

UNIVERSAL DISPLAY CORP \PA\  
Form 10-K  
March 12, 2009

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UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
Washington, D.C. 20549

FORM 10-K

(Mark One)

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF  
1934

For the fiscal year ended December 31, 2008

OR

TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT  
OF 1934

For the transition period from \_\_\_\_\_ to \_\_\_\_\_

Commission File Number 1-12031

UNIVERSAL DISPLAY CORPORATION  
(Exact name of registrant as specified in its charter)

Pennsylvania  
(State or other jurisdiction of incorporation or  
organization)

23-2372688  
(I.R.S. Employer Identification No.)

375 Phillips Boulevard, Ewing, New Jersey  
(Address of principal executive offices)

08618  
(Zip Code)

Registrant's telephone number, including area code:  
Securities registered pursuant to Section 12(b) of the Act:  
Title of Each Class

(609) 671-0980

Name of Each Exchange on Which  
Registered  
The NASDAQ Stock Market LLC

Common Stock, \$0.01 par value  
Securities registered pursuant to Section 12(g) of the Act: None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act.  
Yes No

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes No

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was

required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes  No

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K.

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer  Accelerated filer   
Non-accelerated filer (Do not check if a smaller reporting company)  Smaller reporting company

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes   
No

The aggregate market value of the voting and non-voting common equity held by non-affiliates of the registrant computed by reference to the closing sale price of the registrant's common stock on the NASDAQ Global Market as of June 30, 2008, was \$378,647,340. Solely for purposes of this calculation, all executive officers and directors of the registrant and all beneficial owners of more than 10% of the registrant's common stock (and their affiliates) were considered affiliates.

As of March 9, 2009, the registrant had outstanding 36,308,821 shares of common stock.

#### DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's Proxy Statement for the 2009 Annual Meeting of Shareholders, which is to be filed with the Securities and Exchange Commission no later than April 30, 2009, are incorporated by reference into Part III of this report.

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CAUTIONARY STATEMENT  
CONCERNING FORWARD-LOOKING STATEMENTS

This report and the documents incorporated by reference in this report contain some “forward-looking statements.” Forward-looking statements concern possible or assumed future events, results and business outcomes. These statements often include words such as “believe,” “expect,” “anticipate,” “intend,” “plan,” “estimate,” “seek,” “will,” “may” expressions. These statements are based on assumptions that we have made in light of our experience in the industry, as well as our perceptions of historical trends, current conditions, expected future developments and other factors we believe are appropriate under the circumstances.

As you read and consider this report, you should not place undue reliance on any forward-looking statements. You should understand that these statements involve substantial risk and uncertainty and are not guarantees of future performance or results. They depend on many factors that are discussed further under Item 1A below (Risk Factors), including:

- the outcomes of our ongoing and future research and development activities, and those of others, relating to organic light emitting diode (OLED) technologies and materials;
- our ability to access future OLED technology developments of our academic and commercial research partners;
- the potential commercial applications of and future demand for our OLED technologies and materials, and of OLED products in general;
- our ability to form and continue strategic relationships with manufacturers of OLED products;
- successful commercialization of products incorporating our OLED technologies and materials by OLED manufacturers, and their continued willingness to utilize our OLED technologies and materials;
- the comparative advantages and disadvantages of our OLED technologies and materials versus competing technologies and materials currently on the market;
- the nature and potential advantages of any competing technologies that may be developed in the future;
- our ability to compete against third parties with resources greater than ours;
- our ability to maintain and improve our competitive position following the expiration of our fundamental OLED patents;
- the adequacy of protections afforded to us by the patents that we own or license and the cost to us of maintaining and enforcing those patents;
- our ability to obtain, expand and maintain patent protection in the future, and to protect our unpatentable intellectual property;
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our exposure to and ability to withstand third-party claims and challenges to our patents and other intellectual property rights;

·the payments that we expect to receive under our existing contracts with OLED manufacturers and the terms of contracts that we expect to enter into with OLED manufacturers in the future;

·our future capital requirements and our ability to obtain additional financing if and when needed;

·our future OLED technology licensing and OLED material revenues and results of operations; and

·general economic and market conditions.

Changes or developments in any of these areas could affect our financial results or results of operations, and could cause actual results to differ materially from those contemplated by any forward-looking statements.

All forward-looking statements speak only as of the date of this report or the documents incorporated by reference, as the case may be. We do not undertake any duty to update any of these forward-looking statements to reflect events or circumstances after the date of this report, or to reflect the occurrence of unanticipated events.

## PART I

### ITEM 1. BUSINESS

#### Our Company

We are a leader in the research, development and commercialization of organic light emitting diode, or OLED, technologies and materials. OLEDs are thin, lightweight and power-efficient solid-state devices that emit light, making them highly suitable for use in full-color displays and as lighting products. We believe that OLED displays have begun to capture a share of the growing flat panel display market because they offer potential advantages over competing display technologies with respect to brightness, power efficiency, viewing angle, video response time and manufacturing cost. We also believe that OLED lighting products have the potential to replace many existing light sources in the future because of their high efficiency, excellent color rendering index, low heat generation and novel form factors. Our technology leadership and intellectual property position should enable us to share in the revenues from OLED displays and lighting products as they enter mainstream consumer markets.

Our primary business strategy is to further develop and license our proprietary OLED technologies to manufacturers of products for display applications, such as cell phones, MP3 players, laptop computers and televisions, and specialty and general lighting products. In support of this objective, we also develop new OLED materials and sell materials to those product manufacturers. Through our internal research and development efforts and our relationships with world-class partners such as Princeton University, the University of Southern California, the University of Michigan, Motorola, Inc. and PPG Industries, Inc., we have established a significant portfolio of proprietary OLED technologies and materials. We currently own, exclusively license or have the sole right to sublicense more than 940 patents issued and pending worldwide.

In 2008, we continued selling our proprietary OLED materials to customers for evaluation and use in commercial OLED products. A substantial portion of our OLED material sales in 2008 were to Samsung SDI Co., Ltd. of South Korea, whose OLED business was transferred to Samsung Mobile Display Co., Ltd. (Samsung SMD) in September 2008. We also sold commercial OLED chemicals in 2008 to Chi Mei EL Corporation of Taiwan and Tohoku Pioneer Corporation of Japan, and in November 2008 we renewed our commercial supply agreement with LG Display Co., Ltd. of South Korea.

We received royalties under our patent license agreement with Samsung SMD on account of its sales of active matrix OLED display products throughout 2008. In August 2008, we entered into our first patent license agreement for OLED lighting products with Konica Minolta Holdings, Inc. and its subsidiary. We also entered into license and material supply agreements with Kyocera Corporation in July 2008, although we are waiting for Kyocera to notify us that these agreements are to become effective. We continue to work with many other companies who are evaluating our OLED technologies and materials for possible use in commercial OLED display and lighting products, including Sony Corporation and Seiko Epson Corporation.

#### Market Overview

##### The Flat Panel Display Market

Flat panel displays are essential for a wide variety of portable consumer electronics products, such as cell phones, MP3 players, digital cameras and laptop computers. Due to their narrow profile and light weight, flat panel displays have also become the display of choice for larger product applications, such as desktop computer monitors and televisions.

Liquid crystal displays, or LCDs, currently dominate the flat panel display market. However, we believe that OLED displays are an attractive alternative to LCDs because they offer a number of potential advantages, including:

- a thinner profile and lighter weight;
- higher brightness and contrast ratios, leading to sharper picture images and graphics;
- wider viewing angles;
- faster response times for video;

- higher operating efficiencies, thereby reducing energy consumption; and
- lower cost manufacturing methods and materials.

Based on these characteristics, product manufacturers are starting to adopt small-area OLED displays for use in portable electronic devices, such as cell phones and MP3 players. These manufacturers are also working to develop OLED displays for use in larger applications, such as computer monitors and televisions. We believe that if these efforts are successful, they could result in sizeable markets for OLED displays.

In addition, due to the inherent transparency of organic materials and through the use of transparent electrode technology, OLEDs eventually may enable the production of transparent displays for use in products such as automotive windshields and windows with embedded displays. Organic materials also make technically possible the development of flexible displays for use in an entirely new set of product applications, such as display devices that can be conformed to certain shapes or even rolled up for storage.

### The Solid-State Lighting Market

Traditional incandescent light bulbs are inefficient because they convert only about 5% of the energy they consume into visible light, with the rest emerging as heat. Fluorescent lamps use excited gases, or plasmas, to achieve a higher energy conversion efficiency of about 20%. However, the color rendering index, or CRI, of most fluorescent lamps – how good their color is compared to an ideal light source – is inferior to that of an incandescent bulb. Fluorescent lamps also pose environmental concerns because they contain mercury.

Solid-state lighting relies on the direct conversion of electricity to visible white light using semiconductor materials. By avoiding the heat and plasma-producing processes of incandescent bulbs and fluorescent lamps, solid-state lighting products can have substantially higher energy conversion efficiencies, which in theory could approach 100%.

There are currently two basic types of solid-state lighting devices: inorganic light emitting diodes, or LEDs, and OLEDs. Current LEDs are very small in size (about one square millimeter) and are extremely bright. Having been developed about 25 years before OLEDs, they are already employed in various specialty lighting products, such as traffic lights, billboards, replacements for neon lighting and as border or accent lighting. However, their intense brightness and high operating temperatures may make them less desirable for general illumination and diffuse lighting applications.

OLEDs, on the other hand, are larger in size and can be viewed directly, without using diffusers that are required to temper the intense brightness of LEDs. OLEDs can be built on any suitable surface, including glass, plastic or metal foil, and could be cost-effective to manufacture in high volume. Given these characteristics, product manufacturers are working to develop OLEDs for diffuse specialty lighting applications and ultimately general illumination. If these efforts are successful, we believe that OLED lighting products could begin to be used for applications currently addressed by incandescent bulbs and fluorescent lamps.

### Our Competitive Strengths

We believe our position as one of the leading technology developers in the OLED industry is the direct result of our technological innovation. We have built an extensive intellectual property portfolio around our OLED technologies and materials, and are working diligently to enable our manufacturing partners to adopt our OLED technologies and materials for commercial usage. Our key competitive strengths include:



Technology Leadership. We are a recognized technology leader in the OLED industry. We and our research partners pioneered the development of our UniversalPHOLED™ phosphorescent OLED technologies, which can be used to produce OLEDs that are up to four times as efficient as traditional fluorescent OLEDs and significantly more efficient than current backlit LCDs. We believe that our PHOLED technologies are well-suited for industry usage in the commercial production of OLED displays and lighting products. Through our relationships with companies such as PPG Industries and our academic partners, we have also developed other important OLED technologies, as well as novel OLED materials that we believe will facilitate the adoption of our various OLED technologies by product manufacturers.

Relationships with Leading Product Manufacturers. We have established relationships with well-known manufacturers that are using, or are evaluating, our OLED technologies and materials for use in commercial products. In

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2008, Samsung SMD, Chi Mei EL and Tohoku Pioneer purchased our proprietary OLED materials for use in commercial OLED display products, and we renewed our commercial material supply agreement with LG Display. We also entered into a license agreement with Konica Minolta for its manufacture of OLED lighting products, and license and material supply agreements with Kyocera for its manufacture of active matrix OLED display products. In 2005, we entered into a license agreement with Samsung SMD for its manufacture of active matrix OLED display products, and in 2002 we entered into a cross-license agreement with DuPont Displays, Inc. for its manufacture of solution-processed OLED display products. We also licensed one of our ink-jet printing patents and certain related patent filings to Seiko Epson in 2006. We continue to work with many product manufacturers who are evaluating our OLED technologies and materials for use in commercial OLED displays and lighting products, including Sony and Seiko Epson.

