ITE

SID
SOCIETY FOR INFORMATION DISPLAY

IDW ’04

THE 11TH INTERNATIONAL DISPLAY WORKSHOPS

Workshops on

- LC Science and Technologies
- Active Matrix Displays
- FPD Manufacturing, Materials and Components
- CRTs
- Plasma Displays
- EL Displays, LEDs and Phosphors
- Field Emission Display
- Organic LED Displays
- 3D/Hyper-Realistic Displays and Systems
- Applied Vision and Human Factors
- Projection and Large-Area Displays, and Their Components

Topical Session on

- Electronic Paper

Advance Program

Niigata Convention Center
Toki Messe, Niigata, Japan
December 8 - 10, 2004

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Topical Session on Electronic Paper

PROGRAM HIGHLIGHTS

Scientific and technological advances in research and development on information displays will be found at the 11th International Display Workshops (IDW '04). A feature of the IDW '04 is an integration of the following eleven workshops and one topical session.

Workshops on
- LC Science and Technologies
- Active Matrix Displays
- FPD Manufacturing, Materials and Components
- CRTs
- Plasma Displays
- EL Displays, LEDs and Phosphors
- Field Emission Display
- Organic LED Displays
- 3D/Hyper-Realistic Displays and Systems
- Applied Vision and Human Factors
- Projection and Large-Area Displays, and Their Components

Topical Session on
- Electronic Paper

The three-day conference will feature 401 papers, including two keynote addresses, two invited addresses, 70 invited papers, 154 oral and 173 poster presentations, and some additional late-news papers will also be arranged. Following keynote and invited addresses on 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. Exhibitions from display and related industries will also be featured from Wednesday to Friday in parallel with workshops and a topical session. The IDW '04 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 session covers from fundamental studies to recent development of LCD technologies. Novel alignment technologies, LC alignment and anchoring, LC materials and evaluation, transflective LCDs, and novel LC modes are discussed.

Workshop on Active Matrix Displays (AMD)
Recent progress in TFT technologies and active matrix displays are widely discussed in this workshop. Sessions cover device and process technologies for a-Si, poly-Si and organic TFTs, featuring sixteen topical invited talks. Their applications to electronic papers, LC-TVs, mobile displays, OLED displays and system on panels are also discussed.

Workshop on FPD Manufacturing, Materials and Components (FMC)
This workshop includes 17 invited papers dealing with the overview of technical trends and the new related technologies on FPDs. In the technical sessions, papers deal with optical components, lamps, substrates, process technologies, measurement system, etc. for FPDs.

Workshop on CRTs (CRT)
This workshop covers the entire field of CRT technologies. This year, a topical session "For the Revival of CRT" is organized.

Workshop on Plasma Displays (PDP)
The 40-year anniversary of PDP will be celebrated by 55 papers including invited papers, "In Celebrating of 40 Years of PDP History" by Dr. L. F. Weber, and "A Technology Roadmap for Developing Large Capacity Electronic Display Fabrics" by Dr. R. L. Johnson. There are many excellent papers ranging from surface-discharge fundamentals to extra-large 80-inch PDP development. Recent research activities towards high efficacy and high resolution PDPs, such as long gap discharges, high Xe contents, and new driving waveforms, will also be discussed.

Workshop on EL Displays, LEDs 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. Invited talks present inorganic EL studies in Tottori University—in memory of Prof. Tanaka: large-screen full-color ELDs, sphere-supported ELDs, degradation mechanism of blue phosphors for PDPs, phosphors for white LEDs and phosphors for FEDs. Contributed papers also include interesting topics such as nano-sized particle phosphors, thin-film phosphor development using combinatorial deposition and new phosphor materials for ELDs and PDPs. In addition, joint sessions will be held with the PDP Workshop and the FED Workshop.

Workshop on Field Emission Display (FED)

Recent progresses in FEDs fabricated by using carbon-nanotubes (CNT) and graphite-nanofibers (GNF) as field emitters are presented. Operating characteristics of FEDs with Spindt-type FEAs and Phosphor technologies for FEDs are also discussed at the joint session with “EL Displays, LEDs and Phosphors workshop. ”

Workshop on Organic LED Displays (OLED)

This workshop includes recent developments in organic EL materials, devices and fabrication process. New organic fluorescent and phosphorescent materials are reported, and highly efficient EL devices using these materials are presented. Durability of the EL devices will be also presented.

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

This workshop focuses on recent developments in 3D and immersive/hyper-realistic display. It also covers 3D image processing such as multiview interpolation and coding technology. Invited talks in this workshop include the topics from a forefront of 3D technologies and the recent research into hyper-realistic display systems.

Workshop on Applied Vision and Human Factors (VHF)

This workshop covers the latest R&D achievements in human factors, such as usability of various display, visual fatigue related to display, 3D vision. The workshop also covers image quality issues of displays, such as pixel arrangement, moving image quality, tone and color reproduction. Recent progress in applied vision and human factors field related to displays are widely discussed.

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

The worldwide hottest technologies for projection displays will make this workshop exciting. Invited talks will cover topics on an extremely high performance projector for Digital Cinema Systems. In the general talks, light valve technology, peripheral circuit, light source and optical systems for enhancing display performance will be discussed.

Topical Session on Electronic Paper (EP)

This session will focus on current topics on Electronic Paper, Paper-like Display, and Rewritable Paper. Various novel technologies including electrophoresis, electrochromism, liquid crystal, and electrowetting will be reported. Concepts, systems, devices, and materials in this field are expected to be discussed.

Outstanding Poster Paper Awards

A limited number of outstanding poster papers will be awarded on December 10, from 12:20 to 13:30 at Exhibition Hall B following Niigata Festival.

Exhibition

The IDW ’04 exhibition of display components and systems will open at 12:00 on December 8 and conclude at 14:00 on December 10. The latest display devices, appliance, manufacturing equipments, measuring instruments, software systems and materials for display technologies will be presented in Exhibition Hall B. Please take this opportunity to enjoy informative discussion with exhibitors.

December 8: 12:00 – 18:30
December 9: 10:00 – 18:00
December 10: 10:00 – 14:00

GENERAL INFORMATION

SPONSORSHIP

IDW ’04 is sponsored by the Institute of Image Information and Television Engineers (ITE) and Society for Information Display (SID).

WORKSHOP SITE

Niigata Convention Center (Toki Messe)
6-1, Bandaijima, Niigata
Niigata 950-0078, Japan
Phone: +81-25-246-8400 Fax: +81-25-246-8411

ON-SITE SECRETARIAT

Telephone and fax machines for IDW ’04 use will be temporarily set up in the secretariat room at the Niigata Convention Center (Toki Messe) (December 7-10).
Phone: +81-25-249-9911 Fax: +81-25-249-9912

BANQUET

A buffet-style banquet will be held on December 8 from 19:30 to 21:30 in Continental Room at Hotel Okura Niigata. As the number of tickets is limited, you are urged to make an advance reservation by completing the enclosed registration form and returning it with payment.
Note: Free shuttle buses are available at 18:20, 18:45 and 19:10 from Niigata Convention Center (Toki Messe) to banquet site. On return from banquet site to Niigata Convention Center (Toki Messe) free buses are available at only 21:50.

EVENING GET-TOGETHER WITH WINE

A get-together will be held on December 7 from 18:00 to 20:00 at Room Hoou (30F), Hotel Nikko Niigata. Wine (sponsored by Merck Ltd., Japan) will be served to participants with a relaxed atmosphere for informal discussion.

OUTSTANDING POSTER PAPER AWARDS AND NIIGATA FESTIVAL

Poster Awards will be given to outstanding poster papers, following Niigata Traditional Dance and Drums, on December 10 from 12:20 to 13:30 in Exhibition Hall B.

REGISTRATION

Registration is available in advance and also on site. However, proceedings book might not be guaranteed for the on-site registrants in case of the unexpected excess of the on-site registration. Advance registration is strongly recommended.

Registration Fees

The registration fee for IDW ’04 includes admission to the conference, a copy of the proceedings in book or in USB memory, and CD-ROM. The proceedings in USB memory can be selected only by those who registered and paid by November 1.

	Paid by Nov. 1	After Nov. 1
Member of SID/ITE/ASO*	¥ 30,000	¥ 35,000
Non-Member	¥ 35,000	¥ 40,000
Student**	¥ 8,000	¥ 10,000
Life Member of SID/ITE	¥ 8,000	¥ 10,000
Banquet	¥ 8,000	¥ 10,000

Note that the reduced registration fee must be paid by November 1. In case of the payment after November 1 or on site, prices after November 1 will be applied even if you sent the registration form by November 1, 2004. Also note that *the number of banquet tickets to register on site is limited.*

*ASO: Academic Supporting Organizations
(See p.86 as well as "Supporting Organizations and Sponsors" at the end of each workshop/topical session section.)
**Student ID is required.

For **additional** sets of the proceedings book or USB memory*, and CD-ROM

	Book & CD-ROM	USB & CD-ROM
at the conference site	¥ 8,000	¥8,000
Airmail after the conference	¥13,000	not available
Sea/Domestic mail after the conference	¥10,000	not available

*Additional Sets of USB memory and CD-ROM can be selected only by the application with payment by November 1.

Payment

Three ways are provided for the registration.

(1) e-Registration

Access the following URL.

http://idw.ee.uec.ac.jp/regist.html

The e-Registration is acceptable until November 22, 2004.

(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 22, 2004.

IDW ’04 Secretariat
c/o The Convention, Annecy Aoyama 2F
2-6-12, Minami-Aoyama, Minato-ku, Tokyo 107-0062, Japan
Phone: +81-3-3423-4180 Fax: +81-3-3423-4108

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

1. Bank transfer (only applicable to domestic participants) to:
   Account name: IDW
   Account no.: 4049628 (ordinary account)
   Bank name: Mizuho Bank
   Branch name: Sendai Branch
   Please attach a copy of your bank remittance form with the registration form to avoid possible troubles.
2. Bank check made payable to "IDW" together with the registration form
3. Credit card (only VISA or MasterCard accepted)

All above payments should be made in **JAPANESE YEN.**
Also, please note that personal and traveler's checks will not be accepted.

(3) On-site Registration

Conference registration desk will be open:

Tuesday, December 7	18:00-20:00
Wednesday, December 8	8:30-18:00
Thursday, December 9	8:30-17:00
Friday, December 10	8:30-15:00

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, and 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 on written cancellation received by IDW ’04 secretariat **by November 1.** For cancellations received after November 1 or no-shows, refunds will not be made. However, after IDW ’04 closes, a set of the proceedings book/USB memory and CD-ROM will be sent to the registrants who have paid the registration fees.

INQUIRY

IDW ’04 Secretariat
c/o The Convention, Annecy-Aoyama, 2F
2-6-12, Minami-Aoyama, Minato-ku, Tokyo 107-0062, Japan
Phone: +81-3-3423-4180 Fax: +81-3-3423-4108

Please pay attention to the website (http://idw.ee.uec.ac.jp/home.html) for latest information.

HOTEL AND TRAVEL INFORMATION

HOTEL RESERVATIONS

IDW '04 executive committee has secured enough rooms for the participants. However, this year IDW '04, Hotel Reservation System is changed from the previous IDWs. Participants who want to stay in Niigata during IDW '04 should make reservations directly with the hotel by themselves as follows. Reservation will be made on a first-come, first-served basis.

Methods of Application

1. Through the IDW website (http://idw.ee.uec.ac.jp/hotelform.html)
2. By fax, using enclosed Form B (Please copy the form.)

Confirmation from the Hotels

1. Confirmation will be sent to the applicants directly from the hotel in a few days upon receiving your application.
2. If your application is not accepted by the hotel, please select another hotel and send your request to make reservation to the hotel through the web or by fax using Form B.
3. In case of no vacancy for your request again, please follow the procedure described above.

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 for its application at least two months before the conference.

JAPAN RAIL PASS

Tourists visiting Japan from abroad can save with a Japan Rail Pass. These 7-, 14-, 21-day passes are valid for unlimited travel on the Shinkansen trains (except NOZOMI) and other JR lines, plus its buses and ferries.

For details, please ask your travel agent and purchase an exchange order at an authorized agent before coming to Japan. This pass cannot be purchased in Japan.

After you arrive in Japan, you turn in the exchange order to receive your JAPAN RAIL PASS at an applicable JR station that has a JAPAN RAIL PASS exchange office.

Ex.

Narita Airport Terminal 1	Travel Service Center	11:30-19:00
	Ticket Office	6:15-11:30, 19:00-21:45
Narita Airport Terminal 2	Travel Service Center	11:30-19:00
	Ticket Office	6:30-11:30, 19:00-21:50
Kansai Airport	Ticket Office	5:30-23:00

CLIMATE

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

NIIGATA CITY

Niigata City is located in the center of the Japanese Islands and 250 km north of Tokyo. Niigata 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 sea. In addition, until relatively recently, the city was 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 hour by car ferry or only one hour by jet foil. Sado Island is 263 km in perimeter and 854.6 km^2 in area. 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 nature beauty and historic monuments. In the ancient and middle ages, Sado was the island of exile. Not a few noble or holy people, the ex-Emperor "Juntoku” (1197-1242), a Buddhist priest "Nichiren Shonin" (1222-1282) and a Noh player "Zeami" (1363 - 1443), for example, were banished there. They left a lot of 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 in1929). The bridge is 307 m long, 21.9 m wide and consists of 6 arches. It was not only strong enough to survive the Niigata Earthquake during 1960s, but has become one of the symbols of Niigata city.

Prefectural Government Memorial Hall

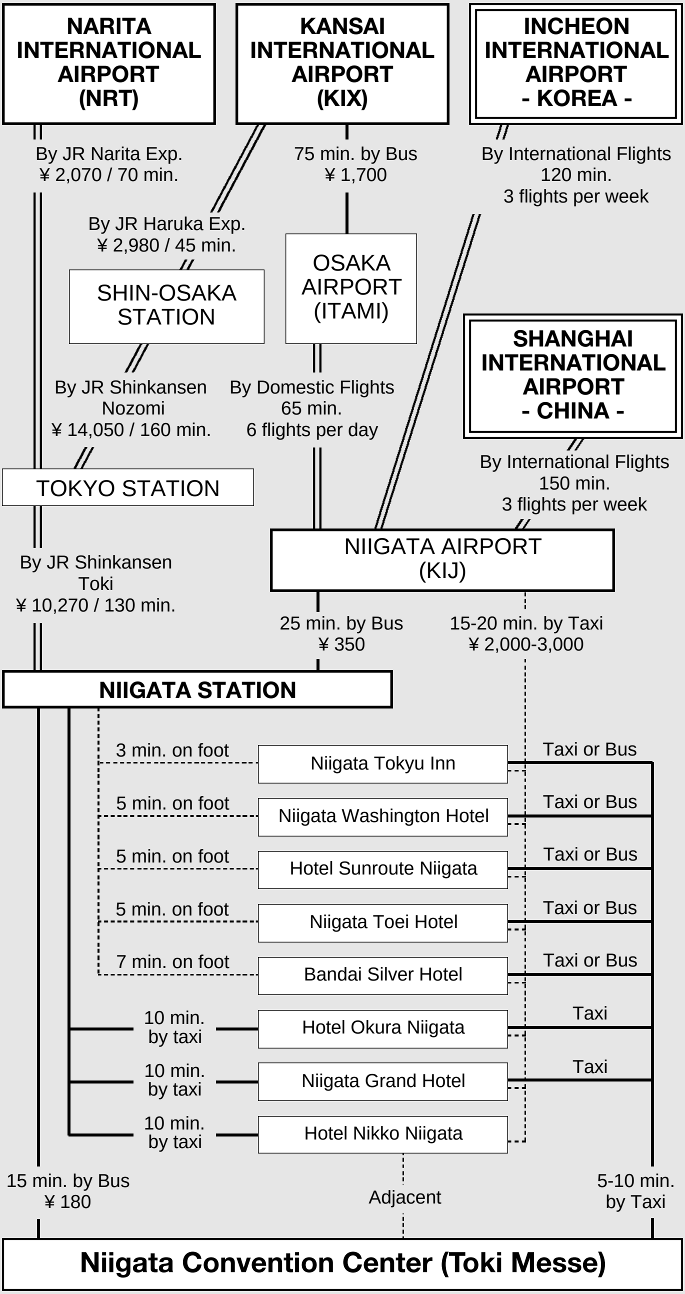
Built in 1884, this building was formerly home to the Niigata prefectural Assembly. This Western-style building fuses elements of Western and traditional Japanese architecture. It is the only prefectural assembly building dating from the early Meiji era still in existence in Japan and was designated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

More information is available on
http://www.city.niigata.niigata.jp/
http://www.nvcb.or.jp/

NIIGATA INFORMATION DESK

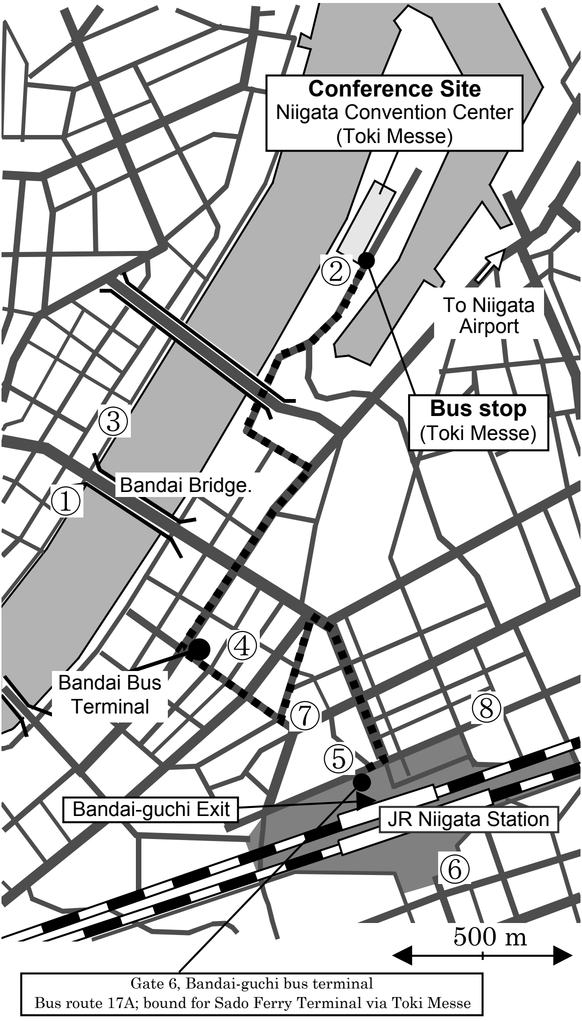
Information concerning hotels and tours will be available during the conference period.

