoMo, Japan
*13AIST, Japan

Author Interviews
18:00 – 19:00

Friday, December 5

3D3: Hyper Realistic and 3D Display Systems (1)

Chair: M. Hashimoto, NTT DATA, Japan
Co-Chair: T. Mishina, NICT, Japan

3D3 - 1 Autostereoscopic 3D Display Characterization Using Fourier Optics Instrument and Computation in 3D Observer Space
9:00

P. Boher, T. Bignon, T. Leroux
ELDIM, France

3D3 - 2 Using Diffusive Adhesives to Reduce Moiré Pattern of Auto-Stereoscopic Displays
9:15


\*Chunghwa Picture Tubes, Taiwan
\**Nat. Taiwan Ocean Univ., Taiwan
3D3 - 3
9:30
Autostereoscopic Display Based on Patterned OLED Backlight

U. Vogel, L. Kroker, J. Knobbe, H.-G. Dallmann,
M. Scholles, C. Grillberger, U. Todt, J. Amelung
Fraunhofer Inst. for Photonic Microsyss., Germany

3D3 - 4
9:45
Floating 3D-Image Display Using Integral Photography Display and Afocal Lens System

M. Ota*, T. Koike**, T. Naemura*
*Univ. of Tokyo, Japan
**Hitachi, Japan

3D3 - 5
10:00
Prototyping and Optical Evaluation of 9-in. OCB Time-Division-Multiplexing 18-View 3D Display

M. Kashiwagi, T. Saishu, K. Taira, H. Kobayashi,
Y. Hirayama
Toshiba, Japan

----- Break -----
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<thead>
<tr>
<th>Session</th>
<th>Title</th>
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<th>Affiliations</th>
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<tbody>
<tr>
<td>VHFp - 1</td>
<td>The Proposal of Correction Method of Color-Matching Functions Using Genetic Algorithm</td>
<td>S. Ozaki, Y. Tokuda, G. Ohashi, Y. Shimodaira</td>
<td>Shizuoka Univ., Japan</td>
</tr>
<tr>
<td>VHFp - 2</td>
<td>A Study of ‘Quasi’ Purity Discrimination Threshold in Mesopic Condition</td>
<td>N. Ishikawa, G. Ohashi, Y. Shimodaira, Y. Shibata*, M. Kitagawa*, H. Serizawa*</td>
<td>Shizuoka Univ., Japan, KOITO Manufacturing, Japan</td>
</tr>
<tr>
<td>VHFp - 3</td>
<td>Methods of Error Detection by Proofreading on LCD Screen</td>
<td>J. Yamaguchi, H. Isono</td>
<td>Nippon Inst. of Tech., Japan</td>
</tr>
<tr>
<td>VHFp - 4</td>
<td>The Influence of Ambient Luminance Level on Perceptual Image Appearances</td>
<td>R. Ho, A. Pong</td>
<td>ITRI, Taiwan</td>
</tr>
<tr>
<td>VHFp - 5</td>
<td>Subjective Evaluation for Indistinct Mura of LED Backlight</td>
<td>Y. Masakura, T. Tamura, K. Nagamine*, S. Tomioka*</td>
<td>Tokyo Polytechnic Univ., Japan, Sony, Japan</td>
</tr>
<tr>
<td>VHFp - 6</td>
<td>Image Contrast Improvement Based on Histogram of Differential Gray-Levels Feature</td>
<td>Y. Higashi, F. Saitoh</td>
<td>Gifu Univ., Japan</td>
</tr>
<tr>
<td>VHFp - 7</td>
<td>Scratched Photographic Image Restoration by Using Variable-Sized Directional Filter</td>
<td>F. Saitoh, D. Takasao</td>
<td>Gifu Univ., Japan</td>
</tr>
<tr>
<td>VHFp - 8</td>
<td>Photography Method for Dark Places by Using Moving Image Analysis with Single Light Scanning</td>
<td>K. Okada, F. Saitoh</td>
<td>Gifu Univ., Japan</td>
</tr>
</tbody>
</table>
VHFp - 9  Color Tonal Analysis on 4-Primary Color LCD System
H.-S. Chen, T.-T. Chang*, J.-F. Huang*
Nat. Taiwan Univ. of S&T, Taiwan
*ITRI, Taiwan

VHFp - 10  The Design of Ambient Light Compensation on TV Device
Nat. Taiwan Univ. of S&T, Taiwan
*TECO, Taiwan

VHFp - 11  A Selective Adjustment Method for Image Quality Improvement
J. Dong, F. Wang, S. L. Wu, C. L. Liu, L. G. Meng, H. Wang
Xi’an Jiaotong Univ., China

VHFp - 12  Moving Blur Edge Measurement Using Adapted Contrast Sensitivity Function
Taiwan TFT LCD Assn., Taiwan

VHFp - 13  A Novel Analysis Method to Verify Moving Picture Quality in Flat Panel Display
S. H. Park, K. H. Lee, I. C. Park, M. S. Yang, I. M. Kang
LG Display, Korea

VHFp - 14  A Mura Inspection and Quantification System for FPD
C.-W. Kuo, C.-H. Kuo, K.-C. Chang
Taiwan TFT-LCD Assn., Taiwan

VHFp - 15  A Contrast Enhancement Method Using Dynamic Range Based on Linear Segmentation
J.-S. Hwang, G.-H. Park, M. R. Choi
Hanyang Univ., Korea

VHFp - 16  Analysis of Human Vision Models and Its Application to Flat Panel Display
B. Wu, Y. Fang, W. Chen
Nat. Kaohsiung First Univ. of S&T, Taiwan

