

ADVANCE PROGRAM

AM-FPD 06



THE JAPAN SOCIETY OF
APPLIED PHYSICS

THE THIRTEENTH INTERNATIONAL WORKSHOP ON ACTIVE-MATRIX FLATPANEL DISPLAYS AND DEVICES

-TFT TECHNOLOGIES AND RELATED MATERIALS-

JULY 5-7, 2006
KEIO PLAZA HOTEL
Tokyo, Japan

Sponsored by

The Japan Society of Applied Physics

in cooperation with:

The Institute of Electronics, Information and

Communication Engineers

The Institute of Image Information and
Television Engineers

The Institute of Electrical Engineers of Japan

The Chemical Society of Japan

Japanese Liquid Crystal Society

AM-FPD '06 Time Table

	Tuesday, July 4 17:00-19:00	Wednesday, July 5 8:15-17:00	Thursday, July 6 8:30-17:00	Friday, July 7 8:20-14:00
Workshop	Registration 9:30-9:45	Opening Session Session 1 : Keynote Address 9:45-10:45	9:00-11:45 Symposium : Future Applications of TFTs (10:00-10:15 Coffee Break)	8:40-9:45 Session 6 : Organic Devices 9:45-10:00 Coffee Break
	10:45-11:00 <i>Coffee Break</i>	Session 2 : LC, LCD & FPDS 11:00-12:25	11:45-13:10 <i>Lunch</i>	10:00-11:25 Session 7 : OLED
	12:25-13:40 <i>Launch</i>	Session 3 : Process Technologies for TFTs 13:40-15:35	13:10-14:40 Symposium : Latest Developments in Flatpanel TV	11:25-12:45 <i>Lunch</i>
	15:35-15:50 <i>Coffee Break</i>	Session 4 : Characterization & Reliability of TFTs 15:50-16:55	14:40-14:55 <i>Coffee Break</i>	12:45-14:10 Session 8 : Crystallization Technologies for TFTs 1 14:10-14:25 Coffee Break
	17:05-18:05 <i>Late News</i>	Session 5 : Special Session : Advanced Apparatuses for TFT Fabrication 14:55-16:40	Session 5 : Special Session : Advanced Apparatuses for TFT Fabrication 14:25-15:30	Session 9 : Crystallization Technologies for TFTs 2 14:25-15:30
		Session 4 : Characterization & Reliability of TFTs 15:50-16:55		
		Session 5 : Special Session : Advanced Apparatuses for TFT Fabrication 14:55-16:40		
		Session 5 : Special Session : Advanced Apparatuses for TFT Fabrication 14:25-15:30		
Author Interviews	18:15-18:45	<i>Author Interviews</i>	16:40-17:10 <i>Author Interviews</i>	15:30-16:00 <i>Author Interviews</i>
Poster Session			16:40-18:40 Poster Session : LCDp/TFT1p/TFT2p TFT3p/OLEDp/OIFT1p/LNp	
Banquet	19:00-21:00	<i>Banquet</i>		

Registration : Foyer, 5th Floor
 Workshop "Eminence Hall," 5th Floor
 Author Interviews : "Eminence Hall," 5th Floor
 Poster Session : "Eminence Hall," 5th Floor
 Banquet : "Nishiki," 4th Floor

GENERAL INFORMATION

The Thirteenth International Workshop on Active-Matrix Flatpanel Displays and Devices (AM-FPD '06, former AM-LCD) will be held from July 5 (Wednesday) to 7 (Friday), 2006 at the Keio Plaza Hotel, Tokyo, Japan.

This international workshop was established in 1994 to present the latest research and development in AM-LCD technologies and their applications. For the 2006 workshop, in addition to AM-LCD technology, the scope has been widened to include active-matrix organic light-emitting-diode (AM-OLED) displays and other AM-FPD technologies. These include thin film transistors (TFT), other thin film devices, circuits, and systems, LC technologies, related materials and crystallization. This year's three-day workshop will feature over 90 papers, including invited papers and additional late-news papers. Two symposia, "Latest Developments in Flatpanel TV" and "Future Applications of TFTs", and also a special session on "Advanced Apparatuses for TFT Fabrication" are scheduled.

We hope you will enjoy what promises to be a very exciting workshop.

SITE

Keio Plaza Hotel

2-2-1 Nishi-Shinjuku, Shinjuku-ku, Tokyo 160-8330, Japan (see the map attached to this booklet)

Secretariat for AM-FPD '06 Tel: +81-3-3597-1108

SYMPOSIA

In addition to the regular sessions, two symposia, "Latest Developments in Flatpanel TV" and "Future Applications of TFTs," are scheduled. The former includes new technologies to realize large-size and high-quality displays. The latter discusses new technologies from system-on-panel to novel applications in addition to flatpanel displays. Invited speakers will give presentations on state-of-the-art topics.

SPECIAL SESSION

A special session, "Advanced Apparatuses for TFT Fabrication," is planned. Advanced research and development such as the 8th gen a-Si or future μ c-Si PECVD, ELA and high-pressure H₂O-vapor treatment will be presented. Invited speakers will present the latest cutting-edge topics.

PRESENTATION TIMES FOR SPEAKERS

	Total	Presentation	Discussion
Keynote	30 min.	25 min.	5 min.
Invited/Special	25 min.	20 min.	5 min.
Symposium	30 min.	25 min.	5 min.
Oral	20 min.	15 min.	5 min.
Poster	16:40-18:40, July 6		
Late-News	15 min.	12 min.	3 min.

REGISTRATION

The Registration Desk will be open in front of the EMINENCE HALL on the 5th floor of the Keio Plaza Hotel from Tuesday to Friday. The registration hours are as follows:

July	4 (Tuesday)	17:00-19:00
	5 (Wednesday)	8:15-17:00
	6 (Thursday)	8:30-17:00
	7 (Friday)	8:20-14:00

For Advance Registration, access our online registration page (<http://www.amlcd.jp>) and enroll your information and complete payment by June 16. Registration and other fees should be paid in Japanese yen via bank transfer* or credit cards. VISA, Master Card, AMEX, and Diners Club, JCB are acceptable. No personal checks are acceptable. After your payment has been confirmed, confirmation will be sent from the Secretariat by the end of June.