ACCESS TO NIIGATA



(as of July, 2004)

Hotel Map (Access to Conference Site)



① Hotel Okura Niigata (Banquet Site)
② Hotel Nikko Niigata (Get Together)
③ Niigata Grand Hotel
④ Bandai Silver Hotel
⑤ Niigata Tokyu Inn
⑥ Niigata Washington Hotel
⑦ Niigata Toei Hotel
⑧ Hotel Sunroute Niigata

IDW ’04

Wednesday, December 8

9:00 - 9:10 **Snow Hall**

Opening

Master of Ceremony: T. Sugiura, Executive Chair

Opening Remarks
9:00
T. Uchida, General Chair
Y. Shimodaira, Program Chair

9:10 - 10:30 **Snow Hall**

Keynote Addresses

Co-Chairs: Y. Shimodaira, Program Chair
T. Uchida, General Chair

Keynote Address - 1 **Displays: Past, Present and Future**
9:10
R. W. G. Hunt
Colour Consultant, UK

Keynote Address - 2 **Digital Broadcasting Technologies : TV for the 21st Century**
9:50
K. Enami
NHK, Japan

----- Break -----

10:40 - 11:50 **Snow Hall**

Invited Addresses

Co-Chairs: Y. Iimura, Program Vice-Chair
K. Betsui, Program Vice-Chair

Invited Address - 1 **Ubiquitous Displays for Ubiquitous Computing**
10:40
H. Nakashima
Future Univ. Hakodate, Japan

Invited Address - 2 **Research and Development of E-Books**
11:15
M. T. Johnson
Philips Res. Labs., The Netherlands

----- Lunch -----

Workshop on LC Science and Technologies

Wednesday, December 8

13:30 - 14:40 **Snow Hall B**

LCT1: Novel Alignment Technologies

Chair: S. Sato, Akita Univ., Japan
Co-Chair: K. Tarumi, Merck, Germany

LCT1 - 1: ***Invited*** **Molecular Alignment Pattern Formation by the Microrubbing Process for LC Optical Device Applications**
13:30

T. Nose, M. Honma
Akita Pref. Univ., Japan

LCT1 - 2: ***Invited*** **Novel Alignment Technique of Liquid Crystal Using Hydrophilic/Hydrophobic Pattern Layer**
13:55

A. Suemasu, K. Ikegami, N. Maji, T. Tanaka
Dai Nippon Printing, Japan

LCT1 - 3 **Control of the Liquid Crystal Alignment by Two-Directional Rubbing**
14:20

K. Kuboki, T. Miyashita, T. Uchida
Tohoku Univ., Japan

----- Break -----

15:10 - 16:35 **Snow Hall B**

LCT2: LC Alignment and Anchoring

Chair: M. Hasegawa, IBM Res., Japan
Co-Chair: H. Okada, Toyama Univ., Japan

LCT2 - 1: ***Invited*** **Photo-Rubbing: A Method to Induce Stable Liquid-Crystal Pretilt Angle on Photo-Alignment Films**
15:10

M. Kimura,**, A. Kumano*, Y. Takeuchi**, H. Yokoyama****
**JSR, Japan*
***Nat. Inst. of Advanced Ind. Sci. & Tech., Japan*
****Int. Ctr. for Materials Res., Japan*

LCT2 - 2 **Dual Image Writing on the Liquid Crystal Cell Using Unpolarized UV Light**
15:35

R. Yamaguchi, T. Kawamura, S. Sato
Akita Univ., Japan

LCT2 - 3 **Highly-Reliable Method of Measuring the Elastic Constants Ratio and Anchoring Energy Using LC Cells with Different Gaps**
15:55

W. Kaneko, T. Ishinabe, T. Oono, T. Miyashita, T. Uchida
J. Watanabe, H. Mori**
Tohoku Univ., Japan
**Fuji Photo Film, Japan*

LCT2 - 4
16:15

Slow Orientational Dynamics and Memory Effects in Nematic Layers at a Weak Surface Anchoring

S. V. Pasechnik, V. G. Chigrinov, D. V. Shmeliova, V. A. Tsvetkov*
Moscow State Ac. of Instr. Eng. & Computer Sci., Russia
**Hong Kong Univ. of Sci. & Tech., Hong Kong*

----- Break -----

16:45 - 18:10 **Snow Hall B**

LCT3: LC Materials and Evaluation

Chair:	V. G. Chigrinov, Hong Kong Univ of Sci. & Tech., Hong Kong
Co-Chair:	M. Kimura, JSR, Japan

LCT3 - 1:
16:45

Invited **Recent Liquid Crystal Material Development for TV Application**

K. Tarumi, M. Klasen-Memmer
Merck, Germany

LCT3 - 2
17:10

A New Design for Transmissive Color NB-STN-LCDs by Using Twisted-Nematic Compensators

A. Mutou, T. Uesaka, Y. Kumagai, S. Nishimura, T. Toyooka*
Nippon Oil, Japan
**Nippon Oil LC Film, Japan*

LCT3 - 3
17:30

Universal Design Parameter Tz to Determine the Viewing Angle Property of Biaxial Retardation Films

T. Higano, T. Ishinabe, T. Uchida
Tohoku Univ., Japan

LCT3 - 4
17:50

A High-Speed Cell Parameter Measurement of Reflective Liquid Crystal Panels by Using a Polarization Converting Device

M. Kawamura, S. Sato
Akita Univ., Japan

Author Interviews
18:10 – 19:00

Thursday, December 9

9:00 - 10:25 **Snow Hall B**

LCT4: Transflective LCDs

Chair:	S. Komura, Hitachi, Japan
Co-Chair:	H. Fujikake, NHK, Japan

LCT4 - 1: *Invited* **Technologies towards Patterned Optical Foils Applied in Transflective LCDs**
9:00

B. M. I. van der Zande, C. Doornkamp, S. J. Roosendaal
J. Steenbakkers, A. Op t Hoog, J. T. M. Osenga, J. J. van Glabbeek, L. Stofmeel, J. Lub, Y. Iefuji, L. Weegels**
Philips Res., The Netherlands
**Philips Mobile Display Syss., Japan*

LCT4 - 2 **Low Interference In-Cell Diffuse Reflectors for Transflective Liquid Crystal Displays**
9:25

N. Sumi, H. Nakamura, Y. Hamawaki, Y. Iefuji, L. M. Weegels
Philips Mobile Display Syss., Japan

LCT4 - 3 **Double-Faced TFT-LCD Having One LC Panel and one Lighting System**
9:45

T. Taguchi, K. Nakamura, K. Tsuda, Y. Itoh, N. Kimura
Sharp, Japan

LCT4 - 4 **3-Color Filter Substrate with Multi Thickness Technology Used in Transflective Type Liquid Crystal Display**
10:05

O. Mikami, X. Gu, X. Y. Gong, C. Schmidgall, N. Bergeron*
Philips Mobile Display Syss., China
**Mitsumura Printing, Japan*

----- Break -----

10:40 - 11:40 **Snow Hall B**

LCT5: Novel LC Modes

Chair: B. M. I. van der Zande, Philips Res., The Netherlands
Co-Chair: M. Suzuki, Merck, Japan

LCT5 - 1 **Electro-Optical Properties of the Hybrid Color Reflective VA-LCD**
10:40

Y. Asao, R. Isobe
Canon, Japan

LCT5 - 2 **Low Power LC Shutter with High Contrast Ratio and Fast Response Time**
11:00

S. A. Studentsov, V. A. Brezhnev, B. I. Gorfinkel
N. D. Zhukov, V. G. Chigrinov, H. S. Kwok**
R&D Inst. "VOLGA", Russia
**Hong Kong Univ. of Sci. & Tech., Hong Kong*

LCT5 - 3 **Bendy Field-Sequential-Color Displays Using A4-Sized Ferroelectric Liquid Crystal Driven by Active Matrix Method**
11:20

H. Fujikake, H. Sato, T. Murashige, Y. Fujisaki, H. Kikuchi
T. Kurita
NHK, Japan

Author Interviews
17:00 – 18:00

14:00 - 17:00 **Exhibition Hall B**

Poster LCTp1: LC Modes

LCTp1 - 1 **Fabrication Process of A4-size Flexible Ferroelectric Liquid Crystal Displays**

H. Sato, H. Fujikake, T. Murashige, H. Kikuchi, T. Kurita
NHK, Japan

LCTp1 - 2 **Influence of Polymer Wall Formation on Electrooptic Behaviors of Ferroelectric Liquid Crystal**

T. Murashige, H. Fujikake, H. Sato, H. Kikuchi, T. Kurita
NHK, Japan

LCTp1 - 3 **Single-Crystal Morphologies of Pentacene Organic Semiconductor Segregated in Liquid Crystal**

H. Fujikake, T. Suzuki, Y. Fujisaki, T. Murashige, H. Sato, H. Kikuchi, T. Kurita*
NHK, Japan
**Tokyo Univ. of Sci., Japan*

LCTp1 - 4 **White Fluorescent Display Properties in Liquid Crystal Cells Using Dichroic Dyes**

R. Yamaguchi, K. Moriyama, S. Sato, X. Zhang, T. Thiemann*, S. Mataka**
Akita Univ., Japan
**Kyushu Univ., Japan*

LCTp1 - 5 **Multi-Dimensional Alignment for Fast transition from Splay to Bend States in a Pi Cell**

C. G. Jhun, J. L. Lee, S. H. Kang, S. R. Lee, J. C. Kim, T.-H. Yoon, J. Y. Lee,*
Pusan Nat. Univ., Korea
**BOE-HYDIS Tech., Korea*

LCTp1 - 6 **Design of a Wide Viewing-Angle OCB Cell with Circular Polarizers**

M. J. Jung, C. G. Jhun, J. C. Kim, T. H. Yoon, J. Y. Lee
Pusan Nat. Univ., Korea
**BOE-HYDIS Tech., Korea*

LCTp1 - 7 **Evaluation of Induced Polarization Dependence in Photo-Polymerization Process of Holographic Polymer Dispersed Liquid Crystal Films**

A. Ogiwara, M. Takeda, H. Matsuda, O. Tanaka**
Takamatsu Nat. College of Tech., Japan
**Okura Ind., Japan*

LCTp1 - 8 **Nematic Diffractive Grating Induced by Nano-Treated Silicon Oxide Surface**

*M. I. Gritsenko, S. I. Kucheev, P. M. Litvin**
Chernigov Univ., Ukraine
**Inst. of Physics, Ukraine*

LCTp1 - 9 **Liquid Crystal Diffractive Optical Devices Fabricated by Microrubbing Process**

M. Honma, M. Takeishi, T. Nose
Akita Pref. Univ., Japan

LCTp1 - 10 **Compensation Element of OCB LCD**

S. H. Chang, C. L. Pan
Chunghwa Picture Tubes, Taiwan

LCTp1 - 11 **Photoaligned Large Cell Gap Permanent Grayscale in Bistable TN Liquid Crystal Display**

Y. W. Li, S. Y. Yeung, H. S. Kwok
Hong Kong Univ. of Sci. & Tech., Hong Kong

LCTp1 - 12 **Multidimensional Alignment Structure for Long-Term Memory in a Bistable Chiral-Splay Nematic Liquid Crystal Device**

S. H. Kang, C. G. Jhun, S. R. Lee, J. C. Kim, T.-H. Yoon
Pusan Nat. Univ., Korea

14:00 - 17:00 **Exhibition Hall B**

Poster LCTp2: Transflective LCDs

LCTp2 - 1 **Reduced Power Consumption in a Single-Polarizer Reflective TN-LCD with One Retardation Film**

H. Hando
Kanazawa Inst. of Tech., Japan

LCTp2 - 2 **Multimode Transflective LCD**

J. S. Gwag, G. S. Lee, J. C. Kim, T.-H. Yoon
Pusan Nat. Univ., Korea

LCTp2 - 3 **Vertically Aligned Transflective Liquid Crystal Display with Inner Retarders**

S. J. Park, C. G. Jhun, K.-H. Park, J. C. Kim, T.-H. Yoon
Pusan Nat. Univ., Korea

LCTp2 - 4 **Configuration of a Transflective IPS LCD with an Optical Dummy Layer**

K. H. Park, Y. J. Ko, J. C. Kim, T. H. Yoon
Pusan Nat. Univ., Korea

LCTp2 - 5 **Electro-Optic Characteristics of In-Plane Driven Transflective LCD**

I. Yu, J. Song, S. Lee
Chonbuk Nat. Univ., Korea

14:00 - 17:00 **Exhibition Hall B**

Poster LCTp3: LC Alignment

LCTp3 - 1 **Evaluation of the Surface Anchoring Strength of the Alignment Film for High Pretilt by Means of the Renormalized Transmission Spectroscopic Ellipsometry**

N. Tanaka, M. Kimura, T. Akahane
Nagaoka Univ. of Tech., Japan

LCTp3 - 2 **Evaluation of Polar Anchoring Strength by Symmetric Oblique Incident Transmission Ellipsometry**

Y. Abe, N. Tanaka, M. Kimura, T. Akahane
Nagaoka Univ. of Tech., Japan

LCTp3 - 3 **Characterization of Polyimide Molecular Orientation of LC Alignment Film by Grazing Incidence X-ray Diffraction**

I. Hirosawa
Japan Synchrotron Radiation Res. Inst., Japan

LCTp3 - 4 **Investigation of the Surface Alignment of Liquid Crystal Multi-Layers Evaporated on Photoalignment Polyimide Film**

T. N. Oo, T. Iwata, M. Kimura, T. Akahane*
Nagaoka Univ. of Tech., Japan
**Core Sys., Japan*

LCTp3 - 5 **Photoalignment Evaluation in In-Plane Switching LC Cells**

D. J. Chen, T. Y. Ho, S. Y. Fuh, Y. M. Chen, C. W. Hsiao, J. L. Chen, C. W. Wu, H. C. Chiang
Taiwan TFT LCD Assn., Taiwan

LCTp3 - 6 **Novel Photo-Aligned Twisted Nematic Liquid Crystal Cell**

D. D. Huang, V. M. Kozenkov, V. G. Chigrinov, H. S. Kwok, H. Takada, H. Takatsu**
Hong Kong Univ. of Sci. & Tech., Hong Kong
**Dainippon Ink & Chems., Japan*

14:00 - 17:00 **Exhibition Hall B**

Poster LCTp4: Analysis & Characterization

LCTp4 - 1 **Study on Phase Transition of the Optically Compensated Splay (OCS) Cell**

B. S. Jung, S. J. Kim, S. M. Oh, J. Y. Hwang, D.-S. Seo*, S. H. Lee*
Chonbuk Nat. Univ., Korea
**Yonsei Univ., Korea*

LCTp4 - 2 **Study on Color Characteristics of the E- and O-Modes in the Fringe-Field Switching Mode**

I. Song, I. Baik, H. Y. Kim, K. H. Lee*, S. Y. Kim*, Y. J. Lim*, S. Lee**
Chonbuk Nat. Univ., Korea
**BOE-HYDIS Tech., Korea*

LCTp4 - 3 **Analysis of Electro-Optic Characteristics in Fringe-Field Switching Mode**

J. B. Park, H. Y. Kim, K. H. Kim, S. Y. Kim, Y. J. Lim
BOE-HYDIS, Korea

LCTp4 - 4 **The Electro-Optical Characteristics of an LCD with Respect to Material Species of the Black Matrix**

C.-S. Lee, S.-K. Yoon, S.-H. Yoon, H.-Y. Youn, D.-W. Kim*, M.-S. Jung*, T. Won**
Sanayi Sys., Korea
**Inha Univ., Korea*

LCTp4 - 5 **The Optical Characteristics of a New MVA-LCD Using Computer Simulation**

D.-W. Kim, M.-S. Jung, H.-J. Yoon, C.-S. Lee, S.-I. Yoon*, S.-H. Yoon*, T. Won*
Inha Univ., Korea
**Sanayi Sys., Korea*

LCTp4 - 6 **Transient Behaviors of Polymer Stabilized Twisted Nematic Liquid Crystal Cells**

M. Kamio, M. Nanaumi, T. Takahashi, S. Saito
Kogakuin Univ., Japan

LCTp4 - 7 **Experimental and Theoretical Studies of Transient Current of Nematic Liquid Crystals with Negative Dielectric Anisotropy Excited by Step Voltage Application**

Y. Iwata, H. Naito, M. Inoue, H. Ichinose**, M. Klasen-Memmer***, K. Tarumi****
Osaka Pref. Univ., Japan
**Toyo, Japan*
***Merck, Japan*
****Merck, Germany*

LCTp4 - 8 **Effect of Electrode Interval in the PVA Mode**

H.-Y. Youn, D.-W. Kim, M.-S. Jung, C.-S. Lee, S.-K. Yoon*, S.-H. Yoon*, T. Won*
Inha Univ., Korea
**Sanayi Sys., Korea*

LCTp4 - 9 **New Approach to LCD Modeling: 2D Version**

V. G. Chigrinov, D. A. Yakovlev, V. I. Tsoi**
Hong Kong Univ. of Sci. & Tech., Hong Kong
**Saratov State Univ., Russia*

LCTp4 - 10 **A Simple Measurement System for Determining Cell Thickness and Twist Angle in Reflective Liquid Crystal Displays**

M. Kawamura, M. Konda, S. Sato
Akita Univ., Japan

LCTp4 - 11 **The Effect of Polarity of Contamination on LCD Performance**

K.-N. Yang
AU Optronics, Taiwan

LCTp4 - 12 **Ring Projector from Surface Stabilized Cholesteric Texture Film**

C.-Y. Huang, C.-Y. Hu
Nat. Changhua Univ. of Education, Taiwan

LCTp4 - 13 **High-Throughput Screening of the Helical Twisting Power Property Using Micro-FTIR Spectroscopy for Novel Chiral Materials**

J. H. Ma, Y. P. Lin, W. C. Chen, R. J. Wu
ITRI, Taiwan

Friday, December 10

9:00 - 10:10 **Room 301**

VHF5/LCT6: Pixel Arrangement and Image Quality

Chair: Y. Shimodaira, Shizuoka Univ., Japan
Co-Chair: M. Ozaki, Osaka Univ., Japan

VHF5/LCT6 - 1: ***Invited*** **PenTile LCDs**
9:00

C. Elliott
Clairvoyante, USA

VHF5/LCT6 - 2 **Color Image Improvement in Display with a Novel String Pixel Architecture**
9:30

C.-S. Chang, C.-J. Chen, J.-P. Pang
InnoLux Display, Taiwan

VHF5/LCT6 - 3 **Optical and Electrical Characterization of Flickering of Color STN-LCD**
9:50

R. Chen, X. Zhang
Philips Mobile Display Sys., China

----- Break -----

10:30 - 12:00 **Room 301**

VHF6/LCT7: Moving Image Quality

Chair: C. Elliott, Clairvoyante, USA
Co-Chair: Y. Shimodaira, Shizuoka Univ., Japan

VHF6/LCT7 - 1: ***Invited*** **A Review of MPRT Measurement Method for Evaluating Motion Blur of LCDs**
10:30

*J. Someya, Y. Igarashi**
Mitsubishi Elec., Japan
**Hitachi Displays, Japan*

VHF6/LCT7 - 2 **Dynamic Gamma: A Metric for the Temporal Response Contribution to Motion Blur**
11:00

H. Pan, X. Feng, S. Daly
Sharp Labs. of America, USA

VHF6/LCT7 - 3 **Parameters of Motion Picture Blurring Measured by Using a Pursuit Camera**
11:20

K. Oka, K. Kitagishi, Y. Enami
Otsuka Elect., Japan

VHF6/LCT7 - 4 **Motion Picture Quality of Colored Image Measured by Using a Pursuit Camera System**
11:40

Y. Enami, K. Kitagishi, K. Oka
Otsuka Elect., Japan

Author Interviews
17:00 – 18:00

Supporting Organizations:
LC Physics and Condensed Matter Forum, JLCS
Chemistry and LC Material Forum, JLCS
Liquid Crystal Display Forum, JLCS
LC Photonics and Optical Device Forum, JLCS
Bionics and Lyotropic Liquid Crystal Forum, JLCS
Technical Group on Information Display, ITE
Technical Committee on Electronic Information Displays, Electronics Society, IEICE
Technical Committee on Electron Devices, Electronics Society, IEICE

Late-News Papers

due October 4, 2004

Submit a two-page camera-ready manuscript of A4-sized pages, reflecting important new findings or developments via on-line submission:

http://idw.ee.uec.ac.jp/authinfo.html

Outstanding Poster Paper Awards

Friday, December 10
12:20 – 13:30
(after Niigata Festival)
Exhibition Hall B

See page 5 for details

Workshop on Active Matrix Displays

Wednesday, December 8

13:30 - 16:30 Exhibition Hall B

Poster AMDp: Active-Matrix Display

AMDp - 1 **MED Sometimes Defeats GAP: A Performance Study on Multi-Valued Image Entropy Coding**

H. Sasaki, T. Arai, M. Hachiuma, A. Masuko
Toshiba, Japan

AMDp - 2 **Optimization of the Driving Voltage for Fast Response of AMLCDs**

S.-I. Yoon, S.-H. Yoon, C.-S. Lee*, H.-J. Youn, D.-W. Kim, M.-S. Jung, T. Won*
Inha Univ., Korea
**Sanayi Sys., Korea*

AMDp - 3 **Design and Implementation of mini-LVDS Receiver in 0.35μm CMOS Process**

J.-H. Kim, J.-C. Choi, J.-S. Lee, C.-S. Jang, J.-S. Yoo*, D.-H. Lee*, O.-K. Kwon, I.-J. Chung**
Hanyang Univ., Korea
**LG.Philips LCD, Korea*

AMDp - 4 **Effects of Capping SiO_2 Layer on the Location-Controlled Si Grain by μ-Czochralski (grain filter) Process with Excimer-Laser**

M. He, R. Ishihara, Y. Hiroshima, S. Inoue*, T. Shimoda*, J. W. Metselaar, C. I. M. Beenakker*
Delft Univ. of Tech., The Netherlands
**Seiko Epson, Japan*

AMDp - 5 **Low Threshold Voltage Polysilicon TFTs with Dual-Layer SiN_X/SiO_2 Gate Dielectric**

P.-H. Tsai, H.-T. Chen, C.-L. Chen
ERSO/ITRI, Taiwan

AMDp - 6 **Numerical Analysis for Spatial Period of Periodic Grain Boundary in Si Thin Film Crystallized by Linearly Polarized Nd:YAG Pulse Laser with Oblique Incidence**

H. Kaki, K. Nishioka, S. Horita
JAIST, Japan

AMDp - 7 **Uniformity Improvement of Plasma Source Using Single-Layer Slotted Waveguide Array**

T. Ide, A. Sasaki, K. Azuma, Y. Nakata, T. Hirano, M. Ando**
ALTEDEC, Japan
**Tokyo Inst. of Tech., Japan*

AMDp - 8 **Low Energy Doping and 450°C Thermal Activation Process Developments for LTPS TFT Device**