VHFp - 17  The Side Effects of Black Insertion on 26-in. TN TFT-LCD
T.-C. Hsu, L.-H. Yeh, M.-W. Tsai
Chunghwa Picture Tubes, Taiwan

16:40 - 18:00  Marine Hall
VHF1/DES5: Contrast Enhancement

Chair:  S. Clippingdale, NHK, Japan
Co-Chair:  M. A. Klompenhouwer, Philips, the Netherlands
Friday, December 5

9:00 - 10:30 Marine Hall

VHF2: Image Quality (1)

Chair: J. Miseli, Sun Microsystems, USA
Co-Chair: H. Isono, Nippon Inst. of Tech., Japan

VHF2 - 1: Invited An Integrating Sphere System to Realize Very-Low-Luminance Reference Light Sources
9:00
S. Kubota, T. Matsumoto, T. Shimura
Univ. of Tokyo, Japan

VHF2 - 2: Evaluation of FPD Mura Grade Using a Contrast Sensitivity Function Filter
9:30
T. Asano, Y. Morimoto, T. Ikeda
Hiroshima Inst. of Tech., Japan

VHF2 - 3: The Parameters and Quantification Factor for the Inspection of Image Sticking
9:50
AU Optronics, Taiwan
Effects of Culture, Ambient Illumination, and Resolution on the Perceived Image Quality of Mobile Displays

P.-H. Lin, P. Patterson*, S.-H. Hwang
Nat. Tsing Hua Univ., Taiwan
*Texas Tech. Univ., USA

----- Break -----
VHF4 - 2 13:40  Measurement of Color Viewing Angle for Displays
N. Funabiki, K. Adachi, S. Minami, J. Hashiguchi, M. Kasahara
Advanced PDP Dev. Ctr., Japan

VHF4 - 3 14:00  Wide Color-Gamut LCs Using Multi-Phosphor White LED and Image-Processing Engine
J.-S. Li, C.-C. Lai, T.-Y. Chang, C.-F. Hsu, W.-C. Wang
Wintek, Taiwan

VHF4 - 4 14:20  The Main Effects of Color Shift Increase in Wide Color Gamut for Mobile-MVA Application
S. L. Yang, S. C. Fan Jiang, C. J. Hu, W. M. Huang
AU Optronics, Taiwan

----- Break -----
VHF6: Moving Image Quality

16:40 - 17:40

Chair: J. Bergquist, Nokia Japan, Japan
Co-Chair: H. Isono, Nippon Inst. of Tech., Japan

VHF6 - 1
16:40
Evaluation on Motion Blur Indexes by Subjective Tests
Y. W. Fang, J. K. Luo, J. F. Chen, R. L. Dong,
K. S. Wang, J. C. Chen
AU Optronics, Taiwan

VHF6 - 2
17:00
Motion Blur Characterization with Dynamic Modulation Transfer Functions
Y. Zhang, Y. Xu, W. Song, X. Li, K. Teunissen*,
I. Heynderickx**
Southeast Univ., China
*Philips Consumer Lifestyle, the Netherlands
**Philips Res. Labs., the Netherlands
***Delft Univ., the Netherlands

VHF6 - 3
17:20
Color Breakup: Taxonomy, Measurement, and Remedy
C.-N. Wu, W.-C. Cheng, W.-C. Tai*, C.-C. Chang*
Nat. Chiao Tung Univ., Taiwan
*Chunghwa Picture Tubes, Taiwan

Author Interviews
17:40 – 18:40

Supporting Organization:
Technical Group on Information Display, ITE

IMID/IMDC/ASIA DISPLAY 2008
October 13–17, 2008
Ilsan, Korea

IDRC ’08
November 3–6, 2008
Orlando, Florida, U.S.A.
# Workshop on Projection and Large-Area Displays, and Their Components

## Wednesday, December 3

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<th>Time</th>
<th>Session</th>
<th>Room 201</th>
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<tbody>
<tr>
<td>13:25 - 14:25</td>
<td>LAD1: Solid State Light Sources</td>
<td></td>
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<tr>
<td>15:00 - 16:25</td>
<td>LAD2: LCOS Light Valves</td>
<td></td>
</tr>
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### Opening Remarks

13:20

*Z. Tajima, Mobara Atecs, Japan*

### LAD1: Solid State Light Sources

13:25 - 14:25

<table>
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<tr>
<th>Topic</th>
<th>Authors</th>
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<tr>
<td>LED Brightness Increase for Projection Displays</td>
<td>K. Li, Wavien, USA</td>
</tr>
<tr>
<td>High Power LED Light Source for Projection System</td>
<td>T. Kaneko, R. Mori, K. Takahashi, Saitama Univ., Japan</td>
</tr>
<tr>
<td>Requirements on Light-Emitting Diodes (LED) for Projection Applications</td>
<td>W. Alexander, C. Wittmann*, G.-Y. Plaine*, OSRAM Opto Semiconductors, Germany</td>
</tr>
</tbody>
</table>

*OSRAM Japan, Japan

### LAD2: LCOS Light Valves

15:00 - 16:25

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<tr>
<th>Topic</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analysis of Fringe-Field Effects in VA Microdisplays for Image Quality Improvement</td>
<td>D. Cuypers, H. De Smet, A. Van Calster, IMEC, Belgium</td>
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</table>

*Ghent Univ., Belgium*
854x600 Pixel LCOS Microdisplay with 5.4µm Pixel Pitch for Pico-Projectors
K. Guttag, J. Lund
Syndiant, USA

Color-Filter LCOS Microdisplay with Space Dithering for Virtual Resolution Improvement
H. C. Huang, C. H. Wong, Y. Y. Ho*, J. Lai*
Hong Kong Univ. of S&T, Hong Kong
Himax Display, Taiwan