**Broad Portfolio of Intellectual Property.** We believe that our extensive portfolio of patents, trade secrets and know-how provides us with a competitive advantage in the OLED industry. Through our internal development efforts and our relationships with world-class partners such as Princeton University, the University of Southern California, the University of Michigan, Motorola and PPG Industries, we own, exclusively license or have the sole right to sublicense more than 940 patents issued and pending worldwide. We also continue to accumulate valuable trade secret information and technical know-how relating to our OLED technologies and materials.

**Focus on Licensing Our OLED Technologies.** We are focused on licensing our proprietary OLED technologies to product manufacturers on a non-exclusive basis. Our current business model does not involve the direct manufacture or sale of OLED display or lighting products. Instead, we seek license fees and royalties from OLED product manufacturers based on their sales of licensed products. We believe this business model allows us to concentrate on our core strengths of technology development and innovation, while at the same time providing significant operating leverage. We also believe that this approach may reduce potential competitive conflicts between us and our customers.

**Leading Supplier of PHOLED Emitter Materials.** We are the leading supplier of phosphorescent emitter materials to OLED product manufacturers. PPG Industries currently manufactures our proprietary emitter materials for us, which we then qualify and resell to OLED product manufacturers. We record revenues based on our sales of these materials to OLED product manufacturers. This allows us to maintain close technical and business relationships with the OLED product manufacturers purchasing our proprietary materials, which in turn further supports our technology licensing business.

**Established U.S. Government Contracts to Fund Research and Development.** In 2008, we started or continued working under approximately 14 research and development contracts with U.S. government agencies, such as the U.S. Department of the Army and the U.S. Department of Energy. Under these contracts, the U.S. Government funds a portion of our efforts to develop next-generation OLED technologies for applications such as flexible displays and solid-state lighting. This enables us to supplement our internal research and development budget with additional funding.

**Experienced Management and Scientific Advisory Team.** Our management team has significant experience in developing business models focused on licensing disruptive technologies in high growth industries. In addition, our management team has assembled a Scientific Advisory Board that includes some of the leading researchers in the OLED industry, such as Professor Stephen R. Forrest of the University of Michigan (formerly of Princeton University) and Professor Mark E. Thompson of the University of Southern California.

## Our Business Strategy

Our current business strategy is to both promote and continue to expand our portfolio of OLED technologies and materials for widespread use in OLED displays and lighting products, and to generate revenues by licensing our

OLED technologies and selling our proprietary OLED materials. We presently are focused on the following steps to implement our business strategy:

**Target Leading Product Manufacturers.** We are targeting leading manufacturers of flat panel displays and lighting products as potential commercial licensees of our OLED technologies and purchasers of our OLED materials. For example, in April 2005 we entered into a patent license agreement with Samsung SMD for its manufacture and sale of active-matrix OLED display products, and in August 2008 we entered into a license agreement with Konica Minolta for its manufacture and sale of OLED lighting products. In 2008, we also sold our proprietary phosphorescent OLED materials to Samsung SMD, Chi Mei EL and Tohoku Pioneer for use in commercial OLED display products. We also provide technical assistance and support to several manufacturers of displays and lighting products who are evaluating our OLED technologies and materials, or utilizing them in product development and/or for pre-commercial product manufacturing. We concentrate on

working closely with these manufacturers because we believe that the successful incorporation of our technologies and materials into commercial products is critical to their widespread adoption.

**Enhance Our Existing Portfolio of PHOLED Technologies and Materials.** We believe that a strong portfolio of proprietary OLED technologies and materials is critical to our success. Consequently, we are continually seeking to expand this portfolio through our internal development efforts, our collaborative relationships with academic and other research partners, and other strategic opportunities. One of our primary goals is to develop new and improved PHOLED technologies and materials with increased efficiencies, enhanced color gamut and extended lifetimes, which are compatible with different manufacturing methods, so that they can be used by various manufacturers in a broad array of OLED products.

**Develop Next-Generation Organic Technologies.** We continue to conduct research and development activities relating to next-generation OLED technologies. Our current research and development initiatives involve flexible OLED displays, transparent or top-emitting OLED displays, thin-film encapsulation for OLEDs and OLEDs for solid-state lighting. We also are funding research by our academic partners on the use of organic thin-film technology in other applications, such as organic lasers, organic TFTs and photodetectors. Our focus on next-generation technologies is designed to enable us to continue our position as a leading provider of OLED and other organic electronics technologies and materials as new markets emerge.

#### Business and Geographic Markets

We derive revenue from the following:

- technology research and development, including government contract work and collaborative R&D with third parties;
- intellectual property and technology licensing;
- sales of OLED materials for evaluation, development and commercial manufacturing; and
- technical assistance and support provided to third parties for commercialization of their OLED products.

Most manufacturers of flat panel displays and lighting products who are or might potentially be interested in our OLED technologies and materials are currently located in foreign countries, particularly the Asia-Pacific region. Consequently, we receive a substantial portion of our revenues from external customers that are domiciled outside of the United States, and our business is heavily dependent on our relationships with these customers. In particular, one customer located in the Asia-Pacific region, Samsung SMD, accounted for approximately 42% of our consolidated revenues for 2008. Substantially all revenue derived from these customers is denominated in U.S. dollars.

For more information on our revenues, costs and expenses associated with our business, as well as a breakdown of revenues from domestic and foreign sources, please see our audited Consolidated Financial Statements and the notes thereto, as well as “Management’s Discussion and Analysis of Financial Condition and Results of Operations,” included elsewhere in this report.

#### Our Phosphorescent OLED Technologies

Phosphorescent OLEDs utilize specialized materials and device structures that allow OLEDs to emit light through a process known as phosphorescence. Conversely, traditional fluorescent OLEDs emit light through an inherently less efficient process. Theory and experiment show that phosphorescent OLEDs exhibit device efficiencies up to four times higher than those exhibited by fluorescent OLEDs. Phosphorescence substantially reduces the power requirements of an OLED and is potentially useful for hand-held devices, such as mobile phones, where battery power is often a limiting factor. Phosphorescence is also important for large-area displays such as televisions, where higher device efficiency and lower heat generation may enable longer product lifetimes and increased energy efficiency.

We have a strong intellectual property portfolio surrounding our existing PHOLED phosphorescent OLED technologies and materials. We also conduct work to develop new and improved PHOLED technologies and materials, and to enhance our intellectual property position. In 2008, we announced further advances in the development of our proprietary PHOLED materials and device architectures. We also continued our commercial supply relationships with companies such

as Samsung SMD to use our PHOLED materials for their manufacture of OLED displays. In addition, we continued to work closely with customers evaluating and qualifying our proprietary PHOLED materials for commercial usage, and with other material suppliers to match our PHOLED emitters with their phosphorescent hosts and other OLED materials.

#### Our Additional Proprietary OLED Technologies

Our research, development and commercialization efforts also encompass a number of other OLED device and manufacturing technologies, including the following:

**TOLED™ Transparent OLEDs.** We have developed a technology for the fabrication of OLEDs that have transparent cathodes. Conventional OLEDs use a reflective metal cathode and a transparent anode. In contrast, TOLEDs use a transparent cathode and either a transparent, reflective or opaque metal anode. TOLEDs utilizing transparent cathodes and reflective metal anodes are known as “top-emission” OLEDs. In a “top-emission” active-matrix OLED, light is emitted without having to travel through much of the device electronics where a significant portion of the usable light is lost. This results in OLED displays having image qualities and lifetimes superior to those of conventional active-matrix OLEDs. TOLEDs utilizing transparent cathodes and transparent anodes may also be useful in novel flat panel display applications requiring semi-transparency or transparency, such as graphical displays in automotive windshields.

**FOLED™ Flexible OLEDs.** We are working on a number of technologies required for the fabrication of OLEDs on flexible substrates. Most OLED and other flat panel displays are built on rigid substrates such as glass. In contrast, FOLEDs are OLEDs built on non-rigid substrates such as plastic or metal foil. This enhances durability and enables conformation to certain shapes or repeated bending or flexing. Eventually, FOLEDs may be capable of being rolled into a cylinder, similar to a window shade. These features create the possibility of new flat panel display product applications that do not exist today, such as a portable, roll-up Internet connectivity and communications device. Manufacturers also may be able to produce FOLEDs using more efficient continuous, or roll-to-roll, processing methods. We currently are conducting research and development on FOLED technologies internally, under several of our U.S. government programs and in connection with the government-sponsored Flexible Display Center at Arizona State University.

**OVPD™ Organic Vapor Phase Deposition.** The standard approach for manufacturing a small molecule OLED, including a PHOLED, is based on a vacuum thermal evaporation, or VTE, process. With a VTE process, the thin layers of organic material in an OLED are deposited in a high-vacuum environment. An alternate approach for manufacturing a small molecule OLED is based on OVPD. In contrast to the VTE process, the OVPD process utilizes a carrier gas stream in a hot walled reactor in a low pressure environment to deposit the layers of organic material in an OLED. The OVPD process may offer advantages over the VTE process through more efficient materials utilization and enhanced deposition control. We have partnered with Aixtron AG, a leading manufacturer of metal-organic chemical vapor deposition equipment, to develop and qualify equipment for the fabrication of OLED displays utilizing the OVPD process.

**UniversalP2OLED™ Printable Phosphorescent OLEDs.** OLEDs can be manufactured using other processes as well. Another method involves preparing solutions of the various organic materials in an OLED that can be solution-processed by techniques such as spin coating or inkjet printing onto the substrate. Solution-processing methods, and inkjet printing in particular, have the potential to be lower cost approaches to OLED manufacturing and scalable to large area displays. Over the past several years, we have worked on P2OLEDs under Joint Development Agreements with Seiko Epson, and we have collaborated with other material manufacturers to develop and evaluate novel P2OLED materials. In May 2008, we announced continued advances in P2OLED material systems for ink-jet printing.

OVJP™ Organic Vapor Jet Printing. Our groundbreaking OVJP technology is another direct printing method for the manufacture of OLEDs. As a direct printing technique, OVJP technology has the potential to offer high deposition rates for any size or shaped OLED. In addition, OVJP technology avoids the OLED material wastage associated with use of a shadow mask (i.e., the waste of material that deposits on the shadow mask itself when fabricating an OLED). By comparison to inkjet printing, an OVJP process does not use solvents and therefore the OLED materials utilized are not limited by their viscosity or solvent solubility. We are working on developing our proprietary OVJP technology in collaboration with Professor Forrest of the University of Michigan under a U.S. Department of Energy (DOE) Solid State Lighting program. We have installed a prototype OVJP tool at our Ewing, New Jersey facility and are using this tool to build prototype white PHOLED lighting panels.

## Our Strategic Relationships with Product Manufacturers

We have established evaluation, technology development, licensing and material supply relationships with numerous manufacturers of displays and lighting products. As of December 31, 2008, we had entered into 36 such relationships, four of which were newly established in 2008. These relationships generally are directed towards tailoring our proprietary OLED technologies and materials for use by each individual manufacturer. Our ultimate objective is to license our OLED technologies and sell our OLED materials to these manufacturers for their commercial production of OLED products. Our key relationships with product manufacturers in 2008 included the following:

**Samsung SMD.** In April 2005, we entered into an OLED Patent License Agreement with Samsung SMD. Under this agreement, we granted Samsung SMD license rights to make and sell active-matrix OLED displays on glass. Throughout 2008, we supplied several of our proprietary PHOLED materials to Samsung SMD for use in the manufacture of these OLED displays. We also continue to supply other of our proprietary PHOLED materials to Samsung SMD for evaluation and development activities under a separate agreement that has been in place since July 2001.

**Chi Mei EL.** In April 2007, we entered into an agreement to supply our proprietary PHOLED materials and technologies to Chi Mei EL for use in its manufacture of commercial AMOLED display products. The agreement ran through the end of 2008, and we are in the process of negotiating an extension of the agreement. We recognize commercial chemical sales and license fee revenues from our supply of material to Chi Mei EL.

