

Discover strategies for commercializing Organic Light-Emitting Devices at:

OLEDs 2001

Emerging Avenues for New Applications

November 14-16, 2001 ~ Hyatt Regency Islandia Hotel ~ San Diego, California

Conference Highlights

Conference Co-Chairs



MICHAEL SULLIVAN
President
Vitex Systems



TERUO TOHMA
Director, EL Business
Operation Unit
Tohoku Pioneer Corporation

Keynote Address



*"OLEDs - Do We Have a
Disruptive Technology?"*

DR. ALAN J. HEEGER
Nobel Laureate-Chemistry, 2000
Professor of Physics & Professor of Materials
University of California, Santa Barbara &
Chief Scientist, UNIAX Corporation

2 Preconference Seminars

1. *OLED Technology - Theory, Materials, Methods and Applications*
2. *Organic Light-Emitting Devices: Operation and Fabrication Methods*

Presented in Association with



Learn how OLEDs are changing the display market landscape ... as new EL chemistries and fabrication technologies are creating a host of innovative OLED-based systems with major players now planning production ramp-ups. Attendees will interact with key OLED business leaders who are taking this industry to the next level. Attend and get insight on:

Attend and get insight on:

- Commercializing full color active matrix OLEDs with CGS TFT
- Writable OLEDs, controlled cross-linking and a new concept in color pixelation
- Electronic ink's emergence as a new generation of paper-like displays—and the implications for OLEDs
- Performance and applications for active matrix OLED-on-Silicon microdisplays
- OLEDs mounting challenge to LCDs—recent progress and market opportunities
- High-efficiency phosphorescent OLED displays, driver performance and thermal management
- Large-area flexible organic electroluminescent lights with self-healing properties
- Current prospects for OLEDs in automotive and 3G mobile phone applications
- Latest trends in small molecule, polymeric and oligomeric technologies
- Using intellectual property strategies to direct rapid innovation in the OLED market
- Development and system integration for OLED mass production

***"It's the
Who's Who
of the
OLED
industry."***

Sandra Gilmour
Sr. Research Scientist
Sharp

Questions? Call: USA+ 207.781.9623

OLEDs 2001

12 Reasons To Attend This Timely Event

1. Explore the characteristics and size of the emerging OLED market and learn new ideas for penetrating it.
2. Get a comprehensive view of OLED technology's promising features and its convergence with competing display technologies.
3. Get updated on the latest progress on commercializing passive matrix and full color active matrix OLEDs.
4. Explore new applications for OLEDs, such as cross-linking, new concepts for color pixelation, and writable OLEDs.
5. Learn about the latest performance trends and commercial applications for active matrix OLED-on-silicon microdisplays.
6. Understand how OLED drivers, mechanical interfacing and thermal management impact OLED display system performance.
7. Get updated on current performance trends for active matrix, high-resolution displays and their future technology advances.
8. Explore a new technology for producing flexible, self-healing, large area OLEDs used as light sources.
9. Discover how electronic ink is an emerging generation of new paper-like displays...and implications for the OLED markets.
10. Explore a novel, oligomeric approach to OLEDs—can oligomers take advantage of both polymer and small molecule systems in terms of application and performance?
11. Get a comprehensive assessment of the challenges in enabling OLED mass production-fabrication, system integration, price barriers and market implementation.
12. Find out where OLEDs will fit in the G3 wireless world, their share of handset sales, how they can challenge the incumbent LCD juggernaut, and how display technologies will shake out by platform.

A Disruptive Display Technology

In the race to win the display prize, OLEDs have emerged as a leading contender for the next-generation. At stake: sales of billions of cellular phones for both voice and visual communication as wireless Internet access is forecast to exceed wired connections in the next couple of years. Plus, in five years retail sales for PDAs alone will increase by a factor of five, surpassing the 80 million mark. As the list of potential OLED-based displays—handhelds, digital cameras, camcorders, automotive displays, computers and TV screens—continues to grow, so does the list of companies getting involved with OLED research, production and commercialization.

