PROGRAM

AM-FPD 23

THE THIRTIETH INTERNATIONAL WORKSHOP ON
ACTIVE-MATRIX
FLATPANEL DISPLAYS AND DEVICES
-TFT TECHNOLOGIES AND FPD MATERIALS-

July 4 - 7, 2023
Ryukoku University Avanti Kyoto Hall Kyoto, Japan
This workshop is held in hybrid format with Zoom.

Sponsorship:
International Society of Functional Thin Film Materials & Devices

Technical Sponsorship:
The Electrochemical Society - Electronics and Photonics Division -
The Electrochemical Society - Japan Section -
IEEE Electron Devices Society

In cooperation with:
The Japan Society of Applied Physics
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
The Laser Society of Japan
Japanese Liquid Crystal Society
Thin Film Materials & Devices Meeting
Society of Automotive Engineers of Japan, Inc.
Society for Information Display
Molecular Electronics and Bioelectronics Division,
The Japan Society of Applied Physics
GENERAL INFORMATION

The 30th International Workshop on Active-Matrix Flatpanel Displays and Devices (AM-FPD '23) will be held as an online meeting from July 4 (Tuesday) to 7 (Friday), 2023. This international workshop was established in 1994 to present the latest research and development in Active-Matrix Liquid Crystal Display technologies and their applications. In addition to AMLCDs and AMOLEDs, the scope has been widened to novel flat panel displays, materials for displays, flexible technologies, related physical phenomena and novel thin-film devices such as thin-film transistors (TFT), photovoltaics (PV) technologies, and other thin-film materials and devices (TFMD).

We hope that you will attend and enjoy our workshop.

WORKSHOP THEME
AM-FPD '23 will prepare an attractive program focusing on “Create from SDGs and Metaverse”.

SYMPOSIA
In addition to the regular sessions, we will prepare symposia which numerous speakers discuss for attractive and interesting themes.
Special Symposium on Vehicular Displays will focus on exciting developments paving the future of invehicle displays. The automotive industry is currently experiencing profound changes in its business environment, which will also have a strong impact on design and requirements of the human-vehicular interface, specifically displays.
Symposia, “XR Technologies”, “Advances in TFT technology for Stretchable/Flexible Devices”, “Emerging Trends in R&D on Durability, Circularity and Sustainability of PVs” and “Development of Emerging and Neuromorphic Devices” are scheduled. Invited speakers will talk about the latest topics from the viewpoints of functional materials, device structures, fabrication processes, driving schemes, circuit technologies, etc.

PRESENTATION TIMES FOR SPEAKERS

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<tr>
<th></th>
<th>Total</th>
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<th>Discussion</th>
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<td>35 min.</td>
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<tr>
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<tr>
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<td>12 min.</td>
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<tr>
<td>Poster</td>
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THE PROCEEDINGS OF AM-FPD ’23
The Proceedings of AM-FPD ’23 will be distributed in our workshop special website from July 4.

LANGUAGE
The official language of the workshop is English.
**REGISTRATION**

For Registration, access our online registration page (http://www.amfpd.jp) and enroll your information and complete payment. Registration fee is discounted until June 9 (JST). Registration and other fees should be paid in Japanese yen via credit cards. VISA, Master, AMEX are acceptable. Apple Pay and Google Play are also acceptable. The receipt can be downloaded after your payment has been completed.

<table>
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<th>Category</th>
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<th>Registration Fee</th>
<th>[One day] Special Symposium Only*2</th>
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*1 The registration fee of the workshop includes the admission to all sessions and the proceedings.
*2 One day pass of “Special Symposium Only” is available to attend Special Symposium on Wednesday, July 5. The proceedings of the AMFPD ‘23 is included in the fee.
*3 The member of the societies which sponsor and support AM-FPD ‘23.
*4 The category of senior is for attendees who are 65 years old or older

**BANQUET**

The banquet will be held on July 5, from 17:30 to 19:30 at Mariage Grande “Ambrosia” on the 8th floor of Avanti.

**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.

**RECORDED PRESENTATION**

Participants will watch the recorded video of oral presentation from July 20 (Thu.) to August 18 (Fri.).

**CANCELLATION POLICY**

In case of cancellation after payment, please contact to the secretariat (secretariat@amfpd.jp).