J. G. Jung, C. K. Yoo, C. Yi, C. W. Kim
Samsung Elect., Korea

AMDp - 9 **Analysis of the Leakage Current in Poly-Si p-Channel TFT Due to Doping Condition**

J. Y. Yang, Y. J. Kim, S. W. Lee, S. H. Kim, H. C. Kang,
K. M. Lim, C. D. Kim, I. J. Chung
LG.Philips LCD, Korea

AMDp - 10 **Highly Stable a-Si:H TFTs Prepared with Optimum SiN_x Films by PECVD Using Taguchi Method**

C.-Y. Wu , C.-H. Chen, Y.-C. Kuan, K.-S. Sun
Chunghwa Picture Tubes, Taiwan

AMDp - 11 **Extreme Grain Growth of Poly-Si Film by Excimer Laser Annealing for Sputtered a-Si Film at Room Temperature**

D. Y. Kim, J. S. Jung*, H. S. Cho*, J. Y. Kwon*, K. B. Park*,*
H. Lim, T. Noguchi*,***
**Samsung Advanced Inst. of Tech., Korea*
***Sungkyunkwan Univ., Korea*

AMDp - 12 **Drain-Induced Barrier Lowering in Polysilicon Thin-Film Transistors**

B. D. Choi, Y. G. Mo
Samsung SDI, Korea

AMDp - 13 **Continuous Argon Laser Crystallization of Patterned Silicon**

J.-F. Michaud, A. Saboundji, R. Rogel, T. Mohammed-Brahim,
M. Sarret, O. Bonnaud
Univ. de Rennes 1, France

AMDp - 14 **Crystallization of RF Sputter Deposited Amorphous Silicon Thin Film and Transistor Characteristics**

Y.-H. Kim, D.-I. Kim, C.-H. Chung, J. W. Lim, S. J. Yun,
D.-W. Kim, D.-J. Park, Y.-H. Song, J. H. Lee
ETRI, Korea

AMDp - 15 **3.8-in. System on Panel LCD Employing Advanced CMOS LTPS Technology**

J. S. Yoo, K. M. Lim, K. E. Lee, S. W. Lee, J. M. Yoon,
M. K. Baek, J. S. Yu, J. K. Park, J. K. Kang, C. D. Kim,
I. J. Chung
LG.Philips LCD, Korea

AMDp - 16 **Improvement of LTPS TFT Digital Circuit Performance for System-On-Panel Application**

J.-G. Kim, J. H. Hur, J. Y. Jeong*
Univ. of Suwon, Korea
**Anyang Univ., Korea*

AMDp - 17 **A New Offset Compensation Circuit for High Gray Scale TFT-LCD Data Driver**

J.-C. Choi, J.-S. Lee, O.-K. Kwon
Hanyang Univ., Korea

AMDp - 18 **The Circuit Development of Liquid Crystal Display Driver for New Type COG Panel**

K. Nishi, Y. Doi, T. Ohmori, Y. Date
Matsushita Elec. Ind., Japan

AMDp - 19 **A New All-P TFT(or All-N TFT) Robust Shift Register**

J.-R. Lin, C.-F. Chung
ERSO/ITRI, Taiwan

AMDp - 20 **Fabrication of Organic TFTs with High-K Gate Insulator Deposited by RF Sputtering Method**

Y. Kouda, A. Kobayashi, Y. Iimura
Tokyo Univ. of A&T, Japan

AMDp - 21 **Low Temperature Processable Inherently Photosensitive Polyimide as a Gate Insulator for Organic Thin Film Transistors**

S. M. Pyo, H. S. Son, Y. J. Lee, K. Y. Choi, M. H. Yi
Korea Res. Inst. of Chem. Tech., Korea

AMDp - 22 **Bias-Stress Effect on the Performance of OTFT on Plastic Substrate**

S. H. Han, S. H. Kim, S. M. Cho, J. Jang
Kyung Hee Univ., Korea

AMDp - 23 **Pentacene Organic Thin-Film Transistors with MoW and ITO Contact and SiO_2 Gate Dielectric**

M. S. So, B. D. Choi, Y. G. Mo
Samsung SDI, Korea

AMDp - 24 **Chracterization of Photosensitive Polymer Insulator Materials**

G. H. Kim, S.-M. Yoon, I.-. Ryu, S. Y. Kang, K. S. Suh
ETRI, Korea

AMDp - 25 **Effects of Inorganic Gas Barriers on the Overlay Tolerance in TFT Fabrication on Plastic Substrates**

D.-J. Park, J.-W. Lim, C.-H. Chung, S.-J. Yun, Y.-H. Kim, Y.-H. Song, D.-W. Kim, J. H. Lee
ETRI, Korea

AMDp - 26 **Low-Damaged Dry Etching of BCB Polymer Film for Interlayer Dielectrics of Poly-Si TFT on Plastic Substrate**

D. W. Kim, S. J. Yun, Y.-H. Kim, C.-H. Chung, J. W. Lim, Y.-H. Song, D.-J. Park, J. H. Lee
ETRI, Korea

13:30 - 16:30 **Exhibition Hall B**

Poster AMD/OLEDp: Active-Matrix OLED

AMD/OLEDp - 1 **A Circuit for Testing TFT-Arrays of AMOLED Displays**

D. Nakano, Y. Sakaguchi, K. Imura, A. Ohta
IBM Japan, Japan

AMD/OLEDp - 2 **Active Organic Light Emitting Diode Drive Circuit**

H.-R. Han,**, C.-C. Kuo*,**, W.-T. Liao*, S.-T. Lo*, W.-C. Wang**
**Wintek, Taiwan*
***Nat. Chung Hsing Univ., Taiwan*

AMD/OLEDp - 3 **A New AMOLED Pixel Driving Scheme Employing Vdd Line Elimination**

W.-J. Nam, J.-H. Lee, S.-H. Jung, C.-W. Han, M.-K. Han
Seoul Nat. Univ., Korea

AMD/OLEDp - 4 **A New AMOLED Pixel Design Compensating Threshold Voltage Degradation of a-Si:H TFT and OLED**

J. H. Kim, J.-H. Lee, W.-J. Nam, B.-H. You, M.-K. Han
Seoul Nat. Univ., Korea

AMD/OLEDp - 5 **Uniformity of AM-OLED Pixels Circuits Using as-Deposited Polysilicon TFTs Improved by Slicing Effect**

A. Gaillard,**, T. Mohammed-Brahim*, S. Crand*, R. Rogel*,*
*C. Prat**, P. Leroy***
**Univ. de Rennes 1, France*
***Thomson Multimedia R&D, France*

16:50 - 17:55 **Room 201**

EP3/AMD1: Electronic Paper (3)

Chair: H. Kawai, Seiko Epson, Japan
Co-Chair: M. Kimura, Ryukoku Univ., Japan

EP3/AMD1 - 1: ***Invited*** **Driving an Active Matrix Electrophoretic Display**
16:50

G. F. Zhou, M. T. Johnson, R. Cortie, R. Zehner,*
K. Amundson, A. V. Henzen**, J. van de Kamer***
Philips Res., The Netherlands
**E Ink, USA*
***Philips Emerging Display Tech., The Netherlands*

EP3/AMD1 - 2 **A Fully Integrated Low-Power High-Voltage Bistable Display Driver for Smartcard Applications**
17:15

W. Hendrix, J. Doutreloigne, A. Van Calster
Ghent Univ., Belgium

EP3/AMD1 - 3 **An Intelligent Driving Scheme for High-Voltage Display Drivers**
17:35

A. Monte, J. Doutreloigne, A. Van Calster
Ghent Univ., Belgium

Author Interviews
18:10 – 19:00

Thursday, December 9

9:00 - 10:25 **Marine Hall**

AMD2/OLED4: AM-OLED (1)

Chair: G. Zhou, Philips Res. Labs., The Netherlands
Co-Chair: T. Shirasaki, Casio Computer, Japan

AMD2/OLED4 - 1: ***Invited*** **High-Performance and Low-Power AMOLED Using White Emitter with Color-Filter Array**
9:00

K. Mameno, R. Nishikawa, T. Omura, S. Matsumoto, S. A. Van Slyke, A. D. Arnold*, T. K. Hatwar*, M. V. Hettel*, M. E. Miller*, M. J. Murdoch*, J. P. Spindler**
Sanyo Elec., Japan
**Eastman Kodak, USA*

AMD2/OLED4 - 2 **2.2-in. QVGA AMOLED with Current De-Multiplexer TFT Circuits**
9:25

*Y. Matsueda, D. Y. Shin, K. N. Kim, D. H. Ryu, B. Y. Chung, H. K. Kim, H. K. Chung, O. K. Kwon**
Samsung SDI, Korea
**Hanyang Univ., Korea*

AMD2/OLED4 - 3 **Optical Cross Talk in AMOLED Displays with Optical Feedback**
9:45

A. Giraldo, W. Oepts, M. C. J. M. Vissenberg, D. A. Fish, N. D. Young**
Philips Res. Labs., The Netherlands
**Philips Res. Labs., UK*

AMD2/OLED4 - 4 **Comparison of Driving Methods for TFT-OLEDs and Novel Proposal Using Time Ratio Grayscale and Current Uniformization**
10:05

M. Kimura
Ryukoku Univ., Japan

----- Break -----

10:40 - 12:05 **Marine Hall**

AMD3/OLED5: AM-OLED (2)

Chair: K. Mameno, Sanyo Elec., Japan
Co-Chair: R. Hattori, Kyushu Univ., Japan

AMD3/OLED5 - 1: ***Invited*** **Solution for Large-Area Full-Color OLED Television - Light Emitting Polymer and a-Si TFT Technologies -**
10:40

*T. Shirasaki, T. Ozaki, T. Toyama, M. Takei, M. Kumagai, K. Sato, S. Shimoda, T. Tano, K. Yamamoto, K. Morimoto, J. Ogura, R. Hattori**
Casio Computer, Japan
**Kyushu Univ., Japan*

AMD3/OLED5 - 2 **A Novel Digital-Gray-Scale Driving Method with a Multiple Addressing Sequence for AM-OLED Displays**
11:05

A. Tagawa, T. Numao, T. Ohba
Sharp, Japan

AMD3/OLED5 - 3 **A 2.0-in. AMOLED Panel with Voltage Programming Pixel Circuits and Point Scanning Data Driver Circuits**
11:25

N. Komiya, C. Y. Oh, K. Y. Eom, Y. W. Kim, S. C. Park, S. W. Kim
Samsung SDI, Korea

AMD3/OLED5 - 4
11:45

A Simple Data Driver Architecture to Improve Uniformity of Current-Driven AMOLED

H. Y. Huang, W. T. Sun, C. C. Chen, J. C. Tseng, S. Hopf, C. F. Sung, C. H. Li, S. H. Li, J. C. Peng, Y. F. Wang, J. J. Lih, C. S. Yang
AU Optronics, Taiwan

----- Lunch -----

13:45 - 15:00 **Marine Hall**

AMD4: LC-TV

Chair: J. Jang, Kyung Hee Univ., Korea
Co-Chair: H. Hamada, Sanyo Elec., Japan

AMD4 - 1: ***Invited*** **Recent Development of High Quality LCD-TVs**
13:45

M. Shigeta, M. Shiomi, M. Hirata, H. Fukuoka
Sharp, Japan

AMD4 - 2: ***Invited*** **High Performance IPS Technology for LCD-TVs: AS-IPS2**
14:10

K. Ono, I. Mori, R. Oke, Y. Tomioka, Y. Satou*
Hitachi Displays, Japan
**Hitachi, Japan*

AMD4 - 3: ***Invited*** **Recent Progress of LC-TVs Using OCB Mode**
14:35

A. Takimoto, H. Wakemoto, K. Nakao
Toshiba Matsushita Display Tech., Japan

----- Break -----

15:35 - 17:00 **Marine Hall**

AMD5: TFT Technologies

Chair: C.-C. Lee, ERSO/ITRI, Taiwan
Co-Chair: T. Asano, Kyushu Inst. of Tech., Japan

AMD5 - 1: ***Invited*** **Research, Development and Fabrication of Integrated Amorphous Silicon Drivers AMLCDs: A Review**
15:35

J. Magarino, T. Kretz, H. Lebrun, N. Szydlo
Thales Avionics LCD, France

AMD5 - 2
16:00

Kink-Current Reduced Poly-Si TFTs Employing Asymmetic Dual-Gate Design for AMOLED Pixel Elements

W.-J. Nam, J. H. Kim, S.-H. Jung, H.-S. Shin, M.-K. Han
Seoul Nat. Univ., Korea

AMD5 - 3
16:20

Reduction of Kink Current in Single Grain TFTs Fabricated by Micro-Czochralski Process

V. Rana, R. Ishihara, Y. Hiroshima, S. Inoue*, T. Shimoda*, J. W. Metsalaar, C .I. M. Beenakker*
Delft Univ. of Tech., The Netherlands
**Seiko Epson, Japan*

AMD5 - 4
16:40
Lateral Crystallization of Amorphous Silicon Using Single Pulsed Excimer Laser for Poly-Si TFT

K. B. Park, H. S. Cho*, H. Yin*, J. S. Jung*, D. Y. Kim*,*
W. Xianyu, J. Y. Kwon*, Y. S. Park*, T. Noguchi*,***
**Samsung Advanced Inst. of Tech., Korea*
***Sungkyunkwan Univ., Korea*

Author Interviews
17:00 – 18:00

Friday, December 10

9:00 - 10:30 **Marine Hall**

AMD6: Mobile Display

Chair: C. W. Kim, Samsung Elect., Korea
Co-Chair: K. Ono, Hitachi Displays, Japan

AMD6 - 1:
9:00
Invited **System-On-Glass Displays for Mobile Applications**

H. Asada
NEC, Japan

AMD6 - 2:
9:25
Invited **Advanced Laser-Crystallization Technologies of Si for Next-Generation TFTs**

M. Hiramatsu
ALTEDEC, Japan

AMD6 - 3
9:50
A 1.9-in. QVGA a-Si AMLCD with Gate Driver Integration and High Brightness

T. Inada, S. C. Deane, M. Cassidy*, K. Yamashita, A. Iwatsu,*
S. Kawata, M. Yoshiga, J. R. Hector, M. Inoue*
Philips Mobile Display Syss., Japan
**Philips Res. Labs., UK*

AMD6 - 4
10:10
Integrated Gate Driver Circuit Using a-Si TFT with Dual Pull-Down Structure

Y. H. Jang, S. Y. Yoon, B. Kim, M. D. Chun, H. N. Cho,
N. W. Cho, C.-D. Kim, I. J. Chung
LG.Philips LCD, Korea

----- Break -----

10:45 - 11:55 **Marine Hall**

AMD7: System on Panel

Chair: Y. Yamamoto, Sharp, Japan
Co-Chair: K. Takatori, NEC, Japan

AMD7 - 1:
10:45
Invited **Advanced TFT Technologies for System-on Glass**

G. Kawachi
ALTEDEC, Japan

AMD7 - 2: *Invited* **Development of SLS-Based Mobile Displays**
11:10

C.-W. Kim, K.-C. Moon, H.-J. Kim, K.-C. Park, C.-H. Kim, I.-G. Kim, C.-M. Kim, S.-Y. Joo, J.-K. Kang, U.-J. Cung
Samsung Elect., Korea

AMD7 - 3 **A Vth-Self-Compensated Analog Buffer Using Low Temperature Poly-Silicon Thin Film Transistors**
11:35

S. H. Yeh, W. T. Sun, C. S. Yang
AU Optronics, Taiwan

----- Lunch -----

12:20-13:30
Outstanding Poster Paper Awards at Exhibition Hall B

13:40 - 15:15 **Marine Hall**

AMD8: Organic TFT Technologies

Chair:	H. Sirringhaus, Univ. of Cambridge / Plastic Logic, UK
Co-Chair:	S. Utsunomiya, Seiko Epson, Japan

AMD8 - 1: *Invited* **Active-Matrix Display Driven by Organic Thin-Film Transistors on Flexible Substrate**
13:40

C. C. Lee, J. C. Ho, L. Y. Huang, T. S. Hu, Y. W. Wang, C. C. Hsieh, W. K. Hwang, W. L. Lin, H. Y. Cheng, T. H. Lin, Y. K. Wang, P. S. Wu
ERSO/ITRI, Taiwan

AMD8 - 2: *Invited* **Active-Matrix OLED Panel Driven by Organic TFTs**
14:05

Y. Inoue, Y. Fujisaki, T. Suzuki, S. Tokito, T. Kurita, M. Mizukami, N. Hirohata*, T. Tada*, S. Yagyu**
NHK, Japan
**JVC, Japan*

AMD8 - 3: *Invited* **Large Area, High Performance OTFT Arrays**
14:30

T. W. Kelley, P. F. Baude, M. A. Haase, D. A. Ender, D. V. Muyres, S. D. Theiss, R. A. Boehmer, J. H. Tokie, G. Lee
3M, USA

AMD8 - 4 **Liquid Crystal Display Cells Fabricated on a Flexible Plastic Substrate Driven by a Low Voltage Operation Organic TFT**
14:55

Y. Fujisaki, Y. Inoue, H. Sato, H. Fujikake, S. Tokito, T. Kurita
NHK, Japan

----- Break -----

15:30 - 17:00 **Marine Hall**

AMD9: Flexible Display

Chair:	T. W. Kelley, 3M, USA
Co-Chair:	M. Ikeda, Toshiba, Japan

AMD9 - 1: *Invited* **Printing of Polymer Transistors for Flexible Active Matrix Displays**
15:30

H. Sirringhaus, ***
**Univ. of Cambridge, UK*
***Plastic Logic, UK*

AMD9 - 2: *Invited* **Rollable Displays and Integrated Drivers Based on Organic Electronics**
15:55

E. Van Veenendaal, L. Schrijnemakers, M. Van Mil,
P. Van Lieshout, F. Touwslager, G. Gelinck, E. Huitema
Philips Res. Lab., The Netherlands

AMD9 - 3 **Development of a Transmissive a-Si TFT-LCD with Transparent Plastic Substrates**
16:20

Y. Chikama, H. Nishiki, Y. Nakatani, N. Watanabe, H. Gotoh,*
H. Umeda, W. Oka**
Sharp, Japan
**Sumitomo Bakelite, Japan*

AMD9 - 4 **Fabrication of High Performance Polymer Thin-Film Transistors on a Paper**
16:40

Y. H. Kim, C. J. Lee, D. G. Moon, W. K. Kim, J. I. Han
KETI, Korea

Author Interviews
17:00 – 18:00

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

EVENING GET-TOGETHER WITH WINE

Tuesday, December 7
18:00 – 20:00
at Hoou Room (30F),
Hotel Nikko Niigata
(Sponsored by Merck Ltd., Japan)

See page 6 for details

Workshop on FPD Manufacturing, Materials and Components

Wednesday, December 8

13:30 - 16:30 **Exhibition Hall B**

Poster FMCp: FPD Manufacturing, Materials & Components

FMCp - 1 **P-Type $SrCu_2O_2$ Thin Film Prepared by Reactive Thermal Co-Evaporation**

A. Uemura, E. Noma, K. Saiki, H. Ohnishi
Ehime Univ., Japan

FMCp - 2 **Transfer-Film Technology to Eliminate Color-Mixing Problem of Inkjet Technology Used in Color Filter Manufacturing**

F.-L. Hsu, Y.-C. Lo, H.-A. Li, C.-C. Chien
Chunghwa Picture Tubes, Taiwan

FMCp - 3 **Research of Coating PI Alignment-Film by Using Ink-Jet Technology**

H.-A. Li, Y.-C. Lo, K.-H. Chen, C.-C. Chien, F.-L. Hsu
Chunghwa Picture Tubes, Taiwan

FMCp - 4 **Laser Absorption Spectroscopy of Ternary Gas Mixture of He-Ne-Xe in External Electrode Fluorescent Lamp (EEFL)**

J. H. Lee, P. Y. Oh, J. Y. Lee, G. S. Cho, E. H. Choi
Kwangwoon Univ., Korea

FMCp - 5 **New Rubbing Cloths for Reliable Alignment Process to Manufacture Advanced LCDs**

T. Inoue, H. Tabira, Y. Hirota, K. Nishiguchi**
Hitachi, Japan
**Hayashi Telempu, Japan*

FMCp - 6 **Novel Photoalignment Process and Materials For LC Patterned Retarder**

*T. Kim, P. Jung**
adVue, Korea
**Hansol LCD, Korea*

FMCp - 7 **The Optical Simulation Analysis and Actual Material Test of a High Brightness Prism Light-Guide Plate for Backlighting Transmissive LCDs**

D. K. Yoon, J. M. Han, Y. S. Oh, K. W. Bae, Y. H. Kim, Y. J. Lim
BOE-HYDIS Tech., Korea

FMCp - 8 **The Electric-Optical Characteristics of Backlight Unit with LED Light Source**