*Bank transfer for AM-FPD

A/C No.: 422-4760343, Bank of Tokyo-Mitsubishi UFJ,
Shin-Marunouchi Branch
A/C Name: JTB Global Marketing & Travel Inc.
(Message: CD100811-071)

	By June 16, 2006	on site
Registration Fee** Regular	¥38,000	¥43,000
Students***	¥5,000	¥5,000
Extra "Digest of Technical Papers"		¥5,000
Back Numbers of "Digest of Technical Papers"****	CD-ROM (from 1st to 9th) ¥15,000 (set) CD-ROM & Book (10th, 11th or 12th) ¥7,000 (each)	

**Registration Fee includes one copy of the Digest of Technical Papers, CD-ROM (2006), admission to all sessions, and the Banquet of AM-FPD '06.

***Students are required to show their ID Card upon registration.

****Back numbers: CD-ROMs (and Books) of past workshops are on sale at the venue or can be sent directly to purchasers with an additional postal charge after the workshop.

Contact information: amlcd@intergroup.co.jp

For cancellations, a fee of ¥5,000 will be deducted from the refund. Cancellations should be made in writing to the Secretariat of AM-FPD '06. No cancellations will be accepted after June 21, 2006. Digest of Technical Papers and CD-ROM (2006) will be sent to absent registrants after the workshop.

BANQUET

The Banquet will be held on July 5, 2006, from 19:00-21:00 at “NISHIKI” in the Keio Plaza Hotel, the venue hotel.

DIGEST OF TECHNICAL PAPERS

The Digest of Technical Papers will be distributed from July 4 at the Registration Desk.

LANGUAGE

The official language of the workshop is English.

OFFICIAL TRAVEL AGENT

JTB Global Marketing & Travel Inc. (JTB GMT) has been appointed as the official travel agent for the workshop and will handle all related travel arrangements, including hotel accommodations. Inquiries and applications concerning arrangements should be addressed to:

JTB Global Marketing & Travel Inc. (JTB GMT)
Convention Center (CD100811-071)
2-3-11 Higashi-Shinagawa, Shinagawa-ku,
Tokyo 140-8604, Japan
Tel: +81-3-5796-5445 Fax: +81-3-5495-0685
E-mail: amfpd2006@jtb.jp

For hotel accommodation, please access our Web site (<http://www.amlcd.jp>) and register on the hotel accommodation page by June 16.

There will also be an on-site travel information desk during the workshop period to handle arrangements for transportation and tours.

VISAS

Every foreign visitor entering Japan must have a valid passport. Visitors from countries whose citizens must have visas should apply to a Japanese consular office or diplomatic mission in their own country.

Japanese Journal of Applied Physics SPECIAL ISSUE

The authors of the best papers will be recommended by the committee to submit their papers for publication in the JJAP (Japanese Journal of Applied Physics) special issue of "Active-Matrix FlatPanel Displays and Devices -TFT Technologies and Related Materials-" (Vol.46, No.3B, 2007). Try to include new, original, and significant findings in your presentation for AM-FPD '06 and submit your manuscript to the registration desk no later than July 6, 2006. Note that your manuscript will be reviewed under the standard JJAP review policy. Your paper should be an original research paper with well-developed discussions based on facts and newly-obtained data. The same manuscript as used for your presentation in AM-FPD '06 cannot be accepted.

<http://www.ipap.jp/jjap/index.htm>

The review schedule is as follows

- July 6, 2006: Submission
- November, 2006: Final decision
- March, 2007: Publication

AWARD

Papers presented at this workshop will be considered for the AM-FPD Best Paper Award. The winner is chosen after the final paper and presentation, and will be presented at the AM-FPD '07 workshop.

AM-LCD '05 BEST PAPER AWARDS

- "Low-Temperature Crystallization of Amorphous Si Films Using Ferritin Protein with Ni Nanoparticles", Hiroya Krimura, Yukiharu Uraoka, Takashi Fuyuki, Mitsuhiro Okuda*, Ichiro Yamashita*, Nara Inst. of Sci. and Technol. and *Matsushita Electr. Ind., Japan.
- "Artificial Retina Using Thin-Film Transistors", Mutsumi Kimura, Takehiro Shima, Tomoyuki Okuyama*, Sumio Utsunomiya*, Wakao Miyazawa*, Satoshi Inoue*, Tatsuya Shimoda*, Ryukoku Univ. and *Seiko Epson, Japan.

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Chair:	Hiroki Hamada (<i>Sanyo Electr.</i>)
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Yasuo Toko (*Stanley Electric*)
Man Wong (*Hong Kong Univ. of Sci. & Technol.*)
Yung-Hui Yeh (*ERSO/ITRI*)
Osamu Yokoyama (*Seiko Epson*)

SCIENTIFIC PROGRAM

July 5, Wednesday

Opening Session (9 : 30~9 : 45)

Chairpersons : A. Masuda, AIST, Japan

Welcome Address

H. Hamada, Sanyo Electr., Japan

Award Presentation

Session 1 : Keynote Address (9 : 45~10 : 45)

Chairpersons : M. Kimura, Ryukoku Univ., Japan

A. Masuda, AIST, Japan

9 : 45 (1-1)	Tangible Media and Information Display (Tentative) (Invited) H. Ishii, MIT Media Laboratory, USA
10 : 15 (1-2)	Development Trend in High-Quality LCD-TV (Invited) Y. Ishii, Sharp, Japan

— Coffee Break —

Session 2 : LC, LCD & FPDs (11 : 00~12 : 25)

Chairpersons : T. Noguchi, Univ. of the Ryukyus, Japan
Y. Takafuji, Sharp, Japan

11 : 00 (2-1)	Jet-Printed Active-Matrix Backplanes and Electrophoretic Displays (Invited) J. Daniel ¹ , A. Arias ¹ , W. Wong ¹ , R. Lujan ¹ , B. Krusor ¹ , N. Chopra ² , G. Iftime ² , P. Kazmaier ² , R. Street ¹ , ¹ Palo Alto Research Center, USA, ² Xerox Research Centre of Canada, Canada
11 : 25 (2-2)	4.1-inch Color QVGA TFT LCD with a-Si:H TFTs on Plastic Substrates C.-C. Cheng, K.-Y. Ho, P.-C. Chen, M. H. Lee, L.-T. Wang, H.-L. Tyan, C.-M. Leu, Y.-A. Sha, S.-Y. Fan, T.-H. Chen, C.-Y. Pan, Y.-H. Yeh, ITRI, Taiwan

11 : 45 (2-3)

Improvement of Adhesion between Inorganic Film and Plastic Substrate by Atomic Hydrogen Anneal for Flexible Displays

A. Heya, M. Noda, N. Matsuo, *Univ. of Hyogo, Japan*

12 : 05 (2-4)