Cancel Charge
- Before June 9--------Cancel fee 6%
- After June 10---------100% of the registration fee / NO REFUND

The Proceedings of the AM-FPD ‘23 (download password) and on-demand viewing will be available.
Endorsement Letter

The endorsement letters to IEEE Journal Electron Device Society (J-EDS) or ECS Journal Solid State Science and Technology (JSS) will be issued for excellent papers, which are chosen at our internal rating processes by AM-FPD program committees.

Please select which journal you wish getting the endorsement letter when you submit a paper to AM-FPD.

1. Endorsement letters will be issued to excellent papers from the AM-FPD committee after AM-FPD ’23 workshop is held.
2. After you receive the endorsement letter,
   - Please attach your paper of AM-FPD ’23 and the endorsement letter when submitting your manuscript to each journal,
   - You make sure to add in your reference list when you reuse the contents (figures / tables) used in your paper of AM-FPD ’23.

Your ID and password are required to be registered before submitting your manuscript to each journal.

IEEE XPLORE DIGITAL LIBRARY

The Proceedings of AM-FPD ’23 will be published in the IEEE Xplore digital library in around 2 months after the workshop.

TUTORIAL

These classes are widely aimed at many people from beginners to researchers who hope to review their knowledge. Presentations and documents will be in Japanese. Documents will be distributed to the participants who have registered in advance. These classes are available for an additional fee (see page 2).

Tuesday, July 4 (9:30 ~ 12:30)
Chairpersons:

9:30 (T-1) Technology trend of Si based TFT -From a viewpoint of a comparison with LSI devices-
N. Matsuo, Univ. of Hyogo, Japan

10:30 (T-2) Fabrication Processes and Characterization Methods for Thin-Film Solar Cells: from Principles and Fundamentals to Applications
H. Shirai, Saitama Univ, Japan

11:30 (T-3) Research Trends of Organic Transistors - Focusing on Materials and Fabrication Processes
H. Minemawari, AIST, Japan
AWARDS

Papers presented at this workshop will be considered for “AM-FPD Paper Awards”, “AMFPD-ECS Japan Section Young Researcher Award”. These winners will be presented at the award ceremony in AM-FPD ’24 workshop.

AM-FPD Paper Awards

“Best Paper Award”, “Poster Award” and “Student Paper Award” will be presented. The winners of them are selected by AMFPD ‘23 award committee chaired by Professor Yukiharu Uraoka (NAIST).

AMFPD-ECS Japan Section Young Researcher Award

ECS Japan Section and AM-FPD Organizing Committee have jointly established “AMFPD-ECS Japan Section Young Researcher Award”. This award will be given to the author under the age of 35 that belongs to the university or the research institute in Japan.

AM-FPD ‘22 PAPER AWARD

Best Paper Award

(2_3) Crosstalk and Uniformity Analysis of Fingerprint-On-Display Technology Using Pinhole Imaging Technique
Muhamad Afliq Bin Misran and Reiji Hattori
Kyushu University, Japan

Poster Paper Award

(P_8) Interplay of Viscosities in Controlling The Orientation of Conjugated Polymer Thin Films Fabricated by Floating Film Transfer Method
Shubham Sharma¹, Ajendra K. Vats², Daisuke Matsuo², Shuichi Nagamatsu¹, Shyam S. Pandy¹
¹Kyushu Inst. of Technol., Japan, ²NAIST, Japan

Student Paper Award

Umu Hanifah, NAIST, Japan
(L_2) Electrical Performance Improvement of All-Solution Processed Indium Zinc Oxide Thin Film Transistor by UV-Irradiation Treatment

AMFPD-ECS Japan Section Young Researcher Award

Shuhei Tanaka, NHK Sci. & Technol. Research Lab., Japan
(L_1) Direct patterning process development for solution-processed electrodes of TFTs
PROGRAM

Date: Tuesday, July 4

Opening Session (13:30〜13:45)
Chairperson: H. Tanabe, Iwate University, JAPAN

Welcome Address
H. Hamada, Kindai University, JAPAN

Award Presentation

Keynote Address (13:45〜16:00)
Chairpersons: H. Hamada, Kindai University, JAPAN
H. Kajii, Osaka University, JAPAN

13:45-14:30 K_1 TFT Application Requirements and Possible Limits (INVITED)
Y. Kuo1,*
1) Texas A&M University, USA