Experts predict that during the next few years OLED displays will explode, with the market increasing in leaps of around 60% per year. Currently, more than 80 companies worldwide have OLED development programs and over a third of them are gearing up for volume production.

From an Emerging Technology to a New Industry

As an *OLEDs 2001* attendee, you'll benefit from a complete immersion in the OLED industry by exploring the key elements in moving OLEDs into the market: new materials developments, intellectual property, apples-to-apples comparison with LCD technology, end user requirements, production ramp-ups, and new applications for OLEDs in writable, flexible display and lighting applications.

“The OLED conference has been the most jam-packed, resource-rich meeting on OLEDs, and has been important to improving our understanding of - and visibility in - the OLED business as it is emerging.”

Kurt Lesker, President, Kurt J. Lesker Co.

You'll hear forecasts for OLEDs in the industrial marketplace, how they will fare in the wireless world, and projections for passive and active matrix displays...plus, the latest trends for OLED-on-silicon, encapsulation, electronic ink, and display drivers. And learn how companies are making improvements in longevity, stability, color rendition, TFT uniformity, and production techniques.

Valuable Insight to Move the Industry Forward

Learn about OLED industry developments in a setting with numerous opportunities to meet with OLED inventors, marketers, scientists, manufacturers and investors. Included in your conference registration package are two networking receptions, four refreshment breaks and two roundtable luncheons. The exhibits will showcase the latest material, manufacturing and product development trends as well as provide a relaxed forum for informal discussion, new idea generation, and business development. If you want to learn how OLEDs will impact the display industry shake out, this conference is for you. Register today!

Register Today!

November 14-16, 2001 ~ Hyatt Regency Islandia ~ San Diego, CA

San Diego, California



The Hyatt Islandia Hotel is ideally situated in the heart of San Diego's Mission Bay Park with seascape views of the marina and Pacific Ocean.

Located only six miles from the international airport and San Diego's central business district, the hotel is also near many of San Diego's most famous attractions, including Sea World, Old Town, Balboa Park, the San Diego Zoo, the Gaslamp Quarter and miles of magnificent beaches. The Islandia is a place where business and pleasure mix...beautifully.

Set around a gracefully curving bay, San Diego offers the visitor a wealth of cultural activity and entertainment, historical sites and museums, attractions and sports.

Additional information on San Diego area dining and entertainment options is available by visiting : <http://citysearch.signonsandiego.com/>

Registration Info

Please Note In order to guarantee your place, payment is required in advance of the conference. The conference proceedings, luncheons, refreshment breaks, access to exhibit area and receptions are included in the conference fee. Separate fees are charged for the pre-conference tutorials. A written confirmation of your registration will be sent to you.

Hotel Information A limited number of discounted rooms has been reserved for attendees who make reservations by October 22. Please contact the hotel directly and be sure to mention the Intertech *OLEDs 2001* conference. Registrants are responsible for making their own hotel and travel reservations.

Hyatt Islandia Hotel
1441 Quivira Road
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Tel: 619-224-1234
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Substitutions & Cancellations Registration fees are fully refundable if cancellations are made in writing by November 2. After this date, refunds are subject to a \$100 cancellation fee. Substitutions may be made at anytime at no charge.

Team Participation Sign up 3 or more colleagues from your company at the same time and **SAVE \$200** on each registration! This is an excellent way for your entire team to get updated, meet potential customers and network with industry experts. Registrations must be submitted at the same time.

Unable to Attend?

If you are unable to attend this conference, you can still take advantage of the important information and contacts from the conference. Order the conference proceedings, and receive a complete set of all papers presented at the meeting, all speaker handouts and complete contact information for all attendees. To order, use the registration form or call 207.781.9623.