Development of Low Power Consumption SOG-LCD

K. W. Park, K. H. Kim, K. M. Park, C.-W. Kim, *Samsung Electron., Korea*

— Lunch —

Session 3 : Process Technologies for TFTs (13:40~15:35)

Chairpersons :

J. Kanicki, *Univ. of Michigan, USA*

S. Higashi, *Hiroshima Univ., Japan*

13 : 40 (3-1)

Low-Temperature Formation of High-Quality SiO_x Thin Films by Evaporation of SiO Nanopowder (Invited)

S. Nozaki, S. Kimura, H. Ono, K. Uchida,
Univ. of Electro-Communications, Japan

14 : 05 (3-2)

High Quality Gate Oxide Formed by ICP CVD for U-LTPS TFT on Plastic Substrate (Invited)

J. S. Jung¹, K. B. Park¹, J. M. Kim¹, T. Noguchi², S.Y. Lee¹, J.Y. Kwon¹,

¹*Samsung Adv. Inst. of Technol., Korea*

²*Univ. of the Ryukyus, Japan*

14 : 30 (3-3)

Solution-Processed Silicon Films and Transistors Using Novel Liquid Silicon Materials (Invited)

H. Tanaka¹, Y. Matsuki², T. Shimoda¹, H. Iwasawa², T. Aoki¹, I. Yudasaka¹, D. Wang², M. Miyasaka¹, M. Furusawa¹,

¹*Seiko Epson, JSR, Japan*

14 : 55 (3-4)

Low Temperature Formation of Source and Drain Using Snow Plow Effect of Silicidation

T. Asano¹, M. Esaki², G. Nakagawa¹,

¹*Kyushu Univ.*, ²*Kyushu Inst. of Technol., Japan*

15 : 15 (3-5)

160 cm²/V.s Microcrystalline Silicon TFTs Mobility thanks to New Deposition Process of both Undoped and Doped Films Performed at T < 200°C

K. Kandoussi, C. Simon,
N. Coulon, T. Mohammed-Brahim,
Univ. of Rennes, France

— Coffee Break —

Session 4 :

Characterization & Reliability of TFTs (15 : 50~16 : 55)

Chairpersons :

H. Tango, *Tokyo Polytechnic Univ., Japan*

Y. Uraoka, *Nara Inst. of Sci. & Technol., Japan*

15 : 50 (4-1)

a-Si:H TFT Electrical Instabilities
(Invited)

J. Kanicki, *Univ. of Michigan, USA*

16 : 15 (4-2)

Hot Carrier Effects in P-Channel Polysilicon TFTs Fabricated on Flexible Substrates

P. Gaucci¹, L. Mariucci¹, A. Valletta¹,
G. Fortunato¹, F. Templier², ¹*IFN-CNR, Italy*, ²*CEA-LETI, France*

16 : 35 (4-3)

Automated Digital Circuits Design Based on Single-Grain Si TFTs Fabricated Through μ -Czochralski (Grain Filter) Process

W. Fang¹, A. van Genderen¹,
R. Ishihara¹, R. Vikas¹, N. Karaki²,
Y. Hiroshima², S. Inoue², T. Shimoda²,
J. W. Metselaar¹, C. I. M. Beenakker¹,
¹*Delft Univ. of Technol., The Netherlands*, ²*Seiko Epson, Japan*

Late News (17 : 05~18 : 05)

Author Interviews (18 : 15~18 : 45)

Banquet (19 : 00~21 : 00)

July 6, Thursday

Symposium : Future Applications of TFTs (9 : 00~11 : 45)

Chairpersons :

R. Ishihara, *Delft Univ. of Technol.*,

The Netherlands

M. Furuta, *Kochi Univ. of Technol.*,

Japan

9 : 00 (S-1)

Value-Added SOG (System-on-Glass)
Display Based on LTPS Technology
(Invited)

T. Nishibe, H. Nakamura, *Toshiba Matsushita Display Technol., Japan*

9 : 30 (S-2)

A 510-kb SOG-DRAM for Displays
with Embedded Frame Memories
(Invited)

H. Haga, Y. Nonaka, T. Otose,
H. Asada, *NEC LCD Technol., Japan*

— *Coffee Break* —

10 : 15 (S-3)

Asynchronous MPU Using Poly-Si
TFTs (Invited)

N. Karaki, T. Nanmoto, H. Ebihara,
S. Inoue, T. Shimoda, *Seiko Epson, Japan*

10 : 45 (S-4)

Novel Applications of Low-Temperature
Poly-Si Thin-Film Transistors Other
than Flatpanel Displays (Invited)

M. Kimura, T. Shima, *Ryukoku Univ., Japan*

11 : 15 (S-5)

New Development in Non-LCD
Applications of Thin Film Transistors
(Invited)

Y. Kuo, *Texas A&M Univ., USA*

— *Lunch* —

Symposium : Latest Developments in Flatpanel TV

(13 : 10~14 : 40)

Chairpersons :

M. Yokozawa, *TUIS, Japan*

Y. Utsumi, *Hitachi, Japan*

13 : 10 (S-6)

Challenges of High Quality Picture for
LCD-TV (Invited)

Y. Shirochi, H. Murayama, *Sony, Japan*

13 : 40 (S-7)	Real-Life In-Home Viewing Conditions for FPDs and Statistical Characteristics of Broadcast Video Signal (Invited) T. Fujine, Y. Kikuchi, M. Sugino, Y. Yoshida, <i>Sharp, Japan</i>
14 : 10 (S-8)	High Performance IPS-Pro Technology for LCD-TVs (Invited) K. Ono ¹ , I. Mori ¹ , M. Ishii ¹ , Y. Ooishi ² , T. Furuhashi ² , ¹ <i>Hitachi Displays</i> , ² <i>Hitachi, Japan</i>
— Coffee Break —	
Session 5 : Special Session : Advanced Apparatuses for TFT Fabrication (14 : 55~16 : 40)	
Chairpersons :	A. Masuda, <i>AIST, Japan</i> A. Heya, <i>Univ. of Hyogo, Japan</i>
14 : 55 (Introductory)	Introduction of Special Session on “Advanced Apparatuses for TFT Fabrication” (Invited) A. Masuda, <i>AIST, Japan</i>
15 : 00 (5-1)	The Latest PECVD Technology for Large-Size Processing (Invited) T. Takehara, <i>AKT, USA</i>
15 : 25 (5-2)	Large Area and High Speed Deposition of Microcrystalline Silicon Film by ICP with Internal Low-Inductance Antenna (Invited) T. Hayashi ¹ , E. Takahashi ¹ , Y. Nishigami ¹ , A. Tomyo ¹ , M. Fujiwara ¹ , H. Kaki ¹ , K. Kubota ¹ , K. Ogata ¹ , A. Ebe ² , Y. Setsuhara ³ ¹ <i>Nissin Electr.</i> , ² <i>EMD</i> , ³ <i>Osaka Univ., Japan</i>
15 : 50 (5-3)	Excimer Laser Processes Using Long Pulse Duration and High Energy for LTPS (Invited) M. Stehlé, <i>SOPRA, France</i>