14:30-15:15 K_2 Environmentally and Financially Sound Recycling of Silicon Solar Panels (INVITED)
M. Tao1,*
1) Arizona State University, USA

15:15-16:00 K_3 Patterned-Liquid-Crystal Planar Optics for Wavefront Control (INVITED)
M. Ozaki1*)
1) Osaka University, JAPAN

― Coffee Break ―

Symposium 1 : Emerging Trends in R&D on Durability, Circularity and Sustainability of PVs (16:20〜18:20)

Chairpersons: A. Wakamiya, Kyoto University, JAPAN
H. Ohkita, Kyoto University, JAPAN

16:20-16:50 S1_1 Recent Global Trends in PV Module Recycling (INVITED)
K. Komoto1,*
1) Mizuho Research & Technologies, Ltd., JAPAN

16:50-17:20 S1_2 Perspective of Ideal Photovoltaic Modules for Various Applications (INVITED)
A Masuda1,*
1) Niigata University, JAPAN

17:20-17:50 S1_3 Degradation Mechanism of Tin-based Perovskite Solar Cells Investigated by Operando Electron Spin Resonance (INVITED)
K. Marumoto1,*
1) University of Tsukuba, JAPAN
S1_4 High Stable Perovskite Solar Cells using Ionic-liquid Addition and Cesium Halides Intercalation Technology (INVITED)
Md. Shahiduzzaman1,*
1) Kanazawa University, JAPAN
Date: Wednesday, July 5

The 30th Anniversary Special Symposium:
Future Automotive Cockpit Display and Technology Trends (9:15〜17:05)

Greeting (9:15〜9:25)

Chairperson: B. Straub, Automotive Display Technology, Germany

Special Symposium 1: Vehicle Wireless Communication and Sensing Application (9:25〜10:45)

Chairpersons: H. Okada, University of Toyama, JAPAN
M. Kimura, Ryukoku University, JAPAN

09:25-10:05 SS1_1 Characterization of Liquid Crystal Materials for Millimeter-Wave Wireless Communication (INVITED)
T. Nose1,*), R. Ito1) and M. Honma1)
1) Akita Prefectural University, JAPAN

10:05-10:45 SS1_2 Object Detection in Poor-visibility Scenarios Using a Night-vision System (INVITED)
Y. Hayashi1,*), K. Taguchi1), S. Morita1), K Arata1) and H. Fujiyoshi2)
1) Kyocera Corporation, JAPAN, 2) Chubu University, JAPAN

— Coffee Break —

Special Symposium 2: Various Automotive Displays and Systems (11:05〜13:05)

Chairpersons: M. Kimura, Ryukoku University, JAPAN
H. Okada, University of Toyama, JAPAN

11:05-11:45 SS2_1 Augmented Reality HUDs: Challenges, Solutions and Competitors (INVITED)
K. Blankenbach1,*
1) Pforzheim University, GERMANY

11:45-12:25 SS2_2 Competition of OLED and LCD for Automotive Applications (INVITED)
B. Straub1,*
1) Steinbeis Consulting Center, GERMANY

— Lunch —
Special Symposium 3 : Technological Trends and Special Automotive LCDs  (14:35〜15:55)

Chairpersons:  T. Kamiya, Tokyo Institute of Technology, JAPAN
                T. Mori, Aichi Institute of Technology, JAPAN

13:55-14:35  SS3_1  The Future of Automotive Displays and Technology: A Look Ahead  (INVITED)
              S. Wu$^{1,*}$

              1) Omdia Research., TAIWAN

14:35-15:15  SS3_2  Research for the Full Array Local Dimming (FALD) LCD for Automotive Applications  (INVITED)
              T. Miyayama$^{1,*}$, T. Morita$^{1}$ and W. Hsu$^{2}$

              1) AUO Corporation Japan, JAPAN,  2) AUO Corporation, TAIWAN

— Coffee Break —

Special Symposium 4 : LC materials for Automotive Applications  (16:15〜16:55)

Chairpersons:  T. Mori, Aichi Institute of Technology, JAPAN
                T. Kamiya, Tokyo Institute of Technology, JAPAN

15:35-16:15  SS4_1  High Value-added Liquid Crystal Materials for Automotive Applications  (INVITED)
              J. Hsia$^{1,*}$, R. Hung$^{1}$, S. Lin$^{1}$, Y. Tsai$^{1}$, F. Chen$^{1}$, R. Chou$^{1}$, Y. Sugiyama$^{2,1}$, S. C. Laut$^{3}$

