FIRST CALL FOR PAPERS

SID 2013

Society for Information Display
INTERNATIONAL SYMPOSIUM, SEMINAR & EXHIBITION

May 19 – 24, 2013

VANCOUVER CONVENTION CENTER
VANCOUVER, BRITISH COLUMBIA, CANADA

SID
SOCIETY FOR INFORMATION DISPLAY

SID DISPLAY WEEK
Vancouver 2013

www.displayweek.org

Special Topics

The Display Week 2013 Symposium will be placing special emphasis on five Special Topics of Interest to address the rapid growth of the field of information display in the following areas: ***OLED TV, Oxide TFTs, 3D, Lighting, and Touch and Interactivity*** Submissions relating to these special topics are highly encouraged.

SPECIAL TOPIC ON OLED TV: *This Special Topic will cover OLEDs specialized for TV applications. Submissions on all aspects of advanced OLED TV technologies are encouraged, including novel device structures, backplane technologies, manufacturing processes, deposition techniques, mask fabrication, encapsulation, driving methods, and next-generation applications.*

- **Device Structure of OLEDs (Specialized in High Efficiency, Reliability, etc.)**
- **Backplane Technologies for OLED TV**
- **Novel OLED Manufacturing Processes for OLED TV**
- **Deposition Technology for OLED TV**
- **Mask-Fabrication Technology for OLED TV**
- **Novel Encapsulation Technology for OLED TV**
- **Driving Methods for OLED TV**
- **Next-Generation TV Applications (Flexible, Transparent, etc.)**

SPECIAL TOPIC ON OXIDE TFTs: *Advancements and manufacturing issues related to oxide semiconductors thin-film transistors, along with new opportunities for increased device performance, greater TFT integration at the systems level, and innovative applications and products. Submissions on all aspects of oxide TFTs are encouraged, including, but not limited to:*

- **Novel Oxide Materials**
- **Device Structures and Processing Techniques**
- **Solution Processing of Oxides and Ink-Jet Printing of TFTs**
- **Bias, Thermal, Optical, and Environmental Stability and Reliability of TFTs**
- **TFT Device Physics,Compact Modeling, and Parameter Extraction Circuits**
- **Design and Compensation Techniques for Instability and Non-Uniformity in Pixelated Arrays**
- **Oxide TFT Sensors and Applications**
- **Integration on Flexible Substrates and Novel Applications**
- **Towards Systems-on-Panel and Very-Large-Scale Integration**

SPECIAL TOPIC ON 3D: *Display technologies for enabling depth perception in viewers, applications for 3D displays, 3D content generation, measurement and characterization of 3D systems, and their human factors. This year a stereoscopic projection system will be available in the 3D sessions to enable presenters to show 3D footage to complement their talks.*

- **3D TV**
- **Mobile 3D Systems**
- **Autostereoscopic and Multi-View Displays**
- **Directional Backlights**
- **Volumetric Displays**
- **Holographic Display Technologies & Algorithms**
- **Integral Imaging**
- **Novel 3D Display Approaches**
- **Glasses-Based Stereoscopic Displays: Shutter, Polarization, and Color-Separation Based**
- **Characterization of 3D Displays: Crosstalk, Luminance Uniformity, etc.**
- **Human Depth Perception, Comfort, or Performance When Viewing Displays**
- **Applications for 3D Displays**
- **3D Cinema**
- **3D Gaming, and Interactivity**
- **3D Content Generation and Conversion: Animated Films, Games, etc.**
- **Light-Field Displays and Computation**
- **Capturing 3D: Stereoscopic Cameras, Plenoptic Cameras, and Multi-Camera Systems**

SPECIAL TOPIC ON LIGHTING: *Advancements in the LED and OLED industries open up new opportunities to increase the perception of reality. Submissions on all aspects of solid-state lighting are encouraged, including:*

- **Novel Lighting Systems and Sources**
- **Solid-State Lighting including OLED and LED**
- **Optical Methods**
- **Flat Illumination Panels**
- **Illumination Systems**
- **Ambient Lighting and Display Interaction**
- **Lighting Measurements**
- **Display Backlights**
- **Novel Lighting-Control Electronics**