**LG Display.** In May 2007, we entered into an agreement to supply LG Display with our proprietary PHOLED materials for use in AMOLED display products. In November 2008, this agreement was extended through June 2009. The agreement allow us to recognize commercial chemical sales and license fee revenues from our supply of materials to LG Display. In May 2008, we also demonstrated with LG Display a flexible, full-color, active matrix OLED display prototype.

**Sony.** We have been supporting Sony in its development of active-matrix OLED display products under various agreements since February 2001. We are currently operating under an evaluation agreement with Sony that has been in place since February 2005. That agreement enables us to sell our proprietary PHOLED materials to Sony for evaluation.

**Seiko Epson.** We have been conducting joint development work with Seiko Epson under various agreements since December 2004. This work relates to the application of our proprietary PHOLED technologies and materials to ink-jet printing processes used by Seiko Epson. In May 2008, we announced continued advances in P2OLED device results for ink-jet printing in collaboration with Seiko Epson. We also supply our proprietary PHOLED materials to Seiko Epson for evaluation and for use under our development program, and in July 2006 we licensed one of our ink-jet printing patents and certain related patent filings to Seiko Epson.

**Konica Minolta.** In August 2008, we entered into a technology license agreement with Konica Minolta for its manufacture and sale of OLED lighting products. We have also entered into separate agreements with Konica Minolta under which Konica Minolta continues to purchase our red and green PHOLED materials for evaluation.

**Kyocera.** In July 2008, we entered into license and material supply agreements with Kyocera for its manufacture and sale of OLED displays. These agreements were to become effective upon notice from Kyocera given on or before December 31, 2008. We recently agreed with Kyocera to extend this date for one additional year.

**Tohoku Pioneer.** In August 2003, we began supplying our proprietary red PHOLED material to Tohoku Pioneer, a subsidiary of Pioneer Corporation, for the commercial production of a passive-matrix OLED display product. Tohoku



Pioneer continued purchasing this material from us in 2008.

DuPont Displays. In December 2005, we completed work under a Joint Development Agreement with DuPont Displays for the development of novel phosphorescent materials and device structures for solution-processed OLEDs. In December 2002, we entered into a Cross-License Agreement with DuPont Displays for its manufacture of solution-processed OLED display products. As of December 31, 2008, we had not received any royalties from DuPont under that agreement.

#### Our OLED Materials Supply Business

In support of our OLED licensing business, we supply our proprietary OLED materials to display manufacturers and others. We device-qualify our materials before shipment in order to ensure the materials meet required specifications. We

believe that our inventory-carrying practices, along with the terms under which we sell our OLED materials (including payment terms) are typical for the markets in which we operate.

#### PPG Industries

We have maintained a close working relationship with PPG Industries since October 2000. Under our original agreements, PPG Industries conducted OLED materials development work for us and supplied us with our proprietary OLED materials. Our relationship with PPG Industries on the development of OLED materials changed in 2006, at which time we assumed sole responsibility over OLED materials development activities. In connection with that change, we hired four chemists from the PPG Industries' OLED materials development team to work for us in our newly constructed synthetic chemistry laboratories.

Our new OLED Materials Supply and Service Agreement with PPG Industries went into effect in January 2006. Under that agreement, PPG Industries remains responsible, under our direction, for manufacturing scale-up of our proprietary OLED materials, and for supplying us with those materials for research and development, and for resale to our customers, both for their evaluation and for use in commercial OLED products. Through our collaboration with PPG Industries, key raw materials are sourced from multiple suppliers to ensure that we are able to meet the needs of our customers on a timely basis. In January 2008, we extended the term of the OLED Materials Supply and Service Agreement through December 2011.

#### Our OLED Material Customers

Throughout 2008, we continued supplying our proprietary PHOLED materials to Samsung SMD for use in its commercial AMOLED display products. Samsung SMD is currently the largest manufacturer of AMOLED displays for handset and other personal electronic devices. Samsung SMD's customers for these products have included many well-known consumer electronics companies throughout the world.

In 2008, we continued supplying our proprietary PHOLED materials to Chi Mei EL for use in its commercial AMOLED display products, and to Tohoku Pioneer for use in its commercial passive-matrix OLED display products. In November 2008, we also renewed our commercial supply agreement with LG Display. During the year, we supplied our proprietary OLED materials to various other product manufacturers for evaluation and for purposes of development, manufacturing qualification and product testing.

#### Collaborations with other OLED Material Manufacturers

We continued our non-exclusive collaborative relationships with other manufacturers of OLED materials during 2008. These included relationships with Nippon Steel Chemical Company (NSCC) and Idemitsu Kosan Co., Ltd., both of which are focused on matching our proprietary PHOLED emitters with the host and other OLED materials of these companies. In March 2008, we announced a relationship with LG Chem, Ltd. focused on combining our PHOLED materials and technology with LG Chem's complementary OLED materials. In December 2008, we announced a strategic business relationship with SFC Co., Ltd. for the development of PHOLED material systems. We believe that collaborative relationships such as these are important for ensuring success of the OLED industry and broader adoption of our PHOLED and other OLED technologies.

#### Research and Development

Our research and development activities are focused on the advancement of our OLED technologies and materials for displays, lighting and other applications. We conduct this research and development both internally and through various relationships with our commercial business partners and academic institutions. In the years 2008, 2007 and

2006, we incurred \$22,257,634, \$20,909,262 and \$19,562,004, respectively, on both internal and third-party sponsored research and development activities with respect to our various OLED technologies and materials.

#### Internal Development Efforts

We conduct a substantial portion of our OLED development activities at our state-of-the-art development and testing facility in Ewing, New Jersey. At this 40,200 square-foot facility, we perform technology development, including device and

process optimization, prototype fabrication, manufacturing scale-up studies, process and product testing, characterization and reliability studies, and technology transfer with our business partners.

Our Ewing facility houses six OLED deposition systems, including a full-color flexible OLED system, a system for fabricating solution-processible OLEDs, an OVPD organic vapor phase deposition system and an OVJP organic vapor jet printing system. In addition, the facility contains equipment for substrate patterning, organic material deposition, display packaging, module assembly and extensive testing in Class 100 and 100,000 clean rooms and opto-electronic test laboratories.

In 2006, we opened state-of-the-art synthetic chemistry laboratories at our Ewing facility. In these laboratories, our scientists conduct OLED materials research and make small quantities of new materials that we then test in OLED devices. Prior to opening these laboratories, we conducted this materials research in laboratory space that we leased in Princeton, New Jersey.

As of December 31, 2008, we employed a team of 51 research scientists, engineers and laboratory technicians at our Ewing facility. This team includes chemists, physicists, engineers with electrical, chemical and mechanical backgrounds, and highly-trained experimentalists. Fifteen members of our R&D team were newly-hired in 2008.

#### University Sponsored Research

We have long-standing relationships with Princeton University and the University of Southern California (USC), dating back to 1994, for the conduct of research relating to our OLED and other organic thin-film technologies and materials for applications such as displays and lighting. This research has been performed at Princeton University under the direction of Dr. Forrest and at USC under the direction of Dr. Thompson. In 2006, Dr. Forrest transferred to the University of Michigan, where we continue to fund his research.

We funded research at Princeton University under a Research Agreement executed with the Trustees of Princeton University in August 1997. The 1997 Research Agreement was allowed to expire in July 2007, after Dr. Forrest had transferred to the University of Michigan. We have exclusive license rights to all OLED and other thin-film organic electronic patents (other than for organic photovoltaic solar cells) arising out of research conducted under that agreement.

In connection with Dr. Forrest's transfer to the University of Michigan, in May 2006 we entered into a new Sponsored Research Agreement with USC under which we are funding organic electronics research being conducted by Drs. Forrest and Thompson. Work by Dr. Forrest is being funded through a subcontract between USC and the University of Michigan. We reimburse the universities for actual costs incurred for sponsored research conducted under this agreement, up to a maximum of \$4,936,296 over the three-year agreement term. As with the 1997 Research Agreement, we have exclusive license rights to all OLED and thin-film organic electronic patents (other than for organic photovoltaic solar cells) arising out of this research. This arrangement runs through April 2009, and we are currently negotiating a further extension with the universities.

In October 2005, we entered into a separate Sponsored Research Agreement with Princeton University to fund research under the direction of Dr. Sigurd Wagner on thin-film encapsulation and fabrication of OLED devices. In December 2008, we extended this agreement through December 2009. Like our other relationships with Princeton University, we have exclusive license rights to all patents arising out of the research.

In December 2004, we entered into a Sponsored Research Agreement with the Yuen Tjing Ling Industrial Research Institute of National Taiwan University (TLIRI). Under that agreement, we funded a research program under the direction of Dr. Ken-Tsung Wong relating to new OLED materials. We have exclusive rights to all intellectual

property developed under that program. The program ran through February 2009.

In April 2004, we entered into a Contract Research Agreement with the Chitose Institute of Science and Technology of Japan (CIST). Under that agreement, we funded a research program headed by Dr. Chihaya Adachi relating to high-efficiency OLED materials and devices. We were granted exclusive rights to all intellectual property developed under this program. This relationship with CIST ended in March 2006 when Dr. Adachi transferred to Kyushu University. However, we have continued our relationship with Dr. Adachi under a separate consulting arrangement that currently runs through March 2010.

In March 2006, we entered into a Research Agreement with Kyung Hee University to sponsor a research program on flexible, amorphous silicon TFT backplane technology. The program was directed by Dr. Jin Jang and continued for one year. In August 2007, we entered into a second Research Agreement with Kyung Hee University to sponsor further research in this area. This research was also directed by Dr. Jang, and the program ran through August 2008. We are in the process of extending our relationship with Kyung Hee University and Dr. Jang.

#### Aixtron

In July 2000, we entered into a Development and License Agreement with Aixtron AG of Aachen, Germany to jointly develop and commercialize equipment for the manufacture of OLEDs using the OVPD process. Under the Development and License Agreement, we granted Aixtron an exclusive license to produce and sell its equipment for the manufacture of OLEDs and other devices using our proprietary OVPD process. Aixtron is required to pay us royalties on its sales of this equipment. Purchasers of the equipment also must obtain rights to use our proprietary OVPD process to manufacture OLEDs and other devices using the equipment, which they may do through us or Aixtron. If these rights are granted through Aixtron, Aixtron is required to make additional payments to us under our agreement.

Aixtron has reported to us the delivery of six OVPD systems since July 2002. These include two second-generation systems, one of which was sold to the Fraunhofer Institute for Photonic Microsystems (IPMS) in Dresden, Germany in November 2007, and the other of which was sold to RiTdisplay Corporation of Taiwan in April 2003. We record royalty income from Aixtron's sales of these various systems in the quarter in which Aixtron notifies us of the sale and the related royalties are due.

#### U.S. Government-Funded Research

We have entered into several U.S. government contracts and subcontracts to fund a portion of our efforts to develop next-generation OLED technologies and materials for applications such as flexible displays and energy-efficient solid-state lighting. These include, among others, Small Business Innovation Research (SBIR) Phase I program contracts for the demonstration of technical merit and feasibility and SBIR Phase II program contracts for continued research and development and the fabrication of prototypes. On contracts for which we are the prime contractor, we subcontract portions of the work to various entities and institutions, including Princeton University, the University of Southern California, the University of Michigan, L-3 Communications Corporation — Display Systems (L-3DS), Armstrong World Industries, Inc. and LG Display. All of our government contracts and subcontracts are subject to termination at the election of the contracting governmental agency. Our government contracts include, among others, the following:

- OLED Displays on Flexible Metal Foil Substrates. We continued our work during 2008 to develop and deliver next-generation prototype OLED displays on flexible metal foil substrates for the U.S. Army Communications-Electronics Research Development and Engineering Center (CERDEC), the U.S. Army Research Laboratory (ARL) and the U.S. Air Force Research Laboratory. For 2008, we recognized \$1,065,898 in revenue for the program under several government contracts. In December 2008, we delivered to these agencies several full-color, active matrix OLED display prototypes on flexible metal foil that were developed under the program. Our contractual commitments to conduct further work under this program currently run until November 2009.