Invited  The D-ILA Device for the World’s Highest Definition (8K4K) Projection System
JVC, Japan

----- Break -----
MEMS1/LAD4 - 1: 9:05
Invited Miniaturized MEMS-Based Laser Projectors Suited for Integration into Mobile Devices
M. Scholles, H. Dallmann, K. Frommhagen, C. Gerwig, J. Knobbe, M. Schwarzenberg
Fraunhofer IPMS, Germany

MEMS1/LAD4 - 2: 9:25
Invited Compact, High Brightness Sequential LED Illumination for Projectors
C. Bruzzone, R. E. English Jr.*, S. Magarill**
3M, USA
*REE Optical Syss., USA
**iTools Consulting, USA

MEMS1/LAD4 - 3: 9:45
Invited Emerging Projection System
M.-L. Chen, C.-S. Chen
Young Optics, Taiwan

MEMS1/LAD4 - 4: 10:05
Invited Making MEMS Devices at a Standard CMOS Foundry
M. Bellis
Miradia, USA

----- Break -----
Workshop on Electronic Paper

Wednesday, December 3

13:20 - 14:30 Room 302

**EP1: Electrophoretic Displays**

**Chair:** T. Kitamura, Chiba Univ., Japan  
**Co-Chair:** N.-S. Roh, Samsung Elect., Korea

**EP1 - 1:** *Invited* Bright Color Electronic Paper  
**13:20**  
Philips Res., the Netherlands

**EP1 - 2:** *Invited* Recent Developments in Microcup  
**13:45**  
Electrophoretic Displays  
R. Sprague  
SiPix Imaging, USA

**EP1 - 3**  
Active Matrix Electrophoretic Display with Micro-Cup Structure  
**14:10**  
Chunghwa Picture Tubes, Taiwan

----- Break -----

**Chair:** A. Suzuki, Ricoh, Japan  
**Co-Chair:** H. Arisawa, Fuji Xerox, Japan

**EP2 - 1:** *Invited* Electrowetting-Based Displays for Portable Multi-Media Devices  
**15:00**  
R. Hayes, A. Giraldo*, F. Li†, J. Feenstra*  
Liquavista, Hong Kong  
*Liquavista, the Netherlands

**EP2 - 2:** *Invited* Droplet Driven Electrowetting Displays: Ambient Light Performance and Color Reproduction  
**15:25**  
Pforzheim Univ., Germany  
*Bartels Mikrotechnik, Germany  
**Advanced Display Tech., Germany

----- Break -----
16:40 - 17:45  Room 302

EP3: Various EP Technologies

Chair: M. Omodani, Tokai Univ., Japan
Co-Chair: Y. Toko, Stanley Elec., Japan

16:40

M. Higuchi*,**
*NIMS, Japan
**JST, Japan

EP3 - 2: High Performance Pen Tracking on Electronic Paper Displays
17:05

G. Feng, S. Chemishkian, K. F. Gudan, J. Barrus, M. J. Gormish
Ricoh Innovations, USA

EP3 - 3: Reflective Electronic Paper by Polarization and Electrophoresis of Toner in Oil
17:25

Nat. Chiao Tung Univ., Taiwan
*Chunghwa Picture Tubes, Taiwan

Author Interviews
18:00 – 19:00

Thursday, December 4

13:20 - 16:20 Exhibition Hall B

Poster EPP: Electronic Paper Technologies

EPP - 1 Near Point Measurement on an Electronic Paper for Assessment of Eye Fatigue
S. Inoue, M. Sakamoto, M. Omodani
Tokai Univ., Japan

EPP - 2 Multiline Addressing of Quick Response Liquid Powder Display (QR-LPD) Using Non-Negative Matrix Factorization
S. Kaneko, M. Asakawa, R. Hattori, Y. Masuda*, N. Nihei*, A. Yokoo*, S. Yamada*
Kyushu Univ., Japan
*Bridgestone, Japan
IDW Outstanding Poster Paper Award

This award will go to the most outstanding paper selected from those presented at IDW ’08 poster presentation.
The 2008 award winners will be announced on the IDW website:
http://www.idw.ne.jp/award.html

EVENING GET-TOGETHER WITH WINE

Tuesday, December 2, 2008
18:00–20:00
Room “Houou” (30F)
Hotel Nikko Niigata
See page 9 for details
Workshop on MEMS for Future Displays and Related Electron Devices

Thursday, December 4

9:00 - 9:05 Room 201
Opening

Opening Remarks
9:00

M. Nakamoto, Shizuoka Univ., Japan

9:05 - 10:25 Room 201
MEMS1/LAD4: Novel MEMS Projection Optical Technologies

Chair: N. W. Hagood, Pixtronix, USA
Co-Chair: H. Kanayama, Sanyo Elec., Japan

MEMS1/LAD4 - 1: 9:05
Invited Miniaturized MEMS-Based Laser Projectors Suited for Integration into Mobile Devices
M. Scholles, H. Dallmann, K. Frommhagen, C. Gerwig, J. Knobbe, M. Schwarzenberg
Fraunhofer IPMS, Germany

MEMS1/LAD4 - 2: 9:25
Invited Compact, High Brightness Sequential LED Illumination for Projectors
C. Bruzzone, R. E. English Jr.*, S. Magarill**
3M, USA
*REE Optical Syss., USA
**iTools Consulting, USA

MEMS1/LAD4 - 3: 9:45
Invited Emerging Projection System
M.-L. Chen, C.-S. Chen
Young Optics, Taiwan

MEMS1/LAD4 - 4: 10:05
Invited Making MEMS Devices at a Standard CMOS Foundry
M. Bellis
Miradia, USA