SPECIAL TOPIC ON TOUCH AND INTERACTIVITY: *Advances in touch-screen technologies, applications, driving electronics, system integration, and human interactions. The advanced materials and process technologies associated with touch design and applications will also be covered.*

- **Advanced User Interfaces**
- **Multi-Touch Systems**
- **Novel Touch Configurations & Applications**
- **Materials and Process Technologies**
- **Driver Electronics, Subsystems, and Algorithms**
- **Touch-Performance Evaluation, Methodology, and Standardization**

As growing and multi-faceted fields, work relating to these topics can fit under a number of different topics, including Active-Matrix Displays, Applied Vision/ Human Factors, Display Applications, Display Electronics, Display Manufacturing, Display Measurements, Display Systems, Emissive Displays, e-Paper and Flexible Displays, Liquid-Crystal and Other Non-Emissive Displays, OLEDs, Projection, and Touch and Interactivity. While the special topics sessions will be arranged in a unified program for the benefit of attendees, authors should indicate the appropriate topical track for their abstract in addition to special topic designation (if any).

Symposium Topics

The Society for Information Display (SID) encourages the submission of original papers on all aspects of the research, engineering, application, evaluation, and utilization of displays. Display Week 2013 will feature topical sessions that focus specifically on selected issues or key developments. Paper submissions are welcome for any of the general symposium topics or any of the specific topical sessions listed below.

The Society plans to include coverage of every aspect of display technology and applications, especially the emergence of 3D TV. Special attention will also be given to all aspects of novel input technologies for displays. Papers are solicited in all aspects of motion-image technology, including device technology (LCD, OLED, PDP, projector, etc.) and related system technology. Papers are also solicited in the area of technology development that enables lower-power-consumption and higher-performance display devices for battery-powered applications (mobile phones, tablets, e-books, etc.).

(1) ACTIVE-MATRIX DEVICES: *Advances in the innovative development and implementation of active-matrix electronics into displays and other devices. Differences between each subcommittee have become blurred because novel technologies involve various aspects. Active-Matrix Devices focus on TFTs themselves, their circuit design and application, including TFTs electrical/optical characteristics, reliability, new structures, and processing.*

- **Fine, Slim, High, or Wide: At the Physical Limits of Active-Matrix Displays**
- **Oxide TFTs and Display Circuits**
- **Sensor Integrated Active-Matrix Displays**
- **High-Frame-Rate Driving for Field-Sequential Color and 3D Displays**
- **Novel TFTs and Processing Techniques**
- **Active Matrix for Flexible Displays**
- **Ultra-Low-Power Active-Matrix Displays**
- **New AMOLED Pixels and Backplanes**
- **Active-Matrix Mobile Displays**
- **System-on-Glass (SOG)**

(2) APPLICATIONS: *Papers are sought that discuss unique and innovative applications of all varieties of display technologies for the consumer, industrial, entertainment, commercial, and military fields.*

- **Solid-State Lighting**
- **3D, Stereoscopy, and Holography**
- **Environmentally Friendly (Green) Displays**
- **Touch and Interactive Display Applications**
- **Mobile Displays (Smartphones, Tablets, & eReaders)**
- **Near-to-Eye Displays**
- **Virtual and Augmented Reality**
- **Avionics and Automotive**
- **Kiosks, Signage, Transparent, and Tiled Displays**
- **Digital Cinema, Entertainment, Gaming, and TV**
- **Medical Displays**
- **Ruggedized Displays for Harsh Environments**
- **Multi-Modal Display User Interface (*e.g., Auditory Displays)***
- **Display Software Applications (*e.g.,* Image Enhancement)**
- **Novel and Emerging Applications**

(3) APPLIED VISION / HUMAN FACTORS: *All aspects of vision, perception, and human factors as they apply to the design, image quality, and usability of all types of visual display systems.*

- **Stereoscopic and 3D Display Perception**
- **Lighting and Adaptation**
- **Display-Centric Interaction**
- **Display Perception and Image Quality**

(4) DISPLAY ELECTRONICS: *Circuits (integrated or otherwise) for displays, image- and video-processing algorithms, and electronic components for displays.*

