International Thin-Film Transistor Conference 2013

(ITC20139)

PROGRAM Book

March 1-2, 2013
Tokyo University
ORGANIZATION

Organizing Committee
- Chair: T. Someya (Univ. Tokyo, Japan)
- Co-Chair: E. Fortunato (FCT-UNL, Portugal)
- Co-Chair: J. Jang (Kyung Hee Univ., Korea)

Program Committee
- Chair: T. Kamiya (Tokyo Tech., Japan)
- Co-Chair: R. Ishihara (Delft Univ. Technol., Netherlands)
- Co-Chair: Sang-Hee Ko Park (ETRI, Korea)
- Co-Chair: Henning Sirringhaus (Univ. Cambridge, UK)
- T. Anthopoulos (Imperial College London, UK)
- Y. Bonnassieux (Ecole Polytechnique, France)
- I-C. Cheng (Natnl. Taiwan Univ., Taiwan)
- G. Dong (Tsinghua Univ. China)
- W. Eccleston (Univ. Liverpool, UK)
- M. Furuta (Kochi Univ. Technol., Japan)
- H. Gomes (Univ. Algarve, Portugal)
- X. Guo (Shanghai Jiao Tong Univ., China)
- M. Hatano (Tokyo Tech., Japan)
- S. Higashi ( Hiroshima Univ., Japan)
- M.P. Hong (Korea Univ., Korea)
- Y.T. Hong (Seoul Natnl. Univ., Korea)
- T. Kamata (AIST, Japan)
- H.J. Kim (Yonsei Univ., Korea)
- M. Kimura (Ryukoku Univ., Japan)
- Y. Kuo (Texas A&M Univ., USA)
- H. Kumomi (Tokyo Tech., Japan)
- S.Y. Lee (Cheongju Univ., Korea)
- R. Martins (FCT/UNL, Portugal)
- L. Mariucci (IFN - CNR, Italy)
- K. Matsumoto (Osaka Univ., Japan)
- N. Matsuo (Univ. Hyogo, Japan)
- G. Nakagawa (Industrial Technology Center of Nagasaki, Japan)
- M. Nakamura (NAIST, Japan)
- T. Noguchi (Univ. Ryukyu, Japan)
- A. Ohtomo (Tokyo Tech, Japan)
- T. Shiba (Hitachi, Japan)
· F. Templier (CEA, France)
· E. Tokumitsu (JAIST, Japan)
· Y. Uraoka (NAIST, Japan)
· Yung-Hui Yeh (ITRI, Taiwan)

Advisory Committee
· T. Asano (Kyushu Univ., Japan)
· P. Roca I Cabarrocas (CNRS, France)
· G. Fortunato (IMM – CNR Sez. Roma, Italy)
· N. Fruehauf (Univ. Stuttgart, Germany)
· M. Grundmann (Univ. Leipzig, Germany)
· M.K. Han (Seoul Natnl. Univ., Korea)
· W. Jackson (HP, USA)
· P. Migliorato (Univ. Cambridge, UK)
· W.I. Milne (Univ. Cambridge, UK)
· A. Nathan (Univ. College London, UK)
· J. Wager (Oregon State Univ., USA)
· S. Wagner (Princeton Univ., USA)

Local Organization Committee
· T. Hayashi (NTT, Japan)
· A. Ohtomo (Tokyo Tech, Japan)
· S. Sekitani (Tokyo Univ., Japan)
· T. Takenobu (Waseda Univ., Japan)
# TIME TABLE

### March 1, 2013

#### ROOM A

<table>
<thead>
<tr>
<th>Session (Chair)</th>
<th>Paper#</th>
<th>Author</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00</td>
<td>Registration</td>
<td>T. Someya</td>
</tr>
<tr>
<td>10:00</td>
<td>Opening</td>
<td>T. Someya</td>
</tr>
<tr>
<td>10:15</td>
<td>Plenary I</td>
<td>H. Hideo</td>
</tr>
<tr>
<td>11:05</td>
<td>1aAPL01</td>
<td>A. Nathan</td>
</tr>
<tr>
<td>11:55</td>
<td>Lunch</td>
<td></td>
</tr>
<tr>
<td>13:30</td>
<td>Oxide I</td>
<td>G.H. Gelinck</td>
</tr>
<tr>
<td>14:00</td>
<td>1aAO01</td>
<td>M. Furuta</td>
</tr>
<tr>
<td>14:15</td>
<td>1aAO02</td>
<td>H. Hwang</td>
</tr>
<tr>
<td>14:30</td>
<td>1aAO03</td>
<td>L. Petti</td>
</tr>
<tr>
<td>14:45</td>
<td>1aAO04</td>
<td>S. Pereira</td>
</tr>
<tr>
<td>15:00</td>
<td>Coffee break</td>
<td></td>
</tr>
<tr>
<td>15:30</td>
<td>General &amp; Nanocarbon (R. Ishihara)</td>
<td>H. Kimura</td>
</tr>
<tr>
<td>16:00</td>
<td>1pAO04</td>
<td>F. Nihey</td>
</tr>
<tr>
<td>16:30</td>
<td>1pAO05</td>
<td>S. Furuyama</td>
</tr>
<tr>
<td>16:45</td>
<td>1pAO06</td>
<td>T. Eto</td>
</tr>
<tr>
<td>17:00</td>
<td>1pAO07</td>
<td>K. Maehashi</td>
</tr>
<tr>
<td>17:15</td>
<td>Poster session (Chair: M. Furuta, M. Kimura)</td>
<td></td>
</tr>
<tr>
<td>19:30</td>
<td>Lunch</td>
<td></td>
</tr>
<tr>
<td>19:30</td>
<td>Move for Banquet</td>
<td></td>
</tr>
<tr>
<td>19:30</td>
<td>Banquet</td>
<td></td>
</tr>
<tr>
<td>22:00</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### March 2, 2013