----- Break -----
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<th>Speaker(s)</th>
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<tr>
<td>10:40</td>
<td>MEMS2 - 1</td>
<td>Invited Recent Molecular Nano Device Progress</td>
<td>I. Ohdomari</td>
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<td></td>
<td></td>
<td></td>
<td>Waseda Univ., Japan</td>
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<tr>
<td>11:00</td>
<td>MEMS2 - 2</td>
<td>Invited Microfluidic Technology for Tissue Engineering</td>
<td>Y. Tsuda, S. Takeuchi</td>
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<td>Univ. of Tokyo, Japan</td>
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<tr>
<td>11:20</td>
<td>MEMS2 - 3</td>
<td>Nano Porous Silica Structures for Thermally Insulated MEMS Devices</td>
<td>Y. Nishijima, H. Yamanaka, M. Kirihara</td>
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<td>Ind. Res. Inst. of Niigata Pref., Japan</td>
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<td>Chunghwa Picture Tubes, Taiwan</td>
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<td>†Nat. Chiao Tung Univ., Taiwan</td>
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<tr>
<td>13:20</td>
<td>MEMS3 - 1</td>
<td>Invited Application Oriented MEMS</td>
<td>M. Esashi</td>
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<td>Tohoku Univ., Japan</td>
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<td>†Inst. for Laser Tech., Japan</td>
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<td>**Osaka Univ., Japan</td>
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<td>***Tohoku Univ., Japan</td>
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</tbody>
</table>
“BEANS Project”: Heterogeneous Technology Convergence Process Development Project

J. Adachi, Y. Takei, M. Takeda, A. Yusa
Micromachine Ctr., Japan

Conditions of Micromirror Lifted by Buckled Bridges Using Film Stress

M. Sasaki, K. Hane*, D. Briand**, W. Noell**, N. de Rooij**
Toyota Technological Inst., Japan
*Tohoku Univ., Japan
**Univ. of Neuchatel, Switzerland

A Novel 15.4-in. Transflective Color Sequential LCD

C.-L. Liu, C.-N. Mo, C.-F. Huang*, W.-C. Tai, S.-J. Chiou, M.-D. Chou
Chunghwa Picture Tubes, Taiwan
*Tatung Univ., Taiwan

----- Break -----
MEMS4/AMD4 - 4
15:50
Large-Scale Non-Contact Electric Field Sensor Array, Fabricated by TFT
M. Ikeda, T. Miyashita*, H. Kawano**, K. Nakamura
Micronics Japan, Japan
*NES, Japan
**FPD Solutions, Japan

----- Break -----

16:35 - 18:00 Room 201
MEMS5: Optical MEMS and Device Technologies

Chair: M. Nakamoto, Shizuoka Univ., Japan
Co-Chair: J. Jang, Kyung Hee Univ., Korea

MEMS5 - 1: Invited Field Emission from Carbon Nanotubes and Metallic Nanowires
16:35
Y. Bonnassieux, N. Le Sech*, B. Marquart,
C. S. Cojucaru, P. Legagneux*, D. Pribat
Ecole PolyTech., CNRS, France
*Thales Res. & Tech., France

MEMS5 - 2: Invited Direct Excitation of Xenon by Ballistic Electrons Emitted from Nanocrystalline Silicon Planar Cathode and Vacuum-Ultraviolet Light Emission
16:55
T. Ichihara, T. Hatai, N. Koshida*
Panasonic Elec. Works, Japan
*Tokyo Univ. A&T, Japan

MEMS5 - 3 Selective Growth of Vertically Aligned Carbon Nanotubes on Metal Foil
17:15
I. O. Jeong, J. H. Ryu, H. E. Lim, J. W. Lim, B. T. Son,
K. C. Park, J. Jang
Kyung Hee Univ., Korea

17:30
N. Y. Song, J. H. Ryu, H. E. Lim, J. W. Lim, B. T. Son,
J. Jang, K. C. Park
Kyung Hee Univ., Korea

MEMS5 - 5 Simulation of Nanostructure Transfer Mold Field Emitter Arrays
17:45
J. H. Moon, M. Nakamoto
Shizuoka Univ., Japan

Author Interviews
18:00 – 19:00
DESp - 1 Improvement of Displayed Image Quality via Zero-D LCD Backlight Modulation
L. Kerofsky
Sharp Labs. of America, USA

DESp - 2 Design Choices in LED Backlight LCD TV
P. A. Cirkel, A. Ševo*, E. H. A. Langendijk**
Philips Consumer Lifestyle, Belgium
*Philips Consumer Lifestyle, the Netherlands
**Philips Res., the Netherlands

DESp - 3 LCD Power Saving Using Adaptive Global Backlight Dimming
G. P. Qiu
ASTRI, Hong Kong

DESp - 4 Adaptive Selection Algorithm for LED Backlight of LCD-TVs
H. S. Cho, H. Kim, O. K. Kwon
Hanyang Univ., Korea

DESp - 5 Adaptive Local Dimming Backlight for Liquid-Crystal Displays
POSTECH, Korea
*LG Display, Korea

DESp - 6 Pre-Compensated X-Y Channel-Driving-White LED Backlight for 46-in. LCD TV
D. Y. Cho, W.-S. Oh, K.-M. Cho, G. W. Moon,
B.-C. Yang*, T.-S. Jang*
KAIST, Korea
*Samsung Elect., Korea

DESp - 7 Low-Power Consumption Color-Filterless 15.4-in. TN-TFT Notebook
S.-J. Chiou, W.-C. Tai, C.-C. Chen, C.-L. Liu, C.-N. Mo
Chunghwa Picture Tubes, Taiwan
DESp - 8  Dynamic Contrast Enhancement Method for Digital Image Display  
Xi’an Jiaotong Univ., China  