16 : 15 (5-4)

A High Pressure Annealing System for
High Performance LTPS TFTs (Invited)
N. Yamamoto, T. Watanabe,
Y. Nagasawa, H. Chishina,
A. Yoshinouchi, Y. Kawasaki,
Ishikawajima-Harima Heavy Ind., Japan

Author Interviews (16 : 40~17 : 10)

Poster Session (16 : 40~18 : 40)

LCDp

- (P-1) Optimization of LCD Pixel Structure for CPA Mode by Numerical Simulation
S.-Y. Cho¹, C.-S. Lee², T.-Y. Won¹,
¹*Inha Univ.*, ²*Sanayi System, Korea*
- (P-2) Viewing Angle Optimization of the Homogeneous-Mode Transflective Liquid Crystal Display
C.-L. Yang, W.-Y. Ling, C.-L. Lin,
C.-J. Chen, J.-P. Pang, *InnoLux Display, Taiwan*
- (P-3) High Stable Counter Design for Timing Controller Using LTPS CMOS Process
B.-Y. Lee, J.-S. Yu, J.-M. Yoon,
Y.-J. Kim, K.-M. Lim, M.-K. Baek,
K.-E. Lee, Y.-S. Yoo, J. S. Yoo,
C.-D. Kim, D.-S. Lee, I.-J. Chung,
LG. Philips LCD , Korea
- (P-4) Data and Gate-Line Sharing Pixel Structure and Driving Method for Low Cost of Poly-Si TFT-LCD
Y.-J. Kim, I.-H. Jeong, H.-J. Kim,
O.-K. Kwon, *Hanyang Univ., Korea*
- (P-5) Instability Phenomena of Amorphous Silicon Thin Film Transistors Utilizing Copper as Electrodes
Y.-C. Kuan¹, S.-W. Liang², H.-K. Chiu¹,
O. Sun¹, ¹*Chunghwa Picture Tubes,*
²*Research Alliance, Taiwan TFT LCD Association , Taiwan*

- (P-6) Chromatic and Physical Properties of Inject-Printed Reddish Resist on Color Filter
H.-S. Koo¹, M. Chen², F.-M. Wu³,
S.-J. Chang³, P.-C. Pan¹, T. Kawai¹,
¹*Osaka Univ., Japan*, ²*Ming-Hsin Univ. of Sci. and Technol.*, ³*ITRI, Taiwan*
- (P-7) Design and Performance of Inkjet Printing Apparatus for Fabricating LCD-Based Color Filters
H.-S. Koo¹, S.-C. Wu², J.-C. Tseng²,
V. Shih³, T.-H. Jaw³, T. Kawai¹, ¹*Osaka Univ., Japan*, ²*Built-In Precision Machine.*, ³*NanoDynamics, Taiwan*
- TFT1p**
- (P-8) A Quick Thin-Film Device Transfer Process by Thermal Shear Stress
K. Yoshioka¹, T. Sameshima¹,
K. Takechi², ¹*Tokyo Univ. of A & T*,
²*TRADIM, Japan*
- (P-9) Defect Reduction of Polycrystalline Silicon Thin Films by High-Pressure H₂O Vapor
T. Sameshima¹, H. Hayasaka¹,
M. Maki¹, A. Masuda², T. Matsui²,
M. Kondo², ¹*Tokyo Univ. of A & T*,
²*AIST, Japan*
- (P-10) Lateral Diffusion of Phosphorous Induced by Excimer Laser Irradiation in the Si Thin Film for Gradual LDD in poly-Si TFT
S.-M. Han¹, I.-H. Ji¹, H.-S. Shin¹,
S.-H. Choi¹, M.-K. Han¹, J.-M. Son²,
S.-Y. Sung², C. J. Kang², ¹*Seoul Natl. Univ.*, ²*Myoungji Univ., Korea*

- (P-11) Dependence on Poly-Si Crystallinity in Electrical Characteristics of Poly-Si TFTs Processed with High-Pressure Water-Vapor Annealing
M. Kunii, *Sony, Japan*
- (P-12) Deposition of Silicon Nitride by Hot-Wire CVD with Ultra High Deposition Rate ($> 7 \text{ nm/s}$)
V. Verlaan, Z. S. Houweling,
C. H. M. van der Werf, H. D. Goldbach,
R. E. I. Schropp, *Utrecht Univ., The Netherlands*
- (P-13) Hydrogenated Amorphous Silicon with Bottom Gate TFT Fabricated at 200°C
J.-J. Huang, L.-T. Wang, C.-J. Tsai,
C.-Y. Tseng, Y.-H. Yeh, *ITRI, Taiwan*
- (P-14) Fabrication of Poly-Si TFTs in Array Patterns Using Field Aided Lateral Crystallization Process
T.-S. Han¹, C.-J. Park¹, H.-C. Kim¹,
H.-P. Jeon¹, Y.-B. Kim², T. Noguchi¹,
D.-K. Choi¹, ¹*Hanyang Univ., Korea,*
²*North Carolina State Univ., USA*
- (P-15) Withdrawn
- TFT2p**
- (P-16) Melt Duration of Excimer Laser Annealing Si Film with Time-Resolved Optical Reflection and Transmission Measurement
C.-J. Zhuang, W.-C. Yeh, C.-C. Kuo,
J.-Y. Jeng, *Natl. Taiwan Univ. of Sci. and Technol., Taiwan*
- (P-17) Reducing of Ni Impurity in NILC Poly-Si Films Using Bonding Techniques
C.-C. Lin, C.-Y. Hou, Y. C. S. Wu,
Natl. Chiao Tung Univ., Taiwan

