

## **Society for Information Display**

# DISPLAY WEEK 2014 EXHIBIT & PRODUCT GUIDE

The Official Directory for the 51st Annual Show

# June 3-5, 2014 San Diego Convention Center San Diego, California

#### **Exhibit Hours**

Tuesday, June 3 Wednesday, June 4 Thursday, June 5 10:30 am - 6:30 pm

9:00 am - 5:00 pm

9:00 am - 2:00 pm

#### **I-Zone Hours**

Tuesday, June 3 Wednesday, June 4 10:30 am - 6:30 pm

9:00 am - 5:00 pm

#### **Exhibitors Forum**

June 3 and 4 (schedule inside)





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Touch Screens

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LED Drivers

Pick our brains at SID Display Week 2014 Booth 403

## Enabling the Future of Touch Touch panel manufacturers are rapidly turning their attention to FLEXX Transparent Conductive Films from Carestream. The combination of exceptional flexibility, high conductivity (<100 ohms/square) and excellent transmission (>90%) enable manufacturers to achieve next-generation touch panel design goals. FLEXX Films are ideal for a wide range of applications, including mobile phones and tablets, notebooks and All-in-One PCs. Explore the advantages of FLEXX films and discover why manufacturers are adopting these innovative, yet economical films. **Benefits of FLEXX Films from Carestream** See us at the Display Week 2014 Conference (Booth # 1713). Or learn more by visiting www.carestream.com/adv-materials. Send email inquiries to flexx@carestream.com





## Welcome



The Society for Information Display welcomes you to San Diego for our 51st Annual International Symposium, Seminar and Exhibition. Both SID and Display Week began in California, and we are pleased to host our 2014 event in this beautiful city on the Pacific Coast.

We would also like to thank our exhibitors. Many return to the show year after year, and some are brand-new to Display Week. They all have great products to demonstrate and fascinating stories to tell make sure you visit as many exhibitors as you can, because there is

always a chance to learn something new at Display Week.

Some other good ways to learn on the show floor include the Exhibitors Forum, where you can listen to exhibitors describe their products and technology areas in detail; the I-Zone, where you can discover emerging display technologies being created at research labs, universities, and start-ups; and the Networking Lounge, where you can talk with others in your field who just may have the display solutions you've been seeking.

Enjoy Display Week 2014!

Amal Ghosh President, SID



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#### Where To Find It . . .

**Author Interviews** – Hall A

Career Recruitment Office - Room 8

**Coffee Breaks** – located around the show floor and Convention Center

**Exhibit Hall B Show Office** – At back of Exhibit Hall B

**Exhibit Sales Office** – Booth 742

Exhibits - Halls B & C

**Exhibitor Service Center** (GES and lead retrieval) – Bayside Lobby (behind Exhibit Hall B)

**Exhibitors Forum** – Booth 1840

**Information** – Hall A

**I-Zone** – Booth 145

**Networking Lounges** – Booths 231 and 1840

**New Exhibitors** – Look for this Symbol



**Poster Session** – Hall A

Press Room - Room 4

**Registration** – Hall A

**SID Membership Desk and Book Sales** – Hall A

**Speaker Prep Room** – Room 3



## Display Week 2014 **Alphabetical Exhibitor Listings**

3M is a global innovation company that never stops inventing. Over the years, its innovations have improved daily life for hundreds of millions of people all over the world. 3M has made driving at night easier, made buildings safer, and made consumer electronics lighter, less energy-intensive, and less harmful to the environment. 3M even helped put a man on the moon. Every day at 3M, one idea leads to the next, igniting momentum to make progress possible around the world. Visit 3M and see what's new in light management.

Mary Auvin, Marketing Specialist 3M Center, 235-1E-54 Saint Paul, MN 55144-1000 (651) 733-9103; fax: (651) 733-5208 mcauvin@3M.com; www.3M.com/displayfilms

**4JET Technologies GmbH** 

318



4JET designs laser systems that enable the manufacturing of displays, organic LEDs, and speciality glass. Applications include patterning, annealing, and selective laser ablation of TCO/ITO layers, semi-conductors, and metals; laser cut-

ting; and laser drilling of glass, as well as custom-made equipment for R&D and mass production. LASER | SYSTEME | SERVICES

Julia Cremer, Marketing julia.cremer@4jet.de; www.4jet.de

Abrisa Technologies

Abrisa Technologies provides thin-film optical coatings, high-quality precision glass fabrication, and specialty thin glass. The company specializes in chemically strengthened high ion-exchange (HIE) aluminosilicate thin glass for displays and touch screens. Other offerings include large-format screen printing, ITO/IMITO coatings, bus bars, AR coatings, heater windows, etching and patterning, anti-glare and shielding, UV and IR coatings, contrast enhancement filters, and more. Applications include cockpit displays, handheld devices, outdoor displays, digital signage, project ion systems, teleprompters HUD displays, traffic management systems, vision control systems, sighting and scopes, scanners, digital imaging, diagnostic equipment, biometric devices, bar code scanner applications, and more.

Lori Appel, Marcom Consultant 200 South Hallock Drive Santa Paula, CA 93060 (877) 622-7472; fax: (805) 525-8604 marcom@abrisatechnologies.com; www.abrisatechnologies.com

**AD Metro** 1530

AD Metro is one of the few remaining North American-based touch sensor manufacturers. Its flagship product is the patented ULTRA Glass/Film/Glass technology, an industry-leading glass-fronted resistive sensor. This revolutionary enhancement to resistive-type sensors delivers among the most durable, flexible, and cost-effective touch solutions available. AD Metro specializes in small-volume and customized projects with reasonable NRE/tooling fees to get customers' devices to market quicker and with less risk. To meet the needs of specialized touch requirements, AD Metro prides itself in developing innovative

solutions for extreme environments such as military, industrial, or vandal-prone applications.

Simon Morgan, Sales and Marketing Manager 1181 Parisien Street Ottawa, ON K1B 4W4 Canada (613) 742-5545 simon.morgan@admetro.com; www.admetro.com

#### **Adhesives Research**

Adhesives Research is a leading independent developer and manufacturer of custom-engineered, pressure-sensitive adhesive (PSA) coated products for bonding touch-screen and display components while delivering enhanced performance capabilities. The company offers optically clear, diffuser, melt-flow, encapsulation, and electrically conductive adhesive technologies along with dual-stage adhesives that cure when exposed to light. Other technologies include self-wetting adhesives for surface protection of displays, which are able to be field applied, and are easily removable. Adhesives Research provides ITO compatible/ non-corrosive electronically clean adhesive technologies. The company has recently developed the capability to offer a range of adhesive chemistries at higher thicknesses.

Jan Gumerlock 400 Seaks Run Road Glen Rock, PA 17317 (717) 235-7979; fax: (717) 235-8320 jgumerlock@arglobal.com; www.adhesivesresearch.com

#### Advanced Link Photonics, Inc.

1437

Founded in 1997, Advanced Link Photonics (ALP) specializes in complete display head assemblies with a wide variety of customizable options for customers in the military, avionics, and industrial industries. ALP has been awarded several patents for sunlight readable display head assemblies with resistive touch panels, EMI mesh, heater, and NVIS LED and LED backlight enhanced high-bright LCD screens. ALP is backed by a strong R&D team and OEM manufacturing facility, RayShine Photonics Corp. (RSP), in Taiwan. The collaboration between ALP and RSP has increased ALP's ability to satisfy all its customers' needs with greater logistical convenience and affordability.

Minshine Wang, Vice President 2685 Dow Avenue, Ste. C Tustin, CA 92780-7234 (714) 730-6728, Fax: (714) 730-3667 mswang@alpincorp.com; www.alpincorp.com

#### **AGC Asahi Glass**

The AGC Group is a world-leading manufacturer and supplier of flat and automotive glass and a leading producer of display glass, chemicals, and other high-tech materials and components. AGC has been a noted technological innovator since 1907. The AGC Group does business in some 30 countries and regions worldwide; annual global sales amount to more than US \$13 billion.

81-3-3218-5090 www.agc.com

1512

Please see German Pavilion listings on pp. 12-13.

AmtouchUSA 1826

Apex Material Technology (AMT) is one of the industry's only touch-screen "total solutions providers," producing and designing touch sensors, controllers, and associated electronics and software drivers to service medical, industrial, and military customers. AMTouch Inc. is the North American sales office based in Milwaukee, Wisconsin, and wholly owned by AMT. AMTouch stocks and provides technical support for both PCAP and resistive products, as well as custom sensors from 3.5-in. to 24-in. sizes, and touch screen controllers. A full line of stock projected capacitive screens from 3.5 in. to 21.5 in., with the company's PenMount line of PCI controllers, are also available.

Kevin Brown, General Manager 5050 W. State Street Milwaukee, WI 53208 (414) 847-1814; fax: (414) 445-1968 sales@amtouchusa.com; www.amtouch.com.tw/about-amt/

Applied Laser Engineering Ltd.

1727



ALE is a world leader in the design and manufacture of laser engraving systems for the production of printing rollers and plates for use in various printing and texturing industries including flexographic printing and flat-screen TV manu-

facturing, paper and polymer texturing, security printing, and others. Its range of laser engraving systems includes special purpose machinery involving a high precision machine bed integrated with novel mechanisms and optical instrumentation together with specialized electronic, optical, computerized, and laser equipment. ALE is constantly developing its range of products to increase productivity, reduce production costs, and meet specific customer requirements.

Kyle Dixon, Director's Assistant
Molesey Business Centre
Central Avenue
West Molesey, Surrey KT8 2QZ UK
4-420894111e+011; fax: 4-4208783135e+011
kyle@appliedlaser.co.uk; www.appliedlaser.co.uk

**Arrow Electronics** 

1803



At Arrow OEM Computing Solutions (OCS), the customer's mission is Arrow's mission. From design engineering services, global marketing and integration; global logistics; and business solutions, the company's dedicated team of experts

brings it all together to help customers deliver the latest technologies to market—quickly and efficiently. Arrow OCS takes pride in adapting its services to fit particular needs, processes, and expectations. Its people take customers' challenges and business success personally. This is why Arrow remains in constant contact throughout the lifecycle of a project and why it provides application engineers, field sales personnel, and a wealth of other resources in the field. Its entire team is committed to supporting a customer's project every step of the way.

7459 S. Lima Street Englewood, CO 80112 (877) 535-9166 displaytechnology@arrow.com; ocs.arrow.com

#### Astra Products, Inc.

**52** 

Astra Products, Inc. is the North American sales and distribution arm for Clarex products, produced in Japan by Nitto Jushi Kogyo Co., Ltd. Clarex is optical grade, cell-cast acrylic sheeting formulated into several distinct product types used specifically for flat-panel displays. Clarex is available in thicknesses from 0.2mm with available scratch resistant,

antireflective, antibacterial, antismudge, and other coatings as well as several nonglare textures. Any color/transmission can be supplied. In addition to protective filters, Clarex offers acrylic diffuser sheets and NIR pass, IR block, UV pass and UV block filters, rear projection screens, and other optical grade products.

Amy Bogin, Coordinator PO Box 479 Baldwin, NY 11510-0479 (631) 464-4747; fax: (631) 464-4442 amy@astraproducts.com; astraproducts.com

#### **AU Optronics Corp.**

435

AU Optronics Corp. (AUO) is one of the world's leading providers of optoelectronic solutions. Based on its profound R&D and manufacturing experience, AUO continues to develop advanced display technologies such as ultra-high resolution, curved displays, LTPS, AMOLED, and touch solutions. Through product differentiation and value innovation, AUO is able to provide customers with a wide selection of panel sizes (1.5 inches to larger than 65 inches) for various applications in today's entertainment, commerce, education, navigation, and industrial fields.

Chen Chen, Senior Specialist No. 1 Li-Hsin Rd. 2 Hsinchu Science Park Hsinchu 30078 Taiwan 886-3-500-8899; fax: 886-3-577-2730 chen.chen@auo.com; AUO.com

Beneq

321

Beneq, a leading supplier of production and research equipment for thin-film coatings, is also the world's premier manufacturer and developer of thin-film electroluminescent (TFEL) displays. Beneq thin-film equipment is used for thin-film coatings in solar photovoltaics, flexible electronics, strengthened glass, and other emerging thin-film applications. Industry-proven Beneq equipment and thin-film experience is used for improving the efficiency of crystalline silicon and thin-film solar cells, producing transparent conductive oxide (TCO) coated glass, and making touch-screen glass more durable.

Marika Starck, Marketing Specialist P.O. Box 262 Vantaa 1511 Finland 358-9-7599530; fax: 358-9-75995310 marika.starck@beneq.com; www.beneq.com

#### Bi-Search, Inc.

1131

Bi-Search International (BSI) is a provider of display solutions for the TFT LCD market. As one of the largest and oldest authorized distributors/value-add centers for LG Display, it offers an array of solutions. In addition, BSI is at the forefront of LCD optical enhancement technology. The company offers passive and active enhancement capabilities, which are performed in its on-site clean room. Bi-Search also provides various levels of integration, from touch-screen attachment to custom display assemblies. Offering extensive LCD background and the support of its world class manufacturers, BSI looks forward to being your display solutions company.

Peter Park, Director/Sales & Marketing 15131 Woodlawn Avenue Tustin, CA 92780-6452 (714) 258-4500; fax: (714) 258-4512 peter@bisearch.com; www.bisearch.com/

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**Cat-I Glass** 

1824



BOE Technology Group Co., Ltd., which was founded in April 1993, is a supplier focusing on semiconductor display technologies, products, and solutions. BOE's accumulated

usable patents currently total over 18,000, with an additional 4,282 patent applications filed in 2013. This recent increase in applications ranks number two in the world, and patent applications per R&D staff member rank number one on a global basis.

No.10 Jiuxianqiao Rd. Beijing Chaoyang District Beijing, China 86-10-64318888; fax: 86-10-64363965 www.boe.com

#### Boron Molecular, Inc.

170

Established in 2001, Boron Molecular is a leading fine chemical manufacturer specializing in high purity OLED and display materials. The company was formed around a suite of boronic acid patents (both process and composition of matter) originally developed by the CSIRO. Boron Molecular's combined experience and expertise exceed 30 years in chemical manufacturing, 10 years in coupling chemistry, and 15 years in ISO and API/cGMP compliance. Add to this diverse skills in chemical synthesis and process chemistry, and customers are assured of cost-effective solutions to meet their development and commercial timeframes.

Ken Sullivan, Director of Sales and Marketing PO Box 12592 Research Triangle Park, NC 27709 (919) 981-4441 sales@boronmolecular-usa.com; www.boronmolecular.com

Canatu, Ltd.

1708



Canatu is a leading developer and manufacturer of transparent, conductive films and touch sensors for the new class of demanding touch-enabled devices. Canatu's transparent conductive films and touch sensors are based on a new type

of carbon nanomaterial (Carbon NanoBud), and a single-step manufacturing process called Direct Dry Printing. Canatu enables the manufacture of flat, 3-D formable, and flexible touch sensors to service the rapidly expanding market for mobile and wearable consumer devices, home appliances, and automobiles. With its innovative technologies, Canatu offers consumer electronics companies increasing design freedom and customers a superb viewing experience in touch-enabled devices.

Anne Irmola, Marketing Manager Konalankuja 5 Helsinki FI-00390 Finland 3-5850566385e+011 anne.irmola@canatu.com; www.canatu.com

#### **Carestream Advanced Materials**

171

The future of touch is clear. Consumers want light, flexible devices with large touch screens and extra-long battery life. Carestream's FLEXX Transparent Conductive Films are designed specifically to enable this fast-moving future of touch.

#### (See our ad in this Exhibit & Product Guide)

Vishal Shrotriya, Manager, Business Development 1 Imation Way, Discovery 4D Oakdale, MN 55128 (651) 393-1589; fax: (651) 393-1160 vishal.shrotriya@carestream.com; www.carestream.com/adv-materials Cat-i Glass is a full-service glass fabricator located in South Elgin, IL. Its fabrication capabilities include computer controlled grinding and cutting, seaming, washing, screen-printing, anti-fog coatings, anti-reflective coatings, chemical and heat tempering, oleophobic coatings, and polishing and assembly of gaskets, adhesives, and sensors. The Cat-i team has over 75 years of experience servicing customers in fabricated glass components. Cat-I Glass employees use their knowledge and initiative to provide quality parts that meet or exceed customer's expectations. In early 2006 it became ISO 9001:2000 registered.

Ryan O'Connell, New Product Development PO Box 208 South Elgin, IL 60177 (847) 931-8986; fax: (847) 931-0394 ryan@catiglass.com; www.catiglass.com

#### Chi Mei Visual Technology Co., Ltd.

1834

CMVT (Chi Mei Visual Technology Co., Ltd.) a CHI MEI group company, provides innovative solutions for improving view angle through its proprietary UVS technology. CMVT's product, Omniwide FILM, greatly improves the viewing angle weakness of TN panels.

886-6-588-9933 ext. 81501; fax: 886-6-509-1050 www.cmvt.com.tw

#### Cima NanoTech

412

Cima NanoTech is a smart materials company specializing in the development of high-performance silver nanoparticle-based transparent conductors. The company's proprietary SANTE Technology enables a multitude of markets, from large-format touch screens to capacitive sensors, EMI shielding, transparent heating, antennas, photovoltaics, OLED lighting, flexible displays, and more.

Felicia Chia, Marketing Manager 1000 Westgate Drive, Ste. 100 St. Paul, MN 55114 (651) 646-6266; fax: (651) 646-4161 fchia@cimananotech.com; www.cimananotech.com

#### **CODIXX AG**

1508

Please see German Pavilion listings on pp. 12–13.

#### Corning Inc.

703

Corning is a world leader in specialty glass and ceramics. Drawing on more than 160 years of materials science and process engineering knowledge, Corning creates and makes keystone components that enable high-technology systems for consumer electronics, mobile emissions control, telecommunications, and life sciences. Its products include glass substrates for LCD flat-panel televisions, computer monitors, and laptops; ceramic substrates and filters for mobile emission control systems; optical fiber, cable, hardware, and equipment for telephone and internet communication networks; optical biosensors for drug discovery; and other advanced optics and specialty glass solutions for a number of industries.