- **Driving Schemes, Algorithms, and Systems for Low-Power and Low-Cost Systems (Green Technology)**
- **Advanced Driving Schemes and Architectures for Higher-Resolution Displays**
- **Advanced Driving Schemes and Architectures for AMOLED Displays**
- **Color-Correction and Gamma-Tuning Technologies for Better Optical Performance**
- **High-Refresh-Rate Displays for Motion-Blur Reduction and 3D Display Implementation**
- **Video and Image Processing**
- **Backlight-Control Electronics**
- **High-Dynamic-Range Technologies**
- **System-on-Panel and Integrated-Circuits–on– Panel Using TFTs (a-Si:H, LTPS, HTPS, Oxide TFTs, etc.)**
- **Electronics for Emerging Displays**

(5) DISPLAY MANUFACTURING: *Materials, process, and equipment developments for the manufacturing and assembly of display panels and display components*

- **Advances in Manufacturing Materials and Processing (including Thin Glass, Roll-to-Roll, and Ink-Jet Printing) to Enable New Applications and Cost-Down of OLED TVs and 3D Displays**
- **Manufacturing of OLED and Other Emissive Display Panels (including PDPs, PLEDs, ELs, and FEDs)**
- **Manufacturing of AMLCDs and of Other LCD Panels**
- **Manufacturing of e-Paper and of other Reflective Displays (such as Electrophoretic, Electrowetting, Electrochromic, and MEMS-Based Displays)**
- **Display Manufacturing Processes in Display Panel Assembly, Encapsulation, Interconnect, and Packaging, as well as Display Module Assembly (Bonding with Cover Glass, Touch)**
- **Display Materials including Substrates, Films, Adhesives, and Consumables**
- **Manufacturing Equipment for Front- and Back-End Processing including Packaging, Encapsulation, Interconnect, Assembly, and Roll-to-Roll Processing**
- **In-line Manufacturing Test, Repair, and Metrology**
- **Manufacturing Productivity**

(6) DISPLAY MEASUREMENT: *Characterization and measurements of displays and display components.*

- **Optical Characterization and Measurement of 3D Displays**
- **Optical Characterization and Measurement of Display Materials and Components**
- **Latest Advancements in Display Measurements and Display-Measurement Standards**
- **Optical Property Modeling of Display Technologies**
- **Characterization of Perceptible Display Phenomena, including Content-Dependent Artifacts**
- **Evaluation of Measurement Methods for Display Applications**
- **Calibration and Verification of Instrumentation**

(7) DISPLAY SYSTEMS: *Novel integration of displays into specialized devices, as well as system-level aspects of electronic displays.*

- **Wearable, Near-to-Eye, and Augmented Displays**
- **Transparent Displays**
- **Novel Displays**
- **Display Systems**
- **Ultra-Low-Power Displays**
- **Interactive Display Systems**
- **Gaming Displays**
- **Ultra-Resolution Home-Entertainment Systems**
- **Cell Phones, Music Players, eReaders, and Other Mobile Displays**
- **Avionics, Automotive, Shipboard, Simulator, and Military Displays**
- **Signage**
- **Backlight Systems**
- **Backlight Components**
- **Dynamic Backlights / Local Dimming**
- **Color Sequential**

(8) EMISSIVE DISPLAYS: *All aspects of emissive displays, including PDPs, field-emission displays, light-emitting diodes, quantum-dot displays, inorganic EL displays, and field-emission lamps. Advances in materials and processing of such devices including phosphors, quantum-dot materials, and field emitters are also sought.*

- **Plasma-Display Panels**
- **Field-Emission Displays**
- **Light-Emitting Diodes**
- **Phosphors and Quantum-Dot Materials**
- **Inorganic EL Displays**

(9) e-PAPER AND FLEXIBLE DISPLAYS: *All aspects of e-paper and flexible-display technologies, including organic electronics and printed electronics. e-paper covers electrophoretic/electrochromic/electrowetting displays, flexible Ch-LCDs, and other novel reflective displays. The scope is to capture display and display components related to paper-like display technologies on novel materials. Advances directed at the development of substrates, fabrication, transistors, printing, and novel deposition techniques, drive techniques, electro-optical effects, devices, manufacturing, and applications for flexible-display technology, electronic paper, and emerging display technologies are sought. Work focusing on materials is also welcome. This interdisciplinary topic will highlight emerging technologies outside the paradigm of established LCD technologies.*

