FINAL CALL FOR PAPERS Display Week 2019

Society for Information Display INTERNATIONAL SYMPOSIUM, SEMINAR & EXHIBITION

May 12-17, 2019



SAN JOSE MCENERY CONVENTION CENTER SAN JOSE, CALIFORNIA, US

www.displayweek.org

Special Topics for 2019

The Display Week 2019 Technical Symposium will place emphasis on two special topics of interest to address rapid growth in the following areas: Augmented, Virtual and Mixed Reality (AR/VR/MR) and Bendable, Foldable, Rollable Displays. Submissions relating to these special topics in the field of information display are highly encouraged.

(1) AUGMENTED REALITY, VIRTUAL REALITY, AND MIXED REALITY

This special topic will cover the technologies and applications in the emerging areas of Augmented Reality (AR), Virtual Reality (VR), and Mixed Reality (MR). These sessions will bring together scientists, engineers, business professionals, market analysts, and industry leaders involved in AR, VR, and MR technologies, products, applications, advanced developments, and emerging trends.

- AR, VR, and MR Systems and Applications
- Display Technologies for AR, VR, and MR Systems
- Spatial Sensing and Imaging Technologies
- Tracking, Localization, Mapping, and Navigation Techniques
- Computation, Graphics, and Display Processing
- Mapping and Rendering of Virtual Objects onto the Physical World
- Immersive Audio Technologies
- End-to-End System Integration and Latencies
- Inputs, Interfaces, and Interactions
- Human Factors and User-Experience
- Object, Human, and Scene Capture; Reconstruction, Recognition, and Understanding
- Machine Learning Techniques Including Deep Neural Networks
- Eye Tracking, Biometrics, and User Authentication

(2) BENDABLE, FOLDABLE, ROLLABLE DISPLAYS

Displays with novel form factors are a way of adding value and distinguishing features compared to conventional display products. Among the most exciting areas of development are display technologies that enable displays to be folded, bent, or rolled up. This special topic will showcase advances in underlying technology in this area, as well as new product concepts enabled by this technology. Specific areas of interest include:

- Materials and Components
 - o Flexible Hard Coats, Specialty Adhesives, Flexible Display Panel Technology
- Module Designs
 - o Touch Designs and Implementations, Enclosures
- Reliability Topics
 - o Topics Include: High and Low Temperature Storage, Drop and Impact, and Other Risk Factors for Flexible Displays
- Applications and Use Cases

Work relating to the special topics, which are growing and multifaceted fields, can fit under a number of different symposium topics, including Active-Matrix Devices; Applied Vision/Human Factors; Automotive/Vehicular Displays and HMI Technologies; Display Electronics; Display Manufacturing; Display Measurement; Display Systems; Emerging Technologies and Applications; Emissive, MicroLED, and Quantum-Dot Displays; e-Paper and Flexible Displays; Interactive Displays and Systems; Liquid-Crystal Technology; Lighting; and OLEDs.

While the special-topic sessions will be arranged in a unified program for the benefit of attendees, authors should indicate the appropriate symposium topic for their abstract in addition to the special-topic designation (if appropriate).

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. Paper submissions are welcome for any of the following symposium topics:

(1) ACTIVE-MATRIX DEVICES: Advances in implementation of the active-matrix electronics into displays and other related systems. All aspects of TFTs, including devices with new semiconducting materials, new structures/processing, reliability, circuit design, and novel application.

- TFT Devices Made of LTPS, Oxide, and Other Semiconductors
- High-Performance Active-Matrix Displays
- Ultra-Low-Power Active-Matrix Displays
- New AMOLED and AM-MicroLED Display Pixels and Backplane
- Novel TFT Circuits and Driving Technologies
- Sensor-Integrated Active-Matrix Devices
- Emerging Active-Matrix Displays and Devices