- Infrared OLED Displays for Night-Vision Applications. In 2008, we completed work under an SBIR Phase II program contract from CERDEC for the development of a flexible OLED display containing infrared-emitting OLED pixels that would be visible

through night vision goggles. We delivered a prototype infrared-emitting OLED display to CERDEC in April 2008. For 2008, we recognized \$115,387 in revenue under this program.

·Novel Encapsulation Technology for Flexible OLEDs. In 2008, we continued our work under an SBIR Phase II program contract from ARL to develop innovative encapsulation technology for flexible OLEDs. Using technology pioneered at Princeton University, we have demonstrated the feasibility of a novel encapsulation process based on plasma-enhanced chemical vapor deposition (PECVD), which is an important element on the development roadmap for flexible OLED displays. We recognized \$218,547 in revenue from ARL for 2008 under this contract. The program is currently scheduled to run through September 2009.

·OLEDs for High-Efficiency White Lighting. Our work on behalf of the U.S. Department of Energy (DOE) to develop technical approaches for using our proprietary PHOLED and other OLED technologies for high-efficiency white lighting applications continued in 2008. For the year, the DOE recognized \$1,076,363 in revenue for this work under three SBIR Phase II program contracts and three SBIR Phase I program contracts. We also received funding from the DOE under a Solid State Lighting (SSL) program contract to develop a ceiling-based white OLED lighting system in conjunction with Armstrong World Industries. Two of the SBIR Phase I programs were completed in March 2008, and our other DOE programs are currently scheduled for completion between March 2009 and August 2010.

·OVJP Technology for Lighting Applications. In 2008, we continued our work on behalf of the DOE to develop our proprietary OVJP organic vapor jet printing technology for the printing of striped OLEDs for lighting applications. Revenue recognized under this DOE Solid State Lighting program totaled \$313,918 in 2008. The program ran through December 2008. At the conclusion of the program, we delivered to the DOE prototype OLED devices fabricated using our OVJP process. The OLED materials in these devices were deposited in red, green and blue stripes, and the resulting devices generated white light.

#### The Army Flexible Display Center

We have been a charter member of The Army Flexible Display Center (FDC) since its establishment at Arizona State University in December 2004. The FDC is being supported through a \$51.5 million Cooperative Agreement between Arizona State University and the U.S. Army Research Laboratory. This agreement was recently renewed to provide an additional \$50 million in funding to the FDC over the next five years. The goal of the FDC is to develop flexible, low power, light-weight, information displays for future usage by soldiers and for other military and commercial applications. We believe our involvement with the FDC enhances our flexible OLED display technology development efforts.

#### The FlexTech Alliance

We are a member of the FlexTech Alliance, Inc. (formerly the United States Display Consortium), a cooperative industry and governmental effort aimed at developing an infrastructure to support North American flat panel display manufacturing. The role of the FlexTech Alliance is to provide a common platform for flat panel display manufacturers, developers, users and the manufacturing equipment and supplier base. It has more than 100 members, as well as support from ARL. We are one of 11 members with representation on the Governing Board of the FlexTech Alliance, and we actively participate on its Technical Council. Our President, Steven Abramson, previously served as Vice-Chairman of the Governing Board.

#### OLED Association

We are a charter member of the newly-established OLED Association (OLED-A). OLED-A is a trade association whose mission involves serving as an OLED information resource, driving OLED technology development, and promoting interest in OLED products. We are one of 10 members of OLED-A, and we actively participate on its marketing and technology committees. Janice Mahon, our Vice President of Technology Commercialization, is chairperson of the OLED-A marketing committee.

#### Intellectual Property



Along with our personnel, our primary and most fundamental assets are patents and other intellectual property. This includes numerous U.S. and foreign patents and patent applications that we own, exclusively license or have the sole right to sublicense. It also includes a substantial body of trade secrets and technical know-how that we have accumulated over time.

#### Our Patents

Our research and development activities, conducted both internally and through collaborative programs with our partners, have resulted in the filing of a substantial number of patent applications relating to our OLED technologies and materials. As of December 31, 2008, we owned, through assignment to us alone or jointly with others, 122 issued and pending patents in the U.S., together with numerous counterparts filed in various foreign countries. These patents will start expiring in the U.S. in 2020.

#### Patents We License from Princeton University, the University of Southern California and the University of Michigan

We exclusively license the bulk of our patent rights, including our key PHOLED technology patents, under an Amended License Agreement we executed with the Trustees of Princeton University and USC in October 1997. Based on Dr. Forrest's transfer to the University of Michigan, in January 2006 the University of Michigan was added as a party to this agreement. As of December 31, 2008, the patent rights we license from these universities included 214 issued and pending patents in the U.S., together with numerous counterparts filed in various foreign countries. These patents will start expiring in the U.S. in 2014, but our key PHOLED technology patents licensed from these universities will not start expiring in the U.S. until 2017.

Under the Amended License Agreement, Princeton University, USC and the University of Michigan granted us worldwide, exclusive license rights to specified patents and patent applications relating to OLED technologies and materials. Our license rights also extend to any patent rights arising out of the research conducted by Princeton University, USC or the University of Michigan under our various research agreements with these entities. We are free to sublicense to third parties all or any portion of our patent rights under the Amended License Agreement. The term of the Amended License Agreement is perpetual, though it is subject to termination for an uncured material breach or default by us, or if we become bankrupt or insolvent.

Princeton University is primarily responsible for the filing, prosecution and maintenance of all patent rights licensed to us under the Amended License Agreement pursuant to an Interinstitutional Agreement between Princeton University, USC and the University of Michigan. However, we manage this process and have the right to instruct patent counsel on specific matters to be covered in any patent applications filed by Princeton University. We are required to bear all costs associated with the filing, prosecution and maintenance of these patent rights.

We are required under the Amended License Agreement to pay Princeton University royalties for licensed products sold by us or our sublicensees. These royalties amount to 3% of the net sales price for licensed products sold by us and 3% of the revenues we receive for licensed products sold by our sublicensees. These royalty rates are subject to renegotiation for products not reasonably conceivable as arising out of the research agreements if Princeton University reasonably determines that the royalty rates payable with respect to these products are not fair and competitive. Princeton University shares portions of these royalties with USC and the University of Michigan under their Interinstitutional Agreement.

We have a minimum royalty obligation of \$100,000 per year during the term of the Amended License Agreement. Royalties under the Amended License Agreement with Princeton University were \$223,901 for 2008. We also are required under the Amended License Agreement to use commercially reasonable efforts to bring the licensed OLED technology to market. However, this requirement is deemed satisfied if we invest a minimum of \$800,000 per year in research, development, commercialization or patenting efforts respecting the patent rights licensed to us under the Amended License Agreement.

#### Patents We License from Motorola

In September 2000, we entered into a License Agreement with Motorola whereby Motorola granted us perpetual license rights to what are now 74 issued U.S. patents relating to Motorola's OLED technologies, together with numerous foreign counterparts in various countries. These patents will start expiring in the U.S. in 2012. We have the right to freely sublicense these patents to third parties and, with limited exceptions, Motorola has agreed not to license these patents to others in the OLED industry. Motorola remains responsible for the prosecution and maintenance of all patent rights licensed to us under the License Agreement, including all associated costs. Motorola is obligated to keep us informed as to the status of these activities.

We are required under the License Agreement to pay Motorola annual royalties on gross revenues received by us on account of our sales of OLED products or components, or from our OLED technology licensees, whether or not these revenues relate specifically to inventions claimed in the patent rights licensed from Motorola. We have the option to pay these royalties to Motorola in either all cash or 50% cash and 50% shares of our common stock.

The royalty due to Motorola for the year ended December 31, 2008 was \$163,916. We satisfied this royalty obligation by issuing 12,015 shares of our common stock to Motorola on March 2, 2009, and by paying Motorola \$81,962 in cash on March 5, 2009. The number of shares of common stock used to pay the stock portion of the royalty was equal to approximately 50% of the total royalty due divided by the average daily closing price per share of our common stock on the NASDAQ Global Market over the 10 trading days ended two business days prior to the date of payment.

### Intellectual Property Developed under Our Government Contracts

We and our subcontractors have developed and may continue to develop patentable OLED technology inventions under our various U.S. government contracts and subcontracts. Under these arrangements, we or our subcontractors generally can elect to take title to any patents on these inventions, and to control the manner in which these patents are licensed to third parties. However, the U.S. government reserves rights to these inventions and associated technical data that could restrict our ability to market them to the government for military and other applications, or to third parties for commercial applications. In addition, if the U.S. government determines that we or our subcontractors have not taken effective steps to achieve practical application of these inventions in any field of use in a reasonable time, the government may require that we or our subcontractors license these inventions to third parties in that field of use.

### Trade Secrets and Technical Know-How

We have accumulated, and continue to accumulate, a substantial amount of trade secret information and technical know-how relating to OLED technologies and materials. Where practicable, we share portions of this information and know-how with display manufacturers and other business partners on a confidential basis. We also employ various methods to protect this information and know-how from unauthorized use or disclosure, although no such methods can afford complete protection. Moreover, because we derive some of this information and know-how from academic institutions such as Princeton University, USC and the University of Michigan, there is an increased potential for public disclosure.

### Competition

The industry in which we operate is highly competitive. We compete against alternative flat panel display technologies, in particular LCDs, as well as other OLED technologies. We also compete in the lighting market against incumbent technologies, such as incandescent bulbs and fluorescent lamps, and emerging technologies, such as inorganic LEDs.

### Flat Panel Display Industry Competitors

Numerous domestic and foreign companies have developed or are developing LCD, plasma and other flat panel display technologies that compete with our OLED display technologies. We believe that OLED display technologies ultimately can compete with LCDs and other display technologies for many product applications on the basis of lower power consumption, better contrast ratios, faster video rates and lower manufacturing cost. However, other companies may succeed in continuing to improve these competing display technologies, or in developing new display technologies, that are superior to OLED display technologies in various respects. We cannot predict the timing or extent to which such improvements or developments may occur.

### Lighting Industry Competitors

Traditional incandescent bulbs and fluorescent lamps are well-entrenched products in the lighting industry. In addition, compact fluorescent lamps and solid-state LEDs have recently been introduced into the market and would compete with OLED lighting products. Having attributes different than fluorescent lamps and LEDs, OLEDs may compete directly with these products for certain lighting applications. However, manufacturers of LEDs and compact fluorescent lamps may succeed in more broadly adapting their products to various lighting applications, or others may develop competing solid-state lighting technologies that are superior to OLEDs. Again, we cannot predict whether or when this might occur.

### OLED Technology and Materials Competitors

Eastman Kodak Company has licensed its competing fluorescent OLED technology and other patents to a number of display manufacturers, several of whom are presently manufacturing OLED products. Cambridge Display Technology, Ltd., which was acquired by Sumitomo Chemical Company in 2007, also has licensed its competing polymer OLED technology and sells its polymer OLED materials to display manufacturers. Many display manufacturers themselves are engaged in research, development and commercialization activities with respect to OLED technologies and materials. In addition, other material manufacturers, such as Idemitsu Kosan Co., Ltd., Merck KGaA and BASF Corporation, are selling or sampling OLED materials to the same customers to which we sell our proprietary PHOLED materials.