DESp - 9  Integration of an External Display System in Mobile Phone and Microdisplay for Multimedia Applications  
C.-F. Huang, C.-C. Weng, C.-L. Liu*, C.-N. Mo  
Tatung Univ., Taiwan  
*Chunghwa Picture Tubes, Taiwan  

DESp - 10 Accurate Estimation of Component Thermal Stress  
M.-L. Tai, W.-J. Chen, T.-K. Yeh, W.-L. Huang, S.-K. Wei  
Chunghwa Picture Tubes, Taiwan  

DESp - 11 An Experimental Approach to Super High Resolution Image Generation using Image Shift  
H. Okamura  
Shizuoka Univ., Japan  

DESp - 12 Low Power Driving for TFT-LCD Application  
S.-P. Choi, K.-W. Seo, J.-S. Kim, M.-H. Lee, M.-K. Han*  
Samsung Elect., Korea  
*Seoul Nat. Univ., Korea  

DESp - 13 A Simple Method to Implement Overdrive Technology in a Display System  
M. O. Tareq, A. Bhowmik*, S. W. Lee  
Kyung Hee Univ., Korea  
*Intel, USA  

DESp - 14 New Frame-Rate Method for Reducing Motion-Blur using Compact Arithmetic Circuits  
T. Ishihara, A. Inoue, M. Kobayashi, T. Kumakura, Y. Ishida, K. Kamei, A. Yamada  
Sharp, Japan  

DESp - 15 Dynamic Frame Compensation for LCD Motion Blur Reduction  
InnoLux Display, Taiwan  

DESp - 16 Adaptive Block Motion Estimation Based on Frame Difference for Frame Rate Upconversion  
Hanyang Univ., Korea  

DESp - 17 Motion Adaptive Frame Interpolation Based on Shortest Path Correlation  
S. J. Lee, J. H. Yun, B. H. Hwang, M. R. Choi  
Hanyang Univ., Korea
### DESp - 18

**Advanced Algorithms for Fast Motion Estimation**

*S. W. Choi, T. I. Kwak, B. H. Hwang, J. H. Yun, M. R. Choi*

*Hanyang Univ., Korea*

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<table>
<thead>
<tr>
<th>Time</th>
<th>Location</th>
<th>Session</th>
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<tbody>
<tr>
<td>16:35 - 16:40</td>
<td>Snow Hall A</td>
<td>Opening</td>
</tr>
<tr>
<td>16:40 - 17:40</td>
<td>Snow Hall A</td>
<td>DES1: Novel Electronic Display and Driving</td>
</tr>
</tbody>
</table>

#### Opening Remarks

16:35

*H. Okumura, Toshiba, Japan*

---

#### DES1 - 1: Invited Application of Bi-Axial MEMS Technology for Enabling Miniature Projection Display

16:40

*A. Tokman*

*Microvision, USA*

#### DES1 - 2: Invited A Full Color Eyewear Display Using Holographic Planar Waveguides

17:00

*H. Mukawa, K. Akutsu, I. Matsumura, S. Nakano, T. Yoshida, M. Kuwahara, K. Aiki, M. Ogawa*

*Sony, Japan*

#### DES1 - 3 A Multi-bit/cycle used 12-bit Cyclic-DAC for TFT-LCD Column Drivers

17:20

*H. N. Nguyen, Y. S. Jang, Y. S. Son*, S. T. Ryu, S. G. Lee*

*Info. & Commun. Univ., Korea*

*Silicon Works, Korea*

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### Author Interviews

18:00 – 19:00

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**Thursday, December 4**

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<tr>
<th>Time</th>
<th>Location</th>
<th>Session</th>
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<tbody>
<tr>
<td>9:00 - 10:20</td>
<td>Marine Hall</td>
<td>DES2: High Dynamic Range Display Technologies</td>
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</table>

#### Chair:

*M. Klompenhouwer, Philips, the Netherlands*

#### Co-Chair:

*A. Nagase, Mitsubishi Elec., Japan*
<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Title</th>
<th>Speakers</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:00</td>
<td>DES2 - 1</td>
<td><em>Invited</em> Advanced High Dynamic Range Displays</td>
<td>H. Seetzen, Dolby Labs., Canada</td>
</tr>
<tr>
<td>9:40</td>
<td>DES2 - 3</td>
<td>Three-Primary LEDs Used Adaptive Local Dimming Backlight for High Contrast LCD-TV</td>
<td>W. Zhang, H.-J. Peng, C.-K. Hung, C.-J. Tsai, K.-W. Ng, D.-D. Huang, Hong Kong Appl. S&amp;T Res. Inst., Hong Kong</td>
</tr>
<tr>
<td>10:00</td>
<td>DES2 - 4</td>
<td>A Local Dimming Color-Sequential Liquid-Crystal Display</td>
<td>C. C. Tsai, C. P. Su, H. M. Chen, W. C. Tai, C. L. Liu, C. N. Mo, Chunghwa Picture Tubes, Taiwan</td>
</tr>
</tbody>
</table>