Jennifer Jones, Trade Show Specialist One Riverfront Plaza MP-HQ-01-E1S19A Corning, NY 14831-0001 (607) 974-9000; fax: (607) 974-8177 jonesja2@Corning.com; www.corning.com

#### CreaPhys GmbH

1405

Please see German Pavilion listings on pp. 12–13.

#### Daido Steel Co., Ltd.

736 Since its founding in 1916 in Japan, Daido Steel has been a world leader in specialty steel technology for the automotive market and other applications. Utilizing its technologies and production facilities for specialty steel development and

manufacturing, it has developed and commercialized various new alloy sputtering targets for barrier layers and metal mesh conductive layers for advanced information display devices.

Yutaka Yoshida, Sr. Manager, Technical Support 2404 Douglas Street Victoria, BC V8T 4L7 Canada (250) 361-4300 yoshida@daidosteel.com; www.daido.co.jp/en/index.html

#### **Dark Field Technologies**

1807

Dark Field Technologies is known for its innovative laser/camera metrology systems. The company is now introducing NxtGen, a versatile system that combines laser and camera technologies.

70 Robinson Blvd. Orange, CT 06477-3622 (203) 298-0731 jepotts@darkfield.com; www.darkfield.com

Data Modul, Inc.

Data Modul, Inc. is a major manufacturer of high-quality electronic products and is a leading supplier of flat screens for industrial, telecommunication, automotive, and especially medical markets. In addition, Data Modul offers complete and perfectly tuned p-cap touch screen and embedded computer systems based on ARM, Xscale, and x86 architectures. Specialties include LCD, embedded, panel PC, touch, system integration, p-cap, carrier board design, ARM, x86, industrial, SBC, motherboard, LVDS, display, RGB, monitors and computers, optical bonding, 4K, and QFHD.

Thomas Klingl, Exec. VP 275 Marcus Blvd. Hauppauge, NY 11788 (631) 951-0800; fax: (631) 951-2121 tklingl@data-modul.com; www.data-modul.com

Dawar Technologies, Inc.

1525

Dawar Technologies is a recognized leader in providing resistive and projected-capacitive touch solutions for the medical, industrial, and instrumentation markets. The company has design and application engineering as well as manufacturing facilities in both the U.S. and Asia to provide global support for its customers. Dawar Technologies is franchised with major distribution companies such as Avnet Embedded Solutions, Arrow Electronics, and Future Electronics.

Lizzy Stoltz, Product Manager 1016 N. Lincoln Avenue Pittsburgh, PA 15233-2132 (412) 322-9900, x335; fax: (412) 322-9958 espann@dawar.com; www.dawar.com

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#### DELO Industrie Klebstoffe GmbH & Co. KGaA

DELO Industrial Adhesives is a world-leading developer and manufacturer of customized industrial high technology adhesives and corresponding curing and dispensing equipment. Its experienced teams of engineers, scientists, and chemists work on fast and reliable solutions for individual customer needs. At Display Week 2014, the focus will be on fast light-curing optically clear adhesives for bonding of displays and touch panels for industrial and automotive applications.

Stefanie Reimers DELO-Allee 1 Windach Germany 86949 49-8193-9900-264 stefanie.reimers@delo.de; www.DELO.us

#### **Dexerials America Corporation**

1021

Dexerials Corporation creates advanced materials for display applications by utilizing its unique set of materials, process, and customization technology. Providing its customers with superior products and creating value are paramount. As a global leader in Anisotropic Conductive Film (ACF), Dexerials will showcase its latest ACF at Display Week 2014 in San Diego, as well as its display-enhancing UV curable resin, SVR.

Bryan Aubineau, Marketing Assistant 226 Airport Parkway, Ste. 650 San Jose, CA 95110-3706 (408) 564-6862; fax: (408) 441-0925 bryan.aubineau@dexerials.com; www.dexerials.jp/en

Dexerials

**Digital View** 

1127

Digital View was established in 1995 and is a privately held U.S. corporation and a member of the Digital View Group headquartered in the United Kingdom, with R&D, SCM, and manufacturing facilities in Hong Kong and China. Its display electronics division is recognized as a leading developer of LCD control solutions for military, marine, broadcast, medical, and industrial display markets. The company is now represented around the globe by major component distributors and supplies a host of key OEM manufacturing partners. Its range of LCD interface products supports thousands of panels from more than 25 different manufacturers.

Dawn Kersey, Senior Account Manager 18440 Technology Drive, Bldg. 130 Morgan Hill, CA 95037-2881 (408) 782-7773; fax: (408) 782-7883 dkersey@digitalview.com; www.digitalview.com

#### **Display Logic**



Display Logic is a display-focused product development and technology enabler. It develops and markets innovative solutions for OEM and digital signage customers. Its line of 1500nit LCDs defines the standard for high brightness

LCDs with industry leading performance and features around power, backlight life, operating temperature, and extended warranties. Its LCDBase-T innovative single-wire Cat5/6 solutions deliver high-resolution HDMI/LVDS video, up to 95 watts POE, integrated LED driver, Audio, USB and environmental sensing features. Display Logic gives customers more unique choices around display visual performance and interfacing technologies.

(See our ad in this Exhibit & Product Guide)

40 Oser Avenue, Ste. 3 Hauppauge, NY 11788 (631) 406-1922



sales@displaylogic.com; www.displaylogic.com

**DisplaySearch** 

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NPD DisplaySearch is a leading provider of reliable information, highly insightful analysis, and industry events specifically focused on the display supply chain and display-related industries. DisplaySearch empowers decision makers across the globe to make better business decisions and enhance their strategic efforts by providing the most aggressive coverage of the display industry. Backed by its parent company, The NPD Group, DisplaySearch provides a true end-to-end view of the display supply chain from materials and components to shipments of electronic devices with displays to sales of major consumer and commercial channels

Laura Castellano, Events Manager 2350 Mission College Blvd., Ste. 750 Santa Clara, CA 95054-1532 (408) 418-1904; fax: (512) 628-3484 laura.castellano@displaysearch.com; www.displaysearch.com

taura.cascettario @ atoptaysear cri.com, w w w.atoptaysear cri.com

Dontech, Inc.

921

Dontech designs and manufactures glass, plastic, and crystalline optical filters for LCDs, touch screens, and precision optical assemblies, servicing military, medical, avionic, and industrial electronics markets. Products include: EMI/RFI shielding optical filters, high-performance AR coatings, contrast enhancement filters, night vision compatible filters, and Therma Klear transparent heaters. Filters can be purchased as stand-alone products or integrated/optically bonded for touch screen and display assemblies. Dontech filters and display enhancement services extend the environmental performance and durability of LCDs to meet demanding requirements.

Bill Cusack, Sales Manager 700 Airport Blvd. Doylestown, PA 18902 (215) 348-3010; fax: (215) 348-9959 wcusack@dontech.com; www.dontech.com



E Ink Corporation

1121

E Ink Corporation is the world-leading developer and provider of electronic paper displays (EPDs) to the market. Products made with E Ink electronic paper displays possess attributes that enable new advancements in the mobile electronics market, including a paper-like high contrast and appearance, ultra-low power consumption, and a thin, feather-light form. E Ink technology is ideal for many consumer and industrial applications, spanning e-Books, e-Newspapers, e-Textbooks, watches, smartcards, electronic shelf labels, battery/memory indicators, and public information and promotional signs.

Alexandra Morgan 1000 Technology Park Drive Billerica, MA 01821 (617) 499-6000; fax: (617) 871-6660 lmorgan@eink.com; www.eink.com

EarthLCD 730

EarthLCD is the oldest LCD integrator and color TFT LCD trading company in the world. Since 1994 it has designed and manufactured innovative LCD solutions and sold over 1,000,000 LCDs. EarthLCD.com has a global supply chain serving medical, industrial, instrumentation, and educational markets. Custom projects are welcome and at EarthLCD no order is too small. Earth will be showing a 5-touch, glove-friendly, all-weather touch monitor module, a \$99 smart LCD with Arduino inside, and the world's only generally available 10.4-in. x 1-in. color TFT module. A full line of open frame, LCD kits, and the award winning ezLCD smart LCD will be shown.

Randy Schafer, CEO randy@earthlcd.com Gary Heppy, VP Sales gary.heppy@earthlcd.com



3184- J Airway Avenue Costa Mesa, CA 92626 (949) 248-2333 www.earthlcd.com

**Edge Electronics** 

www.edgeelectronics.com

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Edge Electronics is an authorized distributor and LCD solution provider. Edge's dedication to service separates it from competitors, and it consistently delivers solutions that exceed customer's expectations. Edge provides engineering services for display solutions that enable clients to bring their product to market consistantly on time, and under budget. (See our ad in this Exhibit & Product Guide)

Mitchell Auerbach, Vice President of Operations/ Director LCD Solutions 75 Orville Drive Bohemia, NY 11716 (800) 647-3343; fax: (631) 471-3405 mauerbach@edgeelectronics.com;



eGalax\_EMPIA Technology, Inc.

935

eGalax\_eMPIA Technology, Inc. (EETI) designs, develops, and markets a wide portfolio of standard solutions such as resistive, surface-capacitive, surface-acoustic wave, and infrared; as well as leading-edge solutions such as a projected-capacitive touch controller for Microsoft Windows 7 and Windows 8 Logo devices. EETI offers comprehensive driver support and partners with worldwide sensor makers and tier brand suppliers to provide a broad-base solution for its customers.

Candice Yang, Sales Account Manager 11F., No.302, Rueiguang Road, Neihu District Taipei City 114 Taiwan 886-2-87515191; fax: 886-2-27978808 candiceyang@eeti.com; www.eeti.com

ELDIM 1421

ELDIM has been manufacturing measurement instruments based on Fourier optics for more than 20 years in order to commercialize key developments in display technology. ELDIM products are the reference for faster and easier testing solutions, based on high-performance CCD cameras, proprietary optics, and advanced user-friendly software. ELDIM can meet customers' R&D and quality control needs, providing solutions in viewing angle and BRDF evaluation of flat-panel displays, 3-D displays, LCD TV, OLED, PDA, films, polarizers, and more. ELDIM also offers uniformity and mura inspection of whole panel areas, as well as cockpits, dashboards, monocular, and others; quantitative imaging for scientific applications; and response time and pattern generation for display characterization.

Luc Margerie, Logistic Manager 1185 Rue D'Epron (Ancienne) Herouville Saint Clair F-14200 France 33-2-31-94-76-00; fax: 33-2-31-94-09-50 Imargerie@eldim.fr; www.eldim.fr

#### **Ellsworth Adhesives**

430

Ellsworth Adhesives is a global distributor of specialty chemicals, offering a wide range of adhesives, sealants, coatings, encapsulants, tapes, soldering products, and dispensing equipment. Ellsworth Adhesives offers the newest products and latest technologies from leading manufacturers including 3M, Dow Corning, Dymax, Fisnar, Henkel, Loctite, Lord, Permabond, and Humiseal. This extensive product line, combined with the ability to assist clients in the integration of supply, logistics, custom formulation, and packaging of specialty chemicals, make Ellsworth Adhesives a perfect fit for manufacturing companies of any size.

Nick Noskowiak, Marketing Assistant W129 N10825 Washington Drive Germantown, WI 53022 (800) 888-0698 nnoskowiak@ellsworth.com; www.ellsworth.com

**Elo Touch Solutions** 

600

Elo founders pioneered the touch screen over 40 years ago. Today, Elo Touch Solutions is a leading global supplier of touch-enabled technology, products, and industry solutions. The Elo portfolio encompasses one of the broadest selections of OEM touchscreen components, touch monitors, and all-in-one touch computers for the demanding requirements of diverse markets, including gaming machines, hospitality systems, industrial automation, interactive kiosks, healthcare, office equipment, point of sale terminals, retail displays, and transportation applications. The Elo touch experience has consistently stood for quality, reliability, and innovation with over 20 million installations worldwide.

Kerri Holland, Marketing Events 1033 McCarthy Blvd. Milpitas, CA 95035 (800) 557-1458 kerri.holland@elotouch.com; www.elotouch.com

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Elpa Displays, Inc.

1536

Elpa Displays, Inc. is a leading designer and manufacturer of display modules. With its broad product and technology offering, it has been able to capture the attention of OEMs and design firms. Products include: LCDs, OLED, open frame, TFT modules, touch panels, and optical bonding. Its market strategy is to offer customers superior products with the best lead times at very competitive pricing. From new applications to continued support of competitors' obsolete modules, Elpa Displays is committed to customer satisfaction.

2300 N. Barrington Rd., Ste. 400 Hoffman Estates, IL 60169 (847) 519-7205 info@elpadisplays.com; www.elpadisplays.com

eMagin Corporation

1721

eMagin is a leading manufacturer of active-matrix organic LED (AMOLED) microdisplays on silicon. These displays perform at low-power levels and extended temperature ranges, and provide image performance not possible with LCD technologies. eMagin's OLED microdisplays are designed and manufactured in the U.S. Already the most power-efficient system solution for virtual imaging devices, eMagin's OLED microdisplays based on the company's new OLED-XL technology feature significant improvements in efficiency luminance, operational lifetime, and reliability.

Ming Shi, Director of Sales 3006 Northup Way, Ste. 103 Bellevue, WA 98004-8632 (425) 284-5200; fax: (425) 284-5201 mshi@emagin.com; www.emagin.com

EMD 911

Merck KGaA (EMD), Darmstadt, Germany, is a global pharmaceutical and chemical company with total revenues of €11.1 billion in 2013. Innovations by entrepreneurial employees characterize the success of the company. It operates its businesses in four divisions: Merck Serono (biopharmaceuticals), Consumer Health (over-the-counter pharmaceuticals), Performance Materials (high-tech chemicals), and Merck Millipore (products for pharmaceutical research and biotechnology). Merck's Performance Materials division offers highly innovative materials, advanced technologies, and high-tech chemicals to clients in the con-

sumer electronics, lighting, printing, plastics, and cosmetics industries. Its market leader products include liquid crystals for LC displays and new lighting technologies.

One International Plaza, Ste. 300 Philadelphia, PA 19113 (888) 367-3275; fax: (484) 652-5749 www.emd4displays.com

**Emerging Display Technologies** 

421

Headquartered in Kaohsiung, Taiwan, and with offices throughout the world, Emerging Display Technologies has emerged as a leader in visual display solutions. Since it commenced operations in 1994, it has grown to be one of the largest capacitive touch panel and active and passive LCD manufacturers in the world. Through a clear mission, strong corporate planning, and a culture that focuses on execution of business strategies, EDT has established a global organization that is strong, stable, and growing. Its unwavering commitment to capital investment, manufacturing capacity, and product technology ensures a continued leadership role in the markets it serves.

Chris Angelou 25 Mall Road Burlington, MA 01803-4156 (781) 425-5260; fax: (781) 425-5290 c.angelou@edtc.com; edtc.com

#### **Endicott Research Group, Inc.**

930

ERG specializes in power conversion solutions for LCD backlights. The company supports over 300 panels from most major manufacturers of CCFL- and LED-backlit displays by offering the industry's widest range of standard and custom DC-AC inverters and LED drivers. If you have a backlit LCD, ERG has the inverter or driver to match it for optimal brightness, maximum lamp or LED life, and dependable performance. Founded in 1979, ERG understands the importance of matching the right power supply to your display and application. ERG is ISO9001-certified and manufactures to IPC610 standards.

Bill Abbott, Corporate Distribution Manager 2601 Wayne Street Endicott, NY 13760-3207 (607) 754-9187; fax: (607) 754-9255 babbott@ergpower.com; www.ergpower.com

**Epoxy Technology** 

1026

Epoxy Technology, founded in 1966, is a global manufacturer and custom formulator of epoxy adhesives. It offers a complete line of electrically conductive, thermally conductive, optically clear, and photo curable (UV) materials for display assembly. Display technologies include haptic, touch-screen, interactive, and flexible. The company is ISO 9001 certified and RoHS and REACH compliant.

Mark Busa, Sales & Marketing 14 Fortune Drive Billerica, MA 01821-3972 (978) 667-3805; fax: (978) 663-9782 mbusa@epotek.com; www.epotek.com

**EUROLCDS** 

1637

EUROLCDS produces specialized LCD-based products under license or manufacturing contract. Services also involve buying licenses and/or developing and patenting of technical concepts for products that are new to the market.

Ilmars Osmanis, COO Lielirbes iela 17a Riga LV-1046 Latvia 371-67550511

ilmars.osmanis@eurolcds.com; www.eurolcds.com

Europtec, Inc.

1503

Europ Tec is a manufacturer of acid-etched anti-glare glass, EagleEtch, and a specialist in glass processing and fabrication for the display industry. Its products include EagleEtch, EagleEtch XS, EagleEtch Tough and EagleEtch Plus, the display industry's best performing anti-glare glass. Additional capabilities include silk screening, chemical strengthening, heat tempering, cutting, and CNC processing.

Heidi Ruefenacht, Assistant to CEO 423 Tuna Street Clarksburg, WV 26301 (304) 624-7461; fax: (304) 624-7432

heidi.ruefenacht@europtec.com; www.europtecusa.com/

**FLEx Lighting, LLC** 

326



FLEx Lighting is a Chicago-based optics company that produces innovative lighting solutions for consumer electronics and general lighting luminaires using standard LEDs. Based on a decade of research, FLEx has created one of the world's

thinnest and most flexible LED lightguide systems. FLEx's proprietary technology works with off-the-shelf LEDs, yet uses up to 80% fewer LEDs and is 10-20 times thinner than the leading industry methods for edge lighting. This results in the least expensive and most compact LED lighting technology to date. It is designed to be the most efficient LED light diffusion technology available in the market today.

Mike Casper, President 25 East Washington Street, Ste. 510 Chicago, IL 60602 (773) 295-0305 mcasper@flexlighting.com; www.flexlighting.com

FLUXIM AG

1915



FLUXiM is a provider of device simulation software (called SETFOS) and device measurement hardware (called PAIOS) to the display, lighting, photovoltaics, and electronics industries worldwide. Its products are used in industrial and

academic research labs for the study of device physics and product development.