Our existing business relationships with Samsung SMD and other product manufacturers suggest that our OLED technologies and materials, particularly our PHOLED technologies and materials, may achieve some level of market penetration in the flat panel display and lighting industries. However, our competitors may succeed in improving their competing OLED technologies and materials so as to render them superior to ours. We cannot be sure of the extent to which product manufacturers ultimately will adopt our OLED technologies and materials for the production of commercial flat panel displays and lighting products.

#### Employees

As of December 31, 2008, we had 78 full-time employees and two part-time employees, none of whom are unionized. We believe that relations with our employees are good.

#### Our Company History

Our corporation was organized under the laws of the Commonwealth of Pennsylvania in April 1985. Our business was commenced in June 1994 by a company then known as Universal Display Corporation, which had been incorporated under the laws of the State of New Jersey. On June 22, 1995, a wholly-owned subsidiary of ours merged into this New Jersey corporation. The surviving corporation in this merger became a wholly-owned subsidiary of ours and changed its name to UDC, Inc. Simultaneously with the consummation of this merger, we changed our name to Universal Display Corporation. UDC, Inc. now functions as an operating subsidiary of ours and has overlapping officers and directors. In January 2008, we also formed a second wholly-owned subsidiary, Universal Display Corporation Hong Kong, Ltd.

#### Our Compliance with Environmental Protection Laws

We are not aware of any material effects that compliance with Federal, State or local environmental protection laws or regulations will have on our business. We have not expended material amounts to comply with any environmental protection laws or regulations and do not anticipate having to do so in the foreseeable future.

#### Our Internet Site

Our Internet address is [www.universaldisplay.com](http://www.universaldisplay.com). We make available through our Internet website, free of charge, our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act as soon as reasonably practicable after we file such material with the Securities and Exchange Commission (the "SEC"). In addition, we have made available on our Internet website under the heading "Corporate Governance" the charter for the Audit Committee of our Board of Directors, as well as our Code of Ethics and Code of Conduct for Employees, and our Code of Conduct for Directors. We intend to make available on our website any future amendments or waivers to our Code of Ethics and Code of Conduct for Employees, and our Code of Conduct for Directors within four business days after any such amendments or waivers. The information on our Internet site is not part of this report.

#### ITEM 1A. RISK FACTORS

The following factors, as well as other factors affecting our operating results and financial condition, could cause our actual future results and financial condition to differ materially from those projected.

If our OLED technologies and materials are not feasible for broad-based product applications, we may never generate revenues sufficient to support ongoing operations.

Our main business strategy is to license our OLED technologies and sell our OLED materials to manufacturers for incorporation into the flat panel display and lighting products that they sell. Consequently, our success depends on the ability and willingness of these manufacturers to develop, manufacture and sell commercial products integrating our technologies and materials.

Before product manufacturers will agree to utilize our OLED technologies and materials for wide-scale commercial production, they will likely require us to demonstrate to their satisfaction that our OLED technologies and materials are feasible for broad-based product applications. This, in turn, may require additional advances in our technologies and

materials, as well as those of others, for applications in a number of areas, including, without limitation, advances with respect to the development of:

- OLED materials with sufficient lifetimes, brightness and color coordinates for full-color OLED displays and general lighting products;
- more robust OLED materials for use in large-scale, more demanding manufacturing environments; and
- scalable and cost-effective methods and technologies for the fabrication of OLED products.

We cannot be certain that these advances will ever occur, and hence our OLED technologies and materials may never be feasible for broad-based product applications.

Even if our OLED technologies are technically feasible, they may not be adopted by product manufacturers.

The potential size, timing and viability of market opportunities targeted by us are uncertain at this time. Market acceptance of our OLED technologies will depend, in part, upon these technologies providing benefits comparable or superior to current display and lighting technologies at an advantageous cost to manufacturers, and the adoption of products incorporating these technologies by consumers. Many potential licensees of our OLED technologies manufacture flat panel displays and lighting products utilizing competing technologies, and may, therefore, be reluctant to redesign their products or manufacturing processes to incorporate our OLED technologies.

During the entire product development process for a new product, we face the risk that our technology will fail to meet the manufacturer's technical, performance or cost requirements or will be replaced by a competing product or alternative technology. For example, we are aware that some of our licensees and prospective licensees have entered into arrangements with our competitors regarding the development of competing technologies. Even if we offer technologies that are satisfactory to a product manufacturer, the manufacturer may choose to delay or terminate its product development efforts for reasons unrelated to our technologies.

Mass production of OLED products will require the availability of suitable manufacturing equipment, components and materials, many of which are available only from a limited number of suppliers. In addition, there may be a number of other technologies that manufacturers need to utilize to be used in conjunction with our OLED technologies in order to bring OLED products containing them to the market. Thus, even if our OLED technologies are a viable alternative to competing approaches, if product manufacturers are unable to obtain access to this equipment and these components, materials and other technologies, they may not utilize our OLED technologies.

There are numerous potential alternatives to OLEDs, which may limit our ability to commercialize our OLED technologies and materials.

The flat panel display market is currently, and will likely continue to be for some time, dominated by displays based on LCD technology. Numerous companies are making substantial investments in, and conducting research to improve characteristics of, LCDs. Plasma and other competing flat panel display technologies have been, or are being, developed. A similar situation exists in the solid-state lighting market, which is currently dominated by LED products. Advances in any of these various technologies may overcome their current limitations and permit them to become the leading technologies in their field, either of which could limit the potential market for products utilizing our OLED technologies and materials. This, in turn, would cause product manufacturers to avoid entering into commercial relationships with us, or to terminate or not renew their existing relationships with us.



Other OLED technologies may be more successful or cost-effective than ours, which may limit the commercial adoption of our OLED technologies and materials.

Our competitors have developed OLED technologies that differ from or compete with our OLED technologies. In particular, competing fluorescent OLED technology, which entered the marketplace prior to ours, may become entrenched in the industry before our OLED technologies have a chance to become widely utilized. Moreover, our competitors may succeed in developing new OLED technologies that are more cost-effective or have fewer limitations than our OLED technologies. If our OLED technologies, and particularly our phosphorescent OLED technology, are unable to capture a substantial portion of the OLED product market, our business strategy may fail.

If we fail to make advances in our OLED research and development activities, we might not succeed in commercializing our OLED technologies and materials.

Further advances in our OLED technologies and materials depend, in part, on the success of the research and development work we conduct, both alone and with our research partners. We cannot be certain that this work will yield additional advances in the research and development of these technologies and materials.

Our research and development efforts remain subject to all of the risks associated with the development of new products based on emerging and innovative technologies, including, without limitation, unanticipated technical or other problems and the possible insufficiency of funds for completing development of these products. Technical problems may result in delays and cause us to incur additional expenses that would increase our losses. If we cannot complete research and development of our OLED technologies and materials successfully, or if we experience delays in completing research and development of our OLED technologies and materials for use in potential commercial applications, particularly after incurring significant expenditures, our business may fail.

The consumer electronics industry experiences significant downturns from time to time, any of which may adversely affect the demand for and pricing of our OLED technologies and materials.

Because we do not sell any products to consumers, our success depends upon the ability and continuing willingness of our licensees to manufacture and sell products utilizing our technologies and materials, and the widespread acceptance of those products. Any slowdown in the demand for our licensees' products would adversely affect our royalty revenues and thus our business. The markets for flat panel displays and lighting products are highly competitive. Success in the market for end-user products that may integrate our OLED technologies and materials also depends on factors beyond the control of our licensees and us, including the cyclical and seasonal nature of the end-user markets that our licensees serve, as well as industry and general economic conditions.

The markets that we hope to penetrate have experienced significant periodic downturns, often in connection with, or in anticipation of, declines in general economic conditions. These downturns have been characterized by lower product demand, production overcapacity and erosion of average selling prices. Our business strategy is dependent on manufacturers building and selling products that incorporate our OLED technologies and materials. Industry-wide fluctuations and downturns in the demand for flat panel displays and solid-state lighting products could cause significant harm to our business.

The current U.S. and global economic crisis may have a significant adverse effect on our business.

With the recent and significant deterioration of economic conditions in the U.S. and elsewhere, there has been considerable pressure on consumer demand, and the resulting impact on consumer spending has had and may continue to have a material adverse effect on the demand for products that incorporate our OLED technologies and materials. This decline in demand may have a significant adverse effect on one or more of our licensees as an enterprise, which could result in those licensees reducing their efforts to commercialize these products. Consumer demand and the condition of the flat panel display and lighting industries may also be impacted by other external factors such as war, terrorism, geopolitical uncertainties and other business interruptions. The impact of these external factors is difficult to predict, and one or more of these factors could adversely impact the demand for our licensees' products, and thus our business.

If we cannot form and maintain lasting business relationships with OLED product manufacturers, our business strategy will fail.

Our business strategy ultimately depends upon our development and maintenance of commercial licensing and material supply relationships with high-volume manufacturers of OLED products. We have entered into only a limited number of such relationships. Our other relationships with product manufacturers currently are limited to technology development and the evaluation of our OLED technologies and materials for possible use in commercial products. Some or all of these relationships may not succeed or, even if they are successful, may not result in the product manufacturers entering into commercial licensing and material supply relationships with us.

Under our existing technology development and evaluation agreements, we are working with manufacturers to incorporate our technologies into their commercial products. However, these technology development and evaluation

agreements typically last for limited periods of time, such that our relationships with the product manufacturers will expire unless they continually are renewed. These manufacturers may not agree to renew their relationships with us on a continuing basis. In addition, we regularly continue working with manufacturers evaluating our OLED technologies and materials after our existing agreements with them have expired while we are attempting to negotiate contract extensions or new agreements with them. Should our relationships with the various product manufacturers not continue or be renewed, or if we are not able to identify other product manufacturers and enter into contracts with them, our business would suffer.

Our ability to enter into additional commercial licensing and material supply relationships, or to maintain our existing technology development and evaluation relationships, may require us to make financial or other commitments. We might not be able, for financial or other reasons, to enter into or continue these relationships on commercially acceptable terms, or at all. Failure to do so may cause our business strategy to fail.

Conflicts may arise with our licensees or joint development partners, resulting in renegotiation or termination of, or litigation related to, our agreements with them. This would adversely affect our revenues.

Conflicts could arise between us and our licensees or joint development partners as to royalty rates, milestone payments or other commercial terms. Similarly, we may disagree with our licensees or joint development partners as to which party owns or has the right to commercialize intellectual property that is developed during the course of the relationship or as to other non-commercial terms. If such a conflict were to arise, a licensee or joint development partner might attempt to compel renegotiation of certain terms of their agreement or terminate their agreement entirely, and we might lose the royalty revenues and other benefits of the agreement. Either we or the licensee or joint development partner might initiate litigation to determine commercial obligations, establish intellectual property rights or resolve other disputes under the agreement. Such litigation could be costly to us and require substantial attention of management. If we were unsuccessful in such litigation, we could lose the commercial benefits of the agreement, be liable for other financial damages and suffer losses of intellectual property or other rights that are the subject of dispute. Any of these adverse outcomes could cause our business strategy to fail.

If we cannot obtain and maintain appropriate patent and other intellectual property rights protection for our OLED technologies and materials, our business will suffer.

The value of our OLED technologies and materials is dependent on our ability to secure and maintain appropriate patent and other intellectual property rights protection. Although we own or license many patents respecting our OLED technologies and materials that have already been issued, there can be no assurance that additional patents applied for will be obtained, or that any of these patents, once issued, will afford commercially significant protection for our OLED technologies and materials, or will be found valid if challenged. Moreover, we have not obtained patent protection for some of our OLED technologies and materials in all foreign countries in which OLED products or materials might be manufactured or sold. In any event, the patent laws of other countries may differ from those of the United States as to the patentability of our OLED technologies and materials and the degree of protection afforded.