              1) Merck Performance Materials Ltd., TAIWAN
              2) Merck Electronics Ltd., JAPAN
              3) Merck Electronics KGaA, Darmstadt, GERMANY

16:15-16:55  SS4_2  Displays In The Smart Automotive Future - Perceptions, Reflections and Projections  (INVITED)
              D. S. Hermann$^{1,*}$

              1) Volvo Car Group, Sweden

Closing  (16:55〜17:05)

Chairperson:  H. Okada, University of Toyama, JAPAN

Banquet  (17:30〜19:30)
Date: Thursday, July 6

Session 1 : The Frontiers of PV Technology (9:15〜10:30)

Chairpersons: T. Nishimura, Tokyo Institute of Technology, JAPAN
Raifuku, Aoyama Gakuin University, JAPAN

09:15-09:40 1_1 Current Status of Earth-Abundant Cu2SnS3-Based Materials for Next-Generation Solar Cells (INVITED)
A. Kanai1,*), T. Tosuke2), M. Sugiyama2), H. Araki3) and K. Tanaka1)
1) Nagaoka University of Technology, JAPAN, 2) Tokyo University of Science, JAPAN, 3) National Institute of Technology, Nagaoka College, JAPAN

09:40-10:05 1_2 Role of Additive in Perovskite Solar Cells (INVITED)
P. Chen1), K. -W. Huang1), Y. -Y Chiu1), C. -F. Lin1), R. Rajendran1), P. -Y Lin1), H. -H. Chen1) and M. -H. Li2,*)
1) National Cheng Kung University., TAIWAN, 2) National Chi Nan University., TAIWAN

10:05-10:30 1_3 Development of Perovskite Solar Cells Towards High Efficiency, Stability, and Modularization (INVITED)
H. Kanda1,*), K. Yamamoto1), N. Nishimura1), A. Kogo1) and T. Murakami1)
1) National Institute of Advanced Industrial Science and Technology, JAPAN

— Coffee Break —

Symposium 2 : XR Technologies (10:50〜12:20)

Chairpersons: M. Tamaki, KYOCERA Corporation, JAPAN
B. Straub, Steinbeis Consulting Center, GERMANY

10:50-11:20 S2_1 Unleashing Human Vision by Head Mounted Displays (INVITED)
K. Kiyokawa1)
1) Nara Institute of Science and Technology, JAPAN

11:20-11:50 S2_2 Sunglasses Like Head-Mounted Displays with Polarized Laser Backlight and Holographic Optics (INVITED)
Y. Takahashi1,*), K. Okuda1), H. Kijima1), J Hirosawa1) and S. Komura1)
1) Japan Display Inc., JAPAN

11:50-12:20 S2_3 MicroLED Technology and Applications by PixelED Solutions
Y. -T. Liu1) and Y. -L. Li*
1) PlayNitride Inc., TAIWAN

— Lunch —

Symposium 3 : Development of Energy Harvesting and Sensing Devices (13:35〜15:05)

Chairpersons: H. Kajii, Osaka University, JAPAN
S. Pandey, Kyushu Institute of Technology, JAPAN

13:35-14:05 S3_1 Thermoelectric Cloths Using Carbon Nanotube Yarns with Molecular Junctions (INVITED)
M. Nakamura1,*
1) Nara Institute of Science and Technology, JAPAN
14:05-14:35  S3_2  Thermoelectric Properties of Halide Perovskite Thin Films  (INVITED)
K. Watanabe1), A. Miura2), T. Yabuki2) and K. Miyazaki1,2,*
1) Kyushu University, JAPAN, 2) Kyushu Institute of Technology, JAPAN

14:35-15:05  S3_3  Strategies to Improve the Performance of Organic Photosensitive Transistors  (INVITED)
N. Yadav1), V. Singh1,*
1) Indian Institute of Technology Indore, INDIA

Session 2: Advanced Materials and Process for TFTs  (15:05〜16:35)

Chairpersons:  H. Kumomi, JST, JAPAN
M. Furuta, Kochi University of Technology, JAPAN