----- Break -----

**DES3: High Image Quality Display Technologies**

Chair: H. Sasaki, Toshiba, Japan  
Co-Chair: S. Ono, Panasonic, Japan

<table>
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<tr>
<th>Time</th>
<th>Session</th>
<th>Title</th>
<th>Speakers</th>
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<tbody>
<tr>
<td>10:40</td>
<td>DES3 - 1</td>
<td><em>Invited</em> Dynamic Resolution of Video Display Systems</td>
<td>M. Klompenhouwer, F. van Heesch, Philips Res., the Netherlands</td>
</tr>
<tr>
<td>11:00</td>
<td>DES3 - 2</td>
<td>Realization of Multiple Color Gamuts in OCB Field Sequential Color LCDs Using LED Scanning Backlights</td>
<td>H. Murai, K. Sekiya, K. Wako, T. Kishimoto, T. Ishinabe, T. Uchida, Res. Inst. for Advanced Liquid Crystal Tech., Japan</td>
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<th>Time</th>
<th>Session</th>
<th>Title</th>
<th>Speakers</th>
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<tbody>
<tr>
<td>11:20</td>
<td>DES3 - 3</td>
<td>Motion Quality Improvement of Double Frame Rate LCD by Real Response Overdrive</td>
<td>H.-T. Lin, C.-C. Chiu, C.-H. Chen, Chunghwa Picture Tubes, Taiwan</td>
</tr>
</tbody>
</table>
Reconsideration of 45dB-PSNR Criterion for FPD Peripheral Devices

H. Sasaki
Toshiba, Japan

----- Lunch -----
Gradation Quality Enhancement without Degradation in Texture Areas
Y. Okuno, T. Nakano, M. Yoshiyama, J. Asano
Samsung Yokohama Res. Inst., Japan

Contrast Enhancement Method Using Limited Histogram Binding
H.-W. Kang, G.-H. Park, B.-H. Hwang, S.-J. Lee,
J.-H. Yun, M.-R. Choi
Hanyang Univ., Korea

Pixel Based Image Enhancement (PBIE) Technology to Enhance Image Quality without Memory at Portable System
Chunghwa Picture Tubes, Taiwan

Author Interviews
18:00 – 19:00

Supporting Organizations:
Technical Group on Consumer Electronics, ITE
Technical Committee on Electronic Information Displays, Electronics Society, IEICE

Late-News Papers
Due September 26, 2008
Submit a two-page camera-ready manuscript via IDW website:
http://www.idw.ne.jp/latenews.html

IDW ’09
The 16th International Display Workshops
December 9-11, 2009
World Convention Center Summit
Phoenix Seagaia Resort
Miyazaki, Japan
http://www.idw.ne.jp/
## Topical Session on Display Technologies for Professional Use

**Thursday, December 4**

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<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Location</th>
<th>Chair</th>
<th>Co-Chair</th>
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<tbody>
<tr>
<td>13:20</td>
<td>Opening</td>
<td>Marine Hall</td>
<td>K. Sekiya, Tohoku Univ., Japan</td>
<td>T. Matsumoto, Univ. of Tokyo, Japan</td>
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</table>

### Opening Remarks

**13:20**

*K. Sekiya, Tohoku Univ., Japan*

### DPU1: Display Technologies for Professional Use

**13:25 - 14:40**

**Marine Hall**

<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Speaker(s)</th>
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<tbody>
<tr>
<td>13:25</td>
<td>Invited Required Characteristics for Flat Panel Displays as a Broadcast Master Monitor in the Transition Era from Cathode Ray Tube</td>
<td>M. Sugawara, NHK, Japan</td>
</tr>
<tr>
<td>13:40</td>
<td>Invited Master Monitors - The European View</td>
<td>R. A. Salmon*,** BBC Res., UK, EBU</td>
</tr>
<tr>
<td>13:55</td>
<td>Invited The Most Appropriate Characteristics as a Master Monitor for Broadcasting Use</td>
<td>H. Kouchi, NHK, Japan</td>
</tr>
<tr>
<td>14:10</td>
<td>Invited Consistent Image Presentation for Color-Critical Work and Medical Diagnosis</td>
<td>T. Matsui, N. Hashimoto, S. Yamaguchi, J. Yonemitsu, J. Sakuta, Eizo Nanao, Japan</td>
</tr>
</tbody>
</table>
DPU1 - 5:  *Invited*  A Software Simulation Framework to Predict Clinical Performance of Medical Displays

BARCO NV, Belgium
*TELIN-IPI, Ghent Univ.-IBBT, Belgium
**IBiTech, Ghent Univ.-IBBT, Belgium

----- Break -----
### Topical Session on Flexible Displays

#### Thursday, December 4

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Title</th>
<th>Authors</th>
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<tbody>
<tr>
<td>9:00 - 10:00</td>
<td>Snow Hall A</td>
<td>FLX1: Flexible OLED Technologies</td>
<td></td>
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<tr>
<td>Chair: K. Nakayama, Yamagata Univ., Japan</td>
<td>Co-Chair: J. J. Brown, Universal Display, USA</td>
<td><strong>FLX1 - 1</strong> 9:00 3M Barrier Film Solutions and Light Extraction Technology</td>
<td>F. McCormick, S. Lamansky, M. Roehrig, A. Nachtigal, J. Ramos, J. Pieper, S. Finley, D. Stegall, J.-Y. Zhang 3M, USA</td>
</tr>
<tr>
<td>FLX1 - 3</td>
<td>9:30</td>
<td>Permeation Measurements on Ultra-High Barrier Layers for Encapsulation of Flexible Electronic Devices</td>
<td>H. Nörenberg</td>
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<th>Authors</th>
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<tr>
<td>10:40 - 11:25</td>
<td>Snow Hall A</td>
<td>FLX2: Flexible Electronic Papers</td>
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FLX2 - 2 11:05 Integration of Carbon Nanotube Based Common Electrode in Active-Matrix Electrophoretic Flexible Display