Technoparkstrasse 2 Winterthur 8406 Switzerland 41-44-500-47-70 info@fluxim.com; www.fluxim.com

FocalTech Systems, Ltd.





FocalTech is an IC design house founded in 2005, specializing in the R&D of DSP algorithm and mixed-signal circuit design for touch controlling and display applications. Its products include capacitive touch panel controller ICs and

TFT-LCD driver ICs. Its operations cover all aspects of design flow, including IC design, process development, IC packaging technology, IC testing, product application development and failure analysis, etc.

Monica Wang, Deputy Manager 8F-1, No 32, Gaoite 2nd Rd. Zhubei City Hsinchu 302 Taiwan 886-3-6672758; fax: 886-3-6675515

monica.wang@focaltech-systems.com; www.focaltech-systems.com

#### Fraunhofer COMEDD

1608

Please see German Pavilion listings on pp. 12-13.

FSN, Inc.

451

FSN is a total TFT LCD solution provider (manufacturer) of choice for professionals who want the best display solutions. The company pro-

vides specially designed A/C boards, TFT LCD modules, open frame (touch) monitors, various inverters, power supplies, and all required cables.

Sunny Nam
Baekseok-Dong, ILsanTechno Town 1009
ILsan-ro 138, ILsandong-gu
Goyang-si, Gyenggi-do 410-722 South Korea
82-31-903-6812; fax: 82.31.817.6812
sunny.name@fsndisplay.com; www.fsndisplay.com

Fujitsu Components America

827

Fujitsu Components America supplies standard and custom, 4-, 5- and 7-wire, resistive touch panels in 1.8- to 17.3-in. (diagonal) sizes using film-glass that are designed to fit standard-size LCDs to simplify and reduce product development time for OEMs.

Beate Heckner, Marcom 250 E. Caribbean Drive Sunnyvale, CA 94089-1007 (408) 745-4900; fax: (408) 745-4971 bheckner@fcai.fujitsu.com; us.fujitsu.com/touchpanels

#### **Futaba Corporation of America**

731

Futaba, founded in 1948, is a global company that manufactures standard and custom displays and touchscreen products. Futaba has a long and proven track record of supplying to stringent automotive, medical, industrial, and consumer markets. Futaba technologies include: organic light-emitting diode (OLED), projected-capacitive touchscreen, touchkey, and touch-switch (PCT/PCAP), vacuum fluorescent displays (VFDs), and proprietary OleDry (liquid-type desiccant for OLED devices). Futaba also offers U.S.-based contract manufacturing services with an impressively broad range of capabilities.

Julie Ryan, Sales Assistant 711 East State Parkway Schaumburg, IL 60173 (847) 884-1444; fax: (847) 884-1635 jryan@futaba.com; www.futaba.com

#### Gamma Scientific

1030

With over 50 years of experience in designing commercial light measurement instruments, Gamma Scientific is trusted by the world's leading organization to provide accurate and reliable results. Gamma Scientific also operates an ISO/IEC 17025:2005, NVLAP accredited testing and calibration laboratory.

Anthony Zazo, Technical Marketing Manager 9925 Carroll Canyon Road San Diego, CA 92131 (858) 279-8034; fax: (858) 576-9286 azazo@gamma-sci.com; www.gamma-sci.com

General Digital Corporation, Optical Bonding Lab 1907

General Digital offers a multitude of standard and custom enhancement products and services. Enhancement of consigned LCDs, OLEDs, plasma displays, or complete turnkey solutions is available. The company possesses the ability to provide enhanced display components through finished, ready-to-deploy monitors. Backlight enhancement capabilities range from replacement of Cold Cathode Fluorescent Lamp (CCFL) rails to LED lighting solutions to full custom backlight design. Sunlight readable and night vision goggle-compatible systems are readily available. Other services include applying antireflective (AR) film laminations to the front of displays, optical bonding using multiple adhesives, and various bond configurations.

Continued on page 14

## German Pavilion

Welcome to the presentation of the Federal Republic of Germany within SID's Display Week 2014.

The German Pavilion features 10 high-tech companies exhibiting state-of-the-art materials, components, and manufacturing solutions for electronic flat-panel displays (FPDs).

Despite the fact that nearly all FPDs are manufactured in Asia, Germany offers one of the most innovative supply industries in the world, throughout the whole value-added chain: from FPD materials and components, manufacturing and process equipment, to system integration and end-usage! Moreover, many basic and groundbreaking developments have been made by German R&D teams.

Additional information on German products and suppliers is available at the official information center. Experts will gladly advise on further possibilities of co-operation and answer specific questions.

AIXTRON SE 1512 Manz AG 1409

AIXTRON is a leading supplier of deposition equipment to the semiconductor industry. Its technology solutions are used by a diverse range of customers worldwide, enabling themto build advanced components for electronic and opto-electronic applications.

Brigitte Hampejs, Marketing Communications Kaiserstrasse 98 Herzogenrath 52134 Germany 49-241-8909-6986 b.hampejs@aixtron.com; www.aixtron.com

**CODIXX AG**The German company CODIXX produces polarizers for the UV.

The German company CODIXX produces polarizers for the UV, VIS, NIR, and MIR range, which have been distributed under the brand name colorPol since 2003. CODIXX is ISO 9001:2008 certified.

Christian Gerlach, Marketing & Sales Steinfeldstrasse 3 Barleben 39179 Germany 49-39203-9630; fax: 49-39203-96333 colorpol@codixx.de; www.codixx.de

CreaPhys GmbH 1405

Located in Dresden, Germany, CreaPhys provides R&D and production solutions for its customers worldwide. The company's focus lies in solutions for organic electronics research and industry. Activities include the construction of UHV systems and components for organic thin-film deposition, vacuum sublimation systems, and thermal evaporators. Another area of focus is the production of ultra-high-purity materials, which is offered as a service on both R&D and industrial scales.

Overbeckstrasse 39a Dresden 1139 Germany 49-351-407-916-20; fax: 49-351-407-916-22 www.creaphys.com

#### Fraunhofer COMEDD

1608

Fraunhofer COMEDD offers a wide range of research, development, and pilot production possibilities, especially for OLED lighting, organic solar cells, and OLED microdisplays and sensors.

Ines Schedwill, Head of Marketing
Maria-Reiche-Strasse 2
Dresden 01109 Germany
49-351-8823-238; fax: 49-351-8823-394
Ines.Schedwill@comedd.fraunhofer.de; www.comedd.fraunhofer.de

Manz AG, based in Reutlingen, Germany, is a world-leading hightech engineering company with worldwide locations. Founded in 1987, in recent years the company has grown from an automation specialist into a supplier of production lines. Manz AG has amassed expertise in six areas of technology, including automation, laser processes, vacuum coating, printing, metrology and wet chemical processes. The technologies are deployed in three strategic fields, the "Display," "Solar" and "Battery" segments, and are continuously developed.

Birte Benecke, Project Manager Corporate Communications Steigaeckerstrasse 5 Reutlingen 72768 Germany 49-7121-9000 0; fax: 49-7121-9000-99 bbenecke@manz.com; www.manz.com

#### MDI SCHOTT Advanced Processing GmbH 1510

If you are looking for innovative glass processing solutions, MDI Schott offers great experience and new ideas packed in patented cutting tools as well as customized laser-based machines. The company is expanding the development of its production equipment utilizing CO2 lasers for ultra-thin glass cutting and green lasers for drilling, marking, patterning, and coating removal.

Christine-Aya Stahl, Sales & Marketing
Obere Austrasse 6
Mainz 55120 Germany
49-6131-7321-0; fax: 49-6131-7321-101
christine.stahl@mdischott-ap.com; www.mdischott-ap.com

#### Novaled GmbH 1413

Novaled GmbH is a leader in research, development, and commercialization of technologies and materials enhancing the performance of OLEDs and other organic electronics. Novaled offers OLED product manufacturers a unique combination of proprietary technology, materials, and expertise, and is currently the only company in the OLED industry licensing and selling organic conductivity doping technology and materials for mass production of display products. Novaled has a strong IP position in OLED technologies, structures, and materials, with more than 500 patents granted or pending. Novaled is headquartered in Dresden with offices in Asia. Novaled's majority owner is Samsung Cheil Industries.

Anke Lemke
Tatzberg 49
Dresden 01309 Germany
49-351-796580; fax: 49-351-7965829
anke.lemke@novaled.com; www.novaled.com/home/

#### PolyIC GmbH & Co. KG

**1509** 

PolyIC develops and markets products based on the platform technology of printed electronics. In the course of this, PolyIC offers products from fields including touch sensors and passive devices as well as printed electronics and displays. Touch sensors based on its PolyTC technology offer transparent, conductive, and flexible possibilities for touch screens and capacitive keys in any variants. Printed smart objects from its PolyLogo product line offer interesting possibilities such as radio activated displays for the field of marketing.

Katrin Riethus, Marketing & Communications Manager Tucherstrasse 2 Fuerth 90763 Germany 49-911-20249-0 katrin.riethus@polyic.com; www.polyic.com

sim4tec GmbH 1506

sim4tec is an innovative, entrepreneurial company focusing on advanced test equipment for organic material analysis and OLED design simulation tools.It helps its customers to accelerate the organic material and OLED development cycles and to reduce quality cost by organic material analysis in production. Its OLED simulation software provides scientists and OLED designers with a deep inside view of the OLED device.

Arnoldstrasse 18b Dresden 01307 Germany 4.935144665e+011; fax: 4.9351440395e+012 info@sim4tec.com; www.sim4tec.com

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www.springer.com

### **SAVE THE DATE**



51st Annual International Symposium, Seminar, and Exhibition

May 31 – June 5, 2015 Exhibition: June 2 – 4

San Jose Convention Center San Jose, California, USA

## Get ready to do business at Display Week in Silicon Valley

Display Week 2015 offers synergies unparalleled by any other display event, with attendees and exhibitors who represent the top engineering talent from all over the world, as well as leadership from both the commercial and consumer markets. Display Week is the ideal place to conduct business, discuss systems integration, network with colleagues, and above all, learn about the latest display technologies.

Get started building a better future for your company now:

www.displayweek.org

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Jennifer Derleth 8 Nutmeg Road South South Windsor, CT 06074-3469

(860) 282-2900, x132; fax: (860) 282-2244

jderleth@generaldigital.com; www.generaldigital.com

**German Pavilion** 

1403

The German Pavilion information center offers information and services to visitors interested in cooperating with partners and/or looking for supply sources in Germany.

Monika Langlinderer, Project Manager Federal Ministry for Economic Affairs and Energy Villemombler Strasse 76 Bonn D-53123

international@messe-stuttgart.de; www.sid.german-pavilion.com

#### **Glyndwr Innovations**

1832



Glyndwr specializes in manufacturing unique opticalquality microstructures used in next-generation displays. It achieves nanometric finishes, micron-level geometric pattern fidelity, and can produce seamless masters at the

meter scale and has experience in producing a wide variety of new types and unique structures for customers, including microlens arrays, pyramids, BEF patterns and diffractive structures. Glyndwr is dedicated to improving its capabilities even further, so it spends a significant amount of time and resources on R&D to ensure that customers can create new and unique films/structures. Come to the booth and challenge Glyndwr with your ideas!

Fford William Morgan St Asaph North Wales LL170JD UK 44-1745-535100 info@glyndwrinnovations.co.uk; www.ups2.co.uk and www.glyndwrinnovations.co.uk

GM Nameplate, Inc.

1921

GM Nameplate is a manufacturer of custom user interfaces, membranes, elastomers, capacitive touch technologies, and liquid optical bonding of touchscreens/decorative glass to displays. The company offers quickturn prototyping services through value-added assembly (through ruggedized applications). In addition, it offers injection and compression-molded technologies. With its vast capabilities, GM Nameplate is recognized worldwide as a vertically integrated solutions provider.

Elise Harrington, Marketing & Communications Specialist 2040 15th Avenue W. Seattle, WA 98119 (206) 298-0255; fax: (206) 284-3705 eliseh@gmnameplate.com; www.gmnameplate.com

**Gooch & Housego Orlando** 

170

The Life Sciences and Instrumentation division of Gooch & Housego is a world leader in optical radiation measurement solutions. The company designs and manufactures light measurement systems that provide accurate, repeatable, research-grade measurements in the UV-VIS-NIRIR wavelength ranges for research, academia, industry, and the military. Its light measurement systems are designed to provide consistent, precise, and repeatable measurements throughout the long life of the instrumentation.

Maureen Knowles, Sales & Mktg. Coordinator 4632 36th Street Orlando, FL 32811-6538 (407) 422-3171, x206; fax: (407) 648-5412 mknowles@goochandhousego.com; www.goochandhousego.com/products/instrumentation/

#### Goworld Display (North America), Ltd.

1731



Goworld seeks long-term relationships and offers strong engineering support, high quality, competitive pricing, and quick delivery for projects. It offers a wide range of LCDs up to 11 in. in TN, VTN, STN, FSTN, Bi-Stable, and TFT.

Goworld is an expert in projected capacitance touch panels with optical bonding and OGS. It offers 4- and 5-wire RTP, high brightness backlights, and transparent LCD heaters.

Don Feeney, Marketing Director 14925 SE Allen Road, Ste. 203B Bellevue, WA 98006 (425) 698-1938; fax: (425) 698-1852 Don@OrientDisplay.com; www.OrientDisplay.com

#### **GrafTech International**

1621

GrafTech International is a global company that has been redefining limits for more than 125 years. It offers innovative graphite material solutions for customers in a wide range of industries and end markets, including steel manufacturing, advanced energy, and latest-generation electronics. GrafTech operates 20 principal manufacturing facilities on four continents and sells products in over 70 countries.

Alex Augoustidis, Market Manager 12900 Snow Road Cleveland, OH 44130-1012 (216) 676-2252; fax: (216) 676-2250 alex.augoustidis@graftech.com; www.graftech.com

GroGlass

1911



GroGlass is a producer of high-quality anti-reflective and other metal oxide coatings on glass and acrylic substrates for display applications, for both internal and external use. The product line Sapphire exhibits unparalleled durability,

easy handling, optical performance, and is available in a wide variety of thicknesses and large sizes. The Sapphire product range extends from anti-reflective "invisible" acrylic and glass to beamsplitters and high reflective coatings.

Arturs Rozkalns – Sales Manager arturs@groglass.com Rihards Meiksans rihards@groglass.com Katlakalna 4B Riga, LV-1073, Latvia 371-6750-2910; 371-6750-2911 sales@groglass.com; www.groglass.com



#### **Gunze Electronics**

821

Gunze USA is a premier source for touch panels. Gunze's superior quality and innovation in touch sensor technology add extraordinary value for manufacturers and integrators. Its touch panels deliver the best touch solutions for all types of environments and touch display applications.

Marshall Jackson, Regional Sales Manager (512) 961-3228 mjackson@gunzeusa.com
Dennis Lind, Regional Sales Manager (512) 826-2014; fax: (512) 252-1181 dlind@gunzeusa.com
2113 Wells Branch Parkway, #5400
Austin, TX 78728-6999 www.gunzeusa.com

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Hanvon's Electromagnetic Resonance Touch (ERT) module utilizes electromagnetic resonance technology to implement powerful, non-contact handwriting input for digital devices such as e-book readers, GPS navigation, MP4 players, MID, tablet PCs, netbooks, notebook computers, mobile phones, etc. The electromagnetic pen is very convenient to use, requiring no batteries or cords to operate. Compared to resistive and capacitive touch technology, the ERT module eliminates surface stains and reduces erroneous input, lengthening the operating life of the electronic device in which it's embedded. The module is designed such that it has no negative impact on the device's display, making it perfect for devices like the e-Book reader. The ERT module, in conjunction with Hanvon's Handwriting Recognition software, provides support for multiple languages, multiple handwriting styles, and Chinese-English-Arabic number and character recognition.

Tangzhe, Marketing Manager 3rd Floor, Hanvon Tower Beijing 100193 China 86-10-82786651

tangzhe@hanwang.com.cn; www.hanvontouch.com

Henkel Corp.

Henkel is a total solution provider for adhesives, sealants, and functional coatings. Through close customer partnership, industry know-how, and engineering support, Henkel enables innovative design for handheld devices and displays.

#### (See our ad in this Exhibit & Product Guide)

Vicky Valery, Creative Services Traffic Coordinator One Henkel Way Rocky Hill, CT 06067 (860) 571-5266

vicky.valery@henkel.com; www.henkelna.com/optical-adhesive-19801.htm

**Hodogaya Chemical** 

Hodogaya Chemical is a mid-sized chemical manufacturer based in Japan. Its primary goal is to develop and produce fine chemicals. Some of its products are toner additives (CCA) and charge transport materials for OPC and intermediates used in pharmaceutical and agriculture. Currently, Hodogaya is focused on the development of its carrier transporters, namely HTM and ETM.

Chieko Isioka 123 Main Street White Plains, NY 10601 (914) 422-0888 office@hodochem.com; www.hodogaya.co.jp

#### **HOLOEYE Photonics AG**

HOLOEYE Photonics AG provides services and products in the fields of diffractive optics (DOE), spatial light modulation (SLM), and LCOS microdisplay components. HOLOEYE offers a great variety of highresolution LCOS microdisplays, customized packaging, flex cable design, and custom drive electronics for specialty applications and markets. HOLOEYE also provides special phase-modulating LCOS microdisplays for applications like optical tweezing, wavefront correction, holography, or optical switching.

Klaus von Guenner, Marketing Albert-Einstein-Strasse 14 Berlin 12489 Germany 49-30-6392-3660; fax: 49-30-6392-3662 klaus.von.guenner@holoeye.com; www.holoeye.com

#### **HOLOEYE Systems, Inc.**

HOLOEYE Systems, Inc. controls the LCOS (Liquid Crystal on Silicon) microdisplay supply chain from silicon to solution, which allows HSI to offer mid- to long-term strategies for supply chain management. Today HSI designs and produces a wide variety of products including near to eye displays, optical overlay systems, head-up displays, and fully customized LCOS microdisplays. Further, HOLOEYE Systems specializes in designing, engineering, and manufacturing fully customized amplitude and phase modulated LCOS microdisplay solutions for specialty markets such as aerospace, fire & rescue service, military & law enforcement, medical & life sciences, and industrial.