15:05-15:30  2_1  A Strategy for High-Mobility and Highly-Stable Oxide TFTs  (INVITED)
J. Kim1)
1) Ulsan National Institute of Science and Technology, KOREA

15:30-15:55  2_2  High-mobility polycrystalline InO3:H thin-film transistors fabricated through low-temperature solid-phase crystallization  (INVITED)
Y. Magari1), P. Ghediya1), and H. Ohta1)
1) Hokkaido University, JAPAN

15:55-16:15  2_3  Novel Self-aligned Passivation Process for Oxide TFTs Utilizing Amorphous Gallium Oxide
Y. Shi1), J. Kim1 and H. Hosono1)
1) Tokyo Institute of Technology, JAPAN

16:15-16:35  2_4  Hydrogen-Ion Implantation at 300°C Used to Passivate Charge-Trapping Defect States in Polycrystalline-Silicon Films
T. Sameshima1), T. Nagao3), Y. Inouchi2), J Tatemichi2), M Hasumi1) and T. Ueno1)
1) Tokyo University of Agriculture and Technology, JAPAN 2) Nissin Ion Equipment Co., Ltd., JAPAN

Posters Session  (16:40〜18:10)

FPDp
P_1  Benzothiazole-based Bipolar Hosts for Realizing Highly Efficient OLEDs
J. -M. Wang1), T. -C. Lee1), C. -H. Chang1), W. -Y. Chen3), S. -Y. Wu2), Y. -D. Lin2) and C. -W. Lu2)
1) Yuan Ze University, TAIWAN, 2) Providence University, TAIWAN

P_2  Achieving over 20% EQE in RGB PhOLEDs with a Versatile Exciplex-Forming Co-host
Y. -C. Kung1,*), P. -Y. Chiang1) and W. -Y. Hung1)
1) National Taiwan Ocean University, TAIWAN

P_3  Driving Circuit Shared by Two Vertical Dimming Zones for Mini-LED Backlight Units
C. -R. Lu1,*), C. -H. Ke1), W. -S. Liao1), M. -Y. Deng2) and C. -L. Lin1)
1) National Cheng Kung University, TAIWAN, 2) AU Optronics Corp., TAIWAN

P_4  An Auto-zeroing In-pixel Voltage Comparator for High Accurate PWM Micro-LED Displays Based on LTPo TFTs
S. Que1), Y. Liu1), C. Liao1), J. Fu1), Z. Song1) and S. Zhang1)
1) Peking University, CHINA

P_5  Withdrawn

TFTp
P_6  Argon-Precursor-Ion Implantation Used to Activate Boron Atoms in Polycrystalline-Silicon Films at Low Temperatures
T. Sameshima1,*), T. Nagao3), Y. Inouchi2), J. Tatemichi2), M. Hasumi1) and T Ueno1)
1) Tokyo University of Agriculture and Technology, JAPAN, 2) Nissin Ion Equipment Co.Ltd, JAPAN
P_7 High Subthreshold Swing a-IGZO Driving TFTs for Low-Gray Level Uniformity in Active-Matrix OLED
1) Seoul National University, KOREA, 2) LG Display Co., Ltd., KOREA, 3) Sungkyunkwan University, KOREA

P_8 Argon Implantation at 300°C Used to Dehydrogenate Hydrogenated Amorphous Silicon Films for Excimer-Laser-Induced Crystallization
T. Nagao1,*), Y. Inouchi1), J. Tatemichi1), M. Hasumi2), T. Ueno2) and T. Sameshima2)
1) Nissin Ion Equipment Co., Ltd., JAPAN, 2) Tokyo University of Agriculture and Technology, JAPAN

P_9 Investigation of Low-temperature Oxidation of Si Substrates Using Chemical Solutions
H. Takahashi1), Y. Irie1,*), G. Shimizu1), Y. Iwazaki1) and T. Ueno1)
1) Tokyo University of Agriculture and Technology, JAPAN

P_10 Insights of Nanosheet Channel Thickness on Reliability Degradation of Thin-Film Transistor With Nanosheet Channel
W. C. -Y. Ma1,*), C. -J. Su1), K. -H. Kao1), T. -C. Cho1), J. -Q. Guo1), C. -J. Wu1), P. -Y. Wu1) and J. -Y. Hung1)
1) National Sun Yat-sen University, TAIWAN, 2) National Yang Ming Chiao Tung University, TAIWAN, 3) National Cheng Kung University, TAIWAN, 4) Taiwan Semiconductor Research Inst., TAIWAN