#### ROOM A

<table>
<thead>
<tr>
<th>Session (Chair)</th>
<th>Paper#</th>
<th>Author</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:00</td>
<td>Registration</td>
<td>T. Someya</td>
</tr>
<tr>
<td>9:30</td>
<td>Plenary II (A. Nathan)</td>
<td>J.C. Sturm</td>
</tr>
<tr>
<td>10:15</td>
<td>2aAPL02</td>
<td>G.G. Mallilaras</td>
</tr>
<tr>
<td>11:00</td>
<td>Coffee Break</td>
<td></td>
</tr>
<tr>
<td>11:30</td>
<td>Si I (S. Higashi)</td>
<td>M.-B. Tayeb</td>
</tr>
<tr>
<td>12:00</td>
<td>2aAO01</td>
<td>J. Zhang</td>
</tr>
<tr>
<td>12:15</td>
<td>2aAO02</td>
<td>T. Shuto</td>
</tr>
<tr>
<td>12:30</td>
<td>Lunch</td>
<td></td>
</tr>
<tr>
<td>14:15</td>
<td>Si II (M.-B. Tayeb)</td>
<td>S.-J. Yang</td>
</tr>
<tr>
<td>14:30</td>
<td>2pAO04</td>
<td>N. Yamauchi</td>
</tr>
<tr>
<td>14:45</td>
<td>2pAO05</td>
<td>S. Morisaki</td>
</tr>
<tr>
<td>15:00</td>
<td>Coffee Break</td>
<td></td>
</tr>
<tr>
<td>15:30</td>
<td>Oxide II (M. Furuta)</td>
<td>K. Domen</td>
</tr>
<tr>
<td>15:45</td>
<td>2pAO06</td>
<td>S. Urakawa</td>
</tr>
<tr>
<td>16:00</td>
<td>2pAO07</td>
<td>J. Jang</td>
</tr>
<tr>
<td>16:30</td>
<td>2pAO08</td>
<td>Y. Hayashi</td>
</tr>
<tr>
<td>17:00</td>
<td>Closing</td>
<td>T. Someya</td>
</tr>
<tr>
<td>17:30</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### ROOM B

<table>
<thead>
<tr>
<th>Session (Chair)</th>
<th>Paper#</th>
<th>Author</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:00</td>
<td>Registration</td>
<td>T. Someya</td>
</tr>
<tr>
<td>11:00</td>
<td>Coffee Break</td>
<td></td>
</tr>
<tr>
<td>11:30</td>
<td>Organic I (D.-H. Kim)</td>
<td>W. Hu</td>
</tr>
<tr>
<td>12:00</td>
<td>2pBO01</td>
<td>T. Yokota</td>
</tr>
<tr>
<td>12:15</td>
<td>2pBO02</td>
<td>L. Feng</td>
</tr>
<tr>
<td>12:30</td>
<td>Lunch</td>
<td></td>
</tr>
<tr>
<td>13:45</td>
<td>Organic II (T. Sekitani)</td>
<td>D.-H. Kim</td>
</tr>
<tr>
<td>14:15</td>
<td>2pBO03</td>
<td>J. Soeda</td>
</tr>
<tr>
<td>14:30</td>
<td>2pBO04</td>
<td>I. Osaka</td>
</tr>
<tr>
<td>14:45</td>
<td>2pBO05</td>
<td>T. Schmaltz</td>
</tr>
<tr>
<td>15:00</td>
<td>Coffee Break</td>
<td></td>
</tr>
<tr>
<td>15:30</td>
<td>Organic III (W. Hu)</td>
<td>J. Takeya</td>
</tr>
<tr>
<td>16:00</td>
<td>2pBO06</td>
<td>G. Fortunato</td>
</tr>
<tr>
<td>16:15</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
PROGRAM

March 1

09:00-10:00  Registration

10:00-10:15  Opening

Oral Session: Plenary I

10:15-11:05  1aAPL01  Current Status of Oxide TFTs and Their Application to OLEDs  (INVITED)
H. Hosono  
Tokyo Institute of Technology

11:05-11:55  1aAPL02  Amorphous Oxide Semiconductor TFTs for Displays and Imaging  (INVITED)
A. Nathan 1) and S. Lee 2)
1) Department of Engineering, Cambridge University, Cambridge CB3 0FA, UK  2) London Centre for Nanotechnology, University College London, London WC1H 0AH, UK

11:55-13:30  Lunch

Oral Session: Oxide I

13:30-14:00  1pAI02  Low-Temperature, Flexible Metal Oxide Thin-Film Transistors on This Plastic Foils – for Displays and beyond  (INVITED)
G.H. Gelinck 1,*)
1) Holst Centre/TNO, Eindhoven, The Netherlands

14:00-14:15  1aAO01  High Performance A-InGaZnOx Thin-Film Transistors Fabricated by Solution-Based Atmospheric Pressure Deposition Method
M. Furuta, T. Kawaharamura, T. Uchida, D. Wang and M. Sanada
Institute for Nanotechnology, Kochi University of Technology, JAPAN

14:15-14:30  1aAO02  High Performance Ink-Jet Printed Tin-Oxide Thin-Film Transistor
H.r. Hwang 1), C. Avis 2), Y.G. Kim 3) and J. Jang 4)
Department of Information Display and Advanced Display Research center, Kyung Hee University, Korea