Sponsorships & Exhibits

By becoming a sponsor or exhibitor at *OLEDs 2001*, you have a unique opportunity to increase your visibility before a qualified audience of key decision-makers. Sponsorships are still available for the various social functions at the conference, and we also offer tabletop exhibit space and advertising in the book of conference proceedings. For details on these opportunities, please contact Denise Boucher at:

Intertech Conferences
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Participants at our Previous OLED Conferences Include:

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Visit our website: www.intertechusa.com/OLEDs.html

Pre-Conference Seminars

Wednesday, November 14

1. OLED Technology: Theory, Materials, Methods and Applications 8:30 - 12:00

The tutorial will provide end users, design engineers, research and development scientists, sales or marketing executives and business managers an in-depth look at basic OLED technology. Discussions will cover:

- Basic flat panel display physics
- Comparison of small molecule and polymer emitting materials
- Device architecture, behavior and efficiencies
- Active/passive matrix displays
- Approaches to making full color displays
- Fabrication processes
- Future trends and advances

If you are new to the FPD industry, or are well acquainted with displays, you will benefit by attending this in-depth tutorial for valuable insights that can be applied on the job immediately!



Dr. Webster Howard started his career at IBM where he worked for 12 years in semiconductor physics. He joined AT&T as Director of High Resolution Technologies, and also served as display advisor to Bell Laboratories. In 1996 he joined eMagin where he is currently Vice President of Technology. Dr. Howard is a graduate of Carnegie Mellon (BS) and Harvard University (AM, PhD).



Dr. Ian Parker, Director of Product Development at UNIAX, graduated from Cambridge University, England (BS, MA and PhD) and did postdoctoral work at U.C. Berkeley. He has worked for the last 8 years developing polymer LED based displays at UNIAX, and is currently interested in developing manufacturing processes for passive matrix PLED displays and understanding lifetime degradation processes.

2. Organic Light-Emitting Devices: Introduction to Device Operation and Fabrication Methods 1:30 - 5:00

This seminar will give detailed approaches to OLED fabrication techniques and their advantages and disadvantages. The introductory nature of this course will be of great benefit to newcomers in this area; however, the discussion of recent developments will also provide the latest information to those already in the OLEDs industry. Topics will cover:

- The operational principles of both molecular and polymeric OLEDs
- Fluorescence versus phosphorescence in OLEDs
- Materials issues in OLEDs
- Device fabrication and processing
- Recent developments and future outlook

Dr. Ghassan Jabbour holds a joint appointment in the Optical Sciences Center and The Department of Materials Science and Engineering at the University of Arizona. He has made significant contributions to the organic light-emitting devices (OLEDs) area, including novel aluminum based cathodes, screen printing of OLEDs, and many others. Prof. Jabbour's research interests are currently in materials development for optical and electronic applications; fabrication, characterization, and testing of organic (polymeric and molecular) light-emitting devices for rigid and flexible display applications; and printed optical, electronic and optoelectronic materials and devices. He attended Northern Arizona University, Massachusetts Institute of Technology, and The University of Arizona, and earned a PhD in Materials Science and Engineering in 1994.

Conference Agenda

Wednesday, November 14

- 8:30 **Preconference Seminar 1:** (additional fee required)
OLED Technology - Theory, Materials, Methods and Applications
DR. WEBSTER HOWARD, VP of Technology - eMagin
DR. IAN PARKER, Director of Product Development - UNIAX
- 13:30 **Preconference Seminar 2:** (additional fee required)
Organic Light Emitting Devices: Operation and Fabrication Methods
GHASSAN JABBOUR, Associate Research Professor
Optical Sciences Center, University of Arizona
- 6:00 **Registration.** Register for the conference and join fellow participants for a complimentary two-hour wine and cheese reception.