P_11 Impacts of Asymmetry Double Gate Structure on Reliability Degradation of Thin-Film Transistor With Nanosheet Channel
W. C. -Y. Ma1,*), C. -J. Su1), K. -H. Kao1), T. -C. Cho1), J. -Q. Guo1), C. -J. Wu1), P. -Y. Wu1) and J. -Y. Hung1)
1) National Sun Yat-sen University, TAIWAN, 2) National Yang Ming Chiao Tung University, TAIWAN, 3) National Cheng Kung University, TAIWAN, 4) Taiwan Semiconductor Research Inst., TAIWAN

P_12 Influence of PBTTT-C14 Crystallization on Photoresponse Characteristics of Organic Field-effect Transistor
P. -H. Fang1), P. -A. Cho1), J. Ruan1), H. -L. Cheng1) and W. -Y. Chou1,*)
1) National Cheng Kung University, TAIWAN

P_13 Hybrid Photosensitive Field Effect Transistor Based on Conjugated Polythiophene and Perovskite Nanocrystal
G. -W. Hsieh1,*), Y. -S. Zhou1), H. -J. Cheng1) and W. -S. Hu1)
1) National Yang Ming Chiao Tung University, TAIWAN

P_14 Potential of Nano-sheet Lateral pn-Junction Flexible Solar Panel
Y. Omura1,*)
1) Kansai University, JAPAN

P_15 Efficient Defect Passivation of Novel Quinoxaline-based Hole Transporting Materials for Perovskite Solar Cells
Y. -S. Lin1), N. -H. Chen1) and Y. J. Chang1,*)
1) Tunghai University, TAIWAN

P_16 Studies on RF Magnetron Sputtered FTO/n-ZnO/p-NiO/AgNW Transparent Solar Cells Devices
T. -C. Chen1), G. Balaji1), W. -S. Liu1,*), K. -J. Hu1), F. -W. Chiu1) and J. -H. Lin1)
1) Yuan Ze University, TAIWAN

P_17 Study of Water Resistance of GeO2 Films
T. Shibuya1), H. Saito1,*), Y. Iwazaki1) and T. Ueno1)
1) Tokyo University of Agriculture and Technology, JAPAN

P_18 Tunnel Thin-Film Transistor Featuring Ferroelectric Gate Stack for Synaptic Applications
W. C. -Y. Ma1,*), C. -J. Su1), K. -H. Kao1), T. -C. Cho1), J. -Q. Guo1), C. -J. Wu1), P. -Y. Wu1) and J. -Y. Hung1)
1) National Sun Yat-sen University, TAIWAN, 2) National Yang Ming Chiao Tung University, TAIWAN, 3) National Cheng Kung University, TAIWAN, 4) Taiwan Semiconductor Research Inst., TAIWAN
Sn-Doped Si Thin-Films on Insulator by Solid-Phase Crystallization
Y. Hanafusa1,*), K. Okamoto1) and T. Sadoh1)
1) Kyushu University, JAPAN

Excimer Laser Doping for PN Junction Formation with Extremely Low Thermal Budget
R. Aoki1,*), K. Katayama1), D. Nakamura1), H. Ikenoue1) and T. Sadoh1)
1) Kyushu University, JAPAN

Improved Carrier Mobility of Sn-Doped Ge Thin-Films (≤20 nm) by Post-Annealing for Thin-Film Transistor Application
T. Koga1), T. Nagano1), K. Moto2), K. Yamamoto1) and T. Sadoh1)
1) Kyushu University, JAPAN, 2) JSPS Research Fellow, JAPAN

Treatment Time Dependence of Graphene Oxide Reduction by Atomic Hydrogen Annealing
M. Hirata1), A. Fujibuchi1), K. Sumitomo1) and A. Heya1,*)
1) University of Hyogo, JAPAN

Bistable Resistive Switches fabricated by Unidirectional Floating Film Transfer Method
S. Sharma1,*), N Kumari2) and S. S. Pandey1)
1) Kyushu Institute of Technology, JAPAN, 2) Nara Advanced Institute of Science and Technology, JAPAN