14:30-14:45  1aAO03  Influence of Mechanical Strain on Flexible IGZO-Based Ferroelectric Memory TFTs
L. Petti 1,*, N. Muenzenrieder 1), C. Zysset 1), T. Kinkeldei 1), G.A. Salvatore 1) and G. Troester 1)
1) Electronics Laboratory, Swiss Federal Institute of Technology, Zurich, 8092, SWITZERLAND

14:45-15:00  1aAO04  Flexible Electrolyte-Gated Electrochromic Transistors Based on WO3
S. Pereira, P. Barquinha, L. Pereira, R. Martins and E. Fortunato*)
1) CENIMAT/I3N, Departamento de Ciencia dos Materiais, Faculdade de Ciencias e Tecnologia, FCT, Universidade Nova de Lisboa and CEMOP-UNINOVA, 2829-516 Caparica, Portugal

15:00-15:30  Coffee Break

Oral Session: General

15:30-16:00  1pAI03  Most Recent Technologies for Mobile Displays  (INVITED)
H. Kimura 1), Y. Hisatake 1), T. Kawamura 2) and Y. Takubo 3)
1) R&D Dept.,Japan Display Inc.  2) Panel Design Dept.,Japan Display Inc.
Oral Session: Nanocarbon

16:00-16:30 1pAI04 Carbon-Nanotube Thin-Film Transistors for Printed Electronics (INVITED)
F. Nihey
Technology Research Association for Single Wall Carbon Nanotubes (TASC), c/o National Institute of Industrial Science and Technology (AIST), Tsukuba 305-8565, JAPAN

16:30-16:45 1pAO05 Fluorinated Graphene FETs Controlled by Ionic Liquid Gate
S. Furuyama1,*, K. Tahara1, T. Iwasaki1, A. Matsutani2 and M. Hatano1
1) Department of Physical Electronics, Tokyo Institute of Technology, Tokyo 152-8552, JAPAN
2) Semiconductor and MEMS Processing Center, Technical Department, Tokyo Institute of Technology, Tokyo 226-8503, JAPAN

16:45-17:00 1pAO06 Graphene-Channel FET with δ-Doped Diamondlike Carbon Top-Gate Dielectrics
T. Eto1,*, S. Takabayashi1, Y. Kurita1, M. Yang2, H. Hayashi2, Radek JeElko2, S. Ogawa2, Y. Takakuwa2, T. Suemitsu1, T. Otsuji1
1) RIEC, Tohoku University, JAPAN
2) IMRAM, Tohoku University, JAPAN

17:00-17:15 1pAO07 Chemical and Biological Sensing Based on Horizontally Aligned Carbon Nanotube Field-Effect Transistors
K. Maehashi1, S. Okuda, S. Okamoto, Y. Ohno, K. Inoue and K. Matsumoto
The Institute of Scientific and Industrial Research, Osaka University

17:15-19:15 Poster presentation

19:30-22:00 Banquet
Poster presentations

March 1 17:15 – 19:15

Crystal growth
1pLP01 Smoothness of Crystallized Si Films on Flexible Glass Using Blue-Multi-Laser-Diode-Annealing
T. Okada1, T. Nishinohara1, K. Yağ1, T. Noguchi1 and T. Itoh2
1) Faculty of Engineering, University of the Ryukyus, JAPAN 2) IDC, Itoh Device Consulting, JAPAN

1pLP02 Effect of Photon Energy in Low-Temperature Crystallization of A-Ge and A-SiGe Using Soft X-Ray Source
Y. Maruyama1,*, S. Kino1, A. Heya1, N. Matsuo1, S. Amano2, S. Miyamoto2, K. Kanda2, T. Mochizuki2, K. Toko3, T. Sadoh3 and M. Miyao3
1) Department of Materials Science and Chemistry, University of Hyogo, 2167 Sysyo Himeji Hyogo, 671-2280 2) LASTI, University of Hyogo, 3-1-2 Koto Kamigori Ako Hyogo, 678-1205 3) Faculty of Information Science and Electrical Engineering, Kyusyu University, 744 Motooka, Fukuoka, 819-0395

Device
1pLP03 A Novel LTPS TFT Pixel Circuit for High Definition AMOLED Display
S. Lee1,*, J. Lee1 and M. Han4
1) Department of Electrical Engineering and Computer Science, Seoul National University, 599 Gwanak-ro, Gwanak-gu, Seoul 151-742, Korea

1pLP04 (No show)
1pLP05 (Withdrawn)

Si
1pLP06 Reliability Study on The Corner Effects of Gate-All-Around Polycrystalline Silicon Thin-Film Transistors
H. Liu1, S. Chiou1,*, F. Wang1 and T. Kang2
1) Department of Electrical Engineering and Graduate Institute of Optoelectronic Engineering, National Chung Hsing University, Taichung 402, Taiwan, ROC 2) Department of Electronic Engineering, Feng-Chia University, Taichung 407, Taiwan, ROC

1pLP07 Fabrication of Poly-Si Nanowire TFTs with Short Channel Length
H. Lin1,2,*, H. Chuang1, K. Lee1, C. Lai3 and T. Huang1
1) Department of Electronics Engineering and Institute of Electronics, National Chiao Tung University, Taiwan 2) National Nano Device Laboratories, Taiwan 3) Department and Graduate Institute of Electronic Engineering, Chang Gung University, Taiwan

1pLP08 Advanced Si Photo-Sensor in TFT System for FPD by BLDA
S. Chinen1,*, C.J. Koswaththage1, K. Sugihara1, T. Okada1, T. Noguchi1, C. Keum2, B. Bae2 and T. Ohachi3
1) Faculty of Engineering, University of the Ryukyus, Okinawa, Japan 2) College of New IT Engineering, Hoseo University, Chungnam, Korea 3) IRE Lab., D-egg, Doshisha University, Kyoto, Japan