(2) APPLIED VISION/HUMAN FACTORS: New display technology has driven displays to have more pixels, greater contrast, higher brightness, and richer color volume, thus enabling a wide range of new visual experiences. Submissions are encouraged that discuss the benefits and tradeoffs of how these new display technologies, as well as novel uses of traditional display technology, can have a measurable impact on the visual experience. Topics in the following areas are particularly in demand: mitigating the challenges by presenting comfortable and engaging 3D imagery (including autostereoscopic, AR, and VR form factors), effective use of a wider color volume to create a more immersive and compelling experience, and approaches to take advantage of limitations of the visual system to

process or transmit display data more efficiently. Papers that discuss novel methods of user interaction and HMI with display systems are also welcomed. This year we also want to encourage submissions in:

- Wide-Color-Gamut and High-Dynamic-Range Imaging
- Visual Comfort and Health with Display Systems (Including Links Between Myopia and Displays)
- Immersive Interaction
- Image Quality and Display Perception
- Human–Machine Interfaces
- Human Factors in Emerging Displays
- Human Factors of Projection Systems and Applications
- New Display Technologies and Storytelling, Controlling Attention
- Dealing with Prescriptions in Near-to-Eye Displays

(3) AUTOMOTIVE/VEHICULAR DISPLAYS AND HMI

TECHNOLOGIES: Papers for this topic shall deal with all aspects of automotive displays and related HMI issues, including market aspects, display and lighting technologies, head-up displays, application issues with vehicular displays, and advanced technologies for displays, touchscreens, and gestures in vehicles as well as the user experience. Contributions in the following areas are solicited:

Displays

- Advanced Vehicular Display and Lighting Technologies
- Interactive Technologies for Automotive Displays
- Application Issues with Vehicular Displays and Lighting
- Display Metrology for Automotive Displays
- Displays for ADAS (Advanced Driver Assistance Systems)
- Head-Up Displays (HUDs), Including AR, Holographic and Night Vision
- Automotive and Vehicular Display Market and Technology Trends
- Infotainment and Passenger Entertainment Displays
- Projection Displays, Other than HUD, for Interior and Exterior Projection
- Transparent Displays, Other than HUD, for Window, Panoramic Roof etc.
- Camera Display Systems
- Exterior Automotive Displays, Other than Projection
- Displays as Interior Design Elements
- High Visual Performance Displays for Automotive
- Display Readability in Variable Ambient Lighting Situations
- Optical Components for Automotive Applications
- Display Materials Optimized for Automotive Applications
- Motorbike and Bicycle Displays and Applications
- Avionic Displays and Applications, Including HMD, HUD and Interaction Means
- Modeling and Simulations

HMI Technologies

- Human-Machine Interface (HMI) System Solutions
- HMI for, and User Experience (UX) of Advanced Driver Assistance Systems, Automated Driving, etc.
- Multi-Modal Input and Output User Experience (UX)
- Driver In-Attention (Driver Distraction)
- Driver/User Interfaces
- Automotive User Experience (UX), User Interaction (UI), User Delight (UD)
- Application Issues with Automotive HMIs
- Customer Acceptance and Feedback on Different Technology Displays and Interfaces
- Regulation and Trends Related to In-Vehicle Interfaces

(4) **DISPLAY ELECTRONICS:** All aspects of circuits (integrated or otherwise) for displays, electronic components for displays and imaging devices, and image- and video-processing algorithms.

- Electronics and Image Processing for Wearable Displays
- Driving Electronics for UHD (4K x 2K) and Beyond
- Driving and Compensation Circuits for Curved Displays
- Electronics for Touch and Interactive Displays
- OLED Driving Techniques
- Display Drivers, TCONs, and New Driving Schemes
- Driving Circuits Integrated on Glass
- High-Speed Interfaces
- Low-Power and Low-Cost Driving Techniques
- Image/Video Capture and Processing Techniques
- 3D/Depth Imaging and Augmented/Virtual Reality
- High-Dynamic-Range Driving Electronics

(5) DISPLAY MANUFACTURING: Materials, process, and equipment advancements related to the manufacture of display panels, components, and module assemblies.