Fabrication and Characterization of Oriented P3HT/CdS Hybrid Thin Films Prepared by Friction Transfer for Organic Photovoltaics
Y. Kurokawa1,*), S. Pradhan1), T. Kato2), S. Nagamatsu1) and S. S. Pandey1)
1) Kyushu Institute of Technology, JAPAN, 2) National Institute of Technology, JAPAN

Improved NiOx Surface Using Phosphonic Acid-based Self-assembled Monolayer Treatment toward Printed Light-emitting Diodes
S. Yamada1,*) H. Kajii1), M. Huang1), A. Okamoto1), H. Bai1), S. Toda2) and M. Kondow1)
1) Osaka University, JAPAN, 2) ULYAC-Osaka University, Joint Research Laboratory, JAPAN

Fabrication and Characterization of Inverted Organic Light-Emitting Diodes With Low Driving Voltage Utilizing Upconversion Process
M. Okuda1,*) T. Kinoshita1), T. Kobayashi1), H. Naito1) and T. Nagase1)
1) Osaka Metropolitan University, JAPAN

Vertical p-Channel Poly-Ge TFT for CMOS Application on Glass Substrates
K. Kusunoki1,*) K. Suzuki1), S Suzuki1) and A. Hara1)
1) Tohoku Gakuin University, JAPAN

CMOS Inverter with High-k 4-Terminal Poly-Si TFTs on Glass Substrates
K. Nomura1,*) and A Hara1)
1) Tohoku Gakuin University, JAPAN

Amorphous Ga-Al-O Thin Film Double-layer Memristor with Different Oxygen Density Fabricated by Mist CVD Method
R. Ito1,*) S. Sugisaki1), A. Dakeyama1), T. Matsuda2), H. Kawanishi1) and M. Kimura1)
1) Ryukoku University, JAPAN, 2) Kindai University, JAPAN

Withdrawn
Symposium 4: Advances in TFT technology for Stretchable/Flexible Devices (9:15~10:45)

Chairpersons: T. Nagase, Osaka Metropolitan University, JAPAN
               N. Saito, Kioxia Corporation, JAPAN

09:15-09:45  S4_1  Advanced Organic Thin-film Electronics for Non-Invasive Medical Applications (INVITED)
               T. Sekitani 1)
               1) Osaka University, JAPAN

09:45-10:15  S4_2  Solution Processed Oxide Semiconductors for Flexible Active-Matrix Sensors (INVITED)
               Y. Tang 1,2), Y. Wang 1,2), Y. Chen 1,2), D. Li 1,2), H. Ren 1,2), F. Li 1,2), G. Liu 1,2), R. Jin 1,2) and B. Zhu 2,3,*
               1) Zhejiang University, CHINA, 2) Westlake University, CHINA, 3) Westlake Institute for Advanced Study, CHINA

10:15-10:45  S4_3  Recent progress in flexible and Stretchable Backplane Technologies for Future Deformable dDisplay Applications (INVITED)
               M. Miyakawa 1,*), H. Tsuji 1), T. Takei 1), T. Yamamoto 2), Y. Fujisaki 1) and M. Nakata 1)
               1) NHK Science & Technology Research Laboratories, JAPAN, 2) NHK Foundation, JAPAN

― Break ―

Session 3: Neuromorphic and Emerging Devices (11:05~12:10)

Chairpersons: H. Naito, Osaka Metropolitan University, JAPAN
               A. Heya, University of Hyogo., JAPAN

11:05-11:30  3_1  Halide Perovskite and Metal Halide Memristors and Artificial Synapses for Neuromorphic Computing (INVITED)
               T. -K. Su 1), W. -K. Cheng 1), L. Yang 1), Z. -M. Shi 1), L. -W. Chen 1), W. -C. Wang 1) and H. -W. Lin 1,*
               1) National Tsing Hua University, TAIWAN

11:30-11:50  3_2  Application of Bayes Optimization and Machine-learning Regressions to Seek Fabrication Condition of a-In-Ga-Zn-O for Gas Sensor Applications
               A. Shimizu 1), K. Ide 1), T. Katase 1), H. Hiramatsu 1), H. Hosono 1) and T. Kamiya 1)
               1) Tokyo Institute of Technology, JAPAN

11:50-12:10  3_3  Sensitivity-Adjustable, Negatively Strain-Resistive Switch-Type Conductive Fibers for Textile-Based Stretchable Displays with Hidden-Pixel Structures
               W. K. Min 1,*), C. Won 1), D. H. Kim 1), S. Lee 1), J. Chung 1), S. Cho 1), T. Lee 1) and H. J. Kim 1)
               1) Yonsei University, KOREA