1pLP09 Integrated Potentiostat Using TFTs with Electrochemical Cells - Confirmation of Multiple Simultaneous Measurements -
Y. Imuro, Y. Sagawa and M. Kimura4
Department of Electronics and Informatics, Ryukoku University, JAPAN

1pLP10 Trap Densities at MOS Interface and in Poly-Si Film of SPC TFTs with Thermal Annealing Before and After Formation of Gate Insulator
M. Kimura1,2,* and Y. Hiroshima2
1) Department of Electronics and Informatics, Ryukoku University, JAPAN 2) Visual Products Operations Division, Seiko Epson Corporation, JAPAN

1pLP11 (Withdrawn)
1pLP12  (Withdrawn)

**Organic**

1pLP13  (Withdrawn)
1pLP14  (Withdrawn)
1pLP15  (No show)
1pLP16  Admittance Study of Lateral Transport in DNTT-Based MIS Capacitors
T. Hayashi\(^1,^2\), N. Take\(^3\), H. Tamura\(^1\), K. Muraki\(^1\), T. Sekitani\(^2,^3\) and T. Someya\(^2,^3\)
\(^1\) NTT Basic Research Laboratories, NTT Corporation, 3-1 Morinosato-Wakamiya, Atsugi, 243-0198, JAPAN  
\(^2\) Department of Electrical and Electronic Engineering, School of Engineering, The University of Tokyo, 7-3-1 Hongo, Bunkyo-ku, Tokyo, 113-8656, JAPAN  
\(^3\) Exploratory Research for Advanced Technology (ERATO), Japan Science and Technology Agency JST, Tokyo, JAPAN

1pLP17  Displacement Current Measurement of an n-Type Organic Semiconductor: 2:3.5:6-Bis(1,1-dicyanoethylene-2,2-dithiolate)quinone
Y. Azuma\(^1,^2\), J. Xiao\(^2,^3\), Y. Liu\(^2\), G. Li\(^2\), F. Wei\(^2\), K.J. Tan\(^2\), C. Kloc\(^2\), H. Zhang\(^2\), Q. Zhang\(^2\) and Y. Majima\(^1\)
\(^1\) Materials and Structures Laboratory, Tokyo Institute of Technology, 4259 Nagatsuta-cho, Midori-ku Yokohama, 226-8503 JAPAN  
\(^2\) School of Materials Science and Engineering, Nanyang Technological University, 50 Nanyang Avenue, Singapore 639798, SINGAPORE  
\(^3\) Key Laboratory of Chemical Biology of Hebei Province, College of Chemistry and Environmental Science, Hebei University, Baoding 071002, P. R. CHINA

1pLP18  Integration of Solution Processed Organic Thin-Film Transistors with Diodes and Capacitors without Additional Fabrication Processes
W. Tang\(^1,^2\), L. Feng, Y. Chen, J. Zhao and X. Guo  
Department of Electronic Engineering, Shanghai Jiao Tong University, Shanghai 200240, China

1pLP19  Current Spreading Effects in Staggered Fully Printed P-Channel Organic Thin Film Transistors with Schottky Source-Drain Contacts
M. Rapisarda\(^1,^2\), A. Valletta\(^1\), G. Fortunato\(^3\), S. Jacob\(^2\), R. Coppard\(^2\) and L. Mariucci\(^1\)
\(^1\) CNR-IMM, Via del Fosso del Cavaliere 100, 00133, Roma, Italy  
\(^2\) CEA/Liten/DTNM/LCEI, 17 rue des Martyrs, Grenoble, 38054 cedex 9, France

1pLP20  Solvent-Free Printing of Flexible Organic Thin Film Transistors by Thermal Press Method
M. Sakai\(^1,^2\), T. Okamoto\(^2\), J. Hayashi\(^3\), S. Yamaguchi\(^1\), S. Kuniyoshi\(^1\), H. Yamauchi\(^1\), K. Kudo\(^1\), Y. Sadamitsu\(^2\) and M. Hamada\(^2\)
\(^1\) Department of Electrical and Electronic Engineering, Chiba University, JAPAN  
\(^2\) Nippon Kayaku Co., Ltd., JAPAN

1pLP21  Organic TFTs on 1μm-Thick Parylene Substrate
J. Miura\(^1,^2\), T. Sekitani\(^1,^2\), T. Yokota\(^1,^2\), K. Kuribara\(^1\), T. Tokuhara\(^1,^2\) and T. Someya\(^1,^2\)
\(^1\) Department of Electrical and Engineering and Information Systems, School of Engineering, The University of Tokyo, 7-3-1 Hongo, Bunkyo-ku, Tokyo 113-8656, JAPAN  
\(^2\) Exploratory Research for Advanced Technology (ERATO), Japan Science and Technology Agency (JST), 2-11-16, Yayoi, Bunkyo-ku, Tokyo 113-0032, JAPAN

1pLP22  Fully Solution-Processed Organic Integrated Circuits with Printed Electrodes
Y. Takeda\(^1,^2,^3\), Y. Yoshimura\(^1\), Y. Kobayashi\(^1,^2\), K. Fukuda\(^1,^2\), D. Kumaki\(^1,^2\) and S. Tokito\(^1,^2\)
\(^1\) Research Center for Organic Electronics, Yamagata University, JAPAN  
\(^2\) Graduate School of Science and Engineering, Yamagata University, JAPAN