Laila SchneiderGossens, Operations Manager 1620 Fifth Avenue, Ste. 550 San Diego, CA 92101 (877) 881-9144

lschneidergossens@holoeyesystems.com; www.holoeyesystems.com

IDC offers avionics and industrial displays, specializing in optical bonding, touch screens, sunlight readability, and custom-size LCDs. The company is AS-9100 certified.

Kim Lee, Director of Operations 1115 Alpha Drive Alpharetta, GA 30004 (404) 483-8135; fax: (770) 886-3978 kim@idclcd.com; www.idclcd.com

**IDTechEx** 

1822

IDTechEx guides your strategic business decisions through its Research and Events services, helping you profit from emerging technologies. It provides independent research, business intelligence, and advice to companies across the value chain based on core research activities and methodologies providing data sought by business leaders, strategists, and emerging technology scouts to aid their business decisions.

Cara Harrington, Marketing Manager 24 Thorndike Street, Ste. 1A Cambridge, MA 02141 (617) 577-7890; fax: (617) 577-7810 c.harrington@IDTechEx.com; www.IDTechEx.com

IHS is a leading information company providing in-depth insight and expertise in key areas shaping today's global business landscape. Leveraging proprietary market data, forecasts, and analyses, IHS Technology display research spans the entire display value chain, with detailed coverage of small to large panels, display materials and components, touch screens, emerging display technology, and intellectual property.

Richard Stanfill, Event Logistics Coordinator 15 Inverness Way East Englewood, CO 80112 Richard.Stanfill@ihs.com; technology.ihs.com/

#### **Impact Display Solutions**

1924

Impact Display Solutions is a premier distributor for top-quality LCDs, controller cards, industrial motherboards, associated electronics, and value-added services. It is proud of its relationships with industry leaders such as Innolux, DLC, and Fujitsu, among others. Its focus is on products with long life cycles from manufacturers with a strong reputation for quality and support.

6010 Cornerstone Court, Ste. 200 San Diego, CA 92121 (858) 634-4800

info@impactdisplaysolutions.com; www.impactdisplaysolutions.com

INCOM Inc. 19

Incom produces glass/polymer fused fiber optic faceplates, tapers, and microstructures. Its products have made critical contributions to drug research, medicine, and military/homeland security. Over the past few years, Incom has been a leading supplier of fused fiber optics to the display industry, enabling displays to have any outer geometry imaginable. Incom's fiber optics transfer an image, allowing for tactile-programmable digital displays with tactile feedbac. The optic visually enhances the user interface by blocking high-angle ambient light and simplifying systems of numerous displays/buttons. This technology has been used in highend audio mixing, casino gaming, military tanks, and head-up displays for military aircraft.

Darlene Green, Sales Coordinator 294 Southbridge Road Charlton, MA 01507 (508) 909-2200; fax: (508) 909-2323 dar@incomusa.com; www.incomusa.com

**Infinite Trading** 

1906



3651 Lindell Road, Ste. D120 Las Vegas, NV 89103 (888) 415-9964 lourdesinfinite@gmail.com

Instec, Inc. 1726

Instec, Inc. designs, manufactures, and sells programmable precision temperature controllers, microscope hot and cold stages, and automatic liquid-crystal test equipment for use in LC display research and development and quality control applications.

Zachary Morrow, Product Specialist 5589 Arapahoe Avenue, Suite 208 Boulder, CO 80303 (303) 444-4608; fax: (303) 444-4607 sales@instec.com; www.instec.com

**Instrument Systems** 

1720

Instrument Systems develops, manufactures, and markets turnkey solutions for light measurement. The company delivers a comprehensive range of light measuring products for industrial and research applications. These include high-performance array and scanning spectrometers as well as imaging photometers and colorimeters. Key applications are LED/SSL and display measurement, as well as spectroradiometry and photometry. Instrument Systems is one of the leading manufacturers in this area. The associated Optronik Division develops and markets photometric test equipment specifically for vehicles and the traffic sector.

(See our ad in this Exhibit & Product Guide)

Birgit Seifert Neumarkter Strasse 83 Munich, Bavaria 81673 Germany 49-089-45-49-43-0 seifert@instrumentsystems.com; www.instrumentsystems.com/



I-PEX 1427

I-PEX micro-coaxial ultra high-speed graphics connectors are made by Dai-Ichi Seiko Co., Ltd., with a focus on "Perfection in Precision." The I-PEX Cabline-VS 0.5mm pitch connector is the VESA 16:9 Panel Standard connector. The high-performance Cabline-CA at 0.4mm pitch is good for 4K UHD high data rate signals. Also, I-PEX has designed FPC locking connectors called MiniFlex3 (0.3mm pitch), MiniFlex5 (0.5mm pitch), and the EvaFlex5. The I-PEX MHF RF Antenna connectors comply with the PCIe M.2 and Mini Card requirements. The connectors are tooled and fabricated to provide strong and clear signal integrity and feature durable construction.

Gregory Young, VP 2305 Donley Drive, Ste. 110 Austin, TX 78758 (512) 339-4739; fax: (512) 339-4745 greg.young@ipex-us.com; www.i-pex.com

#### Iridian Spectral Technologies Ltd.

1926

Iridian designs and manufactures optical filters and coatings tailored to specifc display application needs. Products include: 3-D glasses and filter wheels, anti-reflection/anti-smudge coatings, hot and cold mirrors, beam-splitters/combiners, and reflective HUD coatings.

Jason Palidwar, Account Manager 2700 Swansea Crescent Ottawa, ON K1G6R8 Canada (613) 741-4513; fax: (613) 741-9986 jason.palidwar@iridian.ca; www.iridian.ca

i-sft GmbH

1609

i-sft began in 1993 as a specialized division inside the much larger Siemens organization, focused on the area of LCDs, new at that time. I-sft was integrated into the Wammes-Group in 2003. From here i-sft became an internationally active and independent player in the global display world, concentrating completely on its technological strength and services. Today i-sft produces tailor-made display products, delivering deep technological consultancy and offering valuable trouble-shooting services.

Ruediger Simon, Director Business Development An der Weidenmühle 2 Gundersheim 67598 Germany 49-6244-9197-300; fax: 49-6244-9197-333 ruediger.simon@i-sft.de; www.i-sft.de

#### **Ito America Corporation**

1031

Ito Group is a technology-centric sales and service organization based in Japan that is active in all major world markets. Ito excels at understanding how technology is applied in real-world manufacturing situations; this is how it brings value to its customers. Ito Group achieves this level of expertise and value added by focusing on core abilities, which are in precision board and FPD assembly.

Kristen Harp, Office Manager 7700 South River Parkway Tempe, AZ 85284-1808 (480) 998-2250; fax: (602) 296-0483 kristen@ito-group.com; www.ito-group.com

#### **Iwatani Corporation**

1831



Iwatani Corporation provides high-performance film and industrial tape products specialized for electronic devices. Its acrylic foam ISR-ACF series has high shock-absorbing performance suitable for mobile devices. With its innova-

tive technologies and superb analysis, the ISR-ACF series provides the possibility of different design concepts that customers can develop freely. Iwatani also provides various types of industrial tape products to meet customers' needs.

Kensuke Kato, Sales 21-8, Nishi-Shimbashi 3-Chome, Minato-Ku Tokyo 105-8458 Japan 81-3-5405-5797; fax: 81-3-5405-5685 kato-k@iwatani.co.jp; www.iwatani.co.jp/eng/index.php

#### J. A. Woollam Co., Inc.

52

J. A. Woollam Co. produces ellipsometers for measurement of thin-film coatings for displays including ITO, a-Si, polysilicon, color filters, glass substrates, flexible display materials, PET, OLEDs, and more. Ellipsometry is a non-contact, nondestructive technique using polarized light to determine the film thickness and optical properties of substrates and films. J. A. Woollam Company provides equipment for use in both R&D and production environments. Measurement services are also available.

Lisa Huff, Project Coordinator 645 "M" Street, Ste. 102 Lincoln, NE 68508 (402) 477-7501; fax: (402) 477-8214 lhuff@jawoollam.com; www.jawoollam.com

#### JDI Display America, Inc.

1332

Japan Display, Inc. was launched on April 1, 2012, as a new company for small- and medium-sized displays, formed through the integration of Sony Mobile Display, Toshiba Mobile Display, and Hitachi Displays. Changing lifestyles around the world are spurring rapid growth in multiple fields, for mobile devices such as smartphones and tablets, intelligent auto electronics, consumer digital cameras, medical, and other industrial equipment. These trends are creating an increasingly important societal role for JDI and the display sector it operates in. The JDI/KOE booth will demonstrate cutting-edge technologies and products spearheading the evolution of the display industry itself.

Steve Vrablik, Director Sales 2150 East Lake Cook Road, Ste. 315 Buffalo Grove, IL 60089 (847) 484-7096 steve.vrablik.rc@j-display.com; www.j-display.com

#### Kimoto Tech, Inc.

40

Kimoto Tech is a world leader in film coatings, and continues to develop new technology and applications. Its production lines comprise automated film and coating delivery systems, computer controlled coating systems, and precision drying capabilities. The combination of comprehensive manufacturing and advanced research and development facilities allows the company to undertake virtually any film coating project, from customized formulations and products to an extensive product line for electronics applications.

601 Canal Street Cedartown, GA 30125 (310) 522-5911; fax: (310) 522-5922 west@kimototech.com; www.kimototech.com

#### **KOE-Americas**, Inc.

1332

JDI/KOE was launched on April 1, 2012, as a new company for small-and medium-sized displays, formed through the integration of Sony Mobile Display, Toshiba Mobile Display, and Hitachi Displays. Changing lifestyles around the world are spurring rapid growth in multiple fields, for mobile devices such as smartphones and tablets, intelligent auto electronics, consumer digital cameras, medical, and other industrial equipment. These trends are creating an increasingly important societal role for JDI and the display sector it operates in. The JDI/KOE booth will demonstrate cutting-edge technologies and products spearheading the evolution of the display industry itself.

Dan Mead, General Manager, Sales 1000 Hurricane Shoals Road, Ste. D-100 Lawrenceville, GA 30043-4826 (770) 409-3000; fax: (770) 409-3028 dan.mead@koe-americas.com; www.koe-americas.com

#### Konica Minolta Sensing Americas, Inc.

1724

Konica Minolta Sensing Americas provides advanced optical technology that precisely measures the elements of color and light. Its products have become a staple in research and manufacturing environments, helping organizations to meet product quality and operational goals with less waste, time, and effort.

#### (See our ad in this Exhibit & Product Guide)

Darlene Giordano, Assistant Marketing Manager 101 Williams Drive Ramsey, NJ 07446 (201) 818-3526 Darlene.giordano@konicaminolta.com; sensing.konicaminolta.us

#### **Kopin Corporation**

1812

Kopin Corporation is a leading developer and provider of innovative wearable technologies and solutions. Kopin's technology portfolio includes ultra-small displays, optics, speech enhancement technology, software, low-power ASICs, and ergonomically designed smart headset reference systems. Kopin's proprietary components and technology are protected by more than 200 global patents and patents pending.

Lisa Safran, Marketing Communications Manager 125 North Drive Westborough, MA 01581-3341 (508) 870-5959; fax: (508) 870-0660 LSafran@kopin.com; www.kopin.com

#### **Kristel Displays**

1715

For more than 30 years, Kristel has manufactured custom and standard industrial grade monitors for the global market. Applications include electromechanical configurations for ATM, automotive, test, gaming, medical, surveillance and many other types of OEM products. Kristel customizes and enhances LCDs for optical performance, and specializes in all varieties of touch solutions. The company is registered ISO-9001 (rev 2008).

555 Kirk Road Saint Charles, IL 60174-3406 (630) 443-1290; fax: (630) 443-1390 www.kristel.com

#### **Kyocera Industrial Ceramics Corporation**

1631

As a leading manufacturer of LCD products, Kyocera provides advanced technology and high-quality products. With a focus on industrial and automotive markets, Kyocera offers high-performance, cost-effective TFT and passive display technology with long-term product availability, which distinguishes the company as a preferred and reliable supplier. With its strong engineering team, the Display Division can provide technical support and guidance from the early design to the production phase of product development, offering various technical solutions to customers, including toolkits, touch screen solutions, and assembly services through its value-add facilities in Plymouth, Michigan, and Tijuana, Mexico.

Jessica He 5713 E Fourth Plain Blvd. Vancouver, WA 98661 (800) 826-0527; fax: (360) 750-6184 jhe@optrexusa.com; http://americas.kyocera.com/kicc/

#### Laserod

1114

For over 40 years, Laserod Technologies and its predecessor companies have provided laser micromachining products and services to many industrial corporations and most prestigious universities in the world. Laser patterning (restructuring) of transparent conductive displays coated with ITO, AgN, Ag paste, Au, and more is readily performed.

Laserod excels in the production and prototype patterning of displays by laser ablation, especially capacitive touch screens. New for 2014 is a laser machine that patterns displays to extraordinary micron accuracy using fast linear motors and travel to  $700~\text{mm} \times 700~\text{mm}$ . Other micromachining operations are hole drilling and the cutting of any thin material.

Rod Waters, Marketing Manager 20312 Gramercy Place Torrance, CA 90501 (310) 328-5869; fax: (310) 328-5873 rod@laserod.com; www.laserod.com

LG Display Co. Ltd.

1302

LG Display is a leading manufacturer of thin-film transistor liquid-crystal display (TFT-LCD) panels, OLEDs, and flexible displays. The company provides TFT-LCD panels in a wide range of sizes and specifications for use in TVs, monitors, notebook PCs, mobile products, portable media players, and GPS navigation systems, as well as panels featured in devices in professional medical and aerospace industries.

DaeChul Jung, Manager 14th Floor LG Display 128, Yeoui-daero, Yeongdeungpo-gu Seoul 150-721 Korea 82-2-3777-1937; fax: 82-23-777-0793 dc.jung@lgdisplay.com; www.lgdisplay.com

**LINTEC Corporation** 

934



LINTEC has been advancing and combining the core technologies of adhesive and film for many years, drawing on insights and multiple leading-edge technologies to create and launch innovative products that provide new value and

increased functionally. At Display Week 2014, LINTEC will be showing novel optical films and adhesives for various applications.

Mary Snow 2-1-2 Koraku Bunkyo-ku, Tokyo 112-0004 Japan 81-3-3868-7737; fax: 81-3-3868-7726 Mary-Snow@lintec-usa.com; www.lintec-global.com/

Litemax Technology, Inc.

163

Litemax Technology, Inc., was established in August of 2000. Litemax is a leading manufacturer and supplier of very high bright (VHB) sunlight readable display panels in multiple form factors such as its Durapixel and Spanpixel display brands. Litemax supplies its technology-driven backlight designs in displays used in numerous industries such as gaming, kiosks, digital signage, medical displays, military applications, and more. Litemax's technology is a game changer in the display industry.

Ray Oribello, Vice President of Sales & Marketing 48531 Warm Springs Blvd., #414 Fremont, CA 94539 (510) 509-7506; fax: (510) 509-6414 ray\_oribello@litemaxusa.com; www.litemax.com

LMS Co., Ltd.

335



LMS is a leading global supplier of core components and materials. LMS provides its customers and stockholders with the best value by focusing on its core capabilities in developing and producing materials for display and optical

components through continuous challenge and passion.

340-6, Cheongho-ri, Jinwi-myeon, Pyeongtaek-si Gyeonggi-do 451-862 Korea 82-31-376-2031; fax: 82-31-421-6446 www.lmsglobal.com/ **Lumineq Displays** 

**321** 

Lumineq Displays, a business unit of Beneq, is a premier global manufacturer and developer of thin-film electroluminescent (TFEL) displays. Lumineq displays are used in a wide array of applications in mining, marine and offshore, public safety, medical devices, military/avionics, and generic industries. The display itself is robust and reliable, and it is habitually used in extreme environments, often being the only type of display that can cope with these conditions. Lumineq also manufactures and develops transparent electroluminescent (TASEL) thin-film displays for applications that combine aesthetics with superior reliability and a unique viewing experience.

Marika Starck, Marketing Specialist P.O. Box 4 Espoo 2201 Finland 358-9-7599-530; fax: 358-9-75995310 marika.starck@beneq.com; www.lumineq.com

**Luminit LLC** 

1809

Luminit is a privately held high-technology company specializing in custom and standard holographic diffuser solutions. Luminit has commercial experience that covers areas including LED lighting, biomedical, semiconductor metrology, architectural lighting, and display applications. Luminit Light Shaping Diffusers are available directly or through its network of domestic and international distributors.

Peter Zinsli, Marketing Manager 1850 W. 205th Street Torrance, CA 90501 (310) 320-1066; fax: (310) 320-8067 PZinsli@luminitco.com; www.luminitco.com

#### Macnica USA, Inc.

526



Macnica operates in Silicon Valley to provide distribution of high-quality electronic components for businesses in North America. Macnica strives to build lasting ties with enterprises and developing companies.

Virginia Smith, CSR 2540 N 1st Street, Ste. 280 San Jose, CA 95131 (855) 325-8710; fax: (408) 456-0885

Virginia.smith@macnica.com; www.macnica.com/web/usa/home

Manz AG

1409

Please see German Pavilion listings on pp. 12–13.

**MBRAUN** 

1015

MBRAUN is the world-wide leader in designing and manufacturing inert gas enclosures and custom system solutions. With the help of its partners, MBRAUN offers complete clean environment solutions for all stages of OLED/PLED/OPV research, development, and mass production. From laboratory scale systems with integrated manual process stations to fully automated production lines, MBRAUN has a complete solution.

Laura Dix, Sales Assistant 14 Marin Way Stratham, NH 03885-2578 (603) 773-9333; fax: (603) 773-0008 l.dix@mbraunusa.com; www.mbraun.com

**MDI SCHOTT Advanced Processing GmbH** 

**1510** 

Please see German Pavilion listings on pp. 12–13.