Samsung Elect., Korea

*Unidym, USA

----- Lunch -----
FLX4 - 2  15:25
Flexible Field-Effect Transistors Fabricated on Polymer Films Using LC Semiconductors with Solution Process
M. Funahashi, F. Zhang, N. Tamaoki
Univ. of Tokyo, Japan
∗Nat. Inst. of Advanced Ind. S&T, Japan

FLX4 - 3  15:45
Ultra-Thin Reflective LC Film
ITRI, Taiwan

FLX4 - 4  16:05
Optimization of Photo-Alignment Layer Suitable for Plastic Substrates
DIC, Japan
∗Hong Kong Univ. of S&T, Hong Kong

----- Break -----
Organizers
Workshop on LC Science and Technologies
Workshop on Active Matrix Displays
Workshop on FPD Manufacturing, Materials and Components
Workshop on Organic LED Displays
Workshop on Electronic Paper

IDW ’09
The 16th International Display Workshops
December 9-11, 2009
World Convention Center Summit
Phoenix Seagaia Resort
Miyazaki, Japan
http://www.idw.ne.jp/

IDW Tutorial in Japanese
Tuesday, December 2, 2008
Room 301
Toki Messe Niigata Convention Center

Detailed information will be available in October:
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Contact Address:idw.tutorial.wz@hitachi.com
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T. Saito Tokyo Cathode Lab.
S. Sakamoto Noritake Kizai
T. Shinoda Shinoda Plasma/Hiroshima Univ.
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K. Suzuki SED
M. Suzuki Merck
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K. Takeuchi DIC
Y. Takiguchi  Ricoh
S. Tanamachi  Sony
C. Tani  Office T Vision
Y. Toko  Stanley Elec.
Y. Tsuchiya  NHK
M. Tsumura  Hitachi
T. Uchida  Tohoku Univ.
M. Uchidoi  Pioneer
H. Uchiike
K. Uchikawa  Tokyo Ohka Kogyo
S. Uemura  Noritake
T. Ushiki  Seiko Epson
S. Yamamoto  Seiko Instrs.
Y. Yanagi  Mitsubishi Heavy Ind.
H. Yokoyama  Nat. Inst. of Advanced Ind. S&T
M. Yokozawa  Tokyo Univ. of Info. Sci.
M. Yuki  Asahi Glass

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FMC  Y. Ukai  UDDI
PDP  K. Nunomura  Pioneer
PH  Y. Nakaniishi  Shizuoka Univ.
FED  M. Takai  Osaka Univ.
OLED  T. Inoue  TDK
3D  I. Yuyama  Utsunomiya Univ.
VHF  H. Isono  Nippon Inst. of Tech.
LAD  Z. Tajima  Mobara Atecs
EP  M. Omodani  Tokai Univ.
MEMS  M. Nakamoto  Shizuoka Univ.
DES  H. Okumoto  Toshiba

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Program Secretary:  K. Ishii  NHK

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PH  N. Miura  Meiji Univ.
FED  H. Mimura  Shizuoka Univ.
OLED  Y. Kijima  Sony
3D  M. Hashimoto  NTT DATA
VHF  N. Hiruma  NHK
LAD  T. Hayashi  3M, Asia Pacific
EP  T. Fujisawa  DIC
MEMS  Y. Nakai  Toshiba
DES  K. Sekiya  Tohoku Univ.
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K. Niwa JSR Micro Korea
Y. Saitoh FUJIFILM
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M. Shida Tokyo Ohka Kogyo
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Program Committee: S. Mikoshiba
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H. Oaku Hitachi
N. Oota DAP Tech.
S. Sakamoto Noritake Kizai
T. Shiga Univ. of Electro-Commun.
T. Shinoda Shinoda Plasma/Hiroshima Univ.
M. Uchidoi Pioneer

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S. Itoh Futaba
D. Y. Jeon KAIST
M. Katayama Denso
H. Kobayashi Tottori Univ.
T. Minami Kanazawa Inst. of Tech.
M. Niboshi Sharp
K. Ohmi Tottori Univ.
S. Okamoto NHK
D. Poelman Ghent Univ.
M. Shiiki Hitachi
M. Sumitomo Nichia
K. Wani iFire Tech.
R.-J. Xie NIMS
H. Yamamoto Tokyo Univ. of Tech.

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Workshop Chair: M. Takai Osaka Univ.
Program Chair: H. Mimura Shizuoka Univ.
General Secretary: M. Namba NHK
Program Committee: T. Asano Kyusyu Univ.
Y. Gotoh Kyoto Univ.
Y. Iguchi FE Technol.
J. Ishikawa Kyoto Univ.
M. Nakamoto Shizuoka Univ.
S. Okuda Mitsubishi Elec.
T. Saito Tokyo Cathode Lab.
M. Suzuki Hitachi
S. Uemura Noritake
Workshop on Organic LED Displays
Workshop Chair: T. Inoue TDK
Program Chair: Y. Kijima Sony
General Secretary: S. Naka Univ. of Toyama
Program Committee: C. Adachi Kyushu Univ.
R. Hattori Kyushu Univ.
J. Kido Yamagata Univ.
H. Kobayashi Seiko Epson
H. Kuma Idemitsu Kosan
A. Mikami Kanazawa Inst. of Tech.
T. Miyadera Pioneer
H. Miyazaki Nippon Steel Chem.
H. Murata JAIST
K. Nakayama Yamagata Univ.
Y. Sato Japan Sci. & Tech.
S. Tokito NHK
T. Wakimoto Merck

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T. Tamura Tokyo Polytech. Univ.
T. Wake Chukyo Univ.
T. Yamamoto Hitachi
R. Yoshitake IBM Japan

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Program Chair: T. Hayashi 3M, Asia Pacific
Program Vice-Chair: H. Kikuchi NICT
Program Committee: S. Shikama Mitsubishi Elec.
Y. Asakura Nittoh Kogaku
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Workshop on Electoronic Paper
Workshop Chair: M. Omodani Tokai Univ.
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General Secretary: H. Arisawa Fuji Xerox
Program Committee: Y. Hotta Ricoh
K. Kitamura Chiba Univ.
S. Maeda Oji Paper
Y. Masuda Bridgestone
N.-S. Roh Samsung Elect.
A. Suzuki Ricoh
Y. Toko Stanley Elec.
G. F. Zhou Philips Res.