The strength of our current intellectual property position results primarily from the essential nature of our fundamental patents covering phosphorescent OLED devices and certain materials utilized in these devices. Our existing fundamental phosphorescent OLED patents expire in the United States in 2017 and 2019, and in other countries of the world in 2018 and 2020. While we hold a wide range of additional patents and patent applications whose expiration dates extend (and in the case of patent applications, will extend) beyond 2020, many of which are also of key importance in the OLED industry, none are of an equally essential nature as our fundamental patents, and therefore our competitive position after 2020 may be less certain.

We may become engaged in litigation to protect or enforce our patent and other intellectual property rights, or in International Trade Commission proceedings to abate the importation of goods that would compete unfairly with those of our licensees. In addition, we are participating in or have participated in, and will likely have to participate in the future in, interference or reexamination proceedings before the U.S. Patent and Trademark Office, and opposition, nullity or other proceedings before foreign patent offices, with respect to our patents or patent applications. All of these actions place our patents and other intellectual property rights at risk and may result in substantial costs to us as well as a diversion of management attention. Moreover, if successful, these actions could result in the loss of patent or other intellectual property rights protection for the key OLED technologies and materials on which our business depends.

In addition, we rely in part on unpatented proprietary technologies, and others may independently develop the same or similar technologies or otherwise obtain access to our unpatented technologies. To protect our trade secrets, know-how and other proprietary information, we require employees, consultants, financial advisors and strategic partners to enter into confidentiality agreements. These agreements may not ultimately provide meaningful protection for our trade secrets, know-how or other proprietary information. In particular, we may not be able to fully or adequately protect our proprietary information as we conduct discussions with potential strategic partners. If we are unable to protect the proprietary nature of our technologies, it will harm our business.

We or our licensees may incur substantial costs or lose important rights as a result of litigation or other proceedings relating to our patent and other intellectual property rights.

There are a number of other companies and organizations that have been issued patents and are filing patent applications relating to OLED technologies and materials, including, without limitation, Eastman Kodak Company, Cambridge Display Technology (acquired by Sumitomo Chemical Company in 2007), Fuji Film Co., Ltd., Canon, Inc., Semiconductor Energy Laboratories Co., Idemitsu Kosan Co., Ltd. and Mitsubishi Chemical Corporation. As a result, there may be issued patents or pending patent applications of third parties that would be infringed by the use of our OLED technologies or materials, thus subjecting our licensees to possible suits for patent infringement in the future. Such lawsuits could result in our licensees being liable for damages or require our licensees to obtain additional licenses that could increase the cost of their products, which might have an adverse affect on their sales and thus our royalties or cause them to seek to renegotiate our royalty rates.

In addition, we may be required from time-to-time to assert our intellectual property rights by instituting legal proceedings against others. We cannot assure you that we will be successful in enforcing our patents in any lawsuits we may commence. Defendants in any litigation we may commence to enforce our patents may attempt to establish that our patents are invalid or are unenforceable. Thus, any patent litigation we commence could lead to a determination that one or more of our patents are invalid or unenforceable. If a third party succeeds in invalidating one or more of our patents, that party and others could compete more effectively against us. Our ability to derive licensing revenues from products or technologies covered by these patents would also be adversely affected.

Whether our licensees are defending the assertion of third-party intellectual property rights against their businesses arising as a result of the use of our technology, or we are asserting our own intellectual property rights against others, such litigation can be complex, costly, protracted and highly disruptive to our or our licensees' business operations by diverting the attention and energies of management and key technical personnel. As a result, the pendency or adverse outcome of any intellectual property litigation to which we or our licensees are subject could disrupt business operations, require the incurrence of substantial costs and subject us or our licensees to significant liabilities, each of which could severely harm our business. Costs associated with these actions are likely to increase as active matrix OLED products using our PHOLED and other OLED technologies and materials enter the consumer marketplace.

Plaintiffs in intellectual property cases often seek injunctive relief in addition to money damages. Any intellectual property litigation commenced against our licensees could force them to take actions that could be harmful to their business and thus to our royalties, including the following:

- stop selling their products that incorporate or otherwise use technology that contains our allegedly infringing intellectual property;
- attempt to obtain a license to the relevant third-party intellectual property, which may not be available on reasonable terms or at all; or

attempt to redesign their products to remove our allegedly infringing intellectual property to avoid infringement of the third-party intellectual property.

If our licensees are forced to take any of the foregoing actions, they may be unable to manufacture and sell their products that incorporate our technology at a profit or at all. Furthermore, the measure of damages in intellectual property litigation can be complex, and is often subjective or uncertain. If our licensees were to be found liable for infringement of proprietary rights of a third party, the amount of damages they might have to pay could be substantial and is difficult to predict. Decreased sales of our licensees' products incorporating our technology would have an adverse effect on our royalty revenues under existing licenses. Any necessity to procure rights to the third-party technology might cause our existing

licensees to renegotiate the royalty terms of their license with us to compensate for this increase in their cost of production or, in certain cases, to terminate their license with us entirely. Were this renegotiation to occur, it would likely harm our ability to compete for new licensees and have an adverse effect on the terms of the royalty arrangements we could enter into with any new licensees.

As is commonplace in technology companies, we employ individuals who were previously employed at other technology companies. To the extent our employees are involved in research areas that are similar to those areas in which they were involved at their former employers, we may be subject to claims that such employees or we have, inadvertently or otherwise, used or disclosed the alleged trade secrets or other proprietary information of the former employers. Litigation may be necessary to defend against such claims. The costs associated with these actions or the loss of rights critical to our or our licensees' business could negatively impact our revenues or cause our business to fail.

A 2007 U.S. Supreme Court decision may raise the standards for all patent applicants and holders for patentability.

On April 30, 2007, the U.S. Supreme Court, in *KSR International Co. vs. Teleflex, Inc.*, mandated a more expansive and flexible approach towards a determination as to whether a patent is obvious and invalid. This ruling may make it more difficult for patent holders to secure or maintain existing patents. At the present time, we are unable to predict the impact, if any, that this recent ruling will have on our currently issued or future patents. As a result of the Supreme Court ruling, however, it may be more difficult for us to defend our currently issued patents or to obtain additional patents in the future. If we are unable to defend our currently issued patents, or to obtain new patents for any reason, our business would suffer.

We have a history of losses and may never be profitable.

Since inception, we have incurred significant losses and we expect to incur losses until such time, if ever, as we are able to achieve sufficient levels of revenue from the commercial exploitation of our OLED technologies and materials to support our operations. This may never occur because:

- OLED technologies might not be adopted for broad commercial usage;
- markets for flat panel displays and solid-state lighting products utilizing OLED technologies may be limited; and
- amounts we can charge for access to our OLED technologies and materials may not be sufficient for us to make a profit.

We may require additional funding in the future in order to continue our business.

Our capital requirements have been and will continue to be significant. We may require additional funding in the future for the research, development and commercialization of our OLED technologies and materials, to obtain and maintain patents and other intellectual property rights in these technologies and materials, and for working capital and other purposes, the timing and amount of which are difficult to ascertain. Our cash on hand may not be sufficient to meet all of our future needs. When we need additional funds, such funds may not be available on commercially reasonable terms or at all. If we cannot obtain more money when needed, our business might fail. Additionally, if we attempt to raise money in an offering of shares of our common stock, preferred stock, warrants or depositary shares, or if we engage in acquisitions involving the issuance of such securities, the issuance of these shares will dilute our then-existing shareholders.



Many of our competitors have greater resources, which may make it difficult for us to compete successfully against them.

The flat panel display and solid-state lighting industries are characterized by intense competition. Many of our competitors have better name recognition and greater financial, technical, marketing, personnel and research capabilities than us. Because of these differences, we may never be able to compete successfully in these markets.

We rely solely on PPG Industries to manufacture the OLED materials we use and sell to product manufacturers.

Our business prospects depend significantly on our ability to obtain proprietary OLED materials for our own use and for sale to product manufacturers. Our agreement with PPG Industries provides us with a source for these materials for

development and evaluation purposes, as well as for commercial purposes. This agreement, however, is scheduled to expire on December 31, 2011. Our inability to continue obtaining these OLED materials from PPG Industries or another source would have a material adverse effect on our revenues from sales of these materials, as well as on our ability to perform development work and to support those product manufacturers currently evaluating our OLED technologies and materials for possible commercial use.

Because the vast majority of OLED product manufacturers are located in the Asia-Pacific region, we are subject to international operational, financial, legal and political risks which may negatively impact our operations.

Many of our licensees and prospective licensees have a majority of their operations in countries other than the United States, particularly in the Asia-Pacific region. Risks associated with our doing business outside of the United States include, without limitation:

- compliance with a wide variety of foreign laws and regulations;
- legal uncertainties regarding taxes, tariffs, quotas, export controls, export licenses and other trade barriers;
- economic instability in the countries of our licensees, causing delays or reductions in orders for their products and therefore our royalties;
- political instability in the countries in which our licensees operate, particularly in South Korea relating to its disputes with North Korea and in Taiwan relating to its disputes with China;
- difficulties in collecting accounts receivable and longer accounts receivable payment cycles; and
- potentially adverse tax consequences.

Any of these factors could impair our ability to license our OLED technologies and sell our OLED materials, thereby harming our business.

The U.S. government has rights to our OLED technologies that might prevent us from realizing the benefits of these technologies.

The U.S. government, through various government agencies, has provided and continues to provide funding to us, Princeton University, the University of Southern California and the University of Michigan for research activities related to certain aspects of our OLED technologies. Because we have been provided with this funding, the government has rights to these OLED technologies that could restrict our ability to market them to the government for military and other applications, or to third parties for commercial applications. Moreover, if the government determines that we have not taken effective steps to achieve practical application of these OLED technologies in any field of use in a reasonable time, the government could require us to grant licenses to other parties in that field of use. Any of these occurrences would limit our ability to obtain the full benefits of our OLED technologies.

If we cannot keep our key employees or hire other talented persons as we grow, our business might not succeed.

Our performance is substantially dependent on the continued services of senior management and other key personnel, and on our ability to offer competitive salaries and benefits to our employees. We do not have employment

agreements with any of our management or other key personnel. Additionally, competition for highly skilled technical, managerial and other personnel is intense. We might not be able to attract, hire, train, retain and motivate the highly skilled managers and employees we need to be successful. If we fail to attract and retain the necessary technical and managerial personnel, our business will suffer and might fail.

We can issue shares of preferred stock that may adversely affect the rights of shareholders of our common stock.

Our Articles of Incorporation authorize us to issue up to 5,000,000 shares of preferred stock with designations, rights and preferences determined from time-to-time by our Board of Directors. Accordingly, our Board of Directors is empowered, without shareholder approval, to issue preferred stock with dividend, liquidation, conversion, voting or other rights superior to those of shareholders of our common stock. For example, an issuance of shares of preferred stock could:

- adversely affect the voting power of the shareholders of our common stock;
- make it more difficult for a third party to gain control of us;
- discourage bids for our common stock at a premium; or
- otherwise adversely affect the market price of our common stock.

As of March 9, 2009, we have issued and outstanding 200,000 shares of Series A Nonconvertible Preferred Stock, all of which are held by an entity controlled by members of the family of Sherwin I. Seligsohn, our Founder and Chairman of the Board of Directors. Our Board of Directors has authorized and issued other shares of preferred stock in the past, none of which are currently outstanding, and may do so again at any time in the future.

If the price of our common stock goes down, we may have to issue more shares than are presently anticipated to be issued under our agreement with PPG Industries.