1pLP23  High-Performance Polymer TFTs by Controlling Semiconducting Polymer / Gate Insulator Interface
T. Minamikawa\(^1\), M. Ito\(^3\), S. Oku\(^1,^2\), K. Fukuda\(^1,^2\), D. Kumaki\(^1,^2\), M. Mizukami\(^1,^2\) and S. Tokito\(^1,^2\)
\(^1\) Graduate School of Science and Engineering, Yamagata University, JAPAN  
\(^2\) Research Center for Organic Electronics, Yamagata University, JAPAN  
\(^3\) Axahi Glass Co. Ltd., JAPAN

1pLP24  Design Rules for Elastomeric Interconnects Enabling Stretchable Organic Transistor Active Matrix Arrays
N. Matsuhisa\(^1,^2\), H. Hirai\(^3\), T. Yokota\(^1\), T. Sekitani\(^1,^2\) and T. Someya\(^1,^2\)
\(^1\) Department of Electrical Engineering and Information Systems, Department of Applied Physics, School of Engineering, The University of Tokyo, 7-3-1 Hongo, Bunkyo-ku Tokyo 113-8656, JAPAN  
\(^2\) Exploratory Research for Advanced Technology (ERATO), Japan Science and Technology Agency JST, Tokyo, JAPAN
**Nanocarbon**

1pLP25  (No show)

1pLP26  **Study on Carrier Behavior in DNA Memory Transistor**
S. Maeno$^{1,2}$, N. Matsuo$^3$, K. Yamana$^1$, A. Heya$^1$ and T. Takada$^1$

1$^1$) Department of Materials Science & Engineering, University of Hyogo
1$^2$) Center for Functional Materials, Åbo Akademi University

1pLP27  **Electric Double Layer Transistors of Aligned Carbon Nanotube Thin Film**
Y. Wada$^{1,2}$, J. Pu$^{1}$, Y. Takagi$^{2,3}$, K. Yanagi$^{2}$ and T. Takenobu$^{2}$

1$^1$) Department of Physics, Waseda University, Tokyo 169-8555, JAPAN
1$^2$) Department of Applied Physics, Graduate School of Advanced Science and Engineering, Waseda University, Tokyo 169-8555, JAPAN
1$^3$) Department of Physics, Tokyo Metropolitan University, Hachioji 192-0397, JAPAN

1pLP28  **Bending Properties of Single-Walled Carbon Nanotube Film Transistors**
H. Hamahata$^1$, Y. Nobusa$^3$, Y. Yomogida$^1$, K. Yanagi$^3$, Y. Iwasa$^3$ and T. Takenobu$^1$

1$^1$) Department of Applied Physics, Waseda University, Shinjuku 169-8555, Japan
1$^2$) Department of Physics, Tokyo Metropolitan University, Hachioji 192-0397, Japan
1$^3$) QPEC, School of Engineering, The University of Tokyo, Bunkyo 113-8656, Japan

1pLP29  **Inkjet Printing of Aligned Carbon-Nanotube Thin Films**
Y. Takagi$^1$, Y. Nobusa$^3$, S. Gocho$^1$, H. Kudou$^1$, K. Yanagi$^2$, H. Kataura$^1$ and T. Takenobu$^1$

1$^1$) Department of Applied Physics, Waseda University, Shinjuku 169-8555, JAPAN
1$^2$) Department of Physics, Tokyo Metropolitan University, Hachioji 192-0397, JAPAN
1$^3$) Nanotechnology Research Institute, AIST, Tsukuba, Ibaraki 305-8562, JAPAN

1pLP30  **Fabrication of Graphene Field-Effect Transistors Using Laser Irradiation**
The Institute of Scientific and Industrial Research, Osaka University, JAPAN

1pLP31  **Organic Thin-Film Memory Transistors Based on C$_{60}$ Charge Storage Units in Dielectric Monolayers**
A. Khassanov$^{1,2}$, T. Schmaltz$^1$, A. Vorobiev$^2$, A. Hirsch$^3$ and M. Halik$^1$

1$^1$) Organic Materials and Devices - Institute of Polymer Materials, Friedrich-Alexander University of Erlangen, GERMANY
1$^2$) European Synchrotron Radiation Facility, Grenoble, FRANCE
1$^3$) Institute of Organic Chemistry II, Friedrich-Alexander University of Erlangen, Erlangen GERMANY

**Oxide**

1pLP32  **Macrocellulose-Based Ionogels for Low-Voltage Zno Circuits on Paper**
S. Thiemann$^{1,3}$, P. Petterson$^1$, S. Sachnov$^1$, P. Waasserscheid$^1$, R. Csterbacka$^3$, J. Zaumseil$^1$

1$^1$) Institute of Polymer Materials, Group Nanomaterials for Optoelectronics, Friedrich-Alexander Universität Erlangen-Nürnberg, Martensstraße 3, D-91058 Erlangen, Germany
1$^2$) Department of Chemical and Bioengineering, Friedrich-Alexander Universität Erlangen-Nürnberg, Eglerlandstraße 3, D-91058 Erlangen, Germany
1$^3$) Physics, Department of Natural Sciences and Center for Functional Materials, Åbo Akademi University, A8 Porthansgatan 3, 20500 Turku, Finland

1pLP33  **Zinc Oxide Film Growth Using High-Energy H$_2$O Generated by A Catalytic Reaction on Pt Nanoparticles**
T. Takeuchi, N. Yamaguchi, E. Nagatomi, S. Satomoto, T. Kato and K. Yasui$^1$
Nagaoka University of Technology

1pLP34  **Gravure-Printed Metal-Oxide Materials for TFTs**
Jaakko Leppäniemi$^{1,2}$, Kimmo Ojanperä$^{1,2}$, T. Kololuoma$^2$, H. Majumdar$^1$, A. Alastalo$^1$