- (P-18) Crystallization of Single-Grain-Like Silicon Transistors by Continuous-Wave Laser
Y.-T. Lin¹, C. Chen¹, J.-M. Shieh²,
Y.-J. Lee², ¹*Natl. Chiao Tung Univ.*,
²*Natl. Nano Device Labs., Taiwan*
- (P-19) Performance of Polycrystallization with High Power Solid Green Laser
K. Nishida, R. Kawakami, J. Izawa,
N. Kawaguchi, F. Matsuzaka,
M. Masaki, M. Morita, A. Yoshinouchi,
Y. Kawasaki, *Ishikawajima-Harima Heavy Ind., Japan*
- (P-20) Gettering of Nickel within NIC Polycrystalline Silicon Film Using a-Si/SiN_x Films
C.-Y. Hou, Y. C. S. Wu, *Natl. Chiao Tung Univ., Taiwan*
- (P-21) Enhancement of NILC Growth Rate Using Rapid Thermal Annealing
C.-M. Hu, Y. C. S. Wu, *Natl. Chiao Tung Univ., Taiwan*
- (P-22) Reliability Analysis of Ultra-Low-Temperature Poly-Si Thin Film Transistors
H. Ueno¹, Y. Sugawara¹, H. Yano¹,
T. Hatayama¹, Y. Uraoka¹, T. Fuyuki¹,
J. S. Jung², K. B. Park², J. M. Kim²,
J. Y. Kwon², T. Noguchi³, ¹*Nara Inst. of Sci. & Technol., Japan*, ²*Samsung Adv. Inst. of Technol., Korea*, ³*Univ. of the Ryukyus, Japan*
- (P-23) Extraction Technique of Trap Density at Grain Boundaries in poly-Si TFTs Using Device Simulation
K. Harada¹, T. Yasuhara¹, M. Kimura¹,
D. Abe², S. Inoue², T. Shimoda²,
¹*Ryukoku Univ.*, ²*Seiko Epson, Japan*

TFT3p

- (P-24) Influence of Grain Boundaries on the Temperature Dependence of Device Characteristics and on Hot Carrier Effects in LTPS-TFTs Containing Large Grains
T. Tsuchiya¹, T. Miura¹, T. Yamai¹, G. Kawachi², M. Matsumura², ¹*Shimane Univ.*, ²*ALTEDEC, Japan*
- (P-25) Effects of Carrier Trapping at Grain Boundary on Switching Transient Behavior in Polycrystalline-Silicon Thin-Film Transistors
H. Ikeda, *Sony, Japan*
- (P-26) Modeling of Grain Boundary Induced Nonlinear Output Characteristics in Polycrystalline-Silicon Thin-Film Transistors
H. Ikeda, *Sony, Japan*
- (P-27) Circular Hydrogenated Amorphous Silicon Thin Film Transistors with Superior Threshold Voltage Stability
H.-Y. Tseng, K.-Y. Chiang, C.-P. Kung, *ITRI, Taiwan*
- (P-28) Analysis of Threshold Voltage for Silicon Thin Film Transistors
H. Hayasaka¹, T. Sameshima¹, M. Kimura², ¹*Tokyo Univ. of A & T*, ²*Ryukoku Univ., Japan*
- (P-29) Hot-Carrier Degradation and Electric Field near Drain Junction in Low-Temperature N-Channel SD (Single Drain) and LDD Poly-Si TFTs
G. Usami, Y. Nogami, T. Yajima, M. Yamagata, T. Satoh, H. Tango, *Tokyo Polytechnic Univ., Japan*

- (P-30) The Mechanical Reliability of a-Si:H TFTs on Flexible Substrate
M. H. Lee, K.-Y. Ho, P.-C. Chen,
C.-C. Cheng, C. M. Lai, Y.-H. Yeh,
ITRI, Taiwan

- (P-31) A Hybrid Type 8-bit DAC for Mobile Display Using Low Temperature Poly-Si TFTs
C.-W. Byun, B.-D. Choi, *Hanyang Univ., Korea*

OLEDp

- (P-32) New AMOLED Pixel Design Employing Fast V_{TH} Detection for Current Compensation
H.-S. Shin, W.-J. Nam, J.-H. Lee,
S.-M. Han, S.-J. Kim, M.-K. Han, *Seoul Natl. Univ., Korea*
- (P-33) Time-Ratio Grayscale with Current Uniformization for TFT-OLEDs and Its Tolerance against Characteristic Degradation
M. Kato, Y. Hara, M. Kimura, *Ryukoku Univ., Japan*
- (P-34) Successive Approximation Current Programming Method for AM-OLED Current Driver
J.-S. Kang, J.-K. Lee, I.-H. Jeong,
O.-K. Kwon, *Hanyang Univ., Korea*
- (P-35) New Voltage Programmed AMOLED Pixel Circuit with 3 TFTs and 2 Capacitors
M.-H. Jung¹, I. Choi¹, O. Kim¹,
H.-J. Chung², ¹*POSTECH*, ²*Kumoh Natl. Inst. of Technol., Korea*
- (P-36) 2.2-inch QCIF+ AMOLED Display Employing Voltage Compensation and LTPS Technology
S.-H. Jung, T.-J. Ahn, H.-K. Lee,
D.-H. Nam, J.-K. Park, C.-Y. Kim,
J.-H. Kim, C.-D. Kim, I.-J. Chung,
LG. Philips LCD, Korea

(P-37) Organic Catalytic CVD and Properties
of SiNC for H₂O/O₂ Barrier Films for
Flexible Organic EL Devices
H. Nakayama^{1,2}, T. Hata^{1,2}, ¹*Material
Design Factory*, ²*Osaka City Univ.,
Japan*

(P-38) Stable and Temperature Resistant
OLED Structures
C. Prat¹, D. Vaufrey¹, T. Maindron¹,
C. Pinot¹, G. Haas¹, Y.-H. Yeh²,
Y.-R. Liu², L.-C. Lin², B.-C. Chang²,
¹*Thomson R&D France, France*, ²*ITRI,
Taiwan*

OTFTp

(P-39) Effect of Annealing on the Performance
of Organic Field-Effect Transistor with
Polymer Gate Dielectric Layer
Q. Zhang, S. Ochiai, G. Sawa,
A. Ohashi, K. Kojima, Y. Uchida,
T. Mizutani, *Aichi Inst. of Technol.,
Japan*

(P-40) Organic Field Effect Transistors with
Crosslinkable Poly (Vinyl Alcohol)
Dielectric and Spin-Coated/ Drop-Cast
Poly (3-hexylthiophene-2,5-diyl)
Semiconductor
X. Wang, S. Ochiai, G. Sawa,
Y. Uchida, K. Kojima, A. Ohashi,
T. Mizutani, *Aichi Inst. of Technol.,
Japan*