- **Electronic Paper**
- **Flexible OLED Materials, Devices, & Displays**
- **MEMS and Other Non-Emissive Flexible Displays**
- **Organic and Other Solution-Based TFTs, Flexible Active-Matrix Backplanes**
- **e-Paper and Flexible Display Materials including Substrates, Films, Adhesives, and Barriers**
- **Integration, Packaging, Testing, and Reliability of e-Paper and Flexible Displays**
- **Flexible-Display Manufacturing of and Equipment for Printed Electronics**
- **Integrated Flexible Electronics**

(10) LIQUID-CRYSTAL AND OTHER NON- EMISSIVE DISPLAYS: *Advances in the development of liquid-crystal and other passive-matrix displays, including electro-optical effects, materials, and devices.*

- **LCDs for Advanced Monitors and TVs**
- **Blue-Phase LCDs**
- **LCDs for Mobile Applications**
- **Bistable Displays/LC-Based e-Paper**
- **Reflective/Transflective Displays**
- **Ferroelectric/Anti-Ferroelectric LCDs**
- **Alignment and Photoalignment Technologies**
- **Non-Emissive Displays for Digital Signage**
- **Microdisplays**
- **Fast-Switching LCDs**
- **LCD Modeling**
- **Wide Viewing Angle**
- **Display Films**
- **LCD Materials and Components**
- **Nanotechnology for LCDs**
- **Driving Mechanisms**
- **Photonics Optical Components for LCDs**
- **Polymer Composites**
- **LC Technologies for 3D**

(11) ORGANIC LIGHT-EMITTING DIODES (OLEDs): *Papers are sought on display design and performance of small–to–large-area panels, including OLED displays utilizing poly-Si, a-Si, microcrystalline silicon, CMOS crystalline silicon, and emerging areas of organic TFTs and mixed-oxide transistors, including ZnO-based materials. Papers that discuss the progress and challenges for OLED display performance and manufacturing issues as compared to LCDs and plasma displays are of particular interest. Furthermore, papers on OLED signage and OLED lighting solutions are welcome.*

- **OLED TV: Mobile and Large-Area Applications**
- **Novel OLED Materials and Architectures Enabling Emerging OLED Displays**
- **Active- and Passive-Matrix OLED Display Technology**
- **Emerging OLED Displays**
- **OLED Device and Materials Fundamentals**
- **Injection and Transport Mechanisms, Molecular Engineering, and Device Structure**
- **OLED Stability and Degradation Mechanisms**
- **OLEDs Applications for Lighting**
- **OLED Manufacturing**
- **OLED Systems Packaging, Integration, and Cost Reduction**

(12) PROJECTION DISPLAYS: *Applications for projection displays continue to grow as they continue to dominate the large-screen market and become more common even for small images. Authors are invited to submit papers on all aspects of projection displays, including components, finished projectors, complete projection systems, and projection applications. Projectors of all types will be covered, including pico/micro/nano projectors, mainstream projectors, large-venue projectors, rear-projection-based cubes, short-throw projectors, consumer rear projection, and other designs for specific applications. Components of interest include microdisplays (SLMs), light sources, optical components, projection screens, etc.*

- **Electronic Projection Systems Based on Microdisplays, Scanned Lasers, or Other Technologies**
- **Pico-/Micro-, Mainstream, and Large-Venue Projectors; Multi-Projector Arrays**
- **Emerging Applications for Projection Systems**
- **Human Factors of Projection Systems and Projection Applications**
- **Projection System Components, Including Image-Generating Components, Light Sources, Optics, Projection Screens, and Electronics**
- **Opto-Mechanical Design of Projection Systems and Components, Including Lifetimes, Thermal Properties, and Acoustic Noise**
- **Other topics Related to the Design, Manufacture, or Application of Projection Systems, Subsystems, or Components**

(13) TOUCH AND INTERACTIVE DISPLAYS: *Advances in touch-screen technologies, applications, driving electronics, system integration, and human interactions. The advanced materials and process technologies associated with touch design and applications will also be covered.*

- **Advanced User Interfaces**
- **Multi-Touch Systems**
- **Novel Touch Configurations & Applications**
- **Materials and Process Technologies**
- **Driver Electronics, Subsystems, and Algorithms**
- **Touch-Performance Evaluation, Methodology, and Standardization**

Format and Submission Requirements: Technical Summary

Submissions must consist of two separate parts. The first part should consist of a single page containing a 35–50 word abstract. The second part should contain a 4-page technical summary that follows the outline below. Please follow the following instructions for the preparation of the Abstract and Technical Summary.