― Lunch ―

Session 4: OLED Technologies (13:40~14:40)

Chairpersons: C. -L. Lin, National Cheng Kung University, TAIWAN
               Y. -H. Yeh, ITRI, TAIWAN
13:40-14:00  4_1  Effect of Inserting 10 nm-thick mCP Layer on EL Properties for Typical TADF OLEDs
T. Mori1,*, R. Sato1, Y. Ichino1 and Y. Seike1
1) Aichi Institute of Technology, JAPAN

14:00-14:20  4_2  A Study on the Large Size AMOLED Display Backplane less Mask Process
I. Y. Chung1,2,*, G. Jin3 and H. Yoon1
1) Seoul National University of Science and Technology, KOREA, 2) Samsung Display Co., Ltd., KOREA

14:20-14:40  4_3  AMOLED Pixel Circuit Using P-type LTPS TFTs Suitable for Low Refresh Rate
Wearable Devices
C. -T. Chiu1,*, Y. -C. Chen1, P. -C. Lai2 and C.-L. Lin1
1) National Cheng Kung University, TAIWAN, 2) AU Optronics Corporation, TAIWAN

--- Coffee Break ---

Session 5 : Driving Circuits  (15:00～16:25)

Chairpersons:  R. Hattori, Kyushu University, JAPAN
               K. Omoto, Apple Inc., JAPAN

15:00-15:25  5_1  Thin-Film-Transistor Pixel Circuit Array on Glass for AMOLED and Micro-LED
Displays  (INVITED)
C. -L. Lin1,*, C. -Y. Huang1, Y. -J. Chen1, Y. -C. Chen1, S. -C. Chen1 and P. -C. Lai2
1) National Cheng Kung University, TAIWAN, 2) AU Optronics Corporation, TAIWAN

15:25-15:45  5_2  A New LTPS TFT-based 8T1C AMOLED Pixel Circuit for Low Refresh-rate Driving
K. C, Moon1,*, J. -H. Lee2 and M. Park2
1) Gachon University, KOREA, 2) Samsung Display, KOREA

15:45-16:05  5_3  Multiple-Threshold-Voltage-Compensation Driving Scheme Using the Dimming Period
To Stabilize the OLED Luminance at Low Gray Levels
J. -H. Lee1,*, K. -S. Kang1, J. -H. Park1, C. Park1 and S. -Y. Lee1
1) Seoul National University, KOREA

16:05-16:25  5_4  An LTPS-based Mini-LED Backlight Driving Circuit with Threshold Voltage Variations
and VSS I-R Rise Compensation
Y. -C. Chen1,*, W. -S. Liao1, M. -Y. Deng2 and C. -L. Lin1
1) National Cheng Kung University, TAIWAN, 2) AU Optronics Corp., TAIWAN

LATE NEWS  (16:25～16:55)

Chairpersons:  T. Nagase, Osaka Metropolitan University, JAPAN
               H. Kajii, Osaka University, JAPAN

16:25-16:40  L_1  Optoelectronic Characteristics of Gallium Oxide Deep Ultraviolet Photodetectors with
Symmetric and Asymmetric Metal Contacts
C. -Y, Tsay1,*, H. -M. Tsai1, P. Sittimart2, M. V. Sreenath3, T. Kusaba2 and T. Yoshitake2
1) Feng Chia University, TAIWAN, 2) Kyushu University, JAPAN

16:40-16:55  L_2  Novel Thin-Film Neuromorphic Devices Integrating Memristors and Capacitors
K. Yachida1,*, Y. Abe1, K. Sawai1, T. Matsuda3, H. Kawashishi1,2 and M. Kimura1,3
1) Ryukoku University, JAPAN, 2) Kindai University, JAPAN, 3) Nara Institute of Science and
Technology, JAPAN

Closing Remarks  (16:55～17:00)
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龍谷大学響都ホール校友会館
THE TWENTY-NINTH INTERNATIONAL WORKSHOP ON
ACTIVE-MATRIX FLATPANEL DISPLAYS AND DEVICES
— TFT TECHNOLOGIES AND FPD MATERIALS —
(AM-FPD ’23)

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