M. S. Lee, D. S. Park, Y. S. Oh, J. M. Han, K. W. Bae, K. H. Kim, Y. J. Lim
BOE-HYDIS Tech., Korea

FMCp - 9 **Direct LED Backlight System Using Novel High-Refractive Polymer**

N. Harada, I. Suehiro, Y. Hotta
Nitto Denko, Japan

FMCp - 10 **Statistic Error for Fast Optimization of LCD Backlight**

C. R. Ou, S. C. Chung
ITRI/OES, Taiwan

FMCp - 11 **Super Bright Backlighting System for Gen. 6 LCD Panel Visual Inspection System**

*S. Lim, K. K. Lee**
Dankook Univ., Korea
**GLDTEK, Korea*

FMCp - 12 **Inductively Coupled Plasma Etch Process of Al_2O_3 Films for the Fabrication of Very Low Temperature Poly-Si TFTs on a Plastic Substrate**

S. J. Yun, K.-H. Kwon, D.-W. Kim, J. W. Lim, Y.-H. Kim, C.-H. Chung, D. J. Park, J.-H. Lee*
ETRI, Korea
**Hanseo Univ., Korea*

FMCp - 13 **Plasma-Resistant Glass**

K. Arai, S. Hashimoto, T. Takahata
Tosoh, Japan

13:30 - 14:50 **Snow Hall A**

FMC1: Materials (1)

Chair: D. Arthur, Eikos, USA
Co-Chair: T. Miyashita, Tohoku Univ., Japan

FMC1 - 1: 13:30 ***Invited*** **Non-Diffuse Cu-Alloy Thin-Film for TFT-LCDs**

T. Ueno, N. Oda, J. P. Chu
DEPT, Japan

FMC1 - 2: 13:50 ***Invited*** **Individually Dispersed ITO Nanoparticle Ink for Transparent Conductive Film Formation**

M. Oda, H. Yamaguchi, N. Abe, T. Atsuki, S. Ukishima, H. Takei, S. Ishibashi, R. Kiyoshima, S. Shiraishi*, T. Hayashi**
ULVAC, Japan
**JEMCO, Japan*

FMC1 - 3 14:10 **Reduced Power Consumption of a Touch Panel Using Patterned Indium Tin Oxide Resistors**

C.-M. Hsu, Y.-Z. Chang, H.-M. Liu, H.-E. Chen, W.-T. Wu
Southern Taiwan Univ. of Tech., Taiwan

FMC1 - 4: 14:30 ***Invited*** **Transparent Carbon Nanotube Electrodes for LCD Color Filters**

D. Arthur, P. Wallis, J. Luo
Eikos, USA

----- Break -----

15:10 - 15:50 **Snow Hall A**

FMC2: Manufacturing Technologies (1)

Chiar: D. Grigg, Zygo, USA
Co-Chair: K. Dantani, Dai Nippon Printing, Japan

FMC2 - 1: ***Invited*** **New Optical Metrology Techniques for Color Filter Inspection and Process Control**
15:10

D. Grigg, R. Garden, M. Mino, H. Lu
Zygo, USA

FMC2 - 2: ***Invited*** **Optical Inspection System for the Next Generation LCD Production**
15:30

N. Kakishita
Kubotek, Japan

----- Break -----

16:50 - 17:50 **Snow Hall A**

FMC3: Color Filter

Chair: D. Grigg, Zygo, USA
Co-Chair: K. Dantani, Dai Nippon Printing, Japan

FMC3 - 1 **High Sensitivity and High OD Value Carbon Dispersed Black Resist for LCD Color Filter**
16:50

K. Uchikawa
Tokyo Ohka Kogyo, Japan

FMC3 - 2: ***Invited*** **Fabrication System of Patterned Spacers with High Uniformity by Transfer Method**
17:10

H. Itoh, S. Yoshinari, K. Hasebe
Fuji Photo Film, Japan

FMC3 - 3 **New Color Filter Carried Out by a Roll-to-Roll Process**
17:30

T. Eguchi, A. Sonehara, A. Sugizaki, T. Ito, A. Kumano**, T. Takahashi****
Tech. Res. Assn. for Advanced Display Materials, Japan
**Sumitomo Bakelite, Japan*
***JSR, Japan*
****Dai Nippon Printing, Japan*

Author Interviews
18:10 – 19:00

Thursday, December 9

9:00 - 10:20 **Snow Hall A**

FMC4: Advanced Technologies

Chair: W. Becker, Merck, Germany
Co-Chair: Y. Fujimura, Nitto Denko, Japan

FMC4 - 1: *Invited* **New EU Legislation (WEEE) Compliant Recovery Processes for LCDs**
9:00

R. Martin, B. Simon-Hettich, W. Becker
Merck, Germany

FMC4 - 2 **New Simulation Methods for Optimizing the Visual Ergonomics of Displays**
9:20

*J. Delacour, L. Fournier, E. Humbert, J.-P. Menu**
Optis, France
**IMNSSA, France*

FMC4 - 3 **New 3-D MEMS Approach for Precision Manufacturing of Flat Panel Displays**
9:40

M. Nosaka, L. Creagh
Spectra, USA

FMC4 - 4: *Invited* **Inkjet Printed LCDs**
10:00

J. Vogels, S. Klink*, R. Penterman*, H. de Koning*,*
H. Huitema, D. Broer*,***
**Philips Res., The Netherlands*
***Tech. Univ. of Eindhoven, The Netherlands*

----- Break -----

10:40 - 12:00 **Snow Hall A**

FMC5: Manufacturing Technologies (2)

Chair: J. Jang, Kyung Hee Univ., Korea
Co-Chair: K. Saito, ULVAC, Japan

FMC5 - 1: *Invited* **Contactless Panel Transportation System**
10:40

S. Yamamoto
Orbotech Japan, Japan

FMC5 - 2 **The Latest PECVD Technology for Large-Size TFT-LCD**
11:00

T. Takehara, S. Sun, I. D. Kang
AKT, USA

FMC5 - 3: *Invited* **New PE-CVD Concept for Next Generation**
11:20

D. Y. Yang
Jusung Eng., Korea

FMC5 - 4 **Wide ECR Plasma Source by Parallel Introduction of Synchronized-Phase Microwaves for Large Area Substrates**
11:40

K. Saito, H. Takagi, T. Takahashi, T. Nozaki, S. Matsuo
NTT Afty, Japan

----- Lunch -----

14:00 - 15:20 **Snow Hall A**

FMC6: Manufacturing Technologies (3)

Chair: K. R. Sarma, Honeywell, USA
Co-Chair: Y. Ukai, Sony, Japan

FMC6 - 1: ***Invited*** **Solid State YAG2ω Laser Annealing System for the Fabrication of Poly-Si TFT-FPDs**
14:00

K. Tamagawa, T. Ohnishi, T. Kikuchi, M. Hayama
ULVAC, Japan

FMC6 - 2 **DPSS Green Laser Crystallization Technology Based on Double-Pulse Control**
14:20

T. Kudo, K. Yamazaki, T. Akashi
Sumitomo Heavy Inds., Japan

FMC6 - 3 **Laser CVD Repair Technology for Final Yield Improvement Method in Mass and Large Size TFT-LCD Production Process**
14:40

K. Wakabayashi, K. Mitobe, T. Torigoe
Laserfront Tech., Japan

FMC6 - 4 **A Narrow Bezel LCD Panel with a Shielding Pattern Design for ODF Process**
15:00

L. Jiang, H.-J. Chu, C.-K. He, W.-H. Liu, S.-H. Hou
Chunghwa Picture Tubes, Taiwan

----- Break -----

15:40 - 16:40 **Snow Hall A**

FMC7: Materials (2)

Chaiir: J. Hanna, Tokyo Inst. Tech., Japan
Co-Chair: T. Nagahara, Clariant, Japan

FMC7 - 1: ***Invited*** **Deposition of High Crystallinity Polycrystalline Si and SiGe Thin Films on Glass Substrates by Reactive Thermal CVD**
15:40

J. Hanna
Tokyo Inst. of Tech., Japan

FMC7 - 2: ***Invited*** **Materials for Printed Organic Thin Film Transistors**
16:00

T. Kamata, T. Kodzasa, S. Uemura, M. Yoshida, S. Hoshino, K. Yase
Nat. Inst. of Advanced Ind. Sci. & Tech., Japan

FMC7 - 3 **UV-Nanoimprint Lithography Using New Photo-Curable Materials and 3-Demensional Patterning Method**
16:20

N. Sakai, M. Ohtaguchi, K. Kawaguchi, J. Taniguchi*, I. Miyamoto**
Toyo Gosei, Japan
**Tokyo Univ. of Sci., Japan*

Author Interviews
17:00 – 18:00

Friday, December 10

9:00 - 10:20 **Snow Hall A**

FMC8: Optical Films

Chair: J. S. Yu, LG Chem, Korea
Co-Chair: H. Mori, Fuji Photo Film, Japan

FMC8 - 1: ***Invited*** **Nano Crystal-Doped Zero-Birefringence Optical Polymers for Liquid Crystal Displays**
9:00

A. Tagaya,**, H. Ohkita*,**, Y. Koike*,***
**Keio Univ., Japan*
***Japan Sci. & Tech. Agency, Japan*

FMC8 - 2: ***Invited*** **Novel Design Method Using Birefringence Dispersion Control of Retardation Films for a High Contrast LCD in Wide Viewing Angle Range**
9:20

A. Uchiyama,**, T. Ishinabe*, T. Miyashita*, T. Uchida*, Y. Ono**, Y. Ikeda***
**Tohoku Univ., Japan*
***Teijin, Japan*

FMC8 - 3 **Depth-Dependent Determination of Molecular Orientation for WV-Film**
9:40

*Y. Takahashi, H. Watanabe, T. Kato**
Fuji Photo Film, Japan
**Josai Univ., Japan*

FMC8 - 4 **A New Polarizer with Wide Viewing Angle and Low Color Shift Characteristics Designed for In-Plane-Switching Liquid Crystal Display (IPS-LCD)**
10:00

J. S. Yu, S. V. Belyaev, M. S. Park, B. K. Jeon, D. Cho, J.-S. Park, N. V. Malimonenko
LG Chem, Korea

----- Break -----

10:40 - 12:00 **Snow Hall A**

FMC9: Backlight Systems (1)

Chair: M. J. J. Jak, Philips Res. Labs., The Netherlands
Co-Chiar: K. Käläntär. Nippon Leiz, Japan

FMC9 - 1: ***Invited*** **Efficient Polarized-Light Backlights**
10:40

H. J. Cornelissen, D. J. Broer*,**, K. W. Chien***, H. J. B. Jagt*, C. W. M. Bastiaansen***
**Philips Res. Labs., The Netherlands*
***Eindhoven Univ. of Tech., The Netherlands*
****Nat. Chiao Tung Univ., Taiwan*

FMC9 - 2 **Spatially Controlled Light Extraction from a Planar Waveguide for Dynamic Backlighting**
11:00

M. J. J. Jak, H. de Koning*, H. J. Cornelissen*, D. J. Broer*,**, S. Y. Thang****
**Philips Res. Labs., The Netherlands*
***Eindhoven Univ. of Tech., The Netherlands*
****Philips MDS, China*

FMC9 - 3 **Novel Beam Shaping Structure for the CCFL Based Direct Backlight System**
11:20

S. C. Chung, C. R. Ou, H. Y. Lin, C. C. Lin, H. H. Lo, C. X. Tseng
ITRI/OES, Taiwan

FMC9 - 4 **Application of Adaptive Dimming Technique to a 17-in. LCTV for Reducing Backlight Power**
11:40

N. Takeo, S. Kuwahara, T. Shiga, S. Mikoshiba
Univ. of Electro-Commun., Japan

----- Lunch -----

12:20-13:30
Outstanding Poster Paper Awards at Exhibition Hall B

14:00 - 15:20 **Snow Hall A**

FMC10: Backlight Systems (2)

Chair:	H. Cornelissen, Philips Res. Labs., The Netherlands
Co-Chair:	M. Takagi, Harison Toshiba Lighting, Japan

FMC10 - 1 **The Latest Technologies of a CCFL for a Large Area LCD-TV**
14:00

*N. Hashimoto, K. Matsuo, H. Yamashita, K. Yamada**
Matsushita Elec. Ind., Japan
**West Elec., Japan*

FMC10 - 2: ***Invited*** **32-in. LCD TV Backlight Unit Using a Hg-free Flat Lamp System**
14:20

O. Kuo, C.-M. Wang, F. Yu, N. Haas, L. Hitzschke*, R. Lecheler*, C. Schraft*, F. Vollkommer*, K. Ziemssen**
Young Lighting Tech., Taiwan
**Osram, Germany*

FMC10 - 3 **RGB-LED Backlighting Monitor/TV for Reproduction of Images in Standard and Extended Color Spaces**
14:40

K. Käläntär, M. Okada
Nippon Leiz, Japan

FMC10 - 4 **Prism-Sheetless High-Brightness Backlight System for Mobile Phone**
15:00

A. Funamoto, Y. Kawabata, M. Ohira, S. Aoyama
Omron, Japan

----- Break -----

15:40 - 16:40 **Snow Hall A**

FMC11: Optical Systems

Chair:	J. Bruinink, Philips Res. Lab., The Netherlands
Co-Chair:	T. Hayashi, Sumitomo 3M, Japan

FMC11 - 1: 15:40 ***Invited*** **Photonic Functions of Periodic Microstructures on Glass**

J. Nishii
Nat. Inst. of Advanced Ind. Sci. & Tech., Japan

FMC11 - 2 16:00 **Design, Fabrication and Characteristics of Binary Gratings Consisting of Silica Glass**

T. Nakazawa, K. Oya, S. Kittaka, K. Tsunetomo,*
*K. Kintaka**, J. Nishii**, K. Hirao****
Nippon Sheet Glass, Japan
**New Glass Forum, Japan*
***Nat. Inst. of Advanced Ind. Sci. & Tech., Japan*
****Kyoto Univ., Japan*

FMC11 - 3 16:20 **Brightness Enhancement in Transflective AMLCDs by Using Micro-Lens Arrays**

*J. Bruinink, D.K.G. de Boer, H. J. Cornelissen, M. Creusen**
Philips Res. Labs., The Netherlands
**Philips Mobile Display Syss., The Netherlands*

Author Interviews
17:00 – 18:00

Supporting Organizations:
The Japan Society for Printing Science and Technology
Japan Society of Colour Material
The Technical Association of Photopolymers, Japan
The Imaging Society of Japan
Society of Photographic Science and Technology, Japan
Japan Printed Circuit Assossiaton
The Society of Radtech, Japan
The Society of Polymer Science, Japan
The Japanese Research Assosiation of Organic Electronics Materials

BANQUET

Wednesday, December 8
19:30 – 21:30
at Continental Room
Hotel Okura Niigata
Free Shuttle Bus;
From Toki Messe to Banquet Site
at 18:20, 18:45 and 19:10
From Banquet Site to Toki Messe
at 21:50

See page 6 for details

Workshop on CRTs

Wednesday, December 8

13:30 - 16:30 **Snow Hall B**

Poster CRTp: CRTs

CRTp - 1 **A Screen-Printed Cathode with Acicular Conductive Particles**

T. W. Kim, J. S. Choi, S. K. Kim, T. M. Jo, Y. J. Youn, H. C. Kim
Samsung SDI, Korea

CRTp - 2 **Mathematical Approach to Emission and Cutoff Degradation in CRTs**

B. M. Weon
LG.Philips Displays, Korea

CRTp - 3 **Reducing the Number of Focusing Grid Pieces of Mini-Neck CRT Gun**

C. T. Chan, W. N. Chang, C. H. Yeh*, P. H. Chong, C. C. Chao*
Chunghwa Picture Tubes, Malaysia
**Chunghwa Picture Tubes, Taiwan*

CRTp - 4 **Optimized Mask & Frame Structure for Improving the Anti-Doming Performance in CRTs**

N. J. Koh, P. S. Jung, J. E. Choi, S. Y. Park, J. C. Park
LG.Philips Displays, Korea

CRTp - 5 **Reduction of Phosphor Aging Time in Projection CRT**

L. C. Yang
CPTF Optronics, China

Thursday, December 9

9:00-9:05 **Room 302**

Opening

Opening Remarks
9:00
S. Shirai, Workshop Chair

9:05 - 10:15 **Room 302**

CRT1: For the Revival of CRT

Chair: D. den Engelsen, LG.Philips Displays, The Netherlands
Co-Chair: S. Shirai, Hitachi Displays, Japan

CRT1 - 1: ***Invited*** **CRT Industry, Time to Fight Back**
09:05
H.-Y. Chen
Chunghwa Picture Tubes, Taiwan

CRT1 - 2: ***Invited*** **Recent Developments and Prospects on Glass Technology for Still Brightly Shining CRTs**
9:30

T. Sugawara
Asahi Glass, Japan

CRT1 - 3 **A New Self-Converging System with Combination of Magnetic Lens and Uniform Horizontal Deflection Field**
9:55

H. Sakurai, E. Tagami
Matsushita Toshiba Picture Display, Japan

----- Break -----

10:30 - 12:10 **Room 302**

CRT2: Masks & Screens

Chair: N. J. Koh, LG.Philips Displays, Korea
Co-Chair: M. Maeda, Maeda Consulting, Japan

CRT2 - 1 **Robust CRT Shadow Mask Optimization Using an Integral Meta-Modeling Approach**
10:30

A. Grubben, J. van der Heijden, P. Martens, T. Spanjer
LG.Philips Displays, The Netherlands

CRT2 - 2 **Study of AK Shadow Mask with Material Coating for Flat CPTs**
10:50

S. M. Kim, P. S. Jeong, J. Y. Kim, N. J. Koh, S. Y. Park,
J. C. Park, J . E. Choi
LG.Philips Displays, Korea

CRT2 - 3 **An Improved Microphony Measurement System for CRTs**
11:10

J. H. Kim, K. D. Ha
Samsung SDI, Korea

CRT2 - 4 **Analysis of Mis-Landing Caused by Increased Beam Current in Color CRTs**
11:30

K. Ohta, Y. Wada
Matsushita Toshiba Picture Display, Japan

CRT2 - 5 **Heat Transfer Analysis of New Coolant for an Optical Engine**
11:50

M. Liu, C.-C. Chen, I.-H. Yen, C.-L Liu, C.-N. Mo, S.-T. Yang
Chunghwa Picture Tubes, Taiwan

----- Lunch -----

14:00 - 15:20 **Room 302**

CRT3: Deflection Yokes

Chair: H. Y. Chen, Chungwa Picture Tubes, Taiwan
Co-Chair: Y. Wada, Matsushita Toshiba Picture Display, Japan

CRT3 - 1 **Magnetic Ring for Convergence Improvement in Rectangular Shaped DYs**
14:00

I. H. T. Fierkens
LG.Philips Displays, The Netherlands

CRT3 - 2 **A High-Efficiency Velocity Modulation System for Color CRTs**
14:20

K. Taniwa, A. Sato, K. Iwasaki
Matsushita Toshiba Picture Display, Japan

CRT3 - 3 **Minimization of Acoustic Noise from Deflection Yokes**
14:40

J. W. Nam, S. G. Hwang
Samsung SDI, Korea

CRT3 - 4 **A Deflection Yoke for Projection TV with Reduced Geometrical Distortion**
15:00

Y. Takahiko, I. Katsuyo
Matsushita Toshiba Picture Display, Japan

----- Break -----

15:40 - 17:00 **Room 302**

CRT4: Cathodes & Getters

Chair: P. van der Heide, LG.Philips Displays, The Netherlands
Co-Chair: T. Higuchi, Matsushita Toshiba Picture Display, Japan

CRT4 - 1: ***Invited*** **Centennial of the Oxide Cathode**
15:40

*D. den Engelsen, G. Gaertner**
LG.Philips Displays, The Netherlands
**Philips Res. Labs., Germany*

CRT4 - 2 **Lifetime Improvement of the Bimetal Oxide-Coated Cathode**
16:00

J.-L. Ricaud, F. Poret, J.-M. Roquais
Thomson, France

CRT4 - 3: ***Invited*** **The Behavior of Ba-Films in Color CRTs**
16:20

*D. den Engelsen, B. Ferrario**
LG.Philips Displays, The Netherlands
**Saes Getters, Italy*

CRT4 - 4 **A Study of Correlation between Residual Gas and Emission Life**
16:40

Y. Hayashida, S. Nakagawa
Matsushita Toshiba Picture Display, Japan

Author Interviews
17:00 – 18:00

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

Workshop on Plasma Displays

Wednesday, December 8

13:30 - 14:50 **Marine Hall**

PDP1: Discharge Mechanism

Chair: K. W. Whang, Seoul Nat. Univ., Korea
Co-Chair: S. Mikoshiba, Univ. of Electro-Commun., Japan