Merck KGaA

Merck KGaA (EMD), Darmstadt, Germany, is a global pharmaceutical and chemical company with total revenues of €11.1 billion in 2013. Innovations by entrepreneurial employees characterize the success of the company. It operates its businesses in four divisions: Merck Serono (biopharmaceuticals), Consumer Health (over-the-counter pharmaceuticals), Performance Materials (high-tech chemicals), and Merck Millipore (products for pharmaceutical research and biotechnology). Merck's Performance Materials division offers highly innovative materials, advanced technologies, and high-tech chemicals to clients in the consumer electronics, lighting, printing, plastics, and cosmetics industries. Its market leader products include liquid crystals for LC displays and new lighting technologies.

Clemens Gruetz
Frankfurter Strasse 250
Darmstadt 64293 Germany
49-6151-72-0; fax: 49-6151-72-2000
clemens.gruetz@merckgroup.com; www.merck4displays.com

#### **MITAS Electronics**

143

MITAS Electronics designs, develops, and manufactures micro-coaxial cable assemblies for electronic flat-panel displays and related industries

Terrell Simpson, President 2600 East Old Settlers Blvd. Round Rock, TX 78665 (512) 635-7302; fax: (512) 252-1290 terrell@mitaselectronics.com; www.mitaselectronics.com

#### Mitsubishi Electric US, Inc.

1837

Mitsubishi Electric's leading-edge TFT-LCD modules are designed for high reliability, optimal visibility, and enhanced viewability, ensuring optimum performance and excellent color quality in a broad range of indoor and outdoor operating environments.

Yoshifumi DOi, Senior Field Application Engineer 5201 Great America Parkway, Ste. 332 Santa Clara, CA 95054 (408) 727-3111; fax: (408) 727-2689 yoshifumi.doi@meus.mea.com; www.mitsubishielectric.com/semiconductors/index.html

#### **Molecular Imprints**

833

Molecular Imprints is a market and technology leader for high-resolution, low cost-of-ownership nanoimprint lithography systems and extremely small features required in today's state-of-the-art devices. Its J-FIL technology has further applications in emerging display technology, hard disk drives, light emitting diodes (LEDs), and biotechnology markets.

Michael N Miller, Business Development and Marketing Manager 1807 West Braker Lane, Bldg. C-100 Austin, TX 78758

(512) 339-7760; fax: (512) 339-3799

mmiller@molecularimprints.com; www.molecularimprints.com

#### **Momentive Performance Materials**

1909



Momentive Performance Materials is a global corporation involved in the manufacture of silicone-based specialty products. Momentive's silicones offer high-performance materials solutions for current and future display technol-

ogy. The material portfolio for the display industry includes electrode coatings, optical bonding/potting/coatings, formed-in-place gasket (FIPG) sealants, adhesives, potting compounds, and thermal interface materials. Typical applications include optical bonding, ITO/silver electrode coatings, OLED potting, formed-in-place gaskets (FIPG), thermal

interface materials, and assembly adhesives. Material solutions include room temperature and UV cure encapsulants, UV cure or heat cure optically clear adhesives, optically clear high-purity heat cure adhesives, Ti controlled room-temperature cure adhesives, thermally conductive adhesives/gels/greases, and fast-cure/high-purity adhesives.

David Stoddard, Senior Account Manager
260 Hudson River Road
Waterford, NY 12188
(800) 295-2392
David.stoddard@momentive.com; www.momentive.com

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#### Nagase America Corporation California Branch 1703

In the field of electronics, Nagase offers trading, marketing, research, and development, as well as manufacturing and processing functions that make the company "a technology and intelligence-oriented company that turns wisdom into business."

Hiro Sakoda, Assistant Sales Manager 2880 Lakeside Drive, Ste. 320 Santa Clara, CA 95054-2814 (408) 235-1748; fax: (408) 567-9729 hsakoda@nca-nagase.com; http://www.nagase.co.jp/

Nanofilm 1735

Nanofilm, founded in 1985, is the maker of Clarity UltraSEAL and a global optical leader in lens care and coatings. Millions of people around the world use Nanofilm products, including Clarity Clean It, Clarity Defog It, and other lens care products. The Nanofilm team works closely with companies to identify needs and develop solutions aligned with their specific requirements.

John Dietrich, Manager, Product Development 10111 Sweet Valley Drive Valley View, OH 44125 (216) 447-1199; fax: (216) 447-1137 jdietrich@nanofilmtechnology.com; www.nanofilmtechnology.com

#### Nanosys

1622

Nanosys is leading the development of quantum dot technology for displays. Since its founding in 2001, the company has partnered with leading display makers in creating standout tablets, TVs, and smartphones that are thinner, lighter, brighter, and more colorful than ever before. While most of the innovative work Nanosys does can be measured in atomic units, the true impact of its technology advancements reaches far beyond the beautiful and vibrant devices consumers hold in their hands.

Jeff Yurek, Corporate Communications 233 S. Hillview Drive Milpitas, CA 95035 (408) 240-6700; fax: (408) 240-6900 jeff.yurek@nanosysinc.com; www.nanosysinc.com

#### Nicomatic 427

Nicomatic is a global designer and manufacturer of electronic connectors and Flat Flex Cable (FFC) used in a broad range of industries and applications. CrimpFlex (for FPC, FFC and printed electronics) and CMM (mil/aero) connectors carry power, information, and video between printed circuit boards and cable assemblies. Nicomatic FFC is manufactured in the US with 2-week lead times and custom variations including selective gold plating or EMI/RFI shielding capabilities.

Natalie Schweiker, Marketing Assistant 165 Veterans Way, Unit 200 Warminster, PA 18974-3529 (215) 444-9580, x217 n.schweiker@nicomatic.com; www.nicomatic.com

#### NIDEK Co., Ltd.

NIDI light

NIDEK coating technology controls visible and invisible light to offer anti-reflection and transmittance/reflectance of specific wavelengths. The coatings also provide functions like surface protection and anti-smudge.

Takuya Noguchi, Assistant Manager 27-4 Osawa, Katahara-cho Gamagori Aichi 443-0104 Japan takuya\_noguti@nidek.co.jp; www.nidek-intl.com/coating/index.html

nLIGHT 1810

nLIGHT is a leading supplier of high-performance lasers that enable innovations in advanced materials processing, defense, and medical applications. nLIGHT develops and manufactures diode lasers, fiber, and fiber lasers, based on proprietary semiconductor lasers and optical fiber technology.

5408 NE 88th Street Bldg. E Vancouver, WA 98665 (360) 566-4460 nlight.net/

#### NLT Technologies, Ltd.

1320

NLT Technologies is a leader in the development and manufacture of AMLCD modules for industrial and medical applications since the 1990s, offering displays from 4.3 in. to 21.3 in. in various resolutions and feature sets — available in the Americas through Tianma NLT America, Inc. Tianma NLT America, Inc. offers AMLCD products and solutions from NLT Technologies, Ltd., and Tianma Microelectronics with responsibility for sales, marketing, and engineering support of NLT's products, and manages Tianma USA's distribution sales of AMLCDs. The focus is on professional display products for POS/ATM, HMI, medical, OA, mobile display, test/measurement, and transportation applications (automotive, construction, agriculture, marine, aviation).

Cathy Dotson, Senior Product Marketing Manager/Tianma NLT America 1753 Shimonumaze

Nakahara-ku Kawasaki Japan

044-435-1291

cathy.dotson@tianma-nlt.com; www.nlt-technologies.co.jp/en/index.html

#### Noritake Itron Corp.

424

Noritake Itron Corp. is a display manufacturing company founded in Ise, Japan. It has developed from being the first supplier of calculator VFD displays to a leading manufacturer of CIG driver VFD displays. It specializes in the design, development, and production of VFD-related products and core technologies with its dedicated customer service. The core technologies include its proud ingenuity that enhances the capabilities of displays with five aspects, including thin film, thick film, mounting, vacuum, and software and hardware technology.

Mai Hayashi, Administrative Analyst 2635 Clearbrook Drive Arlington Heights, IL 60005 (847) 439-9020; fax: (847) 593-2285

marketing.ele@noritake.com; www.noritake-elec.com/

#### Nouvoyance, Inc.

1027

Nouvoyance is an independent, employee-owned, digital image-processing technology research and development team, the human vision experts that brought you PenTile subpixel rendering technology, ready to partner with customers to solve the most difficult problems in image capture and display. The company's skills include image compression, camera demosaicising, subpixel rendering, RGBW and Multi-Primary gamut mapping, image enhancement, OLED and LCD design improvements, global and local dimming control for high dynamic range display,

and display characterization. Nouvoyance specializes in developing solutions in software, FPGA, and Verilog, fully tested, verified, and ready for integration into customers' hardware.

#### (See our ad in this Exhibit & Product Guide)

Carolyn Marsden, Operations Manager 874 Gravenstein Highway S, Ste. 14 Sebastopol, CA 95472 (707) 228-1328; fax: (707) 829-5983 cmarsden@nouvoyance.com; www.nouvoyance.com

#### **Novaled GmbH**

1413

Please see German Pavilion listings on pp. 12–13.

nTact 1725

nTact is a leading supplier of slot die coating systems and integrated process solutions for display, touchscreen, and flexible electronics applications. The company's product line ranges from lower cost R&D systems to fully automated pilot and full production work cells including integrated modules such as AP plasma, hotplates, vacuum dry, and others. nTact has over 25 years of experience in delivering unique coating process solutions for a wide range of applications in emerging and mature markets, including the deposition of organic materials for OLED displays and lighting, conductive and dielectric layers, photoresists, suspensions, and active photovoltaic materials.

Greg Gibson, Chief Bus Dev Officer 10480 Markison Road Dallas, TX 75238 (214) 343-5300; fax: (214) 590-8760 g.gibson@ntact.com; ntact.com

Ocular

Ocular LCD, Inc., headquartered in Dallas, is a leading supplier of industrial touch panels and display products to the embedded technology industry. Ocular's innovative technologies enable equipment manufacturers to quickly bring to market product solutions with leading-edge, touch-enabled display capabilities. In addition to products, Ocular's extensive knowledge and over 25 years of experience allow the team to work closely with manufacturers to design display capabilities that meet the unique requirements of their applications, including the demands of extreme environments. Ocular's product realization services can combine customized displays and true multi-touch products into a fully integrated and tested turnkey product.

(See our ad in this Exhibit & Product Guide)

Erin Olson, Marketing Manager 12700 Park Central Drive, Ste. 750 Dallas, TX 75251-1500 (214) 635-1920; fax: (972) 437-2562 eolson@ocularlcd.com; www.ocularlcd.com

#### OIKE & Co., Ltd.

1703

OIKE is a pioneer in the use of dry and wet coating technologies. OIKE's core technology consists of roll-to-roll vacuum deposition and sputter technologies, which are used to apply various metals and oxides to plastic film, and wet coating technology that Is used to apply organic or inorganic composite coatings. By combining these processes, OIKE responds to diverse industrial requirements and bring new functionalities to existing products and components.

Hiro Sakoda, Assistant Sales Manager 181 Tokusayama-cho Nishinotoin Bukkoji Nishi-iru hsakoda@nca-nagase.com; www.oike-kogyo.co.jp/english/index.html

**Optical Filters** 

1115

Optical Filters has been a world leader in the design and manufacture of display enhancement products for 25 years. It offers optical lamination and full optical bonding of cover glass, touch screen integration, transparent heaters, and displays. At Display Week 2014 Optical Filters will be presenting its 2nd Generation EmiClare MicroMesh, the latest innovation in EMI/RFI shielding of displays and touch screens.

Peter Fisher, Sales and Marketing Director 13447 South Mosiertown Road Meadville, PA 16335-8321 (814) 333-2222; fax: (814) 333-4338

peter.fisher@opticalfiltersusa.com; opticalfiltersusa.com

**Optika Display** 



Optika Display, a wholly-owned subsidiary of STRATA-CACHE, is a leader in the LCD enhancment market specializing in outdoor displays. Experts in optical bonding, LED backlighting, film laminates and internal brightness

enhancement, Optika provides industries with economical, innovative outdoor display solutions.

Bob Caldarella, Senior Vice President, Sales 7890 Center Point 70 Blvd. Huber Heights, OH 45424 (937) 220-9813, ext. 506 info@optikadisplay.com; www.optikadisplay.com

**OSD Displays** 

OSD Displays has existed since August 2003 and is a leading manufacturer of custom OLED, TFT, and STN displays. OSD has a wide variety of display solutions that are suitable for various end-customer applications. Its displays are broad in specification to meet expectations and needs for a variety of industries including but not limited to; industrial controls, healthcare, laboratory equipment, and temperature and environment control.

12124 High Tech Avenue, Ste. 100 Orlando, FL 32817 (407) 629-0500 www.osddisplays.com

#### OxACs (Oxford Advanced Conductors)

331 OxACs (Oxford Advanced Conductors) is a spin-out from the University of Oxford. OxACs delivers novel, low-cost, and high-performance transparent and conductive coatings

for touch screen and other display applications. OxACs' patented zinc oxide-based material, SiZO, is a new generation of eco-friendly and sustainable transparent conductor that replaces the scarce and expensive indium tin oxide (ITO). OxACs' patented spray coating process enables efficient, fast, and inexpensive deposition of SiZO on large-area substrates. The high throughput nature of this proprietary technique significantly reduces processing costs. These technological achievements are the result of 50 man-years of R&D undertaken at the University of Oxford.

Jalil Oraee (CEO) 44-7802-372111 Linda Webb (PA) 44-1865-272646 Isis Innovations, Ewert House, Ewert Place, Summertown Oxford, OX2 7SG, UK jalil.oraee@oxacs.com; www.oxacs.com

#### **PanJit Touch Screens**

PanJit Touch Screens is a leading-edge designer and manufacturer of multi-touch resistive, resistive, projective capacitive, and touch windows. Products include 4-, 5- and 8-wire resistive touch screens as well as controllers, both board, and chip-level solutions. PanJit services various market segments and applications, including military notebooks/ tablets, GPS, industrial controls, medical, UMPC, kiosks, PC, and POS, just to mention a few.

Kim White, Customer Service Representative 2507 West Erie Drive, Ste. 101 Tempe, AZ 85282-3151 (408) 379-2817; fax: (480) 379-2819 Kim.White@panjit.com; www.panjittouchscreens

#### **Parker Chomerics**

1521

Parker Chomerics is a global leader in supplying display enhancements, EMI shielding, and integrated display assemblies. The company's integrated display solutions can include EMI shielded touchscreens, optical bonding, optical enhancements, custom touchscreen cover glass, glass or plastic optical windows, and transparent glass heaters. In addition, the company can offer complete supply chain management services. Parker Chomerics, a division of Parker Hannifin Corporation, also provides various EMI shielding and thermal management materials as well as complete EMI testing services.

http://www.chomerics.com/optical

#### Photo Research, Inc.

1821

Photo Research has been providing light measuring solutions for over 70 years. Lately, the company has been focusing on speed. Its latest family of instruments, the A-TAKT series, is designed to provide highly accurate spectral or filter-based in-line FPD testing in a fraction of the former time. For example, its fastest spectral solution, the V-7HS, can measure an LED backlit LCD at 0.5 cd/m2 in under 250 ms total cycle time! Its filter colorimeter features an all-in-one design that eliminates a bulky controller. Visit Photo Research at Display Week 2014 to discover how to drive your in-line testing at breathtaking speeds.

Jadu Thamotharan, Product Manager 9731 Topanga Canyon Place Chatsworth, CA 91311-4135 (818) 725-9763; fax: (818) 725-9700 jadu.t@photoresearch.com; www.photoresearch.com

#### **Photonics Media**

Photonics Media - The Pulse of the Industry - invites you to explore the world of light-based technology. As the publisher of Photonics Spectra, Industrial Photonics, BioPhotonics and Europhotonics magazines, Photonics Buyers' Guide and more, Photonics Media brings you the news, research, and applications articles you need to succeed.

PO Box 4949 Pittsfield, MA 01202 (413) 499-0514; fax: (413) 442-3180 Info@photonics.com; www.Photonics.com

#### **Pilkington North America**



Pilkington North America offers one of the widest ranges of robust, pyrolytic, temperable, coated-glass products available today. Its products provide solutions to a multitude of industry requirements, including high light transmission, anti-

reflection, transparent conductive, anti-static, EMI shielding, and heating.

811 Madison Avenue Toledo, OH 43604 (800) 221-0444

Buildingproducts.pna@nsg.com; www.pilkington.com/na

Pixel Interconnect 1524 Qua

Pixel Interconnect provides flat-panel display assembly, repair, and ruggedization lines worldwide. Its equipment and processes are an acknowledged industry standard. It is one of the largest engineering services company in the world that provides complete turnkey lines for ACF (anisotropic conductive film) and NCF (non-conductive film) assembly, LCD repair, and LCD ruggedization.

Scott Cockey, President 8215 Tualatin-Sherwood Road, Ste. 200 Tualatin, OR 97062-8441 (503) 885-8444; fax: (503) 210-0328 scottco@pixel-interconnect.com; pixel-interconnect.com

**Pixelligent Technologies, LLC** 

327

Pixelligent Technologies, producer of PixClear, is an advanced materials company that delivers next-generation materials for demanding applications in solid-state lighting, flat panel displays, and optical components and films.

Kate Burkhard, Exec. Asst. & Ofc. Mgr. 6411 Beckley Street Baltimore, MD 21224 (443) 529-8310 kburkhard@pixelligent.com; www.pixelligent.com

PolyIC GmbH & Co. KG

1509

Please see German Pavilion listings on pp. 12–13.

**Protovic America** 

1923



Protavic America is a worldwide manufacturer of highperformance conductive adhesives and non-conductive adhesives, encapsulation resins, potting resins, sealants, coatings, impregnation, and casting materials, as well as

8 Ricker Avenue Londonderry, NH 03053 (603) 289-2828

rmakee@protavicamerica.com; www.protavicamerica.com

non-silicone based thermal grease products.