- Manufacturing-Related Advances Enabling Current and Emerging Displays Including Flexible, Foldable, Stretchable, Wearable Displays; 3D or Transparent Displays; Multi-Functional Display Architectures; etc.)
- Manufacture of High-Resolution OLED and Other Emissive Display Panels, Including Fine Metal Mask (FMM), OLED Evaporation Systems, OLED Printing or Patterning Processes, and Thin-Film Encapsulation (TFE) Processes
- Manufacture of AMLCD and Other Non-Emissive Displays
- Manufacture of e-Paper and Other Reflective Displays
- Manufacturing Equipment and Processes Including Very Large Substrate Sizes (Gen 10.5 and Above)
- Manufacturing Equipment for Front- and Back-End Processing Including Packaging, Encapsulation, Interconnect, Assembly, and Roll-to-Roll Processing
- Display-Module Manufacturing Including Panel and Module Assembly for all Display Technologies (e.g., AMLCD, OLED Display, e-Paper, Mini/MicroLED Display, Projection, etc.)

- Inline Manufacturing Test, Repair, and Metrology
- Display-Component Manufacturing (e.g., Optical Films, Color Filters, LEDs, Backlights, In-Cell and On-Cell Touch Panels, Finger-Print Sensors, Covers, etc.), Including Topics Related to High Brightness and True Black, HDR Displays and Quantum-Dot-Based Applications.
- Materials for Panel and Module Manufacturing, Including Substrates, Films, Adhesives, Photo-Patternable Organic Materials (for Bank Layers or Polarization Layers, etc.), Photoresists, Sputtering or Evaporating Materials, and Consumables
- Manufacturing Productivity and Cost Reduction Topics
- Green Manufacturing Reducing Energy Consumption and Waste, and Strategies for Product End-of-Life Recycling and Disposal, etc.

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

- Characterization of Perceptible Display Phenomena
- Optical Characterization of Display Materials and Components and Their Effects on System Optical Performance
- Optical Characterization and Measurement of High-Dynamic-Range and Wide-Gamut Displays
- Solid-State-Lighting Metrology and Characterization
- Advances in Display Measurements Standards
- Measurement Methods for Near-to-Eye Displays for AR, VR, and Other Applications
- Optical Characterization and Measurement of Light-Field and 3D Displays
- Calibration and Verification of Instrumentation

(7) DISPLAY SYSTEMS: Original works relating to the following topics on display systems are welcome. The Display Systems Subcommittee solicits submission of original papers on novel engineering, modification, and evaluation aspects of displays. Papers on novel integration of displays into specialized devices as well as system-level aspects of electronic displays are solicited.

- Novel Displays
- Mobile Displays
- Transparent Displays
- Digital 2D/3D Signage
- Ultra-Low-Power Displays
- SDR/HDR/Display BLU, FLU, and Components
- Wearable, Augmented-Reality, and Virtual-Reality Displays
- 3D, Autostereoscopic, Light-Field Displays
- Projection Mapping
- Novel Projection Architectures
- Immersive Display Systems, Dome Displays, and Cave Displays
- Projection Systems, Subsystems, Components
- Projector Design, Manufacturing, Applications

- Cinema Displays Including Direct View LED Walls
- Individual Projectors and Multi-Projector Arrays
- Novel Image Processing and Components for Projectors
- Head-Mounted Display Systems for AR/VR and Mixed Reality
- Large-Area-Display Technologies: Cinema Displays, Direct View LED Walls
- Projection Head-Up Displays for Automotive, Aviation, and Other Applications
- Unique Components for HMDs: See-Through, See Around, and Vision Obscuring
- Standards and Guidelines Related to the Design or Evaluation of Display Systems
- Projection Systems: Opto-Mechanical Design, Components, Lifetimes, Thermal Properties, Acoustic Noise

(8) EMERGING TECHNOLOGIES AND APPLICA-

TIONS: Papers are solicited for the topics of (i) Novel and Emerging Display Technologies (particularly those that do not fit within an existing topical subcommittee) and (ii) Novel Display Applications including, but not limited to, all of the following:

- Applications of Mobile Displays (Smartphones, Tablets, e-Readers, etc.)
- Wearable Display Applications
- Medical and Clinical Applications Including Imaging, Diagnostics, Therapy, Remediation and Quality of Life
- 3D, Stereoscopy, and Holography Display Applications
- Applications of Touch and Distributed Displays
- Avionics, Military, Automotive, and Ruggedized Display Applications
- Applications of Kiosks, Signage, Transparent, and Tiled Displays
- Digital Cinema, Entertainment, Gaming, and TV Applications
- Multi-Modal Display User Interfaces (e.g., Auditory Displays)
- Display Software Applications (e.g., Image Enhancement)
- Smart Lighting/Solid-State Lighting Applications
- Environmentally Friendly (Green) Display Applications
- Displays for IoT Solutions
- Display/Sensor Combinations for Unique Applications (e.g., medical)
- Ubiquitous Display Applications

(9) EMISSIVE, MICROLED, AND QUANTUM-DOT

DISPLAYS (EMQ): All aspects of emissive displays, including EL and PL quantum-dot displays, microLED displays, LED displays and video walls, inorganic EL displays, and field-emission lamps. Advances in materials and processing of such devices, including quantum-dot materials, microLED processing, perovskite materials, phosphors, and field emitters are also sought.

- MicroLEDs
- Quantum-Dot Materials
- Quantum-Dot Applications
- Quantum-Dot Electroluminescence
- Perovskite Electronics
- Phosphors
- Plasma, Field-Emission, and Inorganic EL Displays

(10) E-PAPER AND FLEXIBLE DISPLAYS: All aspects of e-Paper, flexible, and wearable display technologies, including flexible, bendable, foldable, or rollable display devices (OLED, electrophoretic, MEMS, cholesteric LCD, electrowetting, and other novel emissive and reflective display devices) and system-level integration of such devices and printed electronics based on organic and inorganic materials. Advances in flexibledisplay materials (substrates, transparent conductors, TFTs, barrier layers, and adhesives), printing and novel deposition techniques, manufacturing methods (R2R, bonding and lift-off), electro-optical effects, sensor technologies, driving techniques, device performance and reliability, ergonomics, and applications for emerging paper-like, flexible, wearable, or stretchable display technologies are sought.

- Electronic Paper
- Flexible OLED and Other Emissive Materials, Displays and Devices
- EPD, MEMS, and Other Non-Emissive Flexible Displays and Devices
- System-Level Integration for Flexible, Wearable, or Stretchable Display Devices
- Flexible Sensors and Wearable Displays
- Flexible Display Materials Including Substrates, Films, Adhesives, and Barriers
- Organic and Other Solution-Based TFTs, Flexible Active-Matrix Backplanes
- Integration, Packaging, Testing, and Reliability of e-Paper and Flexible Displays
- Flexible-Display Manufacturing of and Equipment for Printed Electronics
- Applications and Ergonomics of Integrated Flexible Electronics
- Flexible and Stretchable Hybrid Electronics
- Materials and Devices for Novel Mechanical UI/UX
 Technique
- Materials and Devices for Textile/Fiber Displays and Electronics

(11) INTERACTIVE DISPLAYS AND SYSTEMS:

Interactive Displays

Sensing and interactivity which is *fundamentally integrated* into a display. Examples include:

- Displays with Directly Integrated Sensing Capabilities
 - o Touch/Hover/Stylus
 - o In-Air Gesture
 - o Force/Pressure/Strain

- o Fingerprint (via e.g., Optical, Capacitive, Piezo Mechanisms)
- o Biometrics (Pulse/Ox, Electrocardiography, Temperature, EM Signature, etc.)
- o Sensor-in-Pixel (SIP), e.g., Optical, Pressure, etc.
- o Ambient Light Sensing
- o Bending/Flexure
- o Proximity
- o Environmental (e.g., UV Exposure)
- o RF (e.g., NFC, RFID Reader)
- Displays with Directly Integrated Output Capabilities: o Haptic Displays
 - o Acoustic Displays (Integrated Speaker and/or Microphone Functionality)
- Bi-Directional Displays
- Displays with Integrated Data Communication (e.g., Li-Fi, etc.) Capabilities
- Optical Imaging Through the Display

Touch Controllers, Sensors, Materials, and Processes

Novel state-of-the-art techniques for sensing touch on a display, with quantitative characterization and discussion of their performance. Topics include:

- Touch Controllers and Electronics (Especially Those Integrated with the Display Driver)
- Touch Electrode Sensor Design and Geometry
- Substrates (Including Novel Glasses, Flexible Films, etc.)
- Transparent Conductors and ITO Alternatives (e.g., Metal Mesh, Nanowires, etc.)
- Patterning Methods for Touch Sensors
- Integration Methods with the Display (e.g., Direct Lamination/Optical Bonding)
- Investigations of Touch Sensor Visibility

Novel Sensors

Novel sensors based on display industry materials or manufacturing techniques and which have a clear path to integration with a display.