PDP1 - 1: 13:30 ***Invited*** **In Celebration of 40 Years of PDP History**

L. F. Weber
Consultant, USA

PDP1 - 2 13:50 **Electron Density and Temperature Profiles of Striated Plasma in an AC PDP-Like Discharge**

S. Hassaballa, K. Tomita, Y-J. Kim, Y. Yamagata,
Kiichiro. Uchino, H. Hatanaka, Y. M. Kim*, S. E. Lee*,*
S. H. Shon, S. H. Jang**
Kyushu Univ., Japan
**Samsung Advanced Inst. of Tech., Korea*

PDP1 - 3 14:10 **Three-Dimensional Fully Kinetic Simulations of the Discharge Pulse in an AC PDP Cell**

V. P. Nagorny, V. N. Khudik
Plasma Dynamics, USA

PDP1 - 4 14:30 **Analysis of Micro-Discharge with Long Discharge Path in AC PDP Based on ICCD Observation**

J. Y. Kim, H. Kim, B. S. Kim, H.-S. Tae, J.-H. So,*
*S. H. Jang**, Y. M. Kim***
Kyungpook Nat. Univ., Korea
**Incheon Univ., Korea*
***Samsung Advanced Inst. of Tech., Korea*

----- Break -----

15:10 - 16:30 **Marine Hall**

PDP2: Cell Structure & Materials

Chair: B. P. Wang, Southeast Univ., China
Co-Chair: M. Uchidoi, Pioneer, Japan

PDP2 - 1: 15:10 ***Invited*** **A 34-in. Diagonal PDP with Metal Barrier Rib**

B. Wang, X. Zhang, Q. Li, Y. Tang, Y. Tu, J. Xia, Y. Zheng,
Z. Fang, H. Yin, L. Tong
Southeast Univ., China

PDP2 - 2 15:30 **Improvement in Address Discharge Response with Stripe Ribs and Discharge Deactivation Films**

S. Nagano, K. Sano, K. Hirose, S. Makino
Mitsubishi Elec., Japan

PDP2 - 3
15:50
Defects in Vacuum Evaporated MgO Thin Films Observed by Cathodoluminescence Analysis

T. Hirakawa, H. Uchiike
Saga Univ., Japan

PDP2 - 4
16:10
Hybrid Protective Layer with ZnO Nanowires for AC PDPs

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

----- Break -----

16:50 - 17:50 **Marine Hall**

PDP3: Components

Chair: H. Tolner, Consultant, The Netherlands
Co-Chair: T. Shinoda, Fujitsu Labs., Japan

PDP3 - 1: ***Invited*** **Recent Trends and Issues for Large Size PDP Glass Substrates**
16:50

H. Ishikawa, K. Maeda, Y. Asano
Asahi Glass, Japan

PDP3 - 2
17:10
Front Filter Directly Applied on Panel Surface without Air Gap

T. Oishi
Pioneer, Japan

PDP3 - 3
17:30
PDP Scan Driver IC with Smart Gate Controlled IGBTs

H. Kobayashi, H. Sumida, A. Fukuchi, H. Shimabukuro, Y. Shigeta, G. Tada
Fuji Elec. Device Tech., Japan

Author Interviews
18:10 – 19:00

Thursday, December 9

10:40 - 12:10 **Room 301**

PH2/PDP4: Phosphors for PDPs

Chair: M. Shiiki, Hitachi, Japan
Co-Chair: Y. Murakami, NHK, Japan

PH2/PDP4 - 1: ***Invited*** **Degradation Mechanism of $BaMgAl_{10}O_{17}:Eu^{2+}$ (BAM) Blue Phosphor for PDPs**
10:40

S. Fukuta, T. Onimaru, T. Misawa, K. Sakita, S. Kasahara, K. Betsui
Fujitsu Labs., Japan

PH2/PDP4 - 2 **Luminescent and Aging Characteristics of Test-PDP Panel Using Gd-Codoped $CaMgSi_2O_6$:Eu^{2+} Phosphors**
11:10

T. Kunimoto, S. Yamaguchi, K. Ohmi*, H. Kobayashi*
Tokushima Bunri Univ., Japan
**Tottori Univ., Japan*

PH2/PDP4 - 3 **Thermal Quenching of the Blue Phosphors for Plasma Display Panels**
11:30

N. Tanamachi, K. Egoshi, H. Tanno, Q. Zeng, S. Zhang
Daiden, Japan

PH2/PDP4 - 4 **A New Synthesis of Germanate Phosphor for PDP Application**
11:50

J. H. Kim, I. K. Choi, Y. C. You, D. S. Zang
Samsung SDI, Korea

Author Interviews
17:00 – 18:00

14:00 - 17:00 **Exhibition Hall B**

Poster PDPp1: Cell Design

PDPp1 - 1 **Discharge and Luminous Characteristics of AC PDPs with a Grooved Front Dielectric Layer**

S. J. Yoon, I. Lee, O. D. Kim, J. H. Jeong, J. R. Lim, K. Y. Choi
LG Elect., Korea

PDPp1 - 2 **Characteristics of AC PDP with Box Shaped Apertures in Transparent Dielectric Layer**

M. H. Nam, S. H.Son, Y. M. Kim*, B. S. Kim, S. Y. Choi*
Kyungpook Nat. Univ., Korea
**Samsung Advanced Inst. of Tech., Korea*

PDPp1 - 3 **Effects of Barrier Rib Height and Electrode Geometry on Discharge Characteristics of AC PDPs**

E.-Y. Jeong, J.-C. Ahn, K.-D. Kang, H.-S. Yoo, E.-G. Heo, W.-J. Yi, K.-S. Lee
Samsung SDI, Korea

PDPp1 - 4 **Effects of Priming Particles on the Discharge Mode in AC PDP Driven by Ramp Voltage Waveform**

D. K. Lee
Pusan Univ., Korea

PDPp1 - 5 **Effect of Subpixel Aspect Ratio on Luminous Efficiency of AC PDPs**

H. S. Bae, T. J. Kim, K.-W. Whang
Seoul Nat. Univ., Korea

14:00 - 17:00 **Exhibition Hall B**

Poster PDPp2: Discharge Mechanisms

PDPp2 - 1 **Temporal Image Sticking Phenomena in AC PDP with Large Sustain Gap**

*J.-W. Han, B.-G. Cho, K.-H. Park, J. Y. Kim, H.-S. Tae, S.-I. Chien, B. J. Shin**
Kyungpook Nat. Univ., Korea
**Sejong Univ., Korea*

PDPp2 - 2 **Three-Dimensional Measurement of Electron Temperature and Plasma Density in Coplanar AC PDP**

M. W. Moon, W. B. Park, Y. H. Seo, G. S. Cho, E. H. Choi
Kwangwoon Univ., Korea

PDPp2 - 3 **Influence of Sustain Electrode Gap on $1s_5$ Metastable Xenon Detected with Laser Absorption Spectroscopy in AC PDP**

P. Oh, H. Lee, H. Moon, J. Hong, W. Jeon, G. Cho, E. Choi*
PDP Res. Ctr. / Kwangwoon Univ., Korea
**Ctr. for Info. & teleCommun. Standards,*
Korea Res. Inst. of Standards & Sci., Korea

PDPp2 - 4 **Improvement of Luminous Efficacy in AC PDP with Open Dielectric Structure**

D.-S. Lee, H.-J. Lee, H.-J. Lee, D.-H. Kim, C.-H. Park
Pusan Univ., Korea

PDPp2 - 5 **Analysis of Discharge Phenomena in AC PDP with Coplanar Long-Sustain Gap and Auxiliary Electrode**

S. D. Park, N. H. Shin, B. J. Shin, K. C. Choi
Sejong Univ., Korea

14:00 - 17:00 **Exhibition Hall B**

Poster PDPp3: Discharge Gases

PDPp3 - 1 **A Study of New Penning Gas for the Improvement of Luminance and Luminous Efficiency in AC PDP**

S.-O. Kwon, H.-J. Hwang
Chung-Ang Univ., Korea

PDPp3 - 2 **Spatiotemporal Behaviors of Excited Kr Atoms in Kr-Ne Gas Mixtures AC PDP**

J.-S. Oh, S. Kawai, O. Sakai, H. Hatanaka, Y.-M. Kim*, K. Tachibana*
Kyoto Univ., Japan
**Samsung Advanced Inst. of Tech., Korea*

PDPp3 - 3 **Influence of Binary and Ternary Gas Mixtures of (He,Ne)-Xe on the Vacuum Ultraviolet Luminous Efficiency in AC PDPs**

K. B. Jung, J. H. Lee, W. B. Park, W. Jeon, P. Y. Oh, G. S. Cho, H. S. Uhm, E. H. Choi*
Kwangwoon Univ., Korea
**Ajou Univ., Korea*

PDPp3 - 4 **Dependence of VUV Band Emission from Xe_2^* Dimers on Gas Pressure in Fine Pitch AC PDP**

*K. Ishii, Y. Hirano, Y. Motoyama, Y. Murakami, K. Tachibana**
NHK, Japan
**Kyoto Univ., Japan*

14:00 - 17:00 **Exhibition Hall B**

Poster PDPp4: Driving Methods

PDPp4 - 1 **New Address Waveform for Improvement of the Priming Effect and Contrast Ratio in AC PDPs at Address Period**

J. S. Kim, B. K. Joung, H. J. Hwang
Chung-ang Univ., Korea

PDPp4 - 2 **An Error Diffusion Technique with Reduced Artifacts for Representation of Gray Levels in Dark Areas on PDP**

Y. H. Kim, C. W. Kim
Inha Univ., Korea

PDPp4 - 3 **Analysis of Driving Method for Long Gap Discharge by Using Vth Close Curve in AC PDP**

M. S. Kim, W. J. Kim, K. D. Cho, K. J. Jeong, S. I. Lee,
Y. C. Choi, K. R. Shim, B. H. Kim, S. H. Kang, J. H. Ryu
LG Elect., Korea

PDPp4 - 4 **High Speed Addressing Method for AC PDPs Using Wall Charge Acceleration Pulse**

J.-Y. Kim, J.-G. Bae, I.-M. Lee
Sejong Univ., Korea

PDPp4 - 5 **A Novel Discharge AND-Gate PDP for Retrenchment of Circuitry Cost**

J. Ryeom
Kyongju Univ., Korea

14:00 - 17:00 **Exhibition Hall B**

Poster PDPp5: MgO

PDPp5 - 1 **Oblique Ion-Induced Secondary Electron Emission Coefficient and Work Function of MgO Thin Film in AC PDPs**

W. B. Park, K. B. Jung, J. C. Jeong, G. S. Cho, E. H. Choi
Kwangwoon Univ., Korea

PDPp5 - 2 **Influences of Degradation of MgO Protective Layer and Phosphor on Ion-Induced Secondary Electron Emission Coefficient and Basic Discharge Characteristics in AC PDP**

J. E. Lim, H. S. Jeong, W. B. Park, J. Y. Lim, K. B. Jung,
E. H. Choi
Kwangwoon Univ., Korea

PDPp5 - 3 **Work Function Change on MgO Protective Layer after RF Plasma Treatment Using Ar, O_2, and H_2 Gases**

J. C. Jung, H. S. Jeong, W. B. Park, E. H. Choi, J. Cho
Kwangwoon Univ., Korea

14:00 - 17:00 **Exhibition Hall B**

Poster PDPp6: Manufacturing Processes

PDPp6 - 1 **PDP Margin Voltage Inspection Using Image Processing Method**

W.-C. Tai, C.-J. Lin, C.-L. Liu, C.-N.. Mo, S.-T. Yang
Chunghwa Picture Tubes, Taiwan

PDPp6 - 2 **Characteristics of PDP with Reflection Layers of High Thermal Conductivities**

D. Y. Park, Y. S. Kim, S. E. Lee, Y. M. Kim**
Hongik Univ., Korea
**Samsung Advanced Inst. of Tech., Korea*

PDPp6 - 3 **Semi-Closed Discharge Cells for PDP with Capillary Molding Process**

T. J. Chang, K. I. Kim, Y. S. Kim
Hongik Univ., Korea

PDPp6 - 4 **Consideration of Compositions and Properties of Transparent Dieletrics for PDPs**

*J. S. Park, S. M. Han, J. H. Hwang, T. Y. Lim, C. Y. Kim, M. Takaki**
Korea Inst. of Ceramic Eng., Korea
**Halla Univ., Korea*

PDPp6 - 5 **Influence of RO Components on Properties of Pb-Free Glass Frits for PDPs**

*S. M. Han, J. S. Park, J. H. Hwang, T. Y. Lim, K. J. Kim, M. Takaki**
Korea Inst. of Ceramic Eng., Korea
**Halla Univ., Korea*

14:00 - 17:00 **Exhibition Hall B**

Poster PDPp7: Discharge Simulation

PDPp7 - 1 **Effect of Bus Electrode Position on Discharge and Luminous Characteristics of AC PDPs**

I. Lee, S. J. Yoon, O. D. Kim, K. Y. Choi
LG Elect., Korea

PDPp7 - 2 **Performances of an AC PDP Cell with Counter Sustain-Electrodes and an Auxiliary Electrode for Versatile Driving Schemes**

S. Kawai, K. Tachibana, J. S. Oh, H. Asai, N. Kikuchi*, S. Sakamoto**
Kyoto Univ., Japan
**Noritake, Japan*

Friday, December 10

9:00 - 10:20 **Snow Hall B**

PDP5: Addressing

Chair: G. Oversluizen, Philips Res. Lab., The Netherlands
Co-Chair: R. Murai, Matsushita Elec. Ind., Japan

PDP5 - 1: ***Invited*** **Technology for the World Largest 80-in. Full-HD PDP**
9:00

E. Heo
Samsung SDI, Korea

PDP5 - 2 **New Reset While Address (RWA) Driving Scheme for Single Scan of XGA Grade AC PDP with High Xe Content**
9:20

B.-G. Cho, H.-S. Tae
Kyungpook Nat. Univ., Korea

PDP5 - 3 **Bipolar Scan Driving Scheme for High-Speed Address in AC PDP**
9:40

S.-K. Jang, K.-H. Park, H.-S. Tae
Kyungpook Nat. Univ., Korea

PDP5 - 4 **Improvement of the Discharge Time Lag of Address Pulse in AC PDP with High Xe Content**
10:00

S. H. Lee, K. S. Lee, S. Y. Park, B. J. Shin, K. C. Choi
Sejong Univ., Korea

----- Break -----

10:40 - 11:40 **Snow Hall B**

PDP6: Driving Methods

Chair: R. L. Johnson, Info. Tech., USA
Co-Chair: K. Nunomura, NEC Plasma Display, Japan

PDP6 - 1: ***Invited*** **Exciting Developments in Plasma Displays**
10:40

H. Tolner
PDP Consultant, The Netherlands

PDP6 - 2 **A New High Contrast and High Speed Reset Waveform**
11:00

D. C. Jeong, K.-W. Whang
Seoul Nat. Univ., Korea

PDP6 - 3 **Study on Reset Discharges in AC PDPs**
11:20

B. J. Shin, K. C. Choi
Sejong Univ., Korea

----- Lunch -----

12:20-13:30
Outstanding Poster Paper Awards at Exhibition Hall B

14:00 - 15:00 **Snow Hall B**

PDP7: Novel PDPs

Chair: L. F. Weber, Consultant, USA
Co-Chair: H. Uchiike, Saga Univ., Japan

PDP7 - 1: ***Invited*** **A Technology Roadmap for Developing Large Capacity Electronic Display Fabrics**
14:00

R. Johnson
Info. Tech., USA

PDP7 - 2 **Discharge Characteristics of a New Structure AC PDP Using Thick Film Ceramic Sheet Technology**
14:20

S. Mori, S. Ajisaka, A. Oku, K. Ikesue, S. Mori, K. Tanaka, H. Asai, N. Kikuchi, S. Sakamoto
Noritake, Japan

PDP7 - 3 **Light and Flexible Plasma Tube Array with Film Substrate**
14:40

K. Shinohe, Y. Yamazaki, A. Tokai, H. Hirakawa, H. Yamada, M. Ishimoto, K. Awamoto, T. Shinoda
Fujitsu Labs., Japan

Author Interviews
17:00 – 18:00

Sponsor:
Plasma Display Technical Meeting

Workshop on EL Displays, LEDs and Phosphors

Wednesday, December 8

13:30 - 16:30 Exhibition Hall B

Poster PHp: EL Displays, LEDs and phosphors

PHp - 1 **High Brightness Warm-White LED Lamps Using Ca-a-SiAlON Phosphors**

K. Sakuma, Y. Yamamoto, K. Omichi, N. Hirosaki*, R.-J. Xie*, M. Ohashi, N. Kimura, T. Suehiro*, D. Tanaka*
Fujikura, Japan
**Nat. Inst. for Materials Sci., Japan*

PHp - 2 **Surface Modification and Low Voltage Cathodoluminescence of $SrTiO_3$:Pr, Al, Ga Phosphor**

J. H. Kang, J. Y. Kim, D. Y. Jeon, S. A. Bukesov***
KAIST, Korea
**Samsung Advanced Inst. of Tech., Korea*
***Seoul Semiconductor, Korea*

PHp - 3 **Study on YAG:Ce and TAG:Ce Phosphors for the Application to White-Emitting Light Source Using Blue-Emitting LEDs**

H. S. Jang, W. B. Im, D. C. Lee, J. H. Kang, D. Y. Jeon
KAIST, Korea

PHp - 4 **Crystalline Analysis and Luminescent Properties of ZnS:Mn Phosphor Thin Films Prepared with Nano-Particles**

S. Okamoto, K. Tanaka, S. Kuzue, K. Takizawa**
NHK, Japan
**Seikei Univ., Japan*

PHp - 5 **Photoluminescent Properties and Local Structural Analysis of ZnS:Mn^{2+} Nanocrystal Phosphors Modified with 2-Mercaptoethanol**

E. Nakamura, T. Isobe, T. Nakano, M. Ishitsuka*, M. Saito**
Keio Univ., Japan
**Sumitomo Osaka Cement, Japan*

PHp - 6 **Thin-Film Phosphor Development Utilizing Combinatorial Deposition by r.f. Magnetron Sputtering Using a Subdivided Powder Target**

T. Minami, Y. Mochizuki, T. Miyata, K. Ihara
Kanazawa Inst. of Tech., Japan

PHp - 7 **High-Luminance Red-Emitting TFEL Devices Using Eu-Activated $(Ga_2O_3)_{1-x}$-$(SnO_2)_x$ Thin Films Prepared by PLD**

T. Miyata, Y. Minamino, T. Minami
Kanazawa Inst. of Tech., Japan

PHp - 8 **Evaluation of Rare Earth-Doped Zn-Y-O Powders Synthesized by Citric Acid Gel Method**

*K. Takebayashi, H. Kominami, Y. Nakanishi, Y. Hatanaka**
Shizuoka Univ., Japan
**Aichi Univ. of Tech., Japan*

PHp - 9 **Structural Properties and Conduction Control of ZnMgO Thin Film by Oxidization of Sulfide on Si Substrates**

K. Ohara, T. Harakawa, T. Seino, A. Nakamura, T. Aoki, H. Kominami, Y. Nakanishi, Y. Hatanaka***
Shizuoka Univ., Japan
**Japan Steel Works, Japan*
***Aichi Univ. of Tech., Japan*

PHp - 10 **Luminescent Properties of Tb^{3+} Substituted YAG:Ce,Gd Phosphors**

Y. S. Lin, R. S. Liu, B.-M. Cheng, H. Y. Su***
Nat. Taiwan Univ., Taiwan
**Nat. Synchrotron Radiation Res. Ctr., Taiwan*
***Lite-On Tech., Taiwan*

PHp - 11 **Effect of X-Ray Irradiation on Doped Europium in $BaMgAl_{10}O_{17}$ Studied by X-ray Absorption Fine Structure**

I. Hirosawa, T. Honma, K. Kato, N. Kijima, Y. Shimomura***
Japan Synchrotron Radiation Res. Inst., Japan
**Mitsubishi Chem., Japan*
***Kasei Optonix, Japan*

PHp - 12 **Photoluminescent Characteristics of New Yttrium Aluminophosphate Phosphors under VUV Excitation**

J. H. Kang, W. B. Im, D. Y. Jeon
KAIST, Korea

PHp - 13 **Blue-Emitting $MAl_2Si_2O_8$:Eu^{2+}(M=Ca, Ba) Phosphor for PDP Application**

W. B. Im, J. H. Kang, D. Y. Jeon
KAIST, Korea

Thursday, December 9

9:00 - 10:20 **Room 301**

PH1: ELDs

Chair: H. Yamamoto, Tokyo Univ. of Tech., Japan
Co-Chair: X. Wu, iFire Tech., Canada