Under our agreement with PPG Industries, we are required to issue to PPG Industries shares of our common stock as partial payment for services rendered by it, though under limited circumstances we are required to compensate PPG Industries fully in cash in lieu of common stock. The number of shares of common stock that we are required to deliver to PPG Industries is based on a specified formula. Under this formula, the lower the price of our common stock at and around the time of issuance, the greater the number of shares that we are required to issue to PPG Industries. Lower than anticipated market prices for our common stock, and correspondingly greater numbers of shares issuable to PPG Industries, with a resulting increase in the number of shares available for public sale, could cause people to sell our common stock, including in short sales, which could drive down the price of our common stock, thus reducing its value and perhaps hindering our ability to raise additional funds in the future. In addition, such an increase in the number of outstanding shares of our common stock would further dilute existing holders of this stock.

Our executive officers and directors own a large percentage of our common stock and could exert significant influence over matters requiring shareholder approval, including takeover attempts.

Our executive officers and directors, their respective affiliates and the adult children of Sherwin Seligsohn, our Founder and Chairman of the Board of Directors, beneficially own, as of March 9, 2009, approximately 15% of the outstanding shares of our common stock. Accordingly, these individuals may, as a practical matter, be able to exert significant influence over matters requiring approval by our shareholders, including the election of directors and the approval of mergers or other business combinations. This concentration also could have the effect of delaying or preventing a change in control of us.

The market price of our common stock might be highly volatile.

The market price of our common stock might be highly volatile, as has been the case with our common stock in the past as well as the securities of many companies, particularly other small and emerging-growth companies. We have included in the section of this report entitled "Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities," a table indicating the high and low closing prices of our common stock as reported on the NASDAQ Global Market for the past two years. Factors such as the following may have a significant impact on the market price of our common stock in the future:

- our expenses and operating results;

- announcements by us or our competitors of technological developments, new product applications or license arrangements; and
- other factors affecting the flat panel display and solid-state lighting industries in general.

Our operating results may have significant period-to-period fluctuations, which would make it difficult to predict our future performance.

Due to the current stage of commercialization of our OLED technologies and the significant development and manufacturing objectives that we and our licensees must achieve to be successful, our quarterly operating results will be difficult to predict and may vary significantly from quarter to quarter.

We believe that period-to-period comparisons of our operating results are not a reliable indicator of our future performance at this time. Among other factors affecting our period-to-period results, our license and technology development fees often consist of large one-time or annual payments, resulting in significant fluctuations in our revenues. If, in some future period, our operating results or business outlook fall below the expectations of securities analysts or investors, our stock price would be likely to decline and investors in our common stock may not be able to resell their shares at or above their purchase price. Broad market, industry and global economic factors may also materially reduce the market price of our common stock, regardless of our operating performance.

The issuance of additional shares of our common stock could drive down the price of our stock.

The price of our common stock might decrease if:

- other shares of our common stock that are currently subject to restriction on sale become freely salable, whether through an effective registration statement or based on Rule 144 under the Securities Act of 1933, as amended; or
- we issue additional shares of our common stock that might be or become freely salable, including shares that would be issued upon conversion of our preferred stock or the exercise of outstanding warrants and options.

Because we do not intend to pay dividends, shareholders will benefit from an investment in our common stock only if it appreciates in value.

We have never declared or paid any cash dividends on our common stock. We currently intend to retain our future earnings, if any, to finance further research and development and do not expect to pay any cash dividends in the foreseeable future. As a result, the success of an investment in our common stock will depend upon any future appreciation in its value. There is no guarantee that our common stock will appreciate in value or even maintain the price at which shareholders have purchased their shares.

#### ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

#### ITEM 2. PROPERTIES

Our corporate offices and research and development laboratories are located at 375 Phillips Boulevard in Ewing, New Jersey. On December 1, 2004, we acquired the building and property at which this facility is located. During 2005, we conducted a two-stage expansion of our laboratory and office space in the building. We currently occupy the entire 40,200 square feet facility. Through February 2008, we leased a small portion of this office space to Global Photonic Energy Corporation (GPEC).

#### ITEM 3. LEGAL PROCEEDINGS

Notice of Opposition to European Patent No. 0946958

On December 8, 2006, Cambridge Display Technology, Ltd. (“CDT”), which was acquired in 2007 by Sumitomo Chemical Company (“Sumitomo”), filed a Notice of Opposition to European Patent No. 0946958 (the “EP ‘958 patent”). The EP ‘958 patent, which was issued on March 8, 2006, is a European counterpart patent to U.S. patents 5,844,363, 6,602,540, 6,888,306 and 7,247,073. These patents relate to our FOLED technology. They are exclusively licensed to us by Princeton, and under the license agreement we are required to pay all legal costs and fees associated with this proceeding.

The European Patent Office (the “EPO”) set a date of May 12, 2007 for us to file a response to the facts and arguments presented by CDT in its Notice of Opposition. The response was timely filed. The opponents then filed their reply to our response on December 7, 2007. We have decided that there is no need to file another response before the oral hearing date is set. We are currently waiting for the EPO to notify us of the date of the oral hearing.

At this stage of the proceeding, we cannot make any prediction as to the probable outcome of this opposition. However, based on an analysis of the evidence presented to date, we continue to believe there is a substantial likelihood that the patent being challenged will be declared valid, and that all or a significant portion of its claims will be upheld.

Notices of Opposition to European Patent No. 1449238

On March 8, 2007, Sumation Company Limited (“Sumation”), a joint venture between Sumitomo and CDT, filed a first Notice of Opposition to European Patent No. 1449238 (the “EP ‘238 patent”). The EP ‘238 patent, which was issued on November 2, 2006, is a European counterpart patent, in part, to U.S. patents 6,830,828, 6,902,830, 7,001,536 and 7,291,406, and to pending U.S. patent application 11/879,379, filed on July 16, 2007. These patents and this patent application relate to our PHOLED technology. They are exclusively licensed to us by Princeton, and under the license agreement we are required to pay all legal costs and fees associated with this proceeding.

Two other parties filed additional oppositions to the EP ‘238 patent just prior to the August 2, 2007 expiration date for such filings. On July 24, 2007, Merck Patent GmbH, of Darmstadt, Germany, filed a second Notice of Opposition to the EP ‘238 patent, and on July 27, 2007, BASF Aktiengesellschaft, of Mannheim, Germany, filed a third Notice of Opposition to the EP ‘238 patent. The EPO combined all three oppositions into a single opposition proceeding.

The EPO set a January 6, 2008 due date for us to file our response to the opposition. We requested a two-month extension to file this response, and we subsequently filed our response in a timely manner. We are currently waiting for the EPO to notify us of the date of the oral hearing. We are also waiting to see whether the other parties in the opposition file any additional documents, to which we may respond.

At this stage of the proceeding, we cannot make any prediction as to the probable outcome of the opposition. However, based on an analysis of the evidence presented to date, we continue to believe there is a substantial likelihood that the patent being challenged will be declared valid, and that all or a significant portion of its claims will be upheld.

#### ITEM 4. SUBMISSION OF MATTERS TO A VOTE OF SECURITY HOLDERS

None.



## EXECUTIVE OFFICERS OF THE REGISTRANT

The following table sets forth certain information with respect to our executive officers as of March 9, 2009:

Name	Age	Position
Sherwin I. Seligsohn	73	Founder and Chairman of the Board of Directors
Steven V. Abramson	57	President, Chief Executive Officer and Director
Sidney D. Rosenblatt	61	Executive Vice President, Chief Financial Officer, Treasurer, Secretary and Director
Julia J. Brown	48	Vice President and Chief Technical Officer
Janice K. Mahon	51	Vice President of Technology Commercialization and General Manager of Material Supply Business

Our Board of Directors has appointed these executive officers to hold office until their successors are duly appointed.

Sherwin I. Seligsohn is our Founder and has been the Chairman of our Board of Directors since June 1995. He also served as our Chief Executive Officer from June 1995 through December 2007, and as our President from June 1995 through May 1996. Mr. Seligsohn serves as the sole Director, President and Secretary of American Biomimetics Corporation, International Multi-Media Corporation, and Wireless Unified Network Systems Corporation. He is also Chairman of the Board of Directors, President and Chief Executive Officer of Global Photonic Energy Corporation. From June 1990 to October 1991, Mr. Seligsohn was Chairman Emeritus of InterDigital Communications, Inc. (InterDigital), formerly International Mobile Machines Corporation. He founded InterDigital and from August 1972 to June 1990 served as its Chairman of the Board of Directors. Mr. Seligsohn is a member of the Industrial Advisory Board of the Princeton Institute for the Science and Technology of Materials (PRISM) at Princeton University.

Steven V. Abramson is our President and Chief Executive Officer, and has been a member of our Board of Directors since May 1996. Mr. Abramson served as our President and Chief Operating Officer from May 1996 through December 2007. From March 1992 to May 1996, Mr. Abramson was Vice President, General Counsel, Secretary and Treasurer of Roy F. Weston, Inc., a worldwide environmental consulting and engineering firm. From December 1982 to December 1991, Mr. Abramson held various positions at InterDigital, including General Counsel, Executive Vice President and General Manager of the Technology Licensing Division.

Sidney D. Rosenblatt is an Executive Vice President and has been our Chief Financial Officer, Treasurer and Secretary since June 1995. He also has been a member of our Board of Directors since May 1996. Mr. Rosenblatt is the owner of and served as the President of S. Zitner Company from August 1990 through December 1998. From May 1982 to August 1990, Mr. Rosenblatt served as the Senior Vice President, Chief Financial Officer and Treasurer of InterDigital.

Julia J. Brown, Ph.D. is a Senior Vice President and has been our Chief Technical Officer since June 2002. She joined us in June 1998 as our Vice President of Technology Development. From November 1991 to June 1998, Dr. Brown was a Research Department Manager at Hughes Research Laboratories where she directed the pilot line production of high-speed Indium Phosphide-based integrated circuits for insertion into advanced airborne radar and satellite communication systems. Dr. Brown received an M.S. and Ph.D. in Electrical Engineering/Electrophysics at the University of Southern California under the advisement of Professor Stephen R. Forrest. Dr. Brown has served as an Associate Editor of the Journal of Electronic Materials and as an elected member of the Electron Device Society

Technical Board. She co-founded an international engineering mentoring program sponsored by the Institute of Electrical and Electronics Engineers (“IEEE”) and is a Fellow of the IEEE. Dr. Brown has served on numerous technical conference committees and is presently a member of the Society of Information Display.

Janice K. Mahon has been our Vice President of Technology Commercialization since January 1997, and became the General Manager of our Materials Supply Business in January 2007. From 1992 to 1996, Ms. Mahon was Vice President of SAGE Electrochromics, Inc., a thin-film electrochromic technology company, where she oversaw a variety of business development, marketing and finance and administrative activities. From 1984 to 1989, Ms. Mahon was a Vice President and General Manager for Chronar Corporation, a leading developer and manufacturer of amorphous silicon photovoltaic (PV) panels. Prior to that, Ms. Mahon worked as Senior Engineer for the Industrial Chemicals Division of FMC Corporation. Ms. Mahon received her B. S. in Chemical Engineering from Rensselaer Polytechnic Institute in 1979, and an M. B. A. from Harvard University in 1984. Ms. Mahon has been a member of the USDC Technical Council since 1997, and a member of its Governing Board since January 2008.

## PART II

## ITEM 5. MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

## Our Common Stock

Our common stock is quoted on the NASDAQ Global Market under the symbol "PANL." The following table sets forth, for the periods indicated, the high and low closing prices of our common stock as reported on the NASDAQ Global Market.

	High Close	Low Close
2008		
Fourth Quarter.....	\$11.75	\$5.51.....
Third Quarter.....	16.08	10.96.....
Second Quarter.....	15.95	12.32.....
First Quarter.....	20.78	13.43.....
2007		
Fourth Quarter.....	\$21.88	\$15.67.....
Third Quarter.....	18.44	13.80.....
Second Quarter.....	17.70	14.59.....
First Quarter.....	15.80	12.03.....