July 7, Friday

Session 6 : Organic Devices (8 : 40~9 : 45)

Chairpersons :

R. Hattori, *Kyushu Univ., Japan*
O. Yokoyama, *Seiko Epson, Japan*

- 8 : 40 (6-1) Organic Bi-Function Devices with Emission and Sensing Abilities (Invited)
H. Okada, S. Naka, Y. Matsushita,
H. Shimada, M. Shibata, H. Onnagawa,
Univ. of Toyama, Japan

- 9 : 05 (6-2) Fine Patterned Organic Thin Film Transistors Using Solution Organic Semiconductor Materials
N.-B. Choi, M.-J. Kim, D.-W. Kim,
S.-H. Paek, S.-H. Kim, K. L. Kim,
H. Kang, H.-S. Seo, C.-D. Kim,
I.-J. Chung, *LG. Philips LCD , Korea*

- 9 : 25 (6-3) Research on Fabricating Low Energy Cost Organic Thin Film Transistors
H. Imanaga, Y.-C. Chen, N. Yamauchi,
Waseda Univ., Japan

— *Coffee Break* —

Session 7 : OLED (10 : 00~11 : 25)

Chairpersons :

H. Akimoto, *Hitachi, Japan*
T. Arai, *Sony, Japan*

- 10 : 00 (7-1) Advanced LTPS Technologies for LCD and OLED Application (Invited)
Y.-M. Tsai, D.-Z. Peng, C.-W. Lin,
C.-H. Tseng, S.-C. Chang, B.-L. Liu,
Toppoly Optoelectronics , Taiwan

- 10 : 25 (7-2) Novel Current-Scaling Current-Mirror a-Si:H TFT Pixel Electrode Circuit with Cascade Capacitor for AM-OLEDs
H. Lee¹, J.-S. Yoo², C.-D. Kim²,
I.-J. Chung², J. Kanicki¹, ¹*Univ. of Michigan, USA*, ²*LG. Philips LCD, Korea*

10 : 45 (7-3)

A New Fraction Time Annealing to Improve OLED Current Stability for a-Si:H TFT Based AMOLED Backplane

J.-H. Lee¹, S.-G. Park¹, J.-H. Jeon²,
J.-C. Goh³, J.-M. Huh³, J. Choi³,
K. Chung³, M.-K. Han¹, ¹*Seoul Natl. Univ.*, ²*Hankuk Aviation Univ.*,
³*Samsung Electron., Korea*

11 : 05 (7-4)

The Magnetic Field Effect on Solid Phase Crystallization for Poly-Si TFT and AM-OLED Display

M.-Y. Chang, C.-T. Peng, J.-Y. Lin,
C.-H. Liu, *AU Optronics, Taiwan*

— Lunch —

Session 8 : Crystallization Technologies for TFTs 1

(12 : 45~14 : 10)

Chairpersons :

Y. Kuo, *Texas A&M Univ., USA*

T. Sameshima, *Tokyo Univ. of A & T, Japan*

12 : 45 (8-1)

Microplasma Jet: Characterization and Application to the Rapid Recrystallization of a-Si (Invited)

H. Shirai¹, Y. Sakurai¹, M. Yeo¹,
T. Kobayashi²,
¹*Saitama Univ.*, ²*The Institute of Physics and Chemical Reserach, Japan*

13 : 10 (8-2)

Influence of Hydrogen Modulation Doping on Properties of Polycrystalline Si Film Formed by Excimer Laser Annealing

A. Heya¹, D. Sannami¹, M. Nakamura¹,
T. Serikawa², N. Kawamoto³,
N. Matsuo¹, ¹*Univ. of Hyogo*, ²*Univ. of Tokyo*, ³*Yamaguchi Univ., Japan*

13 : 30 (8-3)

Preparation of Large Poly-Si Grains by Excimer Laser Crystallization of Sputtered a-Si Film with a Processing Temperature of 100°C

M. He, R. Ishihara, E. J. J. Neihof, Y. van Andel, H. Schellevis, C. I. M. Beenakker, *Delft Univ. of Technol., The Netherlands*

13 : 50 (8-4)

Crystallization of Double-Layered Silicon Thin Films by Solid Green Laser Annealing

Y. Sugawara¹, Y. Uraoka¹, H. Yano¹, T. Hatayama¹, T. Fuyuki¹, A. Mimura², ¹*Nara Inst. of Sci. & Technol.*, ²*AIST, Japan*

— Coffee Break —

Session 9 : Crystallization Technologies for TFTs 2

(14 : 25 ~ 15 : 30)

Chairpersons :

H. Shirai, *Saitama Univ., Japan*
M. Kunii, *Sony, Japan*

14 : 25 (9-1)

Low Temperature Crystallization of Silicon Films Using Ferritin Protein with Ni Nanoparticles (Invited)

Y. Uraoka¹, H. Kirimura¹, T. Fuyuki¹, M. Okuda², I. Yamashita^{1,2}, ¹*Nara Inst. of Sci. & Technol.*, ²*Matsushita Electr. Ind., Japan*

14 : 50 (9-2)

Poly-Ge Thin-Film Transistor with NiGe Schottky Source/Drain Fabricated at Low-Temperature (<500°C)

T. Sadoh, H. Kamizuru, A. Kenjo, M. Miyao, *Kyushu Univ., Japan*

15 : 10 (9-3)