PH1 - 1: 9:00 ***Invited*** **The Inorganic Electroluminescent Studies in Tottori University - in Memory of Professor Tanaka -**

H. Kobayashi
Tokushima Bunri Univ., Japan

PH1 - 2: 9:30 ***Invited*** **Sphere-Supported Thin-Film EL Technology**

A.-H. Kitai, Y. Xiang, M. Bulk, B. Cox
McMaster Univ., Canada

PH1 - 3
10:00
Defect Density Results of Successful Scaling of TDEL Display from 17" to 34"

P. Balmforth, R. Yang, A. Gauthier, H. Abe, Y. Yoshida*, H. Hamada*, M. Kutsukake***
iFire Tech., Canada
**Sanyo Elec., Japan*
***Dai Nippon Printing, Japan*

----- Break -----

10:40 - 12:10 **Room 301**

PH2/PDP4: Phosphors for PDPs

Chair: M. Shiiki, Hitachi, Japan
Co-Chair: Y. Murakami, NHK, Japan

PH2/PDP4 - 1: ***Invited*** **Degradation Mechanism of $BaMgAl_{10}O_{17}:Eu^{2+}$ (BAM) Blue Phosphor for PDPs**
10:40

S. Fukuta, T. Onimaru, T. Misawa, K. Sakita, S. Kasahara, K. Betsui
Fujitsu Labs., Japan

PH2/PDP4 - 2
11:10
Luminescent and Aging Caracteristics of Test-PDP Panel Using Gd-Codoped $CaMgSi_2O_6:Eu^{2+}$ Phosphors

T. Kunimoto, S. Yamaguchi, K. Ohmi*, H. Kobayashi*
Tokushima Bunri Univ., Japan
**Tottori Univ., Japan*

PH2/PDP4 - 3
11:30
Thermal Quenching of the Blue Phosphors for Plasma Display Panels

N. Tanamachi, K. Egoshi, H. Tanno, Q. Zeng, S. Zhang
Daiden, Japan

PH2/PDP4 - 4
11:50
A New Synthesis of Germanate Phosphor for PDP Application

J. H. Kim, I. K. Choi, Y. C. You, D. S. Zang
Samsung SDI, Korea

----- Lunch -----

14:00 - 15:10 **Room 301**

PH3: ELDs

Chair: P. Balmforth, iFire Tech., Canada
Co-Chair: N. Miura, Meiji Univ., Japan

PH3 - 1: ***Invited*** **Large-Screen Flat-Panel Displays Based on TDEL Technology**
14:00

X. Wu
iFire Tech., Canada

PH3 - 2
14:30
Blue-Emitting Ba_2SiS_4:Ce Thin-Film Electroluminescent Devices Prepared by Electron-Beam Evaporation

*S. Usui, Y. Samura, K. Ohmi, H. Kobayashi**
Tottori Univ., Japan
**Tokushima Bunri Univ., Japan*

PH3 - 3
14:50
New and Improved Electroluminescent Ink Systems

A Buchholz, M. Lewandowski
Acheson Colloids, USA

----- Break -----

15:30 - 16:20 **Room 301**

PH4: Phosphors for LEDs

Chair:	A. Kitai, McMaster Univ., Canada
Co-Chair:	S. Okamoto, NHK, Japan

PH4 - 1:
15:30
Invited **a-SiAlON-Based Oxynitride/Nitride Phosphors: Synthesis, Properties and Applications**

*R. J. Xie, N. Hirosaki, M. Mitomo, Y. Yamamoto, T. Suehiro, K. Sakuma**
Nat. Inst. for Materials Sci., Japan
**Fujikura, Japan*

PH4 - 2
16:00
Enhancement of Absorption Around 400 nm in Bi-doped Y_2O_3:Eu Red Phosphors for UV LEDs

R. S. Liu, L. S. Chi
Nat. Taiwan Univ., Taiwan

Author Interviews
17:00 – 18:00

Friday, December 10

10:40 - 11:50 **Room 302**

FED2/PH5: FEDs and Phosphors for FEDs

Chair:	Y. Nakanishi, Shizuoka Univ., Japan
Co-Chair:	M. Nakamoto, Shizuoka Univ., Japan

FED2/PH5 - 1:
10:40
Invited **Development of Field Emission Display**

S. Itoh
Futaba, Japan

FED2/PH5 - 2
11:10
Novel Display Panel Utilizing Field Effect-Ferroelectric Electron Emitters

Y. Takeuchi, T. Nanataki, I. Ohwada
NGK Insulators, Japan

FED2/PH5 - 3
11:30

Eu^{2+} Doped $A_2A'(BO_3)_2$ (A=Ba,Sr, A'=Mg,Ca) Phosphor Thin Films Prepared by Pulsed Laser Deposition Technique

M. Mizumo, T. Kunimoto, K. Ohmi, H. Kobayashi**
Tottori Univ., Japan
**Tokushima Bunri Univ., Japan*

Author Interviews
17:00 – 18:00

Sponsors:

The 125th Research Committee on Mutual Conversion between Light and Electricity, JSPS
Phosphor Research Society, ECSJ

EXHIBITION

12:00 – 19:00 Wednesday, Dec. 8
10:00 – 18:00 Thursday, Dec. 9
10:00 – 14:00 Friday, Dec. 10
Exhibition Hall B

Free admission with your registration name tag

IDW Tutorial in Japanese

Tuesday, December 7
Room 301
Niigata Convention Center

Detail information will be available in October:
http://www.sidchapters.org/japan/J-menu.htm

Contact address:
idw-tutorial@ml.labs.fujitsu.com

Workshop on Field Emission Display

Friday, December 10

9:10 - 9:20 **Room 302**

Opening

Opening Remarks
9:10
M. Takai, Workshop Chair

9:20 - 10:20 **Room 302**

FED1: FEDs and Novel Devices

Chair:	J. Ishikawa, Kyoto Univ., Japan
Co-Chair:	N. Egami, NHK, Japan

FED1 - 1
9:20
A 4-in. QVGA AMCNT-FED Driven by High Voltage LTPS-TFTs

H.-Y. Tseng, Y.-W. Wang, C.-M. Chen, C.-Y. Huang, S.-S. Sheu, W.-Y. Lin, C.-T. Lee, T.-H. Chen, P.-S. Wu, Y.-H. Yeh, C.-C. Lee
ERSO/ITRI, Taiwan

FED1 - 2
9:35
Improvement of Emission and Focusing Characteristics for CNT-FED

S. Watanabe, T. Shiroishi, A. Hosono, S. Nakata, K. Nishimura, T. Sawada, M. Fujikawa, T. Yamamuro, Z. Shen, F. Abe, S. Okuda, K. Oono, Y. Hirokado, A. Inoue, M. Inumochi
Mitsubishi Elec., Japan

FED1 - 3
9:50
A 4.8-in. QVGA Graphite Nanofiber FED with Mesh Gate

M. Hirakawa, H. Nakano, H. Murakami, K. Okasaka, K. Azami*, T. Hoshino*, T. Sasaki*, T. Sakai**, T. Takei**, T. Yamamoto***
ULVAC, Japan
**ULVAC Coating, Japan*
***NHK, Japan*

FED1 - 4
10:05
Flat Lamp Fabrication Using Double-Walled Carbon Nanotubes Synthesized by Thermal CVD

Y.-D. Lee,***, H. J. Lee*, S. I. Moon*, H.-S. Hwang**, J. H. Han**, J.-E. Yoo**, Y.-H. Lee***, S. Nahm***, B.-K. Ju**
**KIST, Korea*
***Iljin Nanotech, Korea*
****Korea Univ., Korea*

----- Break -----

10:40 - 11:50 **Room 302**

FED2/PH5: FEDs and Phosphors for FEDs

Chair: Y. Nakanishi, Shizuoka Univ., Japan
Co-Chair: M. Nakamoto, Shizuoka Univ., Japan

FED2/PH5 - 1: ***Invited*** **Development of Field Emission Display**
10:40

S. Itoh
Futaba, Japan

FED2/PH5 - 2 **Novel Display Panel Utilizing Field Effect-Ferroelectric Electron Emitters**
11:10

Y. Takeuchi, T. Nanataki, I. Ohwada
NGK Insulators, Japan

FED2/PH5 - 3 **Eu^{2+} Doped $A_2A'(BO_3)_2$ (A=Ba,Sr, A'=Mg,Ca) Phosphor Thin Films Prepared by Pulsed Laser Deposition Technique**
11:30

M. Mizumo, T. Kunimoto, K. Ohmi, H. Kobayashi**
Tottori Univ., Japan
**Tokushima Bunri Univ., Japan*

----- Lunch -----

12:20-13:30
Outstanding Poster Paper Awards at Exhibition Hall B

13:35 - 15:15 **Room 302**

FED3: FE Materials and Emission Characteristics (1)

Chair: H.-Y. Tseng, ERSO/ITRI, Taiwan
Co-Chair: H. Mimura, Shizuoka Univ., Japan

FED3 - 1: ***Invited*** **Laser Irradiation to CNT Cathodes for Large Diagonal FEDs**
13:35

K. Murakami, W. Rochanachirapar, N. Yamasaki, S. Abo, F. Wakaya, M. Takai, A. Hosono, S. Okuda**
Osaka Univ., Japan
**Mitsubishi Elec., Japan*

FED3 - 2 **Enhanced Electron Emission from the CNT Grown with a SiN_x Capping Layer**
14:00

*S. H. Lim, K. C. Park, J. H. Moon, H. S. Yoon, J. Jang, D. Pribat**
Univ. of Kyung Hee, Korea
**Ecole Polytech., France*

FED3 - 3 **Measurement of Field Emission Characteristics of Laser Irradiated Carbon Nanotubes**
14:15

Y. Gotoh, Y. Kawamura, K. Ishizu, H. Tsuji, J. Ishikawa, S. Nakata, S. Okuda**
Kyoto Univ., Japan
**Mitsubishi Elec., Japan*

FED3 - 4
14:30

Field Emission Properties from Different Kinds of CNT Film

C.-Y. Hsiao, Y.-A. Li, J.-L. Tsai, K. Cheng, S.-H. Lee, P.-H. Chang, C.-H. Hsiao, W.-S. Hsu, J.-S. Fang, C.-C. Kuo, T.-F. Chan
TECO Nanotech, Taiwan

FED3 - 5
14:45

Investigation of Graphite Nanofiber as an Emitter for FED

M. Ushirozawa, K. Hagiwara, T. Sakai, T. Takei, T. Yamamoto, M. Hirakawa, H. Nakano*, H. Murakami*, K. Okasaka**, T. Sasaki***
NHK, Japan
**ULVAC, Japan*
***ULVAC Coating, Japan*

FED3 - 6
15:00

Self-Focused Gate Structure for Carbon Nanotube Field Emitters

Y.-H. Song, K.-B. Kim, S.-H. Lee, C.-S. Hwang, J. H. Lee, K.-Y. Kang
ETRI, Korea

----- Break -----

15:30 - 17:00 **Room 302**

FED4: FE Materials and Emission Characteristics (2)

Chair: T. Asano, Kyushu Inst. of Tech., Japan
Co-Chair: M. Nakamoto, Shizuoka Univ., Japan

FED4 - 1
15:30

HfC Coated Si-FEA with a Built-in Poly-Si TFT

M. Nagao, Y. Sacho, S. Kanemaru, T. Matsukawa, J. Itoh
Nat. Inst. of Advanced Ind. Sci. & Tech., Japan

FED4 - 2
15:45

Effect of Thermal Annealing On Leakage Current of Field Emitters Fabricated Using Beam Assisted Processes

K. Murakami, N. Yamasaki, S. Abo, F. Wakaya, M. Takai
Osaka Univ., Japan

FED4 - 3
16:00

Effects of the Thermal Annealing on the Field Emission Characteristics of an Oxidized Porous Polysilicon Field Emitter

S. K. Han, S. I. Kwon, S. C. Bae, S. Y. Choi
Kyungpook Nat. Univ., Korea

FED4 - 4
16:15

Field Emission Energy Distributions from Silicon Field Emitters

H. Shimawaki, Y. Suzuki, K. Sagae*, Y. Neo**, H. Mimura***
Hachinohe Inst. of Tech., Japan
**Tohoku Univ., Japan*
***Shizuoka Univ., Japan*

FED4 - 5
16:30

Boron Nitride Field Emitter on Patterned Substrate

C. Kimura, H. Shima, K. Okada, Y. Yamamuro, T. Sugino
Osaka Univ., Japan

FED4 - 6 **Reduction of the Work Function on Mo(100) Surface Covered with ZrO_2**
16:45

H. Nakane, S. Satoh, H. Adachi
Muroran Inst. of Tech., Japan

Author Interviews
17:00 – 18:00

Sponsors:
158th Committee on Vacuum Nanoelectronics, JSPS
’04 Asian Vacuum Microelectronics Conference

Niigata Festival

Niigata Traditional Dance and Drums
Friday, December 10
12:20 – 13:30
(before Outstanding Poster Paper Awards)
Exhibition Hall B
Niigata Convention Center

See page 6 for details

Late-News Papers

due October 4, 2004

Submit a two-page camera-ready manuscript of A4-sized pages, reflecting important new findings or developments via on-line submission:

http://idw.ee.uec.ac.jp/authinfo.html

Workshop on Organic LED Displays

Wednesday, December 8

13:20 - 14:45 **Room 301**

OLED1: Panel

Chair: J. Kido, Yamagata Univ., Japan
Co-Chair: K. Ueno, Canon, Japan

OLED1 - 1: ***Invited*** **Polymer OLED Television Image Quality**
13:20

J. J. L. Hoppenbrouwers, F. P. M. Budzelaar,
N. C. Van der Vaart, C. N. Cordes
Philips Res. Labs., The Netherlands

OLED1 - 2 **Development of Thin Film Passivated 14.1" a-Si AMOLED**
13:45

J. H. Jung, H. Kim, J. S. Lim, J. S. Rhee, S. P. Lee, N. D. Kim,
J. W. Lee, B. K. Ju*, K. Chung*
Samsung Elect., Korea
**KIST, Korea*

OLED1 - 3 **High Efficiency Top Emitting OLEDs on a-Si Active Matrix Backplanes with Large Aperture Ratio**
14:05

*J. Birnstock, J. Blochwitz-Nimoth, K. Leo**
Novaled, Germany
**Tech. Univ. Dresden, Germany*

OLED1 - 4 **Operating Physics and Newly Developed Technologies of Higher Performance Full Color OLEDs Based on Color Conversion Method**
14:25

K. Sakurai, H. Kimura, K. Kawaguchi, M. Kobayashi,
T. Suzuki, Y. Kawamura, H. Sato, M. Nakatani
Fuji Elec. Advanced Tech., Japan

----- Break -----

15:00 - 16:25 **Room 301**

OLED2: Material

Chair: J. Hoppenbrouwer, Philips
Co-Chair: Y. Sato, Mitsubishi Chem., Japan

OLED2 - 1: ***Invited*** **Phosphorescent OLEDs by Organic Vapor Phase Deposition**
15:00

T. X. Zhou, B. D'Andrade, T. Ngo, S. R. Forrest, M. Shtein*,*
J. J. Brown
Universal Display, USA
**Princeton Univ., USA*

OLED2 - 2 **Flexible Color OLED Display using White Light-Emissive Layer based on Phosphorescent Polymers**
15:25

M. Suzuki, T. Suzuki, T. Tsuzuki, S. Tokito, T. Kurita, F. Sato
NHK, Japan

OLED2 - 3 **Temperature Dependence of L and V of OLED Devices**
15:45

E. Young, S. Grabowski, H. Boerner**
Philips Res., The Netherlands
**Philips Res., Germany*

OLED2 - 4 **Novel Mg:Alq$_3$/WO$_3$ Connecting Layer for Tandem White Organic Light Emitting Diodes (WOLEDs)**
16:05

C.-C. Chang, S.-W. Hwang, H.-H. Chen, C. H. Chen, J.-F. Chen
Nat. Chiao Tung Univ., Taiwan

----- Break -----

16:40 - 18:05 **Room 301**

OLED3: Device Structure

Chair: J. Brown, Universal Display, USA
Co-Chair: S. Tokito, NHK, Japan

OLED3 - 1: ***Invited*** **A Challenge to Material Design for High Performance OLED**
16:40

K. Ueno, S. Okada, A. Senoo
Canon, Japan

OLED3 - 2 **White Multi-Photon Emission OLED without Optical Interference**
17:05

M. Horii, Y. Jinde, S. Tanaka, A. Ogawa, Y. Kawakami, Y. Naito
Stanley Elec., Japan

OLED3 - 3 **Very High-Efficiency Deep Blue Organic Light-Emitting Devices Having a Carrier-Blocking Polymer Layer**
17:25

A. Mikami, T. Koshiyama, T. Tsubokawa
Kanazawa Inst. of Tech., Japan

OLED3 - 4 **High Efficient Red Organic Light-Emitting Devices Having the Dotted-Line Doping Structure in an Alq$_3$+Rubrene Mixed Host Emitting Layer**
17:45

C. M. Lee, D. I. Kim, J. W. Han
Sejong Univ., Korea

Author Interviews
18:10 – 19:00

13:30 - 16:30 **Exhibition Hall B**

Poster AMD/OLEDp: Active-Matrix OLED

AMD/OLEDp - 1 **A Circuit for Testing TFT-Arrays of AMOLED Displays**

D. Nakano, Y. Sakaguchi, K. Imura, A. Ohta
IBM Japan, Japan

AMD/OLEDp - 2 **Active Organic Light Emitting Diode Drive Circuit**

H.-R. Han,**, C.-C. Kuo*,**, W.-T. Liao*, S.-T. Lo*,*
*W.-C. Wang**
**Wintek, Taiwan*
***Nat. Chung Hsing Univ., Taiwan*

AMD/OLEDp - 3 **A New AMOLED Pixel Driving Scheme Employing Vdd Line Elimination**

W.-J. Nam, J.-H. Lee, S.-H. Jung, C.-W. Han, M.-K. Han
Seoul Nat. Univ., Korea

AMD/OLEDp - 4 **A New AMOLED Pixel Design Compensating Threshold Voltage Degradation of a-Si:H TFT and OLED**

J. H. Kim, J.-H. Lee, W.-J. Nam, B.-H. You, M.-K. Han
Seoul Nat. Univ., Korea

AMD/OLEDp - 5 **Uniformity of AM-OLED Pixels Circuits Using as-Deposited Polysilicon TFTs Improved by Slicing Effect**

A. Gaillard,**, T. Mohammed-Brahim*, S. Crand*, R. Rogel*,*
*C. Prat**, P. Leroy***
**Univ. de Rennes 1, France*
***Thomson Multimedia R&D, France*

Thursday, December 9

9:00 - 10:25 **Marine Hall**

AMD2/OLED4: AM-OLED (1)

Chair: G. Zhou, Philips Res. Labs., The Netherlands
Co-Chair: T. Shirasaki, Casio Computer, Japan

AMD2/OLED4 - 1: ***Invited*** **High-Performance and Low-Power AMOLED Using White Emitter with Color-Filter Array**
9:00

K. Mameno, R. Nishikawa, T. Omura, S. Matsumoto,
S. A. Van Slyke, A. D. Arnold*, T. K. Hatwar*, M. V. Hettel*,*
M. E. Miller, M. J. Murdoch*, J. P. Spindler**
Sanyo Elec., Japan
**Eastman Kodak, USA*

AMD2/OLED4 - 2 **2.2-in. QVGA AMOLED with Current De-Multiplexer TFT Circuits**
9:25

Y. Matsueda, D. Y. Shin, K. N. Kim, D. H. Ryu, B. Y. Chung,
*H. K. Kim, H. K. Chung, O. K. Kwon**
Samsung SDI, Korea
**Hanyang Univ., Korea*

AMD2/OLED4 - 3 **Optical Cross Talk in AMOLED Displays with Optical Feedback**
9:45

A. Giraldo, W. Oepts, M. C. J. M. Vissenberg, D. A. Fish,*
*N. D. Young**
Philips Res. Labs., The Netherlands
**Philips Res. Labs., UK*

AMD2/OLED4 - 4 **Comparison of Driving Methods for TFT-OLEDs and Novel Proposal Using Time Ratio Grayscale and Current Uniformization**
10:05

M. Kimura
Ryukoku Univ., Japan

----- Break -----

10:40 - 12:05 **Marine Hall**

AMD3/OLED5: AM-OLED (2)

Chair: K. Mameno, Sanyo Elec., Japan
Co-Chair: R. Hattori, Kyushu Univ., Japan

AMD3/OLED5 - 1: ***Invited*** **Solution for Large-Area Full-Color OLED Television – Light Emitting Polymer and a-Si TFT Technologies –**
10:40