1$^1$) VTT Technical Research Centre of Finland, Tietotie 3, 02150 Espoo, Finland
1$^2$) VTT Technical Research Centre of Finland, Kaitoväylä 1, PL 1100, 90571 Oulu, Finland

1pLP35  (Withdrawn)

1pLP36  **P-Type Transistors and Circuits Based on Transparent Inorganic Semiconductor Copper(I) Thiocyanate Processed From Solution at Room Temperature**
P. Pattanasattayavong$^{1,2}$, N. Yaacobi-gross$^1$ and T.D. Anthopoulos$^1$

1$^1$) Centre for Plastic Electronics and Department of Physics, Imperial College London, London SW7 2AZ, United Kingdom

1pLP37  **TFTs Based on ZnO Nanoparticles –The Influence of Particle Distribution and Stabilizing
Agents on The Electrical Performance
J. Hirschmann1,2) and M. Halik1)
1) Organic Materials & Devices - Institute of Polymer Materials, University of Erlangen N?rnberg, GERMANY

1LP38 Interface Structure Analysis of Cu2O Films Fabricated by Low Temperature Process
F. Ran1), M. Taniguti1), T. Kamiya1) and H. Hosono2)
1) Materials and Structures Laboratory, Tokyo Institute of Technology, 4259 Nagatsuta, Midori-ku, Yokohama 226-8503, Japan. 2) Frontier Research Center, Tokyo Institute of Technology, 4259 Nagatsuta, Midori-ku, Yokohama 226-8503, Japan

1LP39 Effects of Oxygen Partial Pressure for Deposition of Magnesium Oxide As Insulator for ZnO-Thin Film Transistor Using A RF-Magnetron Sputter Technique
J.H. Lee1), H.S. Kim1), N.W. Jang2) and Y. Yun3)
1) Major of Semiconductor Physics, Korea Maritime University, Busan 606-791, Korea 2) Division of Electrical and Electronics Engineering, Korea Maritime University, Busan 606-791, Korea 3) Department of Radio Communication Engineering, Korea Maritime University, Busan 606-791, Korea

1LP40 (Withdrawn)

1LP41 Annealing Temperature Effect on Device Performances of Solution-Derived InZnO Thin-Film Transistors
Y. Osada1), Y. Ishikawa, L. Lu and Y. Uraoka
Information Device Science Laboratory, Graduate School of Materials Science, Nara Institute of Science and Technology, JAPAN

1LP42 Influence of Front- and Back-Channel Traps on Electrical Properties of Oxide TFTs with Various Channel Thicknesses
J. Jiang1), D. Wang1) and M. Furuta1,2)
1) Environmental Science and Engineering, Kochi University of Technology, Kami, Kochi 782-8502, JAPAN. 2) Institute for Nanotechnology, Kochi University of Technology, Kami, Kochi 782-8502, JAPAN

1LP43 The Effect of Strontium Addition on Zinc Tin Oxide Thin Film Transistors Fabricated by Solution Process
Y.G. Kim1), C. Avis1) and J. Jang1)
1) Information Display and Advanced Display Research Center, Kyung Hee University, Seoul, Korea

1LP44 High Etching Resistance Amorphous Zn-Sn-O Thin Film Transistors with In-Free Transparent Electrodes
Y. Tsai1), P. Hsu2), P. Liu1), Y. Huang1) and H.D. Shieh1)
1) Display Institute 2) Department of Photonics & Institute of Electro-Optical Engineering

1LP45 (No show)

1LP46 Effect of Surface Roughness on The Electrical Characteristics of High-K Sm2O3 Dielectric Amorphous-InGaZnO TFTs
F. Chen1), C. Chen1), Y. Tsai1), C. Su1), J. Her2), Y.H. Matsuda3) and T. Pan1,7)
1) Department of Electronics Engineering, Chang Gun University, Taoyuan 333, Taiwan, R. O. C. 2) Division of Natural Science, Center for General Education, Chang Gun University, Taoyuan 333, Taiwan, R. O. C. 3) Institute for Solid State Physics, The University of Tokyo, Chiba 277-8581, Japan

1LP47 Influence of Polysilsesquioxane-Based Passivation Layer on The Electrical Characteristics and Stability of A-IGZO Thin Film Transistors
J.P. Bermundo1), Y. Ishikawa1), H. Yamazaki2) and Y. Uraoka1)
1) Information Device Science Laboratory, Nara Institute of Science and Technology, JAPAN 2) AZ Electronic Materials Manufacturing Japan K.K., JAPAN

1LP48 (Withdrawn)

1LP49 Analysis of IGZO Thin-Film Transistors by XPS and Relation with Electrical Characteristics
T.T.T. Nguyen1), O. Renault, B. Aventurier, G. Rodriguez, FranCois Templier
CEA-LETI, Minatrac Campus, 17 Rue des Martyrs, 38054 Grenoble, FRANCE

1LP50 Contact Effects in Amorphous InGaZnO Thin Film Transistors
A. Valletta1), G. Fortunato1), L. Mariucci1), P. Barquinha2), R. Martins2) and E. Fortunato2)
1) CNR-IMM, Via del Fosso del Cavaliere 100, Roma, ITALY 2) CENIMAT/I3N, Departamento de Ciencia dos Materiais, Faculdade de Ciencias e Tecnologia, FCT, Universidade Nova de Lisboa and CEMOP-UNINOVA, 2829-316 Caparica, Portugal
Dual Gate A-IGZO TFT Circuits with Load TFT Having Floating Top Gate Metal
M.J. Seok\textsuperscript{1)} and J. Jang\textsuperscript{1)}
\textsuperscript{1)} Department of Information Display and Advanced Display Research center, Kyung Hee University, Korea