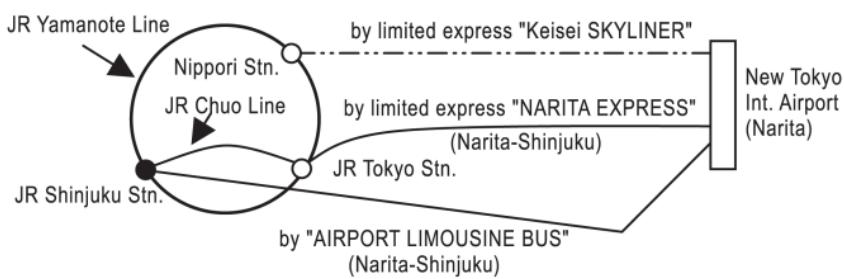
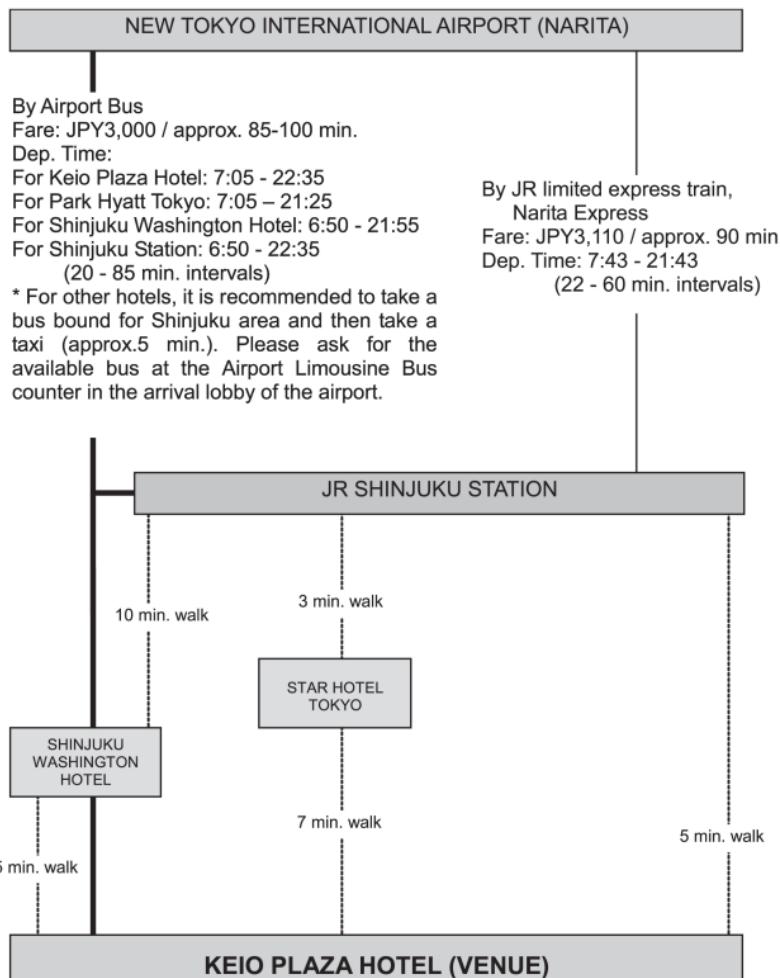
Infrared Laser Annealing of Silicon Films Using Diamond Like Carbon as Photo-Absorption Layer

N. Sano¹, M. Maki², N. Andoh², T. Sameshima², ¹*Hightec System*, ²*Tokyo Univ. of A & T, Japan*

Author Interviews (15 : 30 ~ 16 : 00)

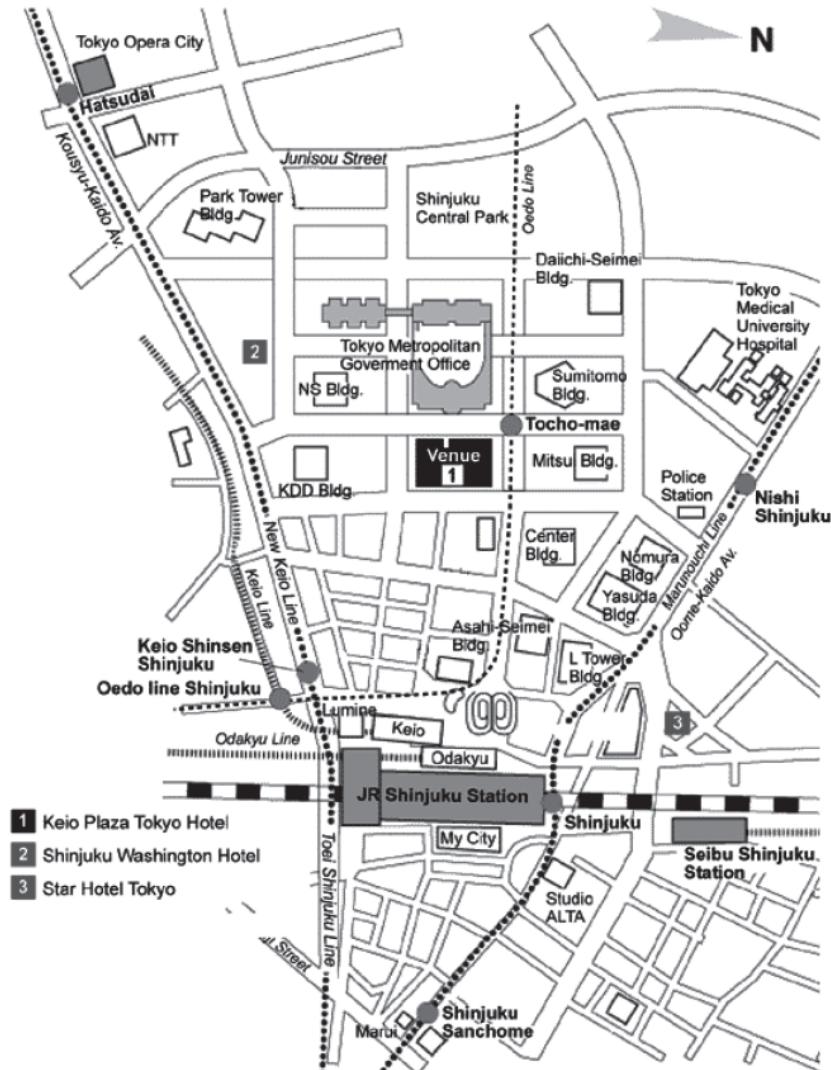
ACCESS TO KEIO PLAZA HOTEL

Most international flights arrive at New Tokyo International Airport (Narita), about 41 miles (66km) away from central Tokyo.