*T. Shirasaki, T. Ozaki, T. Toyama, M. Takei, M. Kumagai, K. Sato, S. Shimoda, T. Tano, K. Yamamoto, K. Morimoto, J. Ogura, R. Hattori**
Casio Computer, Japan
**Kyushu Univ., Japan*

AMD3/OLED5 - 2 **A Novel Digital-Gray-Scale Driving Method with a Multiple Addressing Sequence for AM-OLED Displays**
11:05

A. Tagawa, T. Numao, T. Ohba
Sharp, Japan

AMD3/OLED5 - 3 **A 2.0-Inch AMOLED Panel with Voltage Programming Pixel Circuits and Point Scanning Data Driver Circuits**
11:25

N. Komiya, C. Y. Oh, K. Y. Eom, Y. W. Kim, S. C. Park, S. W. Kim
Samsung SDI, Korea

AMD3/OLED5 - 4 **A Simple Data Driver Architecture to Improve Uniformity of Current-Driven AMOLED**
11:45

H. Y. Huang, W. T. Sun, C. C. Chen, J. C. Tseng, S. Hopf, C. F. Sung, C. H. Li, S. H. Li, J. C. Peng, Y. F. Wang, J. J. Lih, C. S. Yang
AU Optronics, Taiwan

Author Interviews
17:00 – 18:00

14:00 - 17:00 **Exhibition Hall B**

Poster OLEDp: OLED Poster

OLEDp - 1 **Organic Polymer Films Doped by Organic Dyes for OLEDs**

Y. Nakanishi, L. Fenenko*,**, P. Smertenko***
**Shizuoka Univ., Japan*
***V. E. Lashkaryov Inst. of Semiconductor Physics of NASU, Ukraine*

OLEDp - 2 **Red Electrophosphorecence from Polyactylene-Based Light Emitting Diode**

Z. L. Xie, J. W. Y. Jacky, M. Wong, B. Z. Tang, H. S. Kwok*
Hong Kong Univ. of Sci. & Tech., Hong Kong

OLEDp - 3 **Deep Blue Dopant for High Performance OLEDs and Color Purity**

M.-T. Lee, C.-M. Yeh, C. H. Chen
Nat. Chiao Tung Univ., Taiwan

OLEDp - 4 **Indole Based Compounds as Host Materials for Triplet Emitters in Organic Light Emitting Diodes**

M.-H. Ho, Y.-S. Wu, S.-F. Hsu, T.-Y. Chu, C. H. Chen
Nat. Chiao Tung Univ., Taiwan

OLEDp - 5 **Effects of Double Buffer Layers on the Optical Properties of White Organic Light Emitting Diodes**

M. Yokoyama, G. T. Chen, S. H. Su, J. L. Kwo, S. L. Fu
I-Shou Univ., Taiwan

OLEDp - 6 **Highly Efficiect Photoresponsive Organic Light-Emitting Devices with Phosphorescent Materials**

M. Chikamatsu, H. Konno*, T. Oosawa*,**, M. Yamashita**,*
Y. Yoshida, K. Yase**
**Nat. Inst. of Advanced Ind. Sci. & Tech., Japan*
***Tokyo Univ. of Sci., Japan*

OLEDp - 7 **Top Emitting OLEDs on Flexible Substrate**

C.-S. Hwang, S.-H. Ko Park, S. M. Jeong, J. Y. Oh,
M. Y. Yoon, J. I. Lee, Y. S. Yang, M. K. Kim, H. Y. Chu
ETRI, Korea

OLEDp - 8 **White OLEDs with a Single Emissive Layer**

H. Y. Chu, J.-I. Lee, Y.S. Yang, J. Y. Oh, S.-H. K. Park,
M.-K. Kim, C.-S. Hwang, D.-H. Hwang, J. Jang
ETRI, Korea
**Kumo Univ., Korea*
***Kyung Hee Univ., Korea*

OLEDp - 9 **Improvement of Efficiency and Brightness by Insertion of the Novel Layer in Alq_3-Based OLEDs**

Y. M. Kim,**, J. W. Lee*,****, J. M. Kim*,***, J. S. Park*,****,*
*M. Y. Sung**, M. H. Oh***, J. Jin****, B. K. Ju*, J. K. Kim**
**KIST, Korea*
***Korea Univ., Korea*
****Dankook Univ., Korea*
*****Kyunghee Univ., Korea*

OLEDp - 10 **All-Wet-Process Organic Electroluminescent Device Using Electron Transporting and Alcohol-Soluble Organic Semiconductor**

Y. Goto, T. Hayashida, M. Noto**
Kyushu Elec. Power, Japan
**Daiden, Japan*

OLEDp - 11 **Improving Characteristics of OLED with Low Work Function Anode**

S.-H. Park, J.-I. Lee, C.-S. Hwang, H. Y. Chu
ETRI, Korea

OLEDp - 12 **Preparation of ITO Thin Films for Display Application by FTS (Facing Targets Sputtering) System**

G. H. Kim, H. W. Kim, H. K. Kim, M. J. Keum, K. H. Kim*
Kyungwon Univ., Korea
**Samsung SDI, Korea*

OLEDp - 13 **Deposition of AZO Thin Films by FTS System with Sputtering Current**

H. W. Kim, G. H. Kim, M. J. Keum, I. H. Son, H. W. Choi, K. H. Kim*
Kyungwon Univ., Korea
**Shinsung College, Korea*

OLEDp - 14 **Characteristics Improvement of Flexible Organic Light-Emitting Devices by Nickel-Doped Indium Tin Oxide Anode**

C.-M. Hsu, C.-L. Tsai, C.-F. Lu, W.-T. Wu
Southern Taiwan Univ. of Tech., Taiwan

OLEDp - 15 **Aluminum-Doped Zinc Oxide Film for Polymeric Electroluminescent Devices**

X.-T. Hao, F.-R. Zhu, K.-S. Ong, Y.-Q. Li, L.-W. Tan
Inst. of Materials Res. & Eng., Singapore

OLEDp - 16 **Fabrication of OLEDs on Epoxy Substrates with SiN_x/CN_x:H Multi-Layer Barrier Films**

K. Akedo, A. Miura, H. Fujikawa, Y. Taga, Y. Akada, T. Umehara**
Toyota CRDL, Japan
**Nitto Denko, Japan*

OLEDp - 17 **Synthesis and Properties of Colorless Polyimide and Its Nanocomposite**

J. C. Won, S-L. Ma, Y. S. Kim, M. H. Yi, J. H. Lee, K-Y. Choi
Korea Res. Inst. of Chem. Tech., Korea

OLEDp - 18 **Selective Growth of Encapsulation Layer and Its Influence on Organic Light Emitting Diodes**

J. Oh, S.-H. K. Park, C.-S. Hwang, Y. S. Yang, J.-I. Lee, H. Y. Chu
ETRI, Korea

OLEDp - 19 **Flexible Transparent Organic Light Emitting Devices (FTOLED)**

T. Uchida, S. Kaneta, M. Ichihara, M. Ohtsuka, S. Hoshi, S. Webster**, R. Czerw**, D. L. Carroll***
Tokyo Polytech. Univ., Japan
**Yazaki Meter, Japan*
***Wake Forest Univ., USA*

OLEDp - 20 **Flexible Barrier Substrates with Parylene Buffer Layer for Flexible Orgarnic Light Emitting Diode (FOLED)**

S. C. Nam, H. Y. Park, K. C. Lee, K. G. Choi, C. J. Lee, D. G. Moon*, Y. S. Yoon***
Nuricell, Korea
**Korea Elect. Tech. Inst., Korea*
***Konkuk Univ., Korea*

OLEDp - 21 **Manufacturing of Encapsulation Layers for OLED in Polymerization and Plasma Diffusion**

C.-C. Lu, J.-H. Wu, S.-K. Lo, L. Yu, C.-K. Tzen, S.-J. Tang
Chunghwa Picture Tubes, Taiwan

OLEDp - 22 **Novel Photoelectron Spectrometer Equipped with Open Counter for Ionization Potential Measurements of OLED Materials**

Y. Nakajima, D. Yamashita, A. Endo, T. Oyamada*, C. Adachi*, M. Uda***
Rikenkeiki, Japan
**Chitose Inst. of Sci. & Tech., Japan*
***Waseda Univ., Japan*

OLEDp - 23 **The Temperature Dependence of PL Intensity and Fluorescence Lifetime in Polymer Light-Emitting Diodes**

*H. Uchida, Y. Fujita, M. Koden, C. Adachi**
Sharp, Japan
**Chitose Inst. of Sci. & Tech., Japan*

OLEDp - 24 **Analysis of the Deterioration Mechanism of Phosphorescence OLED**

R. Kamoto, M. Ichikawa, K. Araki*, Y. Taniguchi**
Micro Analysis Lab., Japan
**Shinshu Univ., Japan*

OLEDp - 25 **Integrated Host/Dopant Deposition for Large OLED Panel Manufacturing**

M. Shibata, R. Hartmann, P. Chow**
Sumitomo, Japan
**SVT Associates, USA*

OLEDp - 26 **A Simulation of Current-Voltage Characteristics for Alq_3 Single Layer Organic Light Emitting Diodes**

N. Nakamura, A. Takahashi, S. Suwa, T. Wakimoto, M. Kunigita
Asahi Glass, Japan

OLEDp - 27 **Effective Power Reduction in a Non-Emissive State of Passive-Matrix OLED**

R. Hattori, S. Ohashi, S. Sugimoto, G. Yip
Kyushu Univ., Japan

Outstanding Poster Paper Awards

Friday, December 10
12:20 – 13:30
(after Niigata Festival)
Exhibition Hall B

See page 5 for details

Workshop on 3D/Hyper-Realistic Displays and Systems

Wednesday, December 8

13:30-14:50 **Room 302**

3D1: Hyper Reality

Chair: I. Yuyama, Utsunomiya Univ., Japan
Co-Chair: Y. Komiya, Olympus, Japan

3D1 - 1: ***Invited*** **Development of CyberDome - a Scalable Immersive Projection Display with Hemi-Spherical Screen**
13:30

*N. Shibano, K. Sawada, H. Takemura**
Matsushita Elec. Ind., Japan
**Osaka Univ., Japan*

3D1 - 2: ***Invited*** **Mixed Reality Audio-Visual Reproduction System**
14:00

H. Okubo, Y. Nakayama, T. Ikenaga, S. Komiyama
NHK, Japan

3D1 - 3 **An Immersive Display System with Hemispherical Screen and Multiple Projectors - Fast Calibration and Distortion-Free Coordinate Transformation Method -**
14:30

H. Haneishi, T. Ajito, T. Kumano*, A. Watanabe, K. Ohsawa*, Y. Komiya*, T. Yamazaki**
Chiba Univ., Japan
**Olympus, Japan*

----- Break -----

15:10-16:30 **Room 302**

3D2: 3D Displays

Chair: J.-Y. Son, Hanyang Univ.
Co-Chair: T. Mishina, NHK, Japan

3D2 - 1 **Flat Panel Time Multiplexed Autostereoscopic Display Using an Optical Wedge Waveguide**
15:10

C. Moller, A. R. L. Travis
Cambridge Univ., UK

3D2 - 2 **A Multi-Viewer, Mobile-Viewer, Head-Tracked 3D Television Display**
15:30

P. Surman, I. Sexton, R. Bates, K. C. Yow, W. K. Lee
De Montfort Univ., UK

3D2 - 3 **Volumetric 3D TFT Flat Panel Display System Design**
15:50

W. Mphepo
Dalarna Univ., Sweden

3D2 - 4
16:10
Depth- and Viewing-Angle-Enhanced Three-Dimensional/Two-Dimensional Convertible Display Based on Integral Imaging

J.-H. Park, H.-R. Kim, Y. Kim, J. Kim, J. Hong, S.-D. Lee, B. Lee
Seoul Nat. Univ., Korea

----- Break -----

16:50-18:00 **Room 302**

3D3: 3D Processing

Chair: T. Fujii, Nagoya Univ., Japan
Co-Chair: T. Ajito, Olympus, Japan

3D3 - 1:
16:50
Invited **3D Computer Graphics Based on Integral Photography**

T. Naemura
Univ. of Tokyo, Japan

3D3 - 2
17:20
Pixel Pattern for Voxels in Rhomb Shape Pixel Cell

J.-Y. Son, V. Saveljev, K.-T. Kim, S.-S. Kim***
Hanyang Univ., Korea
**Hannam Univ., Korea*
***Samsung Elect., Korea*

3D3 - 3
17:40
A Real-Time Time-Multiplexed Stereoscopic Image Converter

K. W. Kim, H. H. Cho, C. H. Choi, M. R. Choi*
Hanyang Univ., Korea
**Commun. Elec. Network, Korea*

Author Interviews
18:10 – 19:00

Thursday, December 9

14:00 - 17:00 **Exhibition Hall B**

Poster 3Dp: 3D Displays & Related Technologies

3Dp - 1
A New Pseudoscopic Moving-Image 3D Display without Glasses Using Moire

C. Yamada, H. Isono
Nippon Inst. of Tech., Japan

3Dp - 2
Flat-Panel Autostereoscopic View-Sequential 3D Display Backlight

C. M. G. Lee, A. R. L. Travis
Cambridge Univ., UK

3Dp - 3 **Volumetric Display System Based on Three-Dimensional Scanning with an Inclined Optical Image**

D. Miyazaki, K. Shiba, K. Sotsuka, K. Matsushita
Osaka City Univ., Japan

3Dp - 4 **Design Optimization of the Multi-Central Depth Plane Integral Imaging for Three-Dimensional Display**

J. Hong, J. Kim, J.-H. Park, B. Lee
Seoul Nat. Univ., Korea

3Dp - 5 **Stereoscopic Cameras and Displays System over Internet Protocol**

H. Noto, Y. Yamada, H. Yamamoto, Y. Hayasaki,
S. Muguruma, Y. Nagai*, Y. Shimizu*, N. Nishida*
Univ. of Tokushima, Japan
**Nichia, Japan*

15:10 - 17:00 **Room 201**

VHF4/3D4: 3D Vision

Chair: H. Isono, Nippon Inst. of Tech., Japan
Co-Chair: S. Yano, NHK, Japan

VHF4/3D4 - 1: ***Invited*** **3D Structure and Volume Perception from Motion**
15:10

*M. Idesawa, M. Uchida, T. H. Moe**
Univ. of Electro-Commun., Japan
**Myanmar Radio & Television, Myanmar*

VHF4/3D4 - 2 **Mathematical Simulation of the Mime Effect**
15:40

R. Mtibaa, M. Idesawa, Y. Sakaguchi
Univ. of Electro-Commun., Japan

VHF4/3D4 - 3 **Evaluation of Discontinuity in 3D Images Generated by High-Density Directional Images**
16:00

M. Watanabe, H. Nate, Y. Takaki*
Tokyo Univ. of A&T, Japan
**Tokyo Polytech. Univ., Japan*

VHF4/3D4 - 4 **A New Method of Stereo Matching for Curved Surface**
16:20

Z. Xu, M. Idesawa
Univ. of Electro-Commun., Japan

VHF4/3D4 - 5 **Development and Evaluation of Stereoscopic 3D Display with Dynamic Optical Correction**
16:40

T. Shibata, T. Kawai, M. Otsuki, N. Miyake*, Y. Yoshihara**,*
*T. Iwasaki***, N. Terashima*
Waseda Univ., Japan
**Nikon, Japan*
***Arisawa Manufacturing, Japan*
****Univ. of Occupational & Environmental Health, Japan*

Author Interviews
17:00 – 18:00

Supporting Organization:
Technical Group on Artistic Image Technology, ITE

Workshop on Applied Vision and Human Factors

Wednesday, December 8

13:30 - 16:30 **Exhibition Hall B**

Poster VHFp: Human Factor and Image Quality

VHFp - 1 **Using Human Eye Model to Study the Image Quality of Display System**

C. R. Ou, T. J. Chen
ITRI/OES, Taiwan
**Yuan Ze Univ., Taiwan*

VHFp - 2 **Just Noticeable Difference (JND) Contrast of "Mura" in LCDs on the Five Background Luminance Levels**

T. Tamura, K. Tanaka, M. Baba, M. Suzuki, T. Furuhata
Tokyo Polytech. Univ., Japan

VHFp - 3 **Evaluation of Visual Fatigue Relative in the Viewing of a Depth-Fused 3D Display and 2D Display**

Y. Ishigure, S. Suyama, H. Takada, K. Nakazawa, J. Hosohata, Y. Takao*, T. Fujikado**
NTT, Japan
**Osaka Univ., Japan*

VHFp - 4 **Securing Information Display by Use of Multiple Decoding Masks Based on Visual Encryption and Decryption**

H. Yamamoto, Y. Hayasaki, N. Nishida
Univ. of Tokushima, Japan

VHFp - 5 **Automatic Display Monitoring to Detect Human Bodies by Using Edge Vector**

H. Hadano, F. Saitoh
Gifu Univ., Japan

VHFp - 6 **Contrast Improvement of Displayed Scene Image Including a Moving Object**

Y. Kuze, F. Saitoh
Gifu Univ., Japan

VHFp - 7 **Triple Density Error Diffusion for Medical Monochrome LCDs and Evaluation of Its Performance**

N. Oka, N. Kuroki, M. Numa, K. Yamamoto
Kobe Univ., Japan

Thursday, December 9

9:00 - 9:10 **Room 201**

Opening

Opening Remarks
9:00

H. Isono, Workshop Chair

9:10 - 10:20 **Room 201**

VHF1: Human Factor (1)

Chair: J. L. Bergquist, Nokia Japan, Japan
Co-Chair: T. Tamura, Tokyo Polytech. Univ., Japan

VHF1 - 1: 9:10 ***Invited*** **To Expanding Application Horizons of User Friendly Digital AV Contents on KANSEI Engineering**

M. Kasuga, M. Sato
Utsunomiya Univ., Japan

VHF1 - 2 9:40 **A Study on a Presentation Method for Interactive Poster**

I. Kishida, T. Sugihara, Y. Hirano, K. Mase*
Nagoya Univ., Japan
**Ricoh, Japan*

VHF1 - 3 10:00 **Simulator Sickness Symptoms Caused by a Visual Search Task in a Monocular Virtual Display**

J. Häkkinen, J. Takatalo, J. Havukumpu*, J. Komulainen*, H. Särkelä**, G. Nyman**
Nokia Res. Ctr., Finland
**Univ. of Helsinki, Finland*

----- Break -----

10:40 - 11:50 **Room 201**

VHF2: Human Factor (2)

Chair: M. Kasuga, Utsunomiya Univ., Japan
Co-Chair: S. Clippingdale, NHK, Japan

VHF2 - 1: 10:40 ***Invited*** **Human Perception of LED Sources Pulsed above the Critical Fusion Frequency**

R. Sharpe, C. M. Cartwright, W. A. Gillespie, E. Billen, C. Wall, J. A. F. Taylor**
Univ. of Abertay Dundee, UK
**Nat. Physical Lab., UK*

VHF2 - 2 11:10 **Does Eye Tracking Provide a Window to the Soul of Mobile Phone Users?**

*M. Pölönen, J. Häkkinen, J. Laarni**
Nokia Res. Ctr., Finland
**Helsinki School of Economics, Finland*

VHF2 - 3 11:30 **Walking-Caused Vibration and Small Display Legibility**

M. Olkkonen, T. Mustonen
Nokia Res. Ctr., Finland

----- Lunch -----

13:50 - 14:50 **Room 201**

VHF3: Human Factor (3)

Chair:	R. Sharp, Univ. of Abertay, UK
Co-Chair:	S. Clippingdale, NHK, Japan

VHF3 - 1
13:50
Human Factors Guidelines for Paper-Like Displays

S.-C. Jeng, Y.-R. Lin, C.-C. Liao, C.-H. Wen, C.-S. Wei,*
P. Shaw, H. W. Zan**
ITRI, Taiwan
**Nat. Chiao Tung Univ., Taiwan*

VHF3 - 2
14:10
Ergonomic Evaluation of a Projector Using Field-Sequential Color Projection System

E. Umezawa, T. Shibata, T. Kawai, K. Ukai
Waseda Univ., Japan

VHF3 - 3
14:30
Scanning Aspects of Emissive Passive-Matrix Displays

A. Sempel, P. J. Snijder, K. Brunner
Philips Res. Labs., The Netherlands

----- Break -----

15:10 - 17:00 **Room 201**

VHF4/3D4: 3D Vision

Chair:	H. Isono, Nippon Inst. of Tech., Japan
Co-Chair:	S. Yano, NHK, Japan

VHF4/3D4 - 1: ***Invited*** **3D Structure and Volume Perception from Motion**
15:10

*M. Idesawa, M. Uchida, T. H. Moe**
Univ. of Electro-Commun., Japan
**Myanmar Radio & Television, Myanmar*