Thursday, November 15

- 7:00 **Registration & Coffee**
Enjoy a continental breakfast & informal discussion with your colleagues
- 8:00 **Welcome**
CHARLES E. SPEAR, Conference Director
Intertech Corporation
- 8:15 **Introduction and Conference Overview**
MICHAEL SULLIVAN, President - Vitex Systems
TERUO TOHMA, Director, EL Business Operation Unit
Tohoku Pioneer Corporation

Session 1: Market Trends and Opportunities

- 8:30 **KEYNOTE ADDRESS: OLEDs - Do We Have a Disruptive Technology?**
DR. ALAN HEEGER, Nobel Laureate 2000
Professor of Physics & Professor of Materials, University of California Santa Barbara and Chief Scientist, UNIAX
- 9:15 **OLEDs For the Industrial Marketplace**
- Characteristics and size of the industrial marketplace
- OLED feature convergence with competing display technologies - the horizon
- Market factors and price barriers to overcome
- OLED promising features
MICHAEL ANDREWS, Display Technologist
Agilent Technologies
- 9:40 **Progress toward Commercialization of Full Color Active Matrix OLED with CGS TFT**
TERUO TOHMA, Director, EL Business Operation Unit
Tohoku Pioneer Corporation
- 10:05 **Refreshment Break**
- 10:30 **Exploring New Applications of OLEDs**
- Overview of various applications of OLEDs
- Opportunities and challenges of new applications
- Controlled cross-linking & a new concept for color pixelation
- Writable OLEDs
DR. X. CHARLES LI, Research Scientist
Canon R&D Center Americas, Inc.
- 10:55 **Tailored Innovation: IP Strategies to Overcome the Business and Technical Challenges in the Display Technologies Market**
- Using IP to maximize sales opportunities and direct rapid innovation in the OLED market
- Identifying licensing opportunities, protecting innovation and increasing company valuation using IP
- Reducing costs, improving quality and efficiently managing IP
JOHN CRONIN, Chairman & CEO
ipCapital Group Inc.

Session 2: Leading the Way to Innovative Technology Developments & Applications Requirements

11:20 **Commercialization of OLEDs: Innovation to Production**
 - Recent developments and future strategy
 MICHAEL HOLMES, Chief Executive Officer
Opsys Limited

11:45 **Outlook for Manufacturing OLED Displays**
 - Components and materials
 - Facilities and process
 - Sales and marketing
 DR. GWO-SEN LIN, R&D Project Leader
Windell Corporation

12:10 **OLED Manufacturing Challenges & Responses**
 - Introduction of Samsung SDI and NEC joint venture
 - Challenges of OLED manufacturing
 - Choice of technology to meet the challenges
 - Future direction for OLED manufacturing
 DR. HO KYOON CHUNG, Vice President
Samsung NEC

12:35 **Roundtable Luncheon**

2:00 **Performance Applications for Active Matrix OLED-on-Silicon Microdisplays**
 SUSAN JONES, Executive Vice President
eMagin Corporation

2:25 **Title to be Announced**
 KEITH BERGELT, Sr. VP, Strategy, Business Development & IP
Cambridge Display Technology

2:50 **OLED Technology for Automotive Applications**
 - Current automotive display applications
 - Automotive requirements for displays
 - Advantages of OLED display technology for vehicle applications
 DR. PETER FORTMEIER, Display Project Manager
Siemens VDO AG

3:15 **Refreshment Break**

3:45 **Challenges and Future Prospects of Organic Light Emitting Devices**
 WALTER RIESS, Display Technology Manager
IBM Zurich Research Laboratory

4:10 **Title to be Announced**
 DAVE HADANI
 General Manager & Sr. Director, Emerging Display Technologies
Phillips Mobile Display Systems

4:35 **PANEL DISCUSSION**

5:15 **Conference Sessions Adjourn**

6:00 **Cocktail Reception Sponsored by AIXTRON**
An excellent opportunity to meet with speakers and fellow attendees over hors d'oeuvres during this two hour reception.