QD Vision, Inc.

181

QD Vision, Inc. is a nanomaterials product company harnessing the unique light-emitting properties of quantum dots to deliver a new generation of display and lighting solutions that provide unmatched color, power efficiency, and cost savings.

Matt Mazzuchi, VP Market and Business Development 29 Hartwell Avenue Lexington, MA 02421 (781) 652-7433; fax: (781) 652-7600 mmazzuchi@qdvision.com; www.qdvision.com

**Quadrangle Products** 

183

Quadrangle Products is a certified ISO 9001:2008 custom cable manufacturer with over 28 years of leading industry experience and support. It offers custom-designed cable assemblies for prototype/low volume and mass production manufacturing.

Gayle Stamer, Marketing Manager 28 Harrison Avenue, Bldg. 16D Englishtown, NJ 07726 (732) 792-1234; fax: (732) 792-8305 gayle@quadrangleproducts.com; www.quadrangleproducts.com Qualcomm

Whether they're in the tablet on your nightstand, the phone in your pocket, or the watch on your wrist, today's flat-panel displays must be easy on the eyes — and on your battery. Qualcomm MEMS displays deliver a unique combo of power efficiency and stunning visual performance that helps you get more out of the devices you love. Visit Qualcomm's booth at Display Week 2014 and see the difference.

Evan Rutledge, Sr. Marketing Coordinator 5775 Morehouse Drive San Diego, CA 92121-1714 (858) 229-8539 c\_evancr@qualcomm.com; www.qualcomm.com

Q-Vio, Inc.

1736

Q-Vio is a flexible, customer-friendly company focused on providing high-bright, low-power, thermally optimized LED backlit displays. Q-Vio offers more than 50 different display products ranging in size, technology, and brightness. As an LCD enhancement and manufacturing company, Q-Vio can source, customize, and integrate displays to meet customers' specific needs. Its ever-expanding line of LED backlit, Q-Solar Sunlight Readable Displays, along with its ability to produce a quick-turn prototype of a specific LCD panel, gives clients a significant advantage with customers.

Joel Zettl, Partner & CFO 10211 Pacific Mesa Blvd., Ste. 401 San Diego, CA 92121 (858) 777-8299; fax: (858) 875-6696 jzettl@q-vio.com; www.q-vio.com

**Radiant Zemax** 

621

Radiant Zemax offers proven products to measure, characterize, and inspect light and color. Its specialized CCD-based systems help FPD manufacturers combine the benefits of automation (quantified results, speed, flexibility, and repeatability) with the qualitative accuracy of human vision. Radiant Zemax systems reduce cost, lower risk, and shorten time to innovation.

#### (See our ad in this Exhibit & Product Guide)

Teresa Arnold, Global Sales Order Administrator 22908 NE Alder Crest Drive, Ste. 100 Redmond, WA 98053-5894 (425) 844-0152; fax: (425) 844-0153 sales@radiantzemax.com; www.radiantzemax.com



Radiant Zemax

Raydiance

170



Raydiance all-laser precision manufacturing solutions lower display glass cost per-part by improving yield and eliminating capital, consumables, and the labor-intensive steps of current processes. Its femtosecond laser technology,

materials processing expertise, and 24-hour print-to-part software speed time to market for factories worldwide.

Tracey Bradley, Marketing Communications Manager 1450 North McDowell Blvd. Petaluma, CA 94954 tbradley@raydiance.com; www.raydiance.com

SAVE THE DATE



May 31 – June 5, 2015 San Jose Convention Center, San Jose, CA, USA **Rockwell Collins 1531** 

Rockwell Collins is a pioneer in the development and deployment of innovative communication and aviation electronic solutions. The company offers optically bonded, ruggedized, and enhanced display solutions for customers in the medical, automotive, marine, and industrial markets, as well as licensing of its Direct Dry Film optical bonding for consumer markets.

Nancy Daily, Sr. Program Support Specialist 400 Collins Road NE, M/S 124-302 Cedar Rapids, IA 52498-0001 (319) 295-8466 nldaily@rockwellcollins.com; www.rockwellcollins.com/ Products\_and\_Systems/Optics/Optical\_Bonding.aspx

633 Rolith, Inc.



Rolith, Inc. is a leader in nanostructured products for consumer electronics, renewable energy, and architectural markets. Rolith's technology is based on proprietary low-cost nanolithography method (Rolling Mask Lithography or RML). Its

recently developed NanoWeb transparent metal mesh electrodes product has already demonstrated superior performance for touch-screen displays.

Boris Kobrin, CEO 5880 W. Las Positas Blvd., Ste. 51 Pleasanton, CA 94588 (925) 548-6064 boris@rolith.com; www.rolith.com

Samsung Display Company

Samsung Display is a leader in the global display industry, introducing a new level of products and technologies combined with a variety of devices in the remarkable development of IT technology. Samsung Display is a newly merged corporation that combined Samsung Electronics-LCD and Samsung Mobile Display corporation in July 2012 to become the world's largest display company. Samsung Display is ready for the big leap toward the market of the future, integrating Samsung's display capabilities in LCDs and OLEDs.

Kiho Nam, Sr. Mgr. Marketing 601 McCarthy Blvd. Milpitas, CA 95035 (408) 544-4157

kiho.nam@samsung.com; www.samsungdisplay.com

San Technology, Inc.

902

San Technology, Inc. is a display-and-CM company headquartered in San Diego, California. Under the brand name of Santek, the company offers LCD panels, LCD modules, LCD signage, OLED, LED backlighting, touch panels, PCB assembly, and EMS solutions.

Anna Nakayama, Executive Assistant 6210 Marindustry Drive San Diego, CA 92121 (858) 278-7300; fax: (858) 278-7310 anna@santek.us; www.santechnology.com/

#### **Sartomer Americas**

Sartomer is one of the largest suppliers of specialty raw materials for UV/EB formulations including (meth)acrylate monomers and acrylated resins. Key product features for display applications include optical properties, broad refractive indices, barrier properties, varied dielectric properties, and adhesive properties.

James Zawicki, Marketing Communications Manager 502 Thomas Jones Way Exton, PA 19341-2530 (610) 594-7360; fax: (610) 363-4442 jim.zawicki@sartomer.com; www.sartomer.com

**Schenk Vision** 

Schenk's turnkey vision systems set a new standard for flat glass inspection. Providing the highest sensitivity and reliability, these high-performance systems offer precise defect size determination, unmatched in the industry. Along with Schenk's unique defect classification, it provides feedback on all aspects of quality and process control throughout the production of all kinds of flat glass.

Christina Wirth, Marketing 1830 Wooddale Drive, Ste. 500 Woodbury, MN 55125 (651) 730-4090; fax: (651) 730-1955 schenkmarcom@yahoo.com; www.drschenk.com

#### **Secure Communication Systems Inc.**

1836



Secure designs and builds custom rugged computer and display solutions for the commercial and defense industry. Secure uses a proven systems approach to design based on system requirements and technology improvements.

Its core competencies are in ruggedization/environmental sealing, leveraging modified commercial off the shelf (COTS) technology, and innovative advanced technology insertion. Secure uses modified COTS equipment in order to provide customers with leading-edge technology as rapidly as possible. This methodology is also cost-effective and allows Secure to insert disruptive technology into rugged applications.

Jeffrey Loo, Sales and Marketing Manager 1740 E. Wilshire Avenue Santa Ana, CA 92705 (714) 547-1174; fax: (714) 547-1343 jloo@securecomm.com; www.securecomm.com

**SEVASA** 

1126

SEVASA manufactures high-quality acid-etched anti-glare glass for the display industry. Its product line HapticGlas includes HPT, HPT-TEC, and custom productions. This is available at the market's largest sizes (up to 154 in. diagonal) and in large volumes. With 30 years' specialization in sustainable acid-etching, the company is Environmental ISO 14001 and Quality ISO 9001 rated.

Núria Galbe, Marketing Manager Rda. Shimizu 16 Pol. Ind. Can Torrella Vacarisses, Barcelona 08233 Spain 34-938280333; fax: 34-938280745 marketing@sevasa.com; www.sevasa.com

#### Sharp Microelectronics, Inc.

Sharp IGZO takes a starring role in the booth for Display Week 2014. MEMS panels, IGZO 4K x 2K displays, high-resolution IGZO displays for laptops and tablets, and groundbreaking Edgeless and Free Form displays built on an IGZO backplane will all be shown. Sharp will also feature additions to its Industrial Application (IA) LCD line-up, including new PCAP displays, new 1000 nit High Brightness panels direct from Sharp, LCDs featuring Sharp's Progressive Super View (PSV) technology, and more. Sharp will also show its power-saving Memory LCDs, perfect for wearable technology solutions.

Todd Stonewall 5700 NW Pacific Rim Blvd. Camas, WA 98607-9489 (360) 834-8024; fax: (360) 834-8906 stonewall@sharpsec.com; www.SharpSMA.com Shenzhen Jinghua Displays Co., Ltd.

Established in January, 1987, Shenzhen Jinghua Displays Co. is an LCD manufacturer.

Sean Lau, Program Manager No.511 Building, 6F, Bagualing Industrial District Shenzhen, Guangdong 518029 China 86-755-82054993; fax: 86-755-82262610 seanlau@china-lcd.com; www.china-lcd.com

Shintech, Inc.

927

Shintech has been providing optical products for the LCD market for more than 15 years. Its "LCD Master" is used for optimizing LCD optical performance. "OPTIPRO" measures optical retardation and Mueller matrix, and analyzes LCD parameters such as pre-tilt, twist angle, cell gap, and so on.

Michiyuki Miyashita 90 Ogo-Oku, Tabuse-Cho, Kumage-gun Yamaguchi-ken 742-1512 Japan 0820-52-5230; fax: 0820-52-5237 miyashita@shintech.jp; www.shintech.jp/

sim4tec GmbH

1506

Please see German Pavilion listings on pp. 12–13.

**SLENCIL Company** 

1700

SLENCIL manufactures commercial-duty tethered stylus designs and stylus tethers. It has over 40 years of experience in fabricating tethered products to meet critical consumer, commercial, and military applications.

William D. Goodwin, Sales Manager 36 South Main Street, PO Box 210 Orange, MA 01364-0210 (978) 544-2171: fay: (978) 544-281

(978) 544-2171; fax: (978) 544-2812 WDG.sid@slencil.com; www.slencil.com

**SMK Electronics Corp.** 

1625

SMK has been producing highly advanced resistive touch screens with superior quality that include haptic feedback, low reflectance, and robust dependability. In addition to its resistive touch technology, SMK offers capacitive and a multi-touch resistive touch screen for hand-held devices. Both of these products feature gesture input capabilities. Its touch screens are available in film/glass, glass/glass, and film/film configurations with polarization, anti-reflective, anti-smudge, anti-bacterial, and high heat resistant options. Come visit SMK and find out why its reliability and customer focus have earned high praise.

George Sawyer, Marketing Manager 1055 Tierra Del Rey Chula Vista, CA 91910-7875 (800) 770-6018; fax: (619) 216-6499 sawyer@smkusa.com; www.smkusa.com

**Solomon Systech Limited** 

1130

Founded in 1999, Solomon Systech Limited is a leading semiconductor company providing display IC products and system solutions on an international basis under its own global brand. Adopting a "fabless" business model, its group specializes in the design, development, and sales of proprietary IC products and system solutions that enable a wide range of display applications for smartphones, smart TVs, smart projectors, and other smart devices including consumer electronics products, portable devices, industrial appliances, and green energy applications such as LED lighting.

Sheron Lai, Corporate Communication Officer

6/F, No.3 Science Park East Avenue

Hong Kong Science Park Shatin NT Hong Kong

(852) 2207-1111; fax: (852) 2267-0800

sheronlai@solomon-systech.com; www.solomon-systech.com

SouthWest NanoTechnologies, Inc.

1825

SouthWest NanoTechnologies (SWeNT) is a privately held advanced materials company that manufactures high-quality single-wall and specialty multi-wall carbon nanotube products in a variety of forms, including powders, pastes, dispersions, and inks for a wide range of applications in the electronics and composites industries. SWeNT was founded in 2001 and has established commercial-scale manufacturing operations in Norman, OK, and a business and applications development center in the Boston, MA, area.

Shannon Pierce, Sales and Marketing Administration (860) 428-9482

spierce@swentnano.com; www.swentnano.com

**Springer-Verlag** 

1407

Please see German Pavilion listings on pp. 12–13.

Stemmerich, Inc.

1537

Stemmerich, Inc. offers specialty glass for the optical display and electronic markets. Stemmerich is a leader in fabricated complex configurations, precision edge finishing, and touch screen markets. The company specializes in R&D, pilot, and production runs.

Tim Seago, Manager 4728 Gravois Avenue St. Louis, MO 63116 (314) 832-7726; fax: (314) 832-7799 Tseago@stemmerich.com; www.stemmerich.com

Sun-Tec America, LLC

**1603** 

Sun-Tec is an integrated manufacturer that develops, produces, and sells automatic machines for attaching or laminating label, tape, and film for the display industry. Its machines are used for attaching films such as polarizers, AR and AG films, and OCA. Sun-Tec also makes machines for rigid-to-rigid assembly.

Raymond Wiley, General Manager 15207 N 75th Street, Ste. 106 Scottsdale, AZ 85260 (480) 922-5344; fax: (480) 556-9677 st-america-info@sun-tec.net; www.sun-tec.net

#### Taica North America Corp.

316

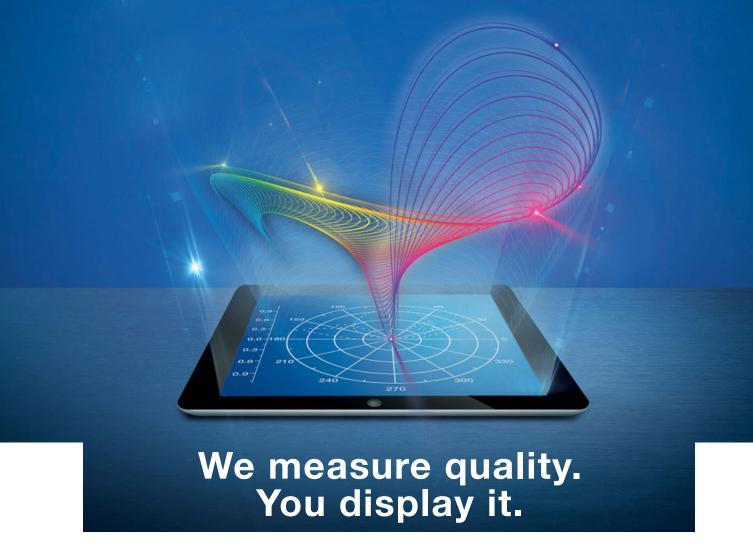
Taica's OptAlphaGEL is a tacky silicone-based product that has excellent optical transparency over the visible wavelength region, excellent durability, and shock absorptivity. OPT Alpha GEL has features best suitable for a wide range applications of flat-panel displays (FPDs), including OLED (organic light-emitting diode)-based FPDs.

Yasuhiro Kanai (408) 691-8137 kanai@taica-na.com; www.taica-na.com

#### **Tannas Electronics**

**1620** 

Tannas Electronic Displays (TED) is devoted to resizing LCDs for applications typically in aerospace and digital signage. Custom sizes are made using TED's patented methods. The resized LCD is fully warrantied and



#### Discover the complete range of display measurement solutions.



From Instrument Systems, the light metrology expert. We now offer the widest product range ever for characterizing and testing displays: spectroradiometers, imaging colorimeters, goniometer systems, and a broad range of accessories and software.

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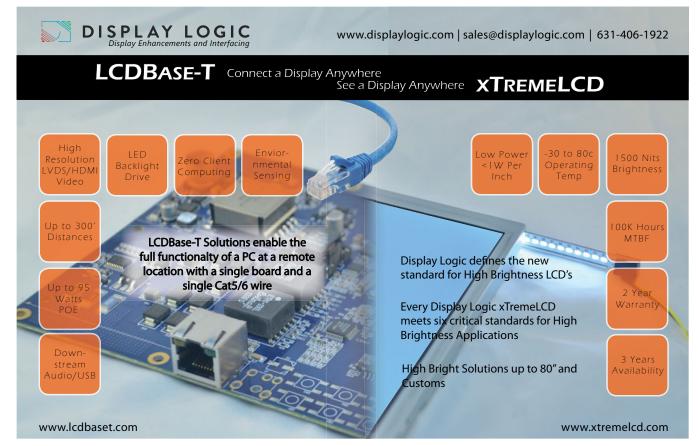


## Whatever the market, no matter the environment WPGA Display Solutions is there...



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## CRYSTAL TOUCH





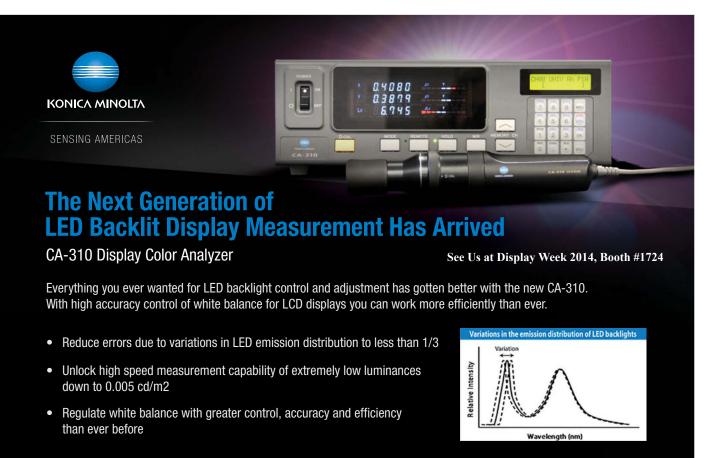
## Visit Ocular at Booth 721



Ocular is a leading supplier of touch panels and cutting edge display products

www.ocularlcd.com





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mil-qualified, and its original properties preserved. Resized LCD products and licenses to the intellectual property are available. Resizing LCDs enable new products using LCDs not available or financially feasible through high-volume production means. TED has been successfully resizing LCDs since 1999, when the first patents were filed. TED has been awarded and has pending over 25 patents internationally.