VHF4/3D4 - 2
15:40
Mathematical Simulation of the Mime Effect

R. Mtibaa, M. Idesawa, Y. Sakaguchi
Univ. of Electro-Commun., Japan

VHF4/3D4 - 3
16:00
Evaluation of Discontinuity in 3D Images Generated by High-Density Directional Images

M. Watanabe, H. Nate, Y. Takaki*
Tokyo Univ. of A&T, Japan
**Tokyo Polytech. Univ., Japan*

VHF4/3D4 - 4
16:20
A New Method of Stereo Matching for Curved Surface

Z. Xu, M. Idesawa
Univ. of Electro-Commun., Japan

VHF4/3D4 - 5
16:40
Development and Evaluation of Stereoscopic 3D Display with Dynamic Optical Correction

T. Shibata, T. Kawai, M. Otsuki, N. Miyake*, Y. Yoshihara**, T. Iwasaki***, N. Terashima*
Waseda Univ., Japan
**Nikon, Japan*
***Arisawa Manufacturing, Japan*
****Univ. of Occupational & Environmental Health, Japan*

Author Interviews
17:00 – 18:00

Friday, December 10

9:00 - 10:10 **Room 301**

VHF5/LCT6: Pixel Arrangement and Image Quality

Chair: Y. Shimodaira, Shizuoka Univ., Japan
Co-Chair: M. Ozaki, Osaka Univ., Japan

VHF5/LCT6 - 1: ***Invited*** **PenTile LCDs**
9:00

C. Elliott
Clairvoyante, USA

VHF5/LCT6 - 2
9:30
Color Image Improvement in Display with A Novel String Pixel Architecture

C.-S. Chang, C.-J. Chen, J.-P. Pang
InnoLux Display, Taiwan

VHF5/LCT6 - 3
9:50
Optical and Electrical Characterization of Flickering of Color STN-LCD

R. Chen, X. Zhang
Philips Mobile Display Sys., China

----- Break -----

10:30 - 12:00 **Room 301**

VHF6/LCT7: Moving Image Quality

Chair: C. Elliott, Clairvoyante, USA
Co-Chair: Y. Shimodaira, Shizuoka Univ., Japan

VHF6/LCT7 - 1: ***Invited*** **A Review of MPRT Measurement Method for Evaluating Motion Blur of LCDs**
10:30

*J. Someya, Y. Igarashi**
Mitsubishi Elec., Japan
**Hitachi Displays, Japan*

VHF6/LCT7 - 2
11:00
Dynamic Gamma: A Metric for the Temporal Response Contribution to Motion Blur

H. Pan, X. Feng, S. Daly
Sharp Labs. of America, USA

VHF6/LCT7 - 3
11:20
Parameters of Motion Picture Blurring Measured by Using a Pursuit Camera

K. Oka, K. Kitagishi, Y. Enami
Otsuka Elect., Japan

VHF6/LCT7 - 4
11:40
Motion Picture Quality of Colored Image Measured by Using a Pursuit Camera System

Y. Enami, K. Kitagishi, K. Oka
Otsuka Elect., Japan

----- Lunch -----

14:00 - 15:00 **Room 301**

VHF7: Image Quality and Tone Reproduction

Chair: J. Someya, Mitsubishi Elec., Japan
Co-Chair: T. Kurita, NHK, Japan

VHF7 - 1
14:00
Development of 45-Inch High Quality LC-TV

Y. Yoshida, H. Furukawa, M. Ueno, E. Ikuta, S. Daly, X. Feng, I. Sezan, Y. Kikuchi, T. Fujine, M. Sugino
Sharp, Japan

VHF7 - 2
14:20
An Image Enhancement Algorithm of Flat Panel Display

H. H. Cho, M. R. Choi
Hanyang Univ., Korea

VHF7 - 3
14:40
A New Gamma Determination Method in FPD Measurement

T. J. Jun, G. C. Park, J. S. Lee, S. Y. Lee
Samsung Elect., Korea

----- Break -----

15:20 - 17:00 **Room 301**

VHF8: Color Reproduction

Chair: T. Kurita, NHK, Japan
Co-Chair: J. Someya, Mitsubishi Elec., Japan

VHF8 - 1
15:20
Wide Color Gamut and High Brightness WUXGA LCD Monitor with Color Calibrator

H. Kaneko, S. Kagawa, M. Ozawa, H. Sugiura, H. Tanizoe, H. Ueno*, T. Kimura*, H. Katou**
Mitsubishi Elec., Japan
**NEC-Mitsubishi Elec. Visual Syss., Japan*

VHF8 - 2
15:40
Displaying sYCC Still Images on a Wide Color Gamut Television

T. Matsumoto, Y. Akiyama, T. Nakatsue, S. Haga, T. Arai, H. Shibata, Y. Kuze, M. Hatanaka, K. Kakinuma
Sony, Japan

VHF8 - 3
16:00

Reproduction of sRGB Image on PDP

Y. Kwak, D. Park, W. Choe, C. Y. Kim
Samsung Advanced Inst. of Tech., Korea

VHF8 - 4
16:20

Color Conversion Method for Multi Primary Displays in order to Reduce the Power Consumption and Conversion Time

M. Takaya, K. Ito, G. Ohashi, Y. Shimodaira
Shizuoka Univ., Japan

VHF8 - 5
16:40

The 3-Factors Color Mapping Method

M. D. Yung, I. L. Ho, K. H. Peng, P. C. Chen, T. T. Lin
Chi Mei Optoelect.ronics, Taiwan

Author Interviews
17:00 – 18:00

BANQUET

Wednesday, December 8
19:30 – 21:30
at Continental Room
Hotel Okura Niigata
Free Shuttle Bus;
From Toki Messe to Banquet Site
at 18:20, 18:45 and 19:10
From Banquet Site to Toki Messe
at 21:50

See page 6 for details

Workshop on Projection and Large-Area Displays, and Their Components

Thursday, December 9

14:00 - 17:00 **Exhibition Hall B**

Poster LADp: Optics & Components

LADp - 1 **Fabrication of Continuous-Relief Planar Blazed Grating Using Laser LIGA for LC Rear-Projection Display Systems**

P. H. Yao, C. F. Chen, R. T. Zheng*
ITRI, Taiwan
**Nat. Chung Cheng Univ., Taiwan*

LADp - 2 **The Application of the YAG Filter in LCOS Optical Engine**

C.-A. Yang, M. Liu, S.-M. Wu, C.-N. Mo, S.-T. Yang
Chunghwa Picture Tubes, Taiwan

LADp - 3 **Gradient Angle Design of Dichroic Mirrors Used in LCD Projection Display**

*W. Lu, Z. Zheng, P. Gu, A. Guan**
Zhejiang Univ., China
**Zhejiang Univ. of Sci. & Tech., China*

Friday, December 10

09:00 - 10:10 **Room 201**

LAD1: Digital Cinema & Imaging Technologies

Chair:	C. Y. M. Cheng, Moxtek, USA
Co-Chair:	K. Ohara, TI Japan, Japan

LAD1 - 1:
9:00 ***Invited*** **Recent Progress on Digital Cinema Systems**

T. Fujii, K. Shirakawa, M. Nomura, T. Yamaguchi
NTT, Japan

LAD1 - 2
9:30 **Digital Microdisplay Backplane with Bit Serial SIMD Processing**

K. Guttag
Kagutech, USA

LAD1 - 3
9:50 **Sensing Technology for Automatic Keystone Correction in Projectors**

M. Kobayashi, H. Matsuda, O. Wada, S. Arazaki,
H. Kamakura
Seiko Epson, Japan

----- Break -----

10:40 - 12:00 **Room 201**

LAD2: Optics & Components

Chair:	M. Robinson, ColorLink Inc., USA
Co-Chair:	T. Hayashi, Sumitomo 3M, Japan

LAD2 - 1
10:40

Full Color QXGA Projection Display with VA-FLC Resolution-Enhancing Device

K. Fujita, A. Takaura, T. Tokita, H. Sugimoto, T. Murai, Y. Takiguchi
Ricoh, Japan

LAD2 - 2
11:00

Dual Paraboloid Reflectors and Light Pipe Based Illumination Systems for Projection Display

K. Li, S. Sillyman, S. Inatsugu
Wavien, USA

LAD2 - 3
11:20

Optical Efficiency Improvements in Wire Grid Polarizing Beamsplitter in LC Projection Displays

C. Y. M. Cheng, R. Perkins, D. Hansen, P. Steve
Moxtek, USA

LAD2 - 4
11:40

Method of Optical Evaluation for Projection Screen

A. Kagotani, T. Kaizuka, S. Iwata, T. Tomono, S. Takahashi, T. Abe
Toppan Printing, Japan

----- Lunch -----

14:00 - 14:40 **Room 201**

LAD3: Microdisplay & System Designs

Chair:	K. Guttag, Kagutech, USA
Co-Chair:	Z. Tajima, Hitachi Displays, Japan

LAD3 - 1
14:00

Fringe-Field Induced Disclinations in VAN LCoS Panels

D. Cuypers, H. De Smet, A. Van Calster**
IMEC, Belgium
**Ghent Univ., Belgium*

LAD3 - 2
14:20

Optimization of Three-Panel Liquid Crystal on Silicon Video Projection Systems

M. G. Robinson, J. Chen, G. D. Sharp
ColorLink, USA

Author Interviews
17:00 – 18:00

Supporting Organizations:
Technical Group on Information Display, ITE
Tehchnical Committee on Electronic Information Displays, Electronics Society, IEICE
Opto-Electronic Materials and Devices Study Specialty Section, IEIJ
Liquid Crystal Display Forum, JLCS

Topical Session on Electronic Paper

Wednesday, December 8

13:30 - 14:35 **Room 201**

EP1: Electronic Paper (1)

Chair: T. Fujisawa, Dainippon Ink & Chem., Japan
Co-Chair: Y. Toko, Stanley Elec., Japan

EP1 - 1: ***Invited*** **A New Color Imaging Method for Photo-Addressable Electronic Paper**
13:30

H. Harada, H. Kobayashi, M. Gomyo, Y. Okano, H. Arisawa
Fuji Xerox, Japan

EP1 - 2 **Black and White Cholesteric Liquid Crystal Display**
13:55

Y. A. Sha, H. L. Wang, C. C. Liao, C. C. Lu, Y. R. Lin, S. C. Jeng, K. H. Chang, L. P. Hsin, C. Y. Lin, J. M. Ding, K. H. Liu, Y. C. Hung, A. Y. G. Fuh, Y. L. Huang**
ITRI, Taiwan
**Nat. Cheng Kung Univ., Taiwan*

EP1 - 3 **A New Approach for Grey Scales in BiNem LCDs**
14:15

C. Joubert, J. Angele, C. Body, A. Boissier, J.-D. Laffite, F. Leblanc, J. Lehoux, R. Vercelletto
Nemoptic, France

----- Break -----

15:10 - 16:15 **Room 201**

EP2: Electronic Paper (2)

Chair: M. Omodani, Tokai Univ., Japan
Co-Chair: S. Maeda, Oji Paper, Japan

EP2 - 1: ***Invited*** **1-in. Active Matrix Addressed Electrowetting Displays**
15:10

B. J. Feenstra, R. A. Hayes, I. G. J. Camps, L. M. Hage, R. van Dijk, T. J. P. Biggelaar, J. M. E. Baken
Philips Res. Labs., The Netherlands

EP2 - 2 **Movement of Triboelectrically Charged Particles for Electronic Paper**
15:35

T. Kitamura, N. Mizuno, S. Nakamura
Chiba Univ., Japan

EP2 - 3 **Computer Simulation of Electrophoretic Display**
15:55

H. Kodama, K. Takeshita, T. Araki, H. Tanaka**
Mitsubishi Chem. Group Sci. & Tech. Res. Ctr., Japan
**Univ. of Tokyo, Japan*

----- Break -----

16:50 - 17:55 **Room 201**

EP3/AMD1: Electronic Paper (3)

Chair: H. Kawai, Seiko Epson, Japan
Co-Chair: M. Kimura, Ryukoku Univ., Japan

EP3/AMD1 - 1: ***Invited*** **Driving an Active Matrix Electrophoretic Display**
16:50

G. F. Zhou, M. T. Johnson, R. Cortie, R. Zehner,*
K. Amundson, A. V. Henzen**, J. van de Kamer***
Philips Res., The Netherlands
**E Ink, USA*
***Philips Emerging Display Tech., The Netherlands*

EP3/AMD1 - 2 **A Fully Integrated Low-Power High-Voltage Bistable Display Driver for Smartcard Applications**
17:15

W. Hendrix, J. Doutreloigne, A. Van Calster
Ghent Univ., Belgium

EP3/AMD1 - 3 **An Intelligent Driving Scheme for High-Voltage Display Drivers**
17:35

A. Monte, J. Doutreloigne, A. Van Calster
Ghent Univ., Belgium

Author Interviews
18:10 – 19:00

Thursday, December 9

14:00 - 17:00 **Exhibition Hall B**

Poster EPp: Electronic Paper Posters

EPp - 1 **Improvement of Response Properties for Mobile Fine Particle Display Cells by Adding Charge Transfer Complex Dopant**

T. Takahashi, Y. Toko, K. Kobayashi**, M. Kamio, S. Saito,*
*M. Kimura**, T. Akahane***
Kogakuin Univ., Japan
**Stanley Elec., Japan*
***Nagaoka Univ. of Tech., Japan*

EPp - 2 **Microencapsulated Liquid Crystal Display for Paper-Like Display**

S. H. Liu, Y. C. Lin, W. S. Tzeng, K. L. Cheng, L. P. Hsin,
Y. A. Sha, C. M. Ding, C. C. Liao, I. J. Lin
ITRI, Taiwan

EPp - 3 **Transient Current Properties in Electronic Paper**

T. Bert, F. Beunis, H. De Smet, K. Neyts**
Ghent Univ. & IMEC, Belgium
**Ghent Univ., Belgium*

EPp - 4 **Electrochromic Properties of Dimethyl Terephthalate and Its Derivatives for Paper-Like Color Display**

H. Urano, S. Sunohara, H. Ohtomo, N. Kobayashi**
Japan Chem. Innovation Inst., Japan
**Chiba Univ., Japan*

Supporting Organization:
The Imaging Society of Japan

Late-News Papers

due October 4, 2004

Submit a two-page camera-ready manuscript of A4-sized pages, reflecting important new findings or developments via on-line submission:

http://idw.ee.uec.ac.jp/authinfo.html

EVENING GET-TOGETHER WITH WINE

Tuesday, December 7
18:00 – 20:00
at Hoou Room (30F),
Hotel Nikko Niigata
(Sponsored by Merck Ltd., Japan)

See page 6 for details

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	Ir. T. G. Spanjer	LG.Philips Displays, The Netherlands
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	N. Miura	Meiji Univ.
	A. Mikami	Kanazawa Inst. of Tech.
	Y. Yano	TDK
	T. Yagi	Lumileds Lighting Japan
	M. Yoshida	Sharp

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IDW Tutorial in Japanese

Tuesday, December 7
Room 301
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Detail information will be available in October:
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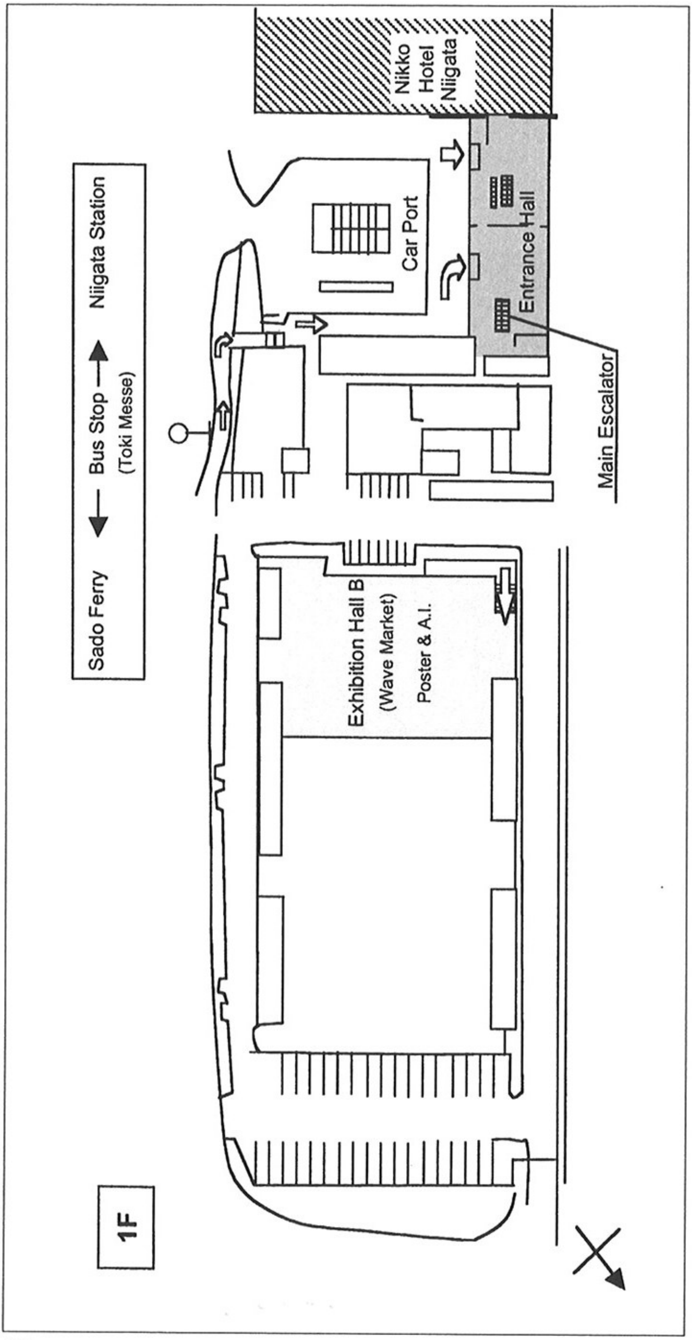
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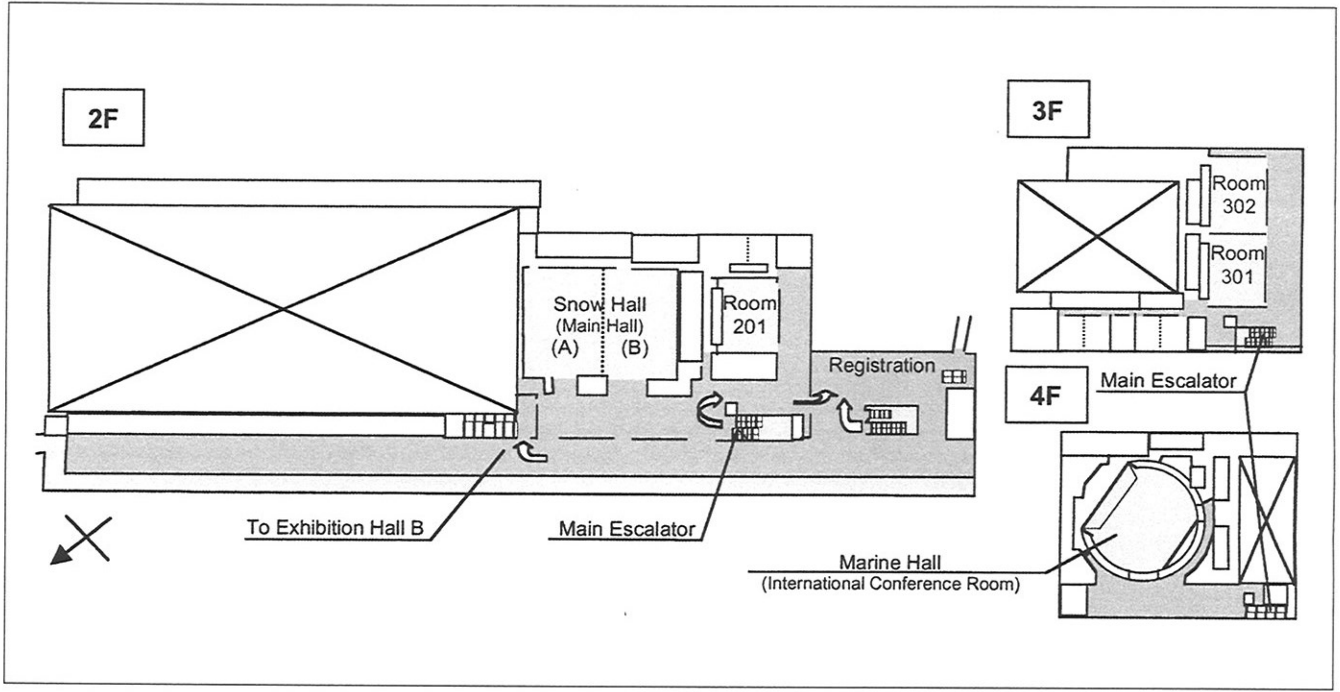
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(A)
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Main Escalator
3F
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302
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301
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