Novel Interaction Systems and Techniques

Systems and the interaction techniques they support; must be extremely novel or impactful to be considered.

(12) LIQUID-CRYSTAL TECHNOLOGY: Advances in the development of liquid crystal, including electrooptical effects, materials, applications, and devices.

- Flexible and Conformable LCDs
- Fast-Response-Time and Color-Sequential LCDs
- High-Dynamic-Range and High-Ambient-Contrast LCDs
- Wide-Color-Gamut and QD-Enhanced LCDs
- LC for AR/VR Applications
- High Image Quality/Super High Resolution
- Smart Windows
- Display Enhancement
- LC-Based Spatial Light Modulators and Optical Elements

- LC Alignment Technologies
- New LC Materials
- Use of LC Technologies in Biomedical Applications

(13) LIGHTING: All aspects of solid-state lighting with focus on advances in materials and devices, visual and non-visual effects of lighting, smart lighting and intelligent luminaires, implementation and application of dynamically color-tunable lighting. Trends and technologies for future lighting solutions and alternative light sources.

- · Materials and Devices for Solid-State Lighting:
 - o Notable Developments in LED and OLED Lighting Sources
 - o Critical Components in Solid-State Lighting: Modules, Substrates, Optics, Drivers, Light Extraction, Thermal Management, Phosphors, and Color-Conversion Materials
 - o The Manufacture of Flexible LED and OLED Lighting Systems and Their Applications
 - o Novel Light Sources
- Visual and Non-Visual Effects of Lighting:
 - o Quality of Light, Including Color Rendering, Flicker, and Glare, for Indoor and Outdoor Applications
- Biological and Psychological Impact of Light and Related Health Effects:
 - o Visual Neuroscience Behind Lighting or Display Design
 - o Visualizing Lighting on Displays
 - o Development of Lighting Products for Improved Well-Being
- Color-Changing and/or CCT-Tunable Luminaires:
 - o Control Systems, Strategies, and Algorithms for Color Changing, CCT Tuning, and Beam Shaping
- o Application or Case Studies of These Luminaires
- Connected Lighting Systems

(14) ORGANIC LIGHT-EMITTING DIODES: Papers are sought on materials, display designs, and performance of small-to-large-area panels. Papers that discuss the progress and challenges for OLED display performance and manufacturing issues are of particular interest. Furthermore, papers on OLED signage and OLED lighting solutions are welcome.

- New AMOLED Display Pixels and Backplanes
- 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
- OLED Applications for Lighting
- OLED Manufacturing
- OLED Systems Packaging, Integration, and Cost Reduction

Abstract/Technical Summary Format and Paper Submission Requirements

NEW for 2019

We are now offering two options for authors who wish to submit papers. Option 1, which is new and designed to streamline the process, allows authors to submit an initial version of their paper in a format that is already appropriate for final submission, instead of submitting the traditional abstract/summary format. If their papers are selected, they do not need to do anything further, but have the option of submitting a final revised paper, if they wish. Option 2 is our traditional process, followed in previous years, of submitting a 4-page Technical Summary for review, with the final paper being submitted later after notification of acceptance.

OPTION 1

Please follow the instructions and templates available on **www.scomminc.com/pp/pcm/sid.htm** to help in the preparation and submission of the 4-page technical paper. If accepted, this submission will be used as the final Symposium Digest paper unless a revised version is submitted by March 15, 2019.

Note that content-wise, the submission must contain the abstract and the information listed in the bullet points (1) - (7) below under Option 2.