Workshop on MEMS for Future Displays and Related Electron Devices
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General Secretary: T. Komoda Matsushita Elec. Works
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K. Matsumoto Olympus
W. L. Milne Cambridge Univ.
T. Ooasa Tokyo Electron
S. Sugiyama Ritsumeikan Univ.
H. L. Tuller MIT
S. Uchikoga Toshiba
J.-B. Yoon KAIST
Y. Yoshida Mitsubishi Elec.

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General Secretary: Y. Kudo Hitachi
Program Committee: K. Käläntär Nippon Leiz
T. Kim Marvell Semiconductor
M.A. Klompenhouwer Philips Res.
H.-S. Koo Ming-Hsing Univ. of S&T
O.-K. Kwon Hanyang Univ.
A. Nagase Mitsubishi Elec.
S. Ono Matsushita Elec. Ind.
H. Sasaki Toshiba
N. Suzuki Nokia Japan
K. Takeuchi Univ. of Electro-Commun.
T. Yamamoto NHK
# IDW '08 Timetable

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<td>Wednesday, December 6</td>
<td>Registration 8:00-18:00</td>
<td>Lunch</td>
<td>Break</td>
<td>AMD2 (p. 29) 15:00-16:30</td>
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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 Organic LED Displays  
3D: Workshop on 3D/Hyper-Realistic Displays & Systems  
VHF: Workshop on Applied Vision & Human Factors  
EP: Workshop on Electronic Paper  
MEMS: Workshop on MEMS for Future Displays & Related Electron Devices  
DES: Workshop on Display Electronic Systems  
DPU: Topical Session on Display Technologies for Professional Use  
FLX: Topical Session on Flexible Displays  
A.I.: Author Interviews  
*: Joint Session
# REGISTRATION FORM

**Please complete and return this form no later than November 21, 2008 to:**

IDW '08 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@bilingualgroup.co.jp

"e-Registration" is available. See [http://www.idw.ne.jp/regist.html](http://www.idw.ne.jp/regist.html)

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## Registration Fee:

**By Nov. 7** Reduced registration fee applies to payment by Nov. 7, 2008. **NO REFUNDS AFTER NOV. 7, 2008.**

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<th>Conference (including a set of proceedings)</th>
<th>Member*1</th>
<th>Non-Member*2</th>
<th>Student*3</th>
<th>Life Member of ITE/SID</th>
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Please choose one: □ a set of Books and CD-ROM or □ a set of USB and CD-ROM*4

**Banquet**

□ ¥8,000 × ( ) person(s)

**ADDITIONAL set of proceedings**

□ a set of Books and CD-ROM

□ At the Conf. Site ¥8,000 × ( ) set(s)

□ Airmail after Conf. ¥15,000 × ( )

□ Domestic mail after Conf. ¥10,000 × ( )

□ a set of USB and CD-ROM

□ At the Conf. Site only ¥8,000 × ( ) set(s)

**After Nov. 7** Normal registration fee. **NO REFUNDS AFTER NOV. 7, 2008.**

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**Banquet**

□ ¥10,000 × ( ) person(s)

**ADDITIONAL set of proceedings**

Books & CD-ROM only

□ At the Conf. Site ¥8,000 × ( ) set(s)

□ Airmail after Conf. ¥15,000 × ( )

□ Domestic mail after Conf. ¥10,000 × ( )

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*1 Member: ITE/SID/ASO (ASO: Academic Supporting Organizations, See p.11 as well as "Supporting Organizations and Sponsors" at the end of each workshop section in the Advance Program.)

*2 Non-Member: If you intend to join either ITE or SID, the membership fee will be subsidized by IDW '08 committee. See http://www.idw.ne.jp/ for more information.

*3 Student: Photocopy of Student ID must be attached to this form.

*4 "USB flash drive and CD-ROM" can be selected only by those who registered and paid by Nov. 7. After Nov. 7, or if no choice is made, "Books and CD-ROM" will be provided.

## Payment:

Payment should be made in Japanese yen. Personal and traveler’s checks are not accepted.

- **CREDIT CARD** ( □ VISA  □ MasterCard )

- **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 2008

Please also be sure to attach a *copy of the bank receipt* with this registration form to avoid any confusion.

## Participant:

Name: (Block letters) ____________________________  (holder’s name)

Last (family) ____________________________  First (given) ____________________________  Middle Initial ____________________________

Mailing Address: ____________________________  Co./Univ./Inst. ____________________________  Div./Dept. ____________________________

No. ____________________________  Street/Town ____________________________  City ____________________________  State/Pref. ____________________________  Zip/Area Code ____________________________  Country ____________________________

Phone: ____________________________  Fax: ____________________________

E-mail: ____________________________

Date: / / ‘08  Signature: ____________________________

(month) (date)
IDW ’08
THE 15TH INTERNATIONAL DISPLAY WORKSHOPS

Workshops on
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• Active Matrix Displays
• FPD Manufacturing, Materials and Components
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Advance Program
Tokai Messe Niigata Convention Center
Niigata, Japan
December 3(Wed) –5(Fri), 2008