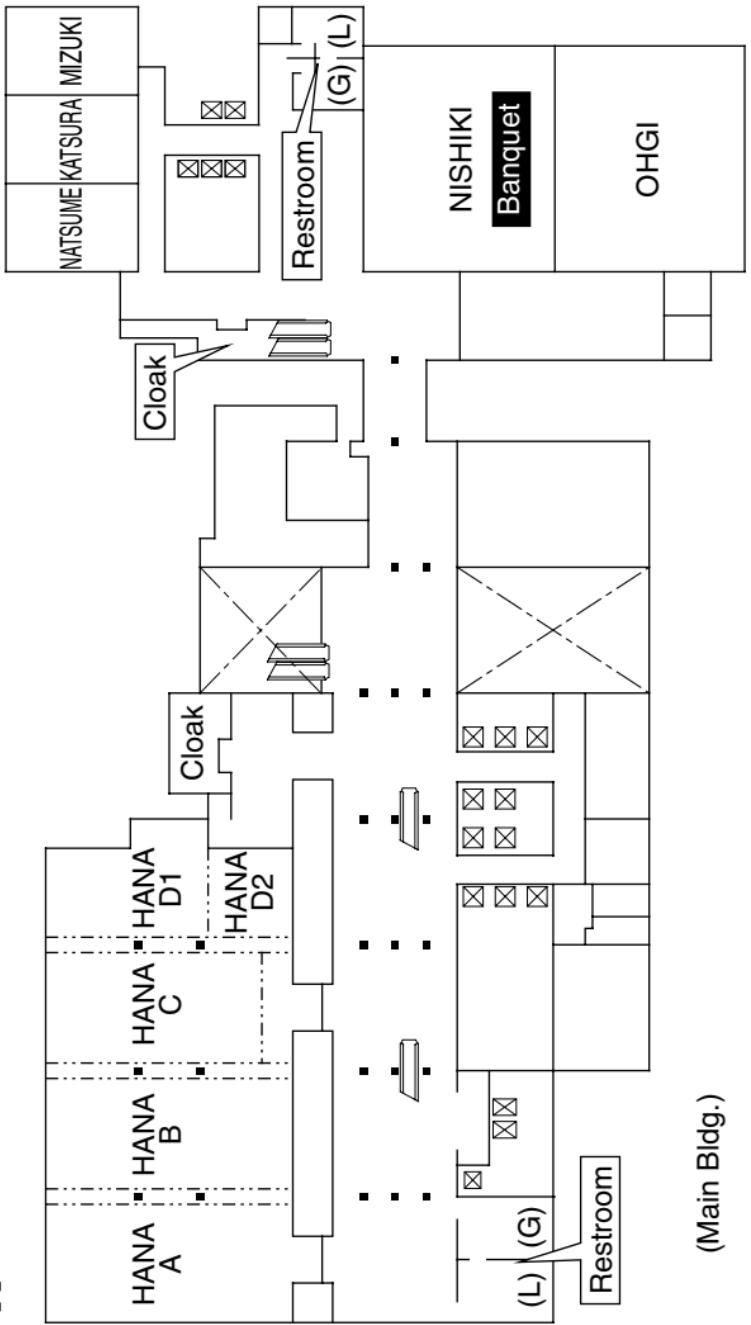


KEIO PLAZA HOTEL

5-minute walk from west exit of JR Shinjuku Station

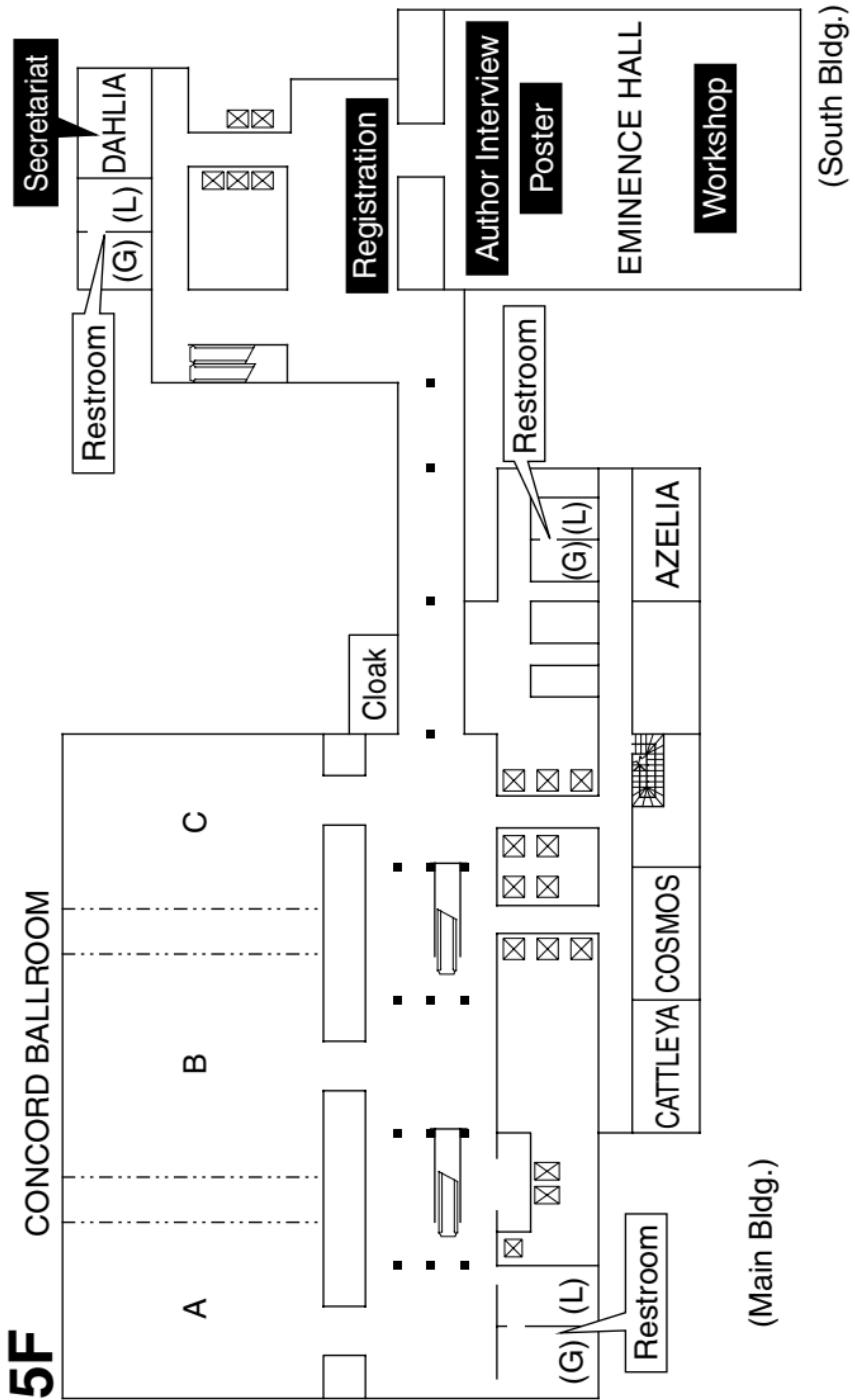


4F



(Main Bldg.)

(South Bldg.)



**THE THIRTEENTH INTERNATIONAL WORKSHOP ON
ACTIVE-MATRIX FLATPANEL DISPLAYS AND DEVICES
-TFT TECHNOLOGIES AND RELATED MATERIALS-
(AM-FPD '06)**

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