35-50 Word Abstract: Your submitted 35-50 word abstract, highlighting the key details of your paper, will be published in the Advance Program if your paper is accepted. The abstracts are usually edited to accommodate the program format.

Technical Summary: Include the first author's name and the title of the paper on each page. Please include the information listed below in the Technical Summary.

(1) Objective and Background: Briefly describe the goals and intent of your project. and give background factors that led to the new results.

(2) Results: Describe the specific results that will be presented at the SID 2013 Symposium. Please provide a technical description of how the results were achieved. Sufficient detail (quantitative and/or graphical data) should be included so the Program Committee can properly evaluate your submission.

(3) Impact: Discuss the significance of your work and compare your findings with previously published work.

(4) References: List a few main references covering projects in related areas.

(5) Prior Publications: Generally, Symposium papers must be original contributions. If your organization has published or presented material on similar work in English, please explain how the present material differs. The only exception to this rule is that papers submitted to the Applications Subcommittee need not be original.

The Technical summary must be no longer than four pages. Material beyond four pages will not be considered in evaluating the paper.

All authors are required to upload their Abstract and Technical Summary to http://www.sheridanprinting.com/pcm/sid.

Additional information must be provided in the online submission form.

Authors must

(A) Indicate if you wish to have your paper considered for oral or poster presentation, if you have a preference.

(B) Indicate the closest matching Symposium Topic from the list provided

(C) Include the 35-50 word abstract

(D) Include a minimum of three keywords for the submission;

(E) Indicate whether the presenter of the paper is currently a student; and

(F) Include the names of all authors with their affiliations, addresses, telephone numbers, and e-mail addresses. Please underline the name of the presenter when there are two or more authors.

Please follow the instructions on the URL site (**http://www.sheridanprinting.com/pcm/sid**). If you need help, contact Bill Klein at wklein@pcm411.com.

Product Engineering/Applications

Attention Manufacturers and Suppliers: These sessions contain information on the practical aspects of display technology such as design, manufacturing, and testing of displays and display-related products. Papers are generally product or process oriented and deal with how something was engineered, how it works, what to use, how to use it, and what to avoid. Emphasis should be technical, not marketing. Abstract, paper submission, and presentation requirements are the same as for the Symposium papers, although the content does not have to be original. Applications Sessions will be conducted in parallel with the Symposium sessions. Applications papers are welcome in all areas of display technology previously listed under the applications symposium topics.

Timetable

The deadline for receipt of abstracts and technical summaries is December 1, 2012. Notification of acceptance will be e-mailed by February 15, 2013 (February 22 for Late-News papers). Authors of accepted papers will be directed to an on-line "Authors Kit" with instructions for the preparation of the paper to be published in the Symposium Digest. The paper shall consist of four pages, including all illustrations and is due March 8, 2013 (March 15 for Late-News papers).

Points of Contact

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Display Week 2013 Features

- Technical Symposium
- Special Focus Sessions
- Poster Session
- Keynotes
- Invited Papers
- Distinguished Papers
- Author Interviews
- Short Courses
- Technical Seminars
- Awards Banquet
- Annual Awards Luncheon
- Best-in-Show Awards
- I-Zone
- Exhibition
- Vendor Forum
- Business Conference
- Investors Conference
- Market Focus Conferences

Deadlines and Key Dates

Technical Summary	Dec. 1, 2012
Accept/Reject Letters	Feb. 15, 2013
Late-News Technical Summary	Feb. 25, 2013
Late-News Accept/Reject Letters	Mar. 21, 2013
Digest Paper Submission	Mar. 8, 2013
Late-News Digest Submission	Mar. 15, 2013
Seminar Notes Submission	Mar. 31, 2013
Display Week 2013	May 19–24, 2013
Sunday Short Courses	May 19, 2013
Monday Technical Seminars	May 20, 2013
Business Conference	May 20, 2013
Investors Conference	May 21, 2013
Exhibition	May 21–23, 2013
Vendor Forum	May 21–23, 2013
Symposium	May 21–24, 2013
Market Focus Conferences	May 22 & 23, 2013