OPTION 2

The instructions below outline the submission requirements we have employed in previous years, and can be used instead of Option 1, above. If your paper is accepted, you will receive further instructions for filing your final submission by March 15, 2019. Below are the requirements for Option 2:

Page Headers: Please place the first author's name and the title of the paper on the top of each page of the submission.

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

Keywords: Include a minimum of three keywords.

Technical Summary: The summary must not exceed 4 pages in length. Material beyond four pages will not be considered in the evaluation of the paper.

(1) 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.

(2) Also indicate whether the presenter is a student.

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

(4) **Results:** Describe the specific results that will be presented at the 2019 Display Week 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.

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

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

(7) 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 Emerging Applications subcommittee need not be original.

SUBMISSION PROCESS FOR BOTH OPTIONS

Once the abstract/technical summary is completed, all authors are required to upload it to

www.scomminc.com/pcm/sid/sid.cfm

Additional information must be provided on the online submission form. Authors must:

- (A) Enter the full title of the paper.
- (B) Enter the name of the contact author and e-mail.
- (C) List all the authors and include their contact information as requested on the form.
- (D) Place the abstract in the allotted space on the form.
- (E) Enter the keywords in the space provided.
- (F) Check the appropriate box for student travel grant requests.
- (G) Indicate whether your paper is invited.
- (H) Indicate if you wish to have your paper considered for oral or poster presentation, if you have a preference.
- (I) Indicate the closest matching symposium topic from the list included in this Call for Papers along with the appropriate special topic if appropriate.
- (J) Attach a PDF of your technical summary.
- (K) Click on submit.

If you need further assistance, please contact either Bill Klein at wklein@pcm411.com or Samantha Tola at stola@pcm411.com.

Author Timeline

The deadline for receipt of technical summaries/ abstracts is December 1, 2018 (January 25, 2019, for Late-News Abstracts/Summaries). Notification of acceptance will be emailed by February 6, 2019 (February 19 for Late-News Abstracts/Summaries). Authors of accepted papers will be directed to an online "Author's Kit" with instructions for the preparation of the paper to be published in the Symposium Digest. The paper shall consist of 4 pages, including all illustrations, and is due no later than March 15, 2019. Note: If a revised paper is not received by March 15, the initial paper submitted will be published in the Symposium Digest.

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Speaker Responsibilities

All costs associated with your participation at Display Week as a speaker will be at your own expense (including travel, housing, registration fee, etc.).

Display Week 2019 Features

- · Technical Symposium
- Special Focus Topics
- Poster Session
- Keynotes
- Invited Papers
- Distinguished Papers
- Author Interviews
- Short Courses
- Technical Seminars
- · Awards Banquet
- Annual Awards Luncheon
- Best-in-Show Awards
- Exhibition
- · Exhibitors' Forum
- I-Zone
- Business Conference
- Investors Conference
- Market Focus Conferences
- Women in Tech Forum
- CEO Forum
- Job Fair

Student Travel Grants

A limited number of student travel grants, up to \$1000 each, will be made available to student presenters of accepted papers. A student travel grant must be requested upon submission of abstracts by checking off the appropriate box on the online submission site. A questionnaire will automatically be generated. Please complete the questionnaire. Only students who submit the questionnaire will be eligible to receive a student travel grant. The deadline for the submission of abstracts is December 1, 2018; January 25, 2019, for Late-News Abstracts/Summaries.

Deadlines and Key Dates

Abstracts/Summaries	Dec. 1, 2018
Late-News Abstracts/Summaries	Jan. 25, 2019
Accept/Reject Letters	Feb. 9, 2019
Late-News Accept/Reject Letters	Feb. 16, 2019
Revised Digest Paper Submission	Mar. 15, 2019
Display Week 2019	May 12–17, 2019
Sunday Short Courses	May 12, 2019
Monday Technical Seminars	May 13, 2019
Business Conference	May 13, 2019
Investors Conference	May 14, 2019
Market Focus Conferences	.May 14 & 15, 2019
Exhibition/Exhibitors' Forum/I-Zone May 14–16, 2019	
Symposium	May 14–17, 2019