(Withdrawn)

Mobility Enhancement of Amorphous Indium-Gallium-Zinc Oxide Thin Film Transistors
T.L. Chen\textsuperscript{1,\textdagger}, H.Y. Lin\textsuperscript{1)}, Y.T. Chen\textsuperscript{1)}, K.C. Huang\textsuperscript{1)}, C.H. Chou\textsuperscript{2)}, H.H. Lin\textsuperscript{3)} and C.W. Liu\textsuperscript{1,\textdagger\textsterling)}
\textsuperscript{1)} Department of Electrical Engineering and Graduate Institute of Electronic Engineering, National Taiwan University, Taipei, Taiwan\textsuperscript{2)} Chimei Innolux Corporation, Tainan, Taiwan\textsuperscript{3)} Department of Electrical Engineering and Graduate Institute of Photonics and Optoelectronics, National Taiwan University, Taipei, Taiwan

Effects of High-Temperature Annealing and Hydrogen on Operation Characteristics of A-InGaZnO TFTs
Y. Hanyu\textsuperscript{1,\textdagger)}, K. Abe\textsuperscript{1)}, K. Domen\textsuperscript{1)}, K. Nomura\textsuperscript{2)}, T. Kamiya\textsuperscript{1)} and H. Hosono\textsuperscript{1,2)}
\textsuperscript{1)} Materials & Structures Laboratory, Tokyo Institute of Technology, Yokohama, JAPAN\textsuperscript{2)} Frontier Research Center, Tokyo Institute of Technology, Yokohama, JAPAN

(Withdrawn)
March 2 (ROOM A)

09:00-09:30 Registration

Oral Session: Plenary II (ROOM A)

09:30-10:15 2aAPL01  Hybrid Architectures and Implementation For Intelligent Electronic Wallpaper Systems (INVITED)
Princeton University

10:15-11:00 2aAPL02  High Performance Organic Electrochemical Transistors for In Vivo Recordings (INVITED)
G.G. Malliaras
1) Department of Bioelectronics, Centre Microelectronique de Provence

11:00-11:30 Coffee Break

Oral Session: Si I

11:30-12:00 2aAI01  Mechanical Behavior of Microcrystalline Silicon TFTs Fabricated on PEN Sheets (INVITED)
T. Mohammed-brahim1) and S. Janfaoui
Department of Microelectronics & Microsensors, IETR, Rennes 1 University

12:00-12:15 2aAO01  Single-Grain Si TFTs Fabricated From Sputtered Si on A Polyimide Substrate
J. Zhang1), M.v.d. Zwan1) and R. Ishihara1)
1) Delft University of Technology, the Netherlands

12:15-12:30 2aAO02  High-Density Room-Temperature Bonding of LSI Chips on Plastic Film Using Cone Bump
T. Shuto1), K. Iwanabe1) and T. Asano1)
1) Graduate School of Information Science and Electrical Engineering, Kyushu University, JAPAN

12:30-14:15 Lunch

Oral Session: Si II

14:15-14:30 2pAO03  A Novel Four-Masks Bottom-Gated Poly-Si Thin-Film Transistor With Current and Electric Field Split RSD Design
S. Yang1), Z. Lin and F. Chien
Department of Electronic Engineering, Feng Chia University, Taichung 407, Taiwan

14:30-14:45 2pAO04  Fabrication Energy Evaluation of Low Temperature Poly-Silicon Thin-Film Transistor
N. Yamauchi1), T. Itoh2) and T. Noguchi3)
1) Graduate School of Information, Production, and Systems, Waseda University, Japan 2) Itoh Device Consulting, Japan 3) University of Ryukyus, Japan

14:45-15:00 2pAO05  Improvement in Characteristic Variability of Thin Film Transistors Using Grain Growth Control by Micro Thermal Plasma Jet Irradiation to Amorphous Silicon Strips and CMOS Circuit Operation at Supply Voltage of 5V
S. Morisaki1), S. Hayashi, Y. Fujita and S. Higashi
Graduate School of Advanced Sciences of Matter, Hiroshima University, JAPAN

15:00-15:30 Coffee Break
Oral Session: Oxide II

15:30-15:45 2pAO06 Positive-Bias Stress Test on A-IGZO TFT: Annealing Temperature Dependence
K. Domen\textsuperscript{1,*}, T. Miyase\textsuperscript{1}, K. Abe\textsuperscript{1}, T. Kamiya\textsuperscript{1} and H. Hosono\textsuperscript{1,2)
\textsuperscript{1) Materials and Structures Laboratory, Tokyo Institute of Technology, JAPAN \textsuperscript{2) Frontier Research Center, Tokyo Institute of Technology, JAPAN}

15:45-16:00 2pAO07 Degradation Phenomena in Amorphous Oxide Thin-Film Transistor by Self-Heating Effect
S. Urakawa\textsuperscript{1,*}, S. Tomai\textsuperscript{2}, Y. Ueoka\textsuperscript{1}, H. Yamazaki\textsuperscript{1}, M. Kasami\textsuperscript{2}, K. Yano\textsuperscript{2}, D. Wang\textsuperscript{3}, M. Furuta\textsuperscript{3}, M. Horita\textsuperscript{1,4}, Y. Ishikawa\textsuperscript{1,4} and Y. Uraoka\textsuperscript{1,2)
\textsuperscript{1) Nara Institute of Science and Technology, 8916-5, Takayama, Ikoma, Nara 630-0192, Japan \textsuperscript{2) Advanced Technology Research Lab., Idemitsu Kosan Co., Ltd., Sodegaura, Chiba 299-0293, Japan \textsuperscript{3) Environmental Science and Engineering, Kochi University of Technology, Kami, Kochi 782-8502, Japan \textsuperscript{4) CREST, Japan Science and Technology Agency, Honcho, Kawaguchi, Saitama 332-0012, Japan}