Friday, November 16

Session 3: OLED Materials Advancements

8:00 **OLED Opportunities in the G3 Wireless World**
 - The billion handset sales scenario
 - G2.5 and G3 roll-out scenarios
 - Subscriber profiles, G3 services, and platform choices
 - Display forecast by platform
 - Challenging the incumbent LCD juggernaut
 - Prospects for passive matrix and active matrix OLEDs
 CHARLES McLAUGHLIN, President
McLaughlin Consulting

8:25 **Advances in OLED Encapsulation**
 JOHN McMAHON, Vice President, Sales and Marketing
Vitex Systems Inc.

8:50 **High-Efficiency Phosphorescent OLED Displays**
 - Fundamentals of electrophosphorescence
 - HEP-OLED materials and performance in active matrix displays
 - Status and future technology directions
 JANICE MAHON, VP, Technology Commercialization
Universal Display Corporation

9:15 **OLED Display System Performance Considerations**
 - Column & row driver overview
 - Display mechanical interfacing
 - Thermal management
 ROBERT E. DECARO, VP - Development Engineering
Clare Micronix

9:40 **Flexible Organic Electroluminescent Lights**
 - Large area OLEDs for light sources
 - Photonic polymer composites
 - Self-healing property of large-area OLED lights
 - High speed, large-area organic vapor deposition
 DR. MICHAEL G. MIKHAEL, Senior Chemist
Sigma Technologies International Inc.

10:05 **Electronic Ink: An Emerging Generation of New Paper-Like Displays**
 - Technical overview of electronic ink
 - Advantages and disadvantages versus OLEDs
 - Addressable markets
 - Path forward to commercialization
 DR. MICHAEL McCREARY, VP - Research and Development
E Ink Corporation

10:30 **Refreshment Break**

11:00 **Recent Materials for the Organic Light-Emitting Diodes**
 - Hole injecting materials
 - Light emitting materials
 - Electron injecting materials
 - Present and future of the OLED materials
 Dr. TOSHIO ENOKIDA, EL Project Leader
Toyo Ink Mfg. Co. Ltd.

11:25 **An Oligomeric Approach to OLEDs: from Between to Beyond**
 - Oligomers as models for polymers - a stimulating combination of basic concepts and practical applications
 - Today and tomorrow - can oligomers take advantage of both polymer and small molecules systems in terms of synthesis application and performance?
 STEVEN XIAO, Technical Director
American Dye Source Inc.

11:50 **Title to be Announced**
 DR. GOPALAN RAJESWARAN, Program Dir., OLED Dev.
Eastman Kodak Co

12:15 **PANEL DISCUSSION**

12:45 **Roundtable Luncheon**

Session 4: OLED Manufacturing - Progress Towards a Working Equipment Infrastructure

2:00 **Challenges in the Fabrication of OLED Displays**
 - Equipment and materials
 - Throughput and yield
 DR. NORMAN BARDSLEY, Director of Roadmaps & Standards
US Display Consortium

2:25 **High Resolution OLED Displays by OVPD Technology**
 - Material technology
 - Manufacturing advantages
 - Availability
 DR. HOLGER JUERGENSEN, President & CEO
Aixtron AG

2:50 **New Developments in OLEDs**
 - Screen printing of OLEDs
 - Anode patterning
 - Electrophosphorescent OLEDs
 DR. GHASSAN JABBOUR, Associate Research Professor
Optical Sciences Center, University of Arizona

3:15 **Development and System Integration for OLED Mass Production**
 - Innovation in evaporation and encapsulation technologies
 HIDEKI INOUE, Manager, OLED Project Group, Industrial and Production Systems Dept.
Nissei Sangyo Co. Ltd.

3:45 **Conference Summary and Conclusion**

REGISTER for OLEDs 2001 TODAY!

On-Line: www.intertechusa.com E-mail: bwilkie@intertechusa.com Fax: 207-781-2150 Phone: 207-781-9623

Please circle one: Mr. Mrs. Ms. Dr.

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Registration Fees

- | | | |
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