Lawrence E. Tannas, Jr., President 1426 E Dana Place Orange, CA 92866-1737 (714) 633-7874; fax: (714) 633-4174 L.Tannas@Tannas.com; www.Tannas.com

#### TATSUTA Electric Wire & Cable Co., Ltd. 103

TATSUTA has been producing and selling electrical materials for years. Its EMI shielding film has attracted world attention. At Display Week, TATSUTA will present its Cu paste and conductive bonding film.

Yoko Kashiwagi, Assistant Manager 5-1,6 Kunimidai Kizugawa, Kyoto 6190216 Japan 81-774 66 5551; fax: 81-774 66 5556 kashiwagi@tatsuta.com; tatsuta.com

TFD, Inc. 1520

TFD, Inc. is a world leader in ion-beam sputtered (IBS) coatings for displays, OLED, LCos, MEMs, and LCDs. All TCOs (ITO, IMITO, LTITO, IZO, AZO, FTO, and IGZO) are produced with the lowest surface roughness. Additionally, the company offers BBAR, black chrome, and solderable metal.

Margie Lewis, Purchasing, A/P & Marketing 1180 N. Tustin Avenue Anaheim, CA 92807-1732 (714) 630-7127; fax: (714) 630-7119 purchasing@tfdinc.com/

Tianma-NLT 1320

Tianma Microelectronics Co. was founded in 1983 and specializes in the design, manufacturing, and supply of high-quality LCD products. We are the leader of small-to-medium size displays in technology, quality, competitive pricing, and long-term support. Tianma offers a full range of LCD solutions, from graphic mono LCD to full-color TFT display modules; with AMOLED coming soon in 2015. It is fully capable in custom design displays that can meet customers' needs around the world. Tianma is dedicated to continuing its focus on producing the best displays for its customers worldwide.

Lu T. Do, Director, Sales & Marketing 13949 Central Avenue Chino, CA 91710 (909) 590-5833; fax: (909) 590-5858 ludo@tianma.com; www.tianma-usa.com

#### Toray Engineering Co., Ltd.

320

A culmination of outstanding reliability and production know-how has resulted in Toray's color filter mass-production. Toray has developed coaters that satisfy the needs of the LCD industry for a more uniformly coated substrate. It

also has electronic spray coater (ESC) technology that is suitable for high-precision thin films required in the process of organic EL (OLED) and other applications. The optimal arrangement of mask and nozzle materializes the whole-area coating of high-precision thin-film, masked pattern-coating, and block coating. Substrates of A4 or smaller size can be coated by ESC. A G5 size coater is now available to perform sample-coating in a demonstration.

1-45, Oe 1-chome Shiga 520-2141 Japan 81-777-544-1892; fax: 81-77-543-4460 satoru\_yamamoto@toray-eng.co.jp; http://www.toray-eng.co.jp/

Tru Vue 1034

Tru Vue Engineered Optics specializes in manufacturing anti-reflective coatings for glass and acrylic substrates used in display applications. The coating, called Vista AR, is engineered for demanding optical requirements, durability, and strength, and is applied via magnetron sputtering. Vista AR is producable in large volume and size capabilities.

Christine Shaffer, Marketing Manager 2150 Airport Drive Faribault, MN 55021 (507) 332.4100; fax: (507) 334.0059 cshaffer@tru-vue.com; www.tru-vue.com

UICO 1134

UICO makes duraTOUCH, some of the most durable P-Cap touch solutions available. duraTOUCH can withstand tremendous amounts of abuse and works with water, with gloves, and in extreme temperatures. UICO's technology makes it possible for companies everywhere to deliver a smartphone/tablet UX. From Cisco to McDonald's, duraTOUCH is in a wide variety of applications including cars, boats, baths, medical devices, oil-rigs, and wearable electronics.

Forrest Elizabeth Folsom, Marketing 612 Lamont Road Elmhurst, IL 60126 (630) 815-8589; fax: (630) 279-5750 ffolsom@uico.com; www.uico.com



#### **Umicore Thin Film Products**

70



Umicore is a leading manufacturer of ITO sputtering targets for flat-panel displays, touch screens, glass-coating, and PV applications. With its range of state-of-the-art materials and services, Umicore is helping its customers meet the

challenge in minimizing their total cost of materials ownership while fully maximizing the performance of their products.

Fezan Sayed, N. American Sales and Marketing Manager 50 Sims Avenue Providence, RI 02909 (401) 215.1784 Fezan.Sayed@Umicore.com; thinfilmproducts.umicore.com

#### **UNIGLOBE KISCO, Inc.**

734



UNIGLOBE KISCO is an advanced materials specialist company and global supplier of plastics, chemicals, and electronics materials. UNIGLOBE works with its fellow subsidiaries all over the world to supply and support materials develop-

ment as well as technical development toward added value for customers and suppliers. The company provides a link to genuine products manufactured by its parent company, KISCO Ltd., providing maximum satisfaction to customers as a broad-based provider of material solutions that give due consideration to product quality, cost, and the environment. Also, UNIGLOBE KISCO owns a factory for parylene coating services, which provides customer-specific services in coating.

Bernard Kabyemela, Chief Chemical Engineer / Sales Manager 6292 San Ignacio Avenue #A San Jose, CA 95119 (408) 224-6500; fax: (408) 224-6530 bkabyemela@uniglobe-kisco.com; www.uniglobe-kisco.com/index.html

#### **Universal Display Corporation**

Universal Display Corporation is a world leader in the research, development, and commercialization of organic light-emitting diode (OLED) technologies and materials.

Jen Umstead, Office Administrator 375 Phillips Blvd. Ewing, NJ 08618-1455 (609) 671-0980x321; fax: (609) 671-0995 jumstead@udcoled.com; www.udcoled.com

#### VP Dynamics Labs (Mobile) Ltd.

1137

VP Dynamics Labs (Mobile) Ltd., based in Hong Kong, is a leading R&D house in disruptive technologies and new business models around visual perception. The company's innovative four primaries RGBW (VPW) display and engine technology enables displays with lower power, higher resolution, excellent brightness, and better contrast. Thus mobile Full-HD displays of 4x perceived Virtual Resolution 1920 x 1080 can be mass produced using VPW physical resolution of 960 x RGBW x 540. VPW Technology finds broad applications in smartphones, tablets, notebooks, etc. for enhancing user experiences and satisfactions, in line with today's low carbon footprint trend.

Vincent Phan, CEO Unit 503, 5/F, 6W IC Development Centre Hong Kong Science Park Sha Tin NT Hong Kong (852) 2607 4238; fax: (852) 3743 4233 vp@vp-dynamics.com; www.vp-dynamics.com

Wamco, Inc. 1925

Wamco's decades of expertise in developing optical solutions for high-performance AMLCDs and its understanding of display applications in harsh environments, combined with Wamco's 30 years of material and optical sciences, position the company as a key partner where high-value, long-term product availability and reliability are required. The solutions are as diverse as opportunities, and range from ruggedization of commercial off-the-shelf modules to custom-designed modules around high-reliability LCD cells.

Jennifer Deleo, Inside Sales/Tradeshows 3128 Red Hill Avenue Costa Mesa, CA 92626 (714) 545-5560; fax: (714) 545-6093 jdeleo@wamcoinc.com; www.wamcoinc.com

**Westar Display Technologies** 

1431

Westar Display Technologies offers a broad range of display quality-assurance systems. Its PanelTest and QuickTest systems measure optical parameters on mobile displays. These measurements include: contrast, color, color gamut, gamma, cross-talk, uniformity, response time, and flicker. Westar's FPM Systems measure the optical performance of monitors, TVs, medical displays, and avionic displays. The T-Drive TFT Tester is a test pattern generator optimized for panel tests. Available models drive panels from cell phone displays to large-format TVs. Westar is the North American distributor for Topcon luminance meters, spectroradiometers, and uniformity analyzers.

Anndrea Griffon, Marketing Coordinator 4 Research Park Drive Saint Charles, MO 63304-5685 (636) 300-5100; fax: (636) 300-5105

Anndrea.Griffon@QinetiQ-NA.com; www.westardisplaytechnologies.com

#### **Westboro Photonics**

1624

Westboro Photonics designs, engineers, and manufactures instrumentation to measure and characterize light emission, reflection, and trans-

mission. Its specialized equipment is used throughout the world in many industries, including automotive, avionic, lighting and displays. Its efforts are focused on advancing the science of light measurement and it works closely with clients to ensure they maintain a strong competitive edge through the use of its products.

Cheryl Pollock, Administration 1505 Carling Avenue, Ste. 301 Ottawa, ON K1Z 7L9 (613) 729-0614, x527; fax: (613) 729-9067 cheryl.pollock@wphotonics.com; www.wphotonics.com

#### **WPG Americas, Inc.**

737



WPG Americas Displays & Solutions Group focuses on the distribution, design, value-add, and integration of products to support the embedded display market. It is proud to partner with the leading companies in the world for display

technologies, providing best-in-class industrial LCDs, peripheral products, and services to its valued customers through the continual improvement process of adding high-quality lines, educating its employees, and expanding its capabilities. Serving the aviation, military, medical, automotive, marine, industrial, digital signage, kiosk, and gaming markets, WPG can find the solutions customers need to reduce time to market and system cost.

#### (See our ad in this Exhibit & Product Guide)

Richard McKay, Vice President Displays & Solutions B.U. 5285 Hellyer Avenue
San Jose, CA 95138
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rich.mckay@wpgamericas.com;



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Xaar PLC 530

Xaar is a world leader in the development of inkjet technology and a manufacturer of piezoelectric drop-on-demand industrial inkjet printheads. Its technology is used all over the world in a wide range of manufacturing applications, including graphics, labels, packaging, ceramic tiles, décor, and outer case coding, as well as printing with specialist fluids for advanced manufacturing techniques. It designs and manufactures its printheadsin the UK and Sweden, exporting over 90% of production to customers around the world. It also develops and sells ink systems, electronics, and fluid optimization services to accelerate inkjet system development and adoption.

Jo Double 316 Science Park Cambridge CB4 0XR UK 44 (0)1223-423663; fax: 44 (0)1223-423590 jo.double@xaar.com; www.xaar.com

#### Xenarc Technologies Corp.

626



Xenarc Technologies Corporation was founded in 2002 as a pioneer in small form factor, video, and touchscreen interface device manufacturing. It was the first to introduce a 7-in. VGA monitor, and the first to bring a touchscreen

version of this monitor to market with the iconic 700TSV. The company quickly found a niche in the display market by providing high-quality monitors with a bevy of functions, as well as monitors that never incorporated refurbished LCD panels, as other display manufacturers rely

Michael Ger, Vice President 24 Hammond, Unit F Irvine, CA 92618 (949) 380-8898; fax: (949) 380-0888 mger@xenarc.com; www.xenarc.com

#### **Z** Microsystems

#### L908

931

Z Microsystems is a leading manufacturer of rugged deployable computing and visual solutions. Since 1986 it has been delivering reliable, high-performance MIL-Spec solutions that are custom tailored to perform at their highest capacity in harsh environments. Its ruggedized products include: displays, computers, servers, handhelds, data storage, video enhancement, video management resources, and much more.

9820 Summers Ridge Road San Diego, CA 92121 (858) 831-7000 sales@zmicro.com; www.zmicro.com

#### **Zeon Corporation**

Zeon is highlighting applications of its latest generation ZeonorFilm optical and retardation films. ZeonorFilm has excellent optical and dimensional stability under heat and humidity, critical criteria for LCD panels. For projected capacitance touch sensors, ZeonorFilm allows premium optical viewing with and without sunglasses – in both portrait and landscape orientation. New versions optimized for OLED will be featured for reducing reflection.

Mr. Toshiro Katayama, Business Manager 4111 Bells Lane Louisville, KY 40211 (502) 775-2000; fax: (502) 775-2025 zeonex@zeonchemicals.com; www.zeonex.com/applications\_zeonorfilm.asp



## **New Exhibitors for 2014**

#### Display Week welcomes the following exhibitors:

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## **Exhibitors Forum Schedule**

#### TUESDAY, JUNE 3, EXHIBIT HALL B

## <u>Session F1: Innovative Display Technologies and Applications</u> (10:45 am - 12:00 pm)

**Moderator:** Geoff Walker, Intel Corp.

#### F1.1: Projected-Capacitance Touch-Panel Technology

(10:45)

D. Feeney, Orient Display, Bellevue, WA, USA

Booth 1731

Orient Display has partnered with Goworld, China's leading manufacturer of capacitance touch panels. The latest technology developments in optical bonding, one glass solution (OGS), floating touch, edgeless touch, gloves, and capacitance touch will be highlighted.

#### F1.2: PCAP Design Flexibility

(11:00)

M. Harris, Ocular, Dallas, TX, USA

Booth 721

Projected-capacitive (PCAP) touch panels need to be customized for the end application in which they will reside. Different environments create different challenges; options must be available to adjust the design so it functions properly and overcomes any challenges the environment may cause.

#### F1.3: The Toughest Touch Out There!

(11:15)

R. Humphreys, UICO, Elmhurst, IL, USA

Booth 1134

We believe that a smartphone doesn't belong in a plastic bag. We believe that hands should stay in gloves. We believe that technology should work for people ... not the other way around. We believe touch should be as tough as the environment and work as hard as people do. That's why we made duraTOUCH®. Learn about the possibilities.

#### F1.4: Futaba Capacitive Touch and Display Technology

(11:30)

R. C. Dohring, Futaba Corp. of America, Plymouth, MI, USA

Booth 731

Futaba manufacturers OLED, capacitive touch panels, and vacuum fluorescent displays (VFDs). Also offerring contract manufacturing capabilities at their Huntsville Alabama facility.

#### F1.5: Reworkable Liquid Optically Clear Adhesive

(11:45)

D. P. Hanscom and L. Chen, Henkel, Rocky Hill, CT, USA

Booth 1311

New advances in reworkable LOCAs, the manufacturing techniques currently used, and improvements made to improve reworkability efficiency and to better protect the display when separating the laminations and cleaning the residual LOCA has been explored. Most importantly, and when done correctly, this will, in turn, make these manufacturing companies more profitable.

#### TUESDAY, JUNE 3, EXHIBIT HALL B

#### <u>Session F2: Transparent Conducting Films</u> (2:00 - 3:30 pm)

**Moderator:** Brad Bowden, Corning Incorporated

#### F2.1: Carestream FLEXX Transparent Conductive Films: Enabling the Future of Touch (2:00)

A. Fried, Carestream Advanced Materials, Oakdale, MI, USA

Booth 1713

Carestream Advanced Materials has commercialized FLEXX transparent conductive films based on silver nanowires as an alternative to ITO for touch panels and displays. FLEXX films are manufactured by a continuous roll-to-roll coating process, offer conductivities ranging from 10 to 150  $\Omega/\Box$ , transmission greater than 90%, greater flexibility and bendability, longer durability, and improved cost effectiveness compared to that of ITO. For touch and display module manufacturers, FLEXX film is a "drop in" replacement.

#### F2.2: NanoWeb™: Sub-Micron Invisible and Moiré-Free Transparent Metal-Mesh (2:15) Conductor for Large-Format and Flexible Touch-Screen Displays

B. Kobrin, Rolith, Inc., Pleasanton, CA, USA

Booth 633

Rolith's NanoWeb<sup>TM</sup> transparent electrode is a metal mesh of submicron lines lithographically fabricated using proprietary large-area low-cost RML® technology. Nanoweb is completely invisible to the human eye, does not form moiré with any display pixel structure, is highly transparent (>95% transmission) and conductive (<5  $\Omega/\Box$ ). Moreover, combining mesh and traces patterning in one lithography/printing step makes this technology cost effective even for small touch screens.

### F2.3: SANTE® Technology Enables Applications in New Emerging Markets for Enhanced User Experiences (2:30)

T. Chang, Cima NanoTech Pte. Ltd., Singapore

Booth 633

New applications and emerging market trends are changing the requirement landscape for transparent conductors, stretching it beyond what the incumbent (ITO) can achieve. Cima NanoTech's proprietary SANTE® self-assembling nanoparticle technology is the solution for bridging the gap between today's market demand and technological capabilities. SANTE technology enables transparent conductors with excellent conductivity, superior optics, and flexibility for applications that disrupt new and existing markets to enhance user experiences.

#### F2.4: CNB™ Films for High Contrast, Flexible, and Formable Touch

(2:45)

B. Senior, Canatu, Inc., Morgan Hill, CA, USA

Booth 1708

Going beyond ITO. The market drivers for Carbon NanoBud® (CNB™) based touch sensors that provide high-display-contrast enhancing properties will be discussed. Consumer electronics and automotive-industry long-awaited design freedom that enable high performance for complex flexible and 3D-shaped touch-enabled electronics devices will be described.

#### F2.5: Daido's Sputtering Targets for Cu Interconnect and Barrier Layers

(3:00)

Y. Yoshida, Daido Steel America, Inc., Victoria, British Columbia, Canada

Booth 736

A reliable barrier layer is essential for Cu interconnects that are expected to be adopted more widely in high-performance information displays. Daido Steel's newly developed high-quality sputtering targets for barrier layers will be presented with various evaluation data. New transparent conductive metal mesh materials will also be introduced.

#### F2.6: Silicon Zinc Oxide: An Eco-Friendly Substrate for ITO

(3:15)

D. Slocombe, Oxford Advanced Conductors (OxACs), Oxford, UK

Booth 331

Silicon (as simply  $SiO_2$ ) acts as a highly effective n-type dopant in zinc oxide (ZnO) thin-film coatings prepared by both vacuum-phase deposition and solution-phase (non-vacuum) deposition techniques. The doping effect arises due to a substitution of  $Si^{4+}$  for  $Zn^{2+}$  sites in the ZnO host crystal structure. Si doping thereby acts to release free-electron carriers in ZnO thus leading to  $SiZO's^{TM}$  excellent optical transmission performance.