16:00-16:30 2pAI03 Origins of Light and Bias Stress Instabilities in A-IGZO Thin-Film Transistors (INVITED)
J. Jang
Department of Information Display, and Advanced Display Research Center

16:30-17:00 2pAI04 On-chip BEOL (back-end-of-line) Metal-oxide Transistors, Connecting "Micro Digital Intelligence" to “High-voltage” Real-world systems (INVITED)
Y. Hayashi\textsuperscript{1,*}, K. Kaneko, H. Sunamura, M. Narihiro, J. Kawahara, N. Igarashi and M. Hane
LSI Research Laboratory, Renesas Electronics Corp.

17:00-17:30 Closing (ROOM A)
March 2 (ROOM B except for Plenary II and Closing)

09:00-09:30  Registration

Oral Session: Plenary II (ROOM A)
09:30-10:15  2aAPL01  Hybrid Architectures and Implementation For Intelligent Electronic Wallpaper Systems  (INVITED)
Princeton University

10:15-11:00  2aAPL02  High Performance Organic Electrochemical Transistors for In Vivo Recordings  (INVITED)
G.G. Malliaras

1) Department of Bioelectronics, Centre Microelectronique de Provence

11:00-11:30  Coffee Break

Oral Session: Organic I  (ROOM B)
11:30-12:00  2aBI01  1-μm-thick, ultraflexible organic amplifier for bio-medical applications  (INVITED)
Tsuyoshi Sekitani,1,2,*) Tomoyuki Yokota,1) Naoji Matsunhisa1), Martin Kaltenbrunner1,2), Hiroshi Fuketa1,2), Makoto Takamiya2,4), Takayasu Sakura1,2, Takao Someya1,2)

1) Department of Electric and Electronic Engineering, Department of Applied Physics, School of Engineering, Japan
2) Exploratory Research for Advanced Technology (ERATO), Japan Science and Technology Agency (JST), Japan
3) Institute of Industrial Science, University of Tokyo, Japan
4) VLSI Design and Education Center (VDEC), University of Tokyo, Japan

12:00-12:15  2aBO01  Low-Voltage Organic N-Channel Thin-Film Transistors Based on A Fluorinated Phenylethylated Naphthalenetetracarboxylic Diimide Semiconductors
T. Yokota,1), T. Sekitani1,2), U. Zschieschang3), H. Klauck3), B.J. Jung4), H.E. Katz4) and T. Someya1,2)

1) Department of Electric and Electronic Engineering, Department of Applied Physics, School of Engineering, Japan
2) Exploratory Research for Advanced Technology (ERATO), Japan Science and Technology Agency (JST), Japan
3) Max Planck Institute for Solid State Research, Germany
4) Department of Materials Science and Engineering, Johns Hopkins University 3400 North Charles Street, USA **Presently, Department of Materials Science and Engineering, The University of Seoul, Korea.

12:15-12:30  2aBO02  2 V Operated Solution Processed Organic Transistors with A Small Gate Dielectric Capacitance
L. Feng1), W. Tang, X. Xu, Q. Cui and X. Guo
Department of Electronic Engineering, Shanghai Jiao Tong University, 800 Dongchuan Rd, Shanghai 200240, P. R. China

12:30-13:45  Lunch

Oral Session: Organic II
13:45-14:15  2pBI02  Flexible and Stretchable Electronics and Applications for Biomedical Devices  (INVITED)
D. Kim

7) School of Chemical and Biological Engineering Seoul National University, Seoul 151-744, Korea
14:15-14:30 2pBO03  P- and N-Type Solution-Crystallized Organic Transistors and
High-Performance Printable Inverters
J. Soeda¹, T. Uemura¹, J. Tsurumi² and J. Takeya¹
¹) The Institute of Scientific and Industrial Research

14:30-14:45 2pBO04  New Polymer Semiconductors Based on Naphthobisthiadiazole for OTFT
I. Osaka¹ and K. Takimiya²
¹) Department of Applied Chemistry, Hiroshima University, JAPAN

14:45-15:00 2pBO05  Self-Assembled Monolayer Field-Effect Transistors (SAMFETs) As Model
System to Improve and Investigate Order on The Molecular Scale
T. Schmaltz¹,², ArtC6m Khassanov¹, A. Ebel², A. Hirsch², M. Halik¹
¹) Organic Materials & Devices - Department of Materials Science, University Erlangen -
Nuremberg, Martensstr. 7, 91058 Erlangen, GERMANY
²) Institute for Organic Chemistry II, University Erlangen Nurnberg, Henkestr. 42, D-91054 Erlangen GERMANY

15:00-15:30 Coffee Break

Oral Session: Organic III
15:30-16:00 2pBI03  Materials and Devices of High-End Organic Transistors  (INVITED)
J. Takeya¹,*
¹) ISIR, Osaka University, Ibaraki, Osaka 567-0047, JAPAN

16:00-16:15 2pBO06  A Non-Quasi-Static Small Signal Capacitance Model for Printed OTFT
G. Fortunato¹, L. Mariucci¹, A. Valletta¹, M. Rapisarda¹, S. Jacob², V. Fischer² and R.
Coppard²
¹) CNR-IMM, Via del Fosso del Cavaliere 100, Roma, ITALY
²) CEA/Liten/DTNM/LCEI, 17 rue des Martyrs, Grenoble, 38054 cedex 9, FRANCE

17:00-17:30 Closing (ROOM A)