#### TUESDAY, JUNE 3, EXHIBIT HALL B

## Session F3: Display Manufacturing and Components (3:45 - 5:30 pm)

**Moderator:** Chuck Yin, Square Inc.

#### F3.1: Slot Die Coating for Display Manufacturing and Assembly

(3:45)

M. Friedrich, nTact, Dallas, TX, USA

Booth 1725

nTact is a leading supplier of Slot Die Coating equipment for display applications. The company offers a range of products from R&D through full production, for both sheet-to-sheet and roll-to-roll processing. In addition to the deposition of active and patterned layers for display manufacturing, nTact also offers solutions for the coating of optically clear adhesive materials for display, touch screens, and cover-glass bonding.

#### F3.2: Disruptive Thin-Film Encapsulation Technology for OLEDs

(4:00)

M. Soderlund, Beneg, Vantaa, Finland

Booth 321

Beneq is a leading provider of ALD-based thin-film encapsulation systems for OLED industry and research. Beneq's ALD TFE technology will be presented and the challenges and solutions for both sheet-to-sheet and roll-to-roll processes will be discussed.

#### F3.3: ZeonorFilm® Optical Films for Touch Sensors and OLED Displays

(4:15)

B. Cail. Zeon Chemicals. Louisville. KY. USA

Booth 931

ZEON will highlight technical features of its optical film for touch-panel and OLED constructions. Whereas film-based touch sensors using PET suffer from rainbow (birefringence), ZeonorFilm® enables premium optical performance both with and without sunglasses. For OLED displays, ZeonorFilm® retardation films significantly reduce reflection. Technical data comparing ZeonorFilm® to other materials will be reviewed.

#### F3.4: eGRAF Thermal Solutions: Improving Display Quality for Over a Decade

(4:30)

A.Augoustidis, Graftech, Cleveland, OH, USA

Booth 1621

eGRAF graphite heat spreaders have enabled improved image quality for over a decade by providing a lightweight, flexible, high-thermal-conductivity heat spreader solution. Next-generation thin displays based on LCD or OLED technology can benefit from the enhanced thermal management of eGRAF SPREADERSHIELD.

#### F3.5: Iwatani Acrylic Foam Technology Solution to Shock-Absorbing Requirements (4:45)

K. Kato, Iwatani Corp., Tokyo, Japan

Booth 1621

Iwatani Corp. provides high-performance film and industrial-tape products for electronic devices. Iwatani's Acrylic foam, ISR-ACF series, demonstrates high-shock-absorbing performance for mobile devices. With its innovative technologies and superb analysis, Iwatani offers electronics companies improving design freedom. Iwatani also provides various types of industrial-tape products to meet with customer's requests.

#### F3.6: 4K UHD 10-Gbps Embedded Cable

(5:00)

G. Young, i-PEX by Dai-Ichi Seiko, Tokyo, Japan

Booth 1427

Transmission-line performance over a pair of micro-coaxial wires that have been directly attached to an i-PEX 0.4-mm-pitch Cabline-CA connector using different-length cable assemblies carrying eDP® at 6 and 10 Gbps were measured using probes connected to a four-pole VNA. Also, TDR results and S-parameter results were compared to simulations made by CST-Microwave Studio.

(continued)

### TUESDAY, JUNE 3, EXHIBIT HALL B

## Session F3: Display Manufacturing and Components (3:45 - 5:30 pm)

## F3.7: Spray Pyrolysis: A High-Throughput and Low Power Deposition Technique for TCOs (5:15)

D. Slocombe, Oxford Advanced Conductors (OxACs), Oxford, UK

Booth 331

OxACs has developed a novel technique to manufacture SiZOTM conductive films by using spray pyrolysis deposition. Using novel precursors and processes, conducting films are sprayed onto substrates by a more sustainable green and low-cost method, many times faster than vacuum sputtering. Adopting spray deposition of SiZOTM coatings will not only reduce costs for existing producers and users of transparent conductors, but also open up the production of large-area conductive films to a wider market.

## Session F4: Display Substrates and Coatings (9:15 - 10:45 am)

Moderator: Greg Gibson, nTact

## F4.1: AGC Glass Technology Solutions to High-Performance and Functional Display (9:15) Requirements Applications

M. Iga, Asahi Glass Co., Ltd., Tokyo, Japan

Booth 531

The technology development for high-end display and value-added product as symbolized by smartphone, tablet PC, and OLED displays has been continuously required, not only in the current market but also in the automotive market. Glass has been also expected to be higher performance and/or multifunctional in order to realize new products. The glass material and glass-related technology to realize the function expected by the market will be presented. AGC also provides the total solution to high-performance and functional display requirements including process performance.

### F4.2: Tailored Anti-Reflection/Anti-Smudge (AR/AS) Display Coatings

(9:30)

J. Palidwar, Iridian Spectral Technologies, Ottawa, Ontario, Canada

Booth 1926

To address the many varied requirements in display applications (touch-screen displays, automotive instrument panels, etc.), Iridian has developed durable and reliable AR/AS coatings with performance tailored to specific customer needs. Customizable features include tint and reflectance levels, along with new techniques to minimize the appearance of fingerprints in different usage scenarios.

#### F4.3: Continuous Innovation: Proactively Addressing Technology Trends

(9:45)

B. Ruffin, Corning Incorporated, Corning, NY, USA

Booth 703

The oxide TFT and LTPS backplane requirements for LCD and OLED displays are changing rapidly, and Corning is moving quickly to address them. The latest display advancements and how specialty glass substrates must evolve to enable the cutting-edge consumer-electronic devices will be discussed.

#### F4.4: VISTA AR Glass and Acrylic

(10:00)

C. Carter, Tru Vue, Inc., Faribault, MN, USA

Booth 1034

Vista AR, anti-reflective coatings for glass and acrylic substrates, was designed for the high-performance needs of display applications and engineered for demanding optical requirements, durability, and strength. The thin-film coating was applied via magnetron sputtering and is available in large volume and size capabilities.

#### F4.5: Glass Fabrication Applications

(10:15)

S. Zschiegner, Raydiance, Petaluma, CA, USA

Booth 1709

Raydiance predicts accelerated advancements in glass-fabrication applications, introducing all laser-precision manufacturing. Manufacturers and factories must keep pace as new glass formulae evolve – next-generation Gorilla Glass and Sapphire – while aggressively reducing cost to meet a very diverse consumer demand for lighter, tougher and more responsive devices.

(continued)

## Session F4: Display Substrates and Coatings (9:15 - 10:45 am)

### F4.6: Snap Cure System for Optical Bonding with Optically Clear Silicone Adhesives (10:30)

Makoto Sakakibara, Momentive Performance Materials, Waterford, NY, USA

Booth 1909

Momentive Performance Materials, Inc., is introducing a new Advanced Snap Cure Optical Bonding System. The liquid optically clear silicone adhesives are used for laminating a range of display substrates and offer brighter optical performance over an extended length of time. The new Snap Cure Optical Bonding System features a non-UV quick-set cure that provides design flexibility along with excellent re-workability. The new process and dispensing technology has been demonstrated for flat curved displays and complex geometries as well as shadowed display areas. Both the material properties and processing techniques of Momentive's Advanced Snap Cure Optical Bonding System will be shared during the presentation.

## <u>Session F5: Display Design and Metrology</u> (2:00 - 3:15 pm)

Moderator: Hugo Steemers, Ricoh Innovations

## F5.1: Advanced R&D Tools for OLED Design and Characterization: Overview on SETFOS and PAIOS

(2:00)

B. Perucco, Fluxim AG, Winterthur, Switzerland

Booth 2020

Fluxim will present its R&D tools for the OLED display, lighting, and photovoltaic industries. The software SETFOS simulates light-outcoupling from OLEDs and light-absorption in solar cells as well as charge transport and recombination in these semiconductor devices. Fluxim offers the all-in-one measurement

### F5.2: Water-Vapor Transmission-Rate Analyzer for Flexible-Display Electronics

T. Shimada, Uniglobe KISCO/Moresco Corp., San Jose, CA, USA

Booth 734

(2:15)

Kisco, Ltd., Moresco Corp., and Hokkaido University have developed a Water Vapor Transmission Rate (WVTR) analyzer, with a capability of measuring up to  $10^{-6}$  g/m<sup>2</sup>/day. A short 2–3 day analysis period without damaging the sample is possible. Barrier films manufacturers and OLED and related printed-electronics technologies can now make rapid WVTR measurements with a high level of reproducibility and precision.

### F5.3: Turnkey Liquid-Crystal Materials Testing

(2:30)

Z. Morrow, Instec, Inc., Boulder, CO, USA

Booth 1726

Precise and accurate measurements of the physical properties of liquid crystals made with Instec's bench-top ALCT have been performed. Testing methods for bend, splay, and twist elastic parameters (K11, K33, and K22), dielectric constants, ion density, residual DC, and voltage-holding ratio will be discussed.

## F5.4: Display Characterization Factors to Consider When Integrating Decorative (2:45) Glass and/or Touch Technology

J. Badders, GM Nameplate, Seattle, WA, USA

Booth 1921

GM Nameplate, an internationally recognized innovator in front-panel integration, will discuss the impact that several different integration solutions can have on a display's key optical properties (i.e., contrast, clarity, and luminesce) and how GMN can characterize these impacts.

### F5.5: New Advances in Resizing LCDs for Aerospace and Digital Signage

(3:00)

L. Tannas, Tannas Electronic Displays, Inc., Orange, CA, USA

Booth 1620

Resizing LCDs is proving to be a valuable enabler. Custom sizes from 2.5 x 2.5 in. for aerospace to resizing 65-in-diagonal LCDs for refrigerator doors are proving feasible. Enabling is feasible with advances to the sealing technique and bezel design covered under new patent applications. Methods of resizing LCDs to achieve otherwise unattainable sizes will be described.

## Session F6: Innovative Display Technologies and Applications (3:30 - 5:00 pm)

**Moderator:** Achin Bhowmik, Intel Corp.

#### F6.1: Qualcomm mirasol: A Leap Forward in Reflective Displays

(3:30)

P. Mulabagal, Qualcomm MEMS Technologies, Inc., San Diego, CA, USA

Booth 503

With the global wearable-devices market forecasted to reach 177 million units by 2018, tomorrow's mobile experiences will be ubiquitously connected, blazing fast, and feature a personalized content mix. The current and next-generation of Qualcomm mirasol display-enabled products will build upon the mobile norms of today and create new experiences enabled by an always-on display.

#### F6.2: Comparison of Transparent-Display Technologies on the Market Today

(3:45)

G. Smid, Beneq, Vantaa, Finland

Booth 321

Many display professionals are interested in how different display technologies affect the view and usage possibilities of transparent displays. An overview of the different transparent-display technologies available today will be presented. The strengths and weaknesses of each technology and how they all have found a place in the market will be discussed.

#### F6.3: Bidirectional OLED Microdisplays

(4:00)

U. Vogel, Fraunhofer COMEDD, Dresden, Germany

Booth 1403

Fraunhofer COMEDD develops and manufactures OLED microdisplays with an embedded-camera function. The latest results of research in this field will be discussed.

## F6.4: Orthogonal Photolithography for High-Resolution OLED Microdisplay and (4:15) Micro-Signage Application

A. Zakhidov, Fraunhofer COMEDD, Dresden, Germany

Booth 1403

The new trend to use solution-processable materials dictates new processing methods and techniques. A particular challenge is a fast, high-precision, high-resolution micro-patterning technology, which goes beyond the capabilities of current techniques (i.e.,  $10~\mu m$  for ink-jet printing). A novel approach that is called orthogonal photolithography (OP) has been explored. OP takes advantage of the fact that the vast majority of organic materials are either oleophilic or hydrophilic and are hence orthogonal to highly fluorinated chemicals. Therefore, appropriate fluorinated photoresists can be used to pattern organic layers without compromising the performance of the OLED device.

#### F6.5: Human-Interface Technologies for Smart Devices

(4:30)

S. Chan, Solomon Systech, Ltd., Hong Kong

Booth 1130

Today's smart devices come with an input human interface and an output human interface. Projected-capacitive touch sensing has been the most preferred input interface technology for the past few years. For the output interface, AMOLED and TFT panels are becoming bigger in size and higher in resolution. Solomon Systech is a premier provider of display and touch IC solutions supporting various human-interface technologies. Solomon Systech is well-positioned and focused in serving the smart-devices market.

#### F6.6: Quantum Dots: Extending the Dominance of LCDs

(4:45)

W-J. Lah, LMS Co., Ltd., Pyeontaek, Korea

Booth 335

The development of a new process-ready quantum-dot component for LCD backlights from LMS and Nanosys that delivers OLED color performance at LCD cost and brightness will be examined. The Quantum Light Accumulation Sheet (QLAS) enables LCDs to achieve wide color gamut and higher power efficiencies without disrupting the established manufacturing process.

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Boron Molecular Inc	1704	Protavic America Inc.	1923
SLENCIL Company	1706	Impact Display Solutions	1924
Canatu, Ltd	1708	Wamco, Inc.	192
Raydiance	1709	Iridian Spectral Technologies Ltd	1926

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DisplaySearch		Wamco, Inc.	1925	Chemical Suppliers	
eMagin Corporation		Xenarc Technologies Corp	626	Boron Molecular Inc.	1704
FSN, Inc.		3 1		Display Logic	
i-sft GmbH		Anti-Reflection Screens		Ellsworth Adhesives	
MITAS Electronics		3M	1003	Nanofilm	
		Arrow Electronics		Sartomer Americas	
NLT Technologies, Inc.		Astra Products, Inc		Universal Display Corporation	
Rockwell Collins		Corning Incorporated		Oniversal Display Corporation	1214
Sharp Microelectronics, Inc				Color Calibration System	
Stemmerich, Inc.		Dexerials America Corporation		:	1007
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41404 FR R: 1		Edge Electronics		Photo Research, Inc.	
AMOLED Displays		GM Nameplate, Inc.		Radiant Zemax	621
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= :		Edge Electronics		Consultants	
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Tianma-NLT		FLEx Lighting, LLC		FLEx Lighting, LLC	
Universal Display Corporation		Fraunhofer COMEDD		Fraunhofer COMEDD	
Wamco, Inc		FSN, Inc.		IDTechEx	
WPG Americas, Inc.	737	GM Nameplate, Inc		i-sft GmbH	
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Manz AG		Edge Electronics		Fraunhofer COMEDD	
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Dontech, Inc.		Qualcomm		Stemmerich, Inc.	
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Edge Electronics		San Technology, Inc.			
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GM Nameplate, Inc					
Litemax Technology, Inc		Electrowetting Displays		Haptics	
MITAS Electronics	1435	DisplaySearch	506	SEVASA	1126
Nicomatic	427	FSN, Inc.	431		
San Technology, Inc.	407	MITAS Electronics	1435	Head-Mounted Displays	
Wamco, Inc	1925	Shenzhen Jinghua Displays Co., Ltd	831	eMagin Corporation	1721
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	1002	Carestream Advanced Materials		•	
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Arrow Electronics	1803	Optical Filters		Wamco, Inc	
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Display Logic		Fixed Lip Slot Dies		Manz AG	1409
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Shenzhen Jinghua Displays Co., Ltd		Beneq		MITAS Electronics	
Tianma-NLT		CreaPhys GmbH		NLT Technologies, Inc.	
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Litemax Technology, Inc		GrafTech International		Secure Communication Systems Inc	
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## SID Corporate Members/Exhibitors

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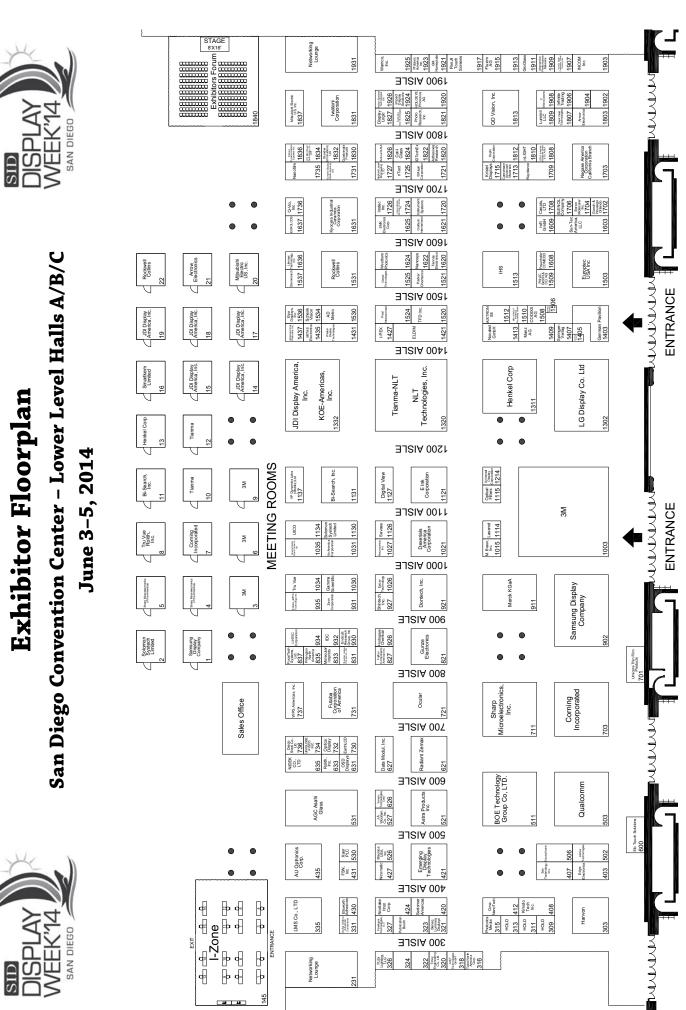


## **Meeting Rooms**

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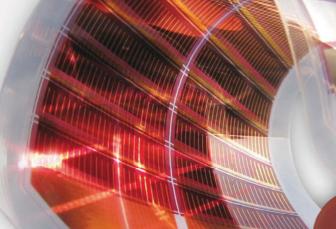
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# **DISPLAY WEEK 2014**

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Cima NanoTech Corning Japan

Dawar Technologies, Inc

Elo Touch Systems

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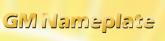


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