As of March 9, 2009, there were approximately 17,500 holders of record of our common stock.

We have never declared or paid cash dividends on our common stock. We currently intend to retain any future earnings for the operation and expansion of our business. We do not anticipate declaring or paying cash dividends on our common stock in the foreseeable future. Any future payment of cash dividends on our common stock will be at the discretion of our Board of Directors and will depend upon our results of operations, earnings, capital requirements, contractual restrictions and other factors deemed relevant by our Board of Directors.

## Issuance of Securities to PPG Industries

Under our OLED Materials Supply and Service Agreement, we have the option to issue shares of our common stock to PPG Industries on a periodic basis as payment for up to 50% of the amounts due for certain services performed for us by PPG Industries. During the quarter ended December 31, 2008, we issued an aggregate of 48,142 shares of our common stock to PPG Industries as partial payment for these services. The shares were issued in reliance on the exemption from registration contained in Section 4(2) of the Securities Act of 1933, as amended.

## Receipt of Shares Upon the Exercise of Outstanding Stock Options

As illustrated in the following table, on December 8, 2008, certain of our executive officers and a former executive officer tendered to us a total of 46,286 shares of our common stock as payment of the exercise price for stock options that had previously been granted to these individuals under our Equity Compensation Plan. These stock options had an exercise price of \$4.50 per share, and an expiration date of December 18, 2008. The shares we received were valued at \$8.75 per share, which was the closing price of our common stock on the NASDAQ Global Market on December 8, 2008. The total value of the shares we received was \$405,003.



The following table provides information relating to the shares we received during the fourth quarter of 2008.

Period	Total Number of Shares Purchased	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Program	Approximate Dollar Value of Shares that May Yet Be Purchased Under the Program
October 1 – October 31	--	--	--	--
November 1 – November 30	--	--	--	--
December 1 – December 31	46,286	\$8.75	46,286	--
Total	46,286	\$8.75	46,286	--

Performance Graph

The performance graph below compares the change in the cumulative shareholder return of our common stock from December 31, 2003 to December 31, 2008, with the percentage change in the cumulative total return over the same period on (i) the Russell 2000 Index, and (ii) the Nasdaq Electronics Components Index. This performance graph assumes an initial investment of \$100 on December 31, 2002 in each of our common stock, the Russell 2000 Index and the Nasdaq Electronics Components Index.

	Cumulative Total Return					
	12/03	12/04	12/05	12/06	12/07	12/08
Universal Display Corp.	100.00	65.60	76.60	109.40	150.66	68.88
Russell 2000	100.00	118.33	123.72	146.44	144.15	95.44
NASDAQ Electronic Components	100.00	78.30	84.93	79.38	92.16	47.68

## ITEM 6. SELECTED FINANCIAL DATA

The following selected condensed consolidated financial data has been derived from, and should be read in conjunction with, our Consolidated Financial Statements and the notes thereto, and with "Management's Discussion and Analysis of Financial Condition and Results of Operations," included elsewhere in this report.

	Year Ended December 31,				
	2008	2007	2006	2005	2004
<b>Operating Results:</b>					
Total revenue	\$ 11,075,224	\$ 11,305,907	\$ 11,921,292	\$ 10,147,995	\$ 7,006,913
Research and development expense	22,257,634	20,909,262	19,562,004	18,798,024	16,226,517
General and administrative expense	10,170,593	9,569,381	8,902,462	7,704,931	7,052,047
Interest income	2,607,897	3,599,229	2,168,933	1,419,858	795,620
Income tax benefit	962,478	804,980	544,567	424,207	612,966
Net loss	(19,139,736)	(15,975,841)	(15,186,804)	(15,801,612)	(15,776,574)
Net loss attributable to common shareholders	(19,139,736)	(15,975,841)	(15,186,804)	(15,801,612)	(15,906,198)
Net loss per share, basic and diluted	(0.53)	(0.47)	(0.49)	(0.56)	(0.59)
<b>Balance Sheet Data:</b>					
Total assets	\$ 96,228,505	\$ 105,000,071	\$ 72,331,536	\$ 73,819,417	\$ 73,892,163
Current liabilities	15,769,505	12,790,531	14,382,673	11,974,854	7,404,278
Long-term debt	—	—	—	—	4,200,000
Shareholders' equity	76,714,463	89,215,957	54,382,363	57,616,463	59,187,885
<b>Other Financial Data:</b>					
Working capital	\$ 64,600,256	\$ 73,979,638	\$ 37,422,740	\$ 38,347,913	\$ 40,630,913
Capital expenditures	1,277,098	1,225,857	2,349,033	5,656,905	7,418,053
Weighted average shares used in computing basic and diluted net loss per common share	35,932,372	33,759,581	30,855,297	28,462,925	26,791,158
	36,131,981	35,563,201	31,385,408	29,545,471	27,903,385

Shares of  
common stock  
outstanding, end  
of period

ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION  
AND RESULTS OF OPERATIONS

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with the section entitled "Selected Financial Data" in this report and our Consolidated Financial Statements and related notes to this report. This discussion and analysis contains forward-looking statements based on our current expectations, assumptions, estimates and projections. These forward-looking statements involve risks and uncertainties. Our actual results could differ materially from those indicated in these forward-looking statements as a result of certain factors, as more fully discussed in Section 1A of this report, entitled "Risk Factors."

Overview

We are a leader in the research, development and commercialization of organic light emitting diode, or OLED, technologies for use in flat panel display, solid-state lighting and other applications. Since 1994, we have been exclusively engaged, and expect to continue to be exclusively engaged, in funding and performing research and development activities relating to OLED technologies and materials, and in attempting to commercialize these technologies and materials. Our revenues are generated through contract research, sales of development and commercial chemicals, license fees and royalties, technology development and evaluation agreements, and commercialization assistance agreements. In the future, we anticipate that the revenues from licensing our intellectual property will become a more significant part of our revenue stream.

While we have made significant progress over the past few years developing and commercializing our family of OLED technologies (PHOLED, TOLED, FOLED, etc.) and materials, we have incurred significant losses and will likely continue to do so until our OLED technologies and materials become more widely adopted by product manufacturers. We



have incurred significant losses since our inception, resulting in an accumulated deficit of \$180,470,203 as of December 31, 2008.

We anticipate fluctuations in our annual and quarterly results of operations due to uncertainty regarding:

- the timing of our receipt of license fees and royalties, as well as fees for future technology development and evaluation;
- the timing and volume of sales of our OLED materials for both commercial usage and evaluation purposes;
- the timing and magnitude of expenditures we may incur in connection with our ongoing research and development activities; and
- the timing and financial consequences of our formation of new business relationships and alliances.

#### Critical Accounting Policies and Estimates

The discussion and analysis of our financial condition and results of operations is based on our consolidated financial statements, which have been prepared in accordance with U.S. generally accepted accounting principles. The preparation of these financial statements requires us to make estimates and judgments that affect our reported assets and liabilities, revenues and expenses, and other financial information. Actual results may differ significantly from our estimates under other assumptions and conditions.

We believe that our accounting policies related to revenue recognition and deferred license fees, valuation of acquired technology and stock-based compensation, as described below, are our “critical accounting policies” as contemplated by the SEC. These policies, which have been reviewed with our Audit Committee, are discussed in greater detail below.

#### Revenue Recognition and Deferred License Fees

Contract research revenue represents reimbursements by the U.S. government for all or a portion of the research and development expenses we incur related to our government contracts. Revenue is recognized proportionally as research and development expenses are incurred or as defined milestones are achieved. In order to ascertain the revenue associated with these contracts for a period, we estimate the proportion of related research and development expenses incurred and whether defined milestones have been achieved. Different estimates would result in different revenues for the period.

We receive non-refundable cash payments under certain development and technology evaluation agreements with our customers. These payments are generally recognized as revenue over the term of the agreement. On occasion, however, these payments are creditable against license fees and/or royalties payable by the customer if a license agreement is subsequently executed with the customer. These payments are classified as deferred license fees or deferred revenues, and are recorded as liabilities in the consolidated balance sheet until such time as revenue can be recognized. Revenue is deferred until a license agreement is executed or negotiations have ceased and there is no appreciable likelihood of executing a license agreement with the customer. If a license agreement is executed, these payments are recorded as revenue over the estimated useful life of the licensed technology and the revenue is classified based on the terms of the license. Otherwise, these payments are recorded as revenue at the time negotiations with the customer show that there is no appreciable likelihood of executing a license agreement. If we used different estimates for the useful life of the licensed technology, reported revenue during the relevant period

would differ. As of December 31, 2008, \$12,632,594 was recorded as deferred license fees and deferred revenue, of which \$6,966,667 may be recognized under license agreements that have not yet been executed or deemed effective.

#### Valuation of Acquired Technology

We regularly review our acquired OLED technologies for events or changes in circumstances that might indicate the value of these technologies may have been impaired. Factors considered important that could cause impairment include, among others, significant changes in our anticipated future use of these technologies and our overall business strategy as it pertains to these technologies, particularly in light of patents owned by others in the same field of use. When factors indicate that long-lived assets should be evaluated for possible impairment, the Company uses an estimate of the related undiscounted

cash flows in measuring whether the long-lived asset should be written down to fair value. Measurement of the amount of impairment would be based on generally accepted valuation methodologies, as deemed appropriate. As of December 31, 2008, we believe that no revision of the remaining useful lives or write-down of our acquired technology was required for 2008, nor was such a revision needed in 2007 or 2006. The net book value of our acquired technology was \$2,929,344 as of December 31, 2008.

#### Valuation of Stock-Based Compensation

We account for our stock-based compensation (see Notes 2 and 10 of the Notes to Consolidated Financial Statements) under Statement of Financial Accounting Standards (SFAS) No. 123(R), Share-Based Payment. We recognize in the statement of operations the grant-date fair value of stock options and other equity-based compensation issued to employees and directors. We account for our stock option and warrant grants to non-employees in exchange for goods or services in accordance with SFAS No. 123(R) and Emerging Issues Task Force 96-18 (EITF 96-18). SFAS No. 123(R) and EITF 96-18 require that we record an expense for our option and warrant grants to non-employees based on the fair value of the options and warrants, which is remeasured over the vesting period of such awards.

We use the Black-Scholes option-pricing model to estimate the fair value of options we have granted for purposes of recording charges to the statement of operations. In order to calculate the fair value of the options, assumptions are made for certain components of the model, including expected volatility, expected dividend yield rate and expected option life. Although we use available resources and information when setting these assumptions, changes to the assumptions could cause significant adjustments to the valuation of future grants or the remeasurement of non-employee awards.

#### Results of Operations

##### Year Ended December 31, 2008 Compared to Year Ended December 31, 2007

We had a net loss of \$19,139,736 (or \$0.53 per diluted share) for the year ended December 31, 2008, compared to a net loss of \$15,975,841 (or \$0.47 per diluted share) for the year ended December 31, 2007. The increase in net loss was primarily due to:

- an increase in operating expenses of \$2,060,373; and
- a decrease in interest income of \$991,332.

Our revenues were \$11,075,224 for the year ended December 31, 2008, compared to \$11,305,907 for the same period in 2007. Commercial revenue increased to \$5,630,758 for 2008 from \$4,428,048 for 2007. Commercial revenue relates to the incorporation our OLED technologies and materials into our customers' commercial products, and includes commercial chemical revenue, royalty and license revenues, and commercialization assistance revenue. Developmental revenue decreased to \$5,444,466 for 2008 from \$6,877,859 for 2007. Developmental revenue relates to OLED technology and material development activities for which we are paid, and includes contract research revenue, development chemical revenue and technology development revenue. We believe these revenue categories, which now combine accounts previously reported separately, better reflect our business strategies and core business efforts.

Our commercial chemical revenue and our royalty and license revenues for the year ended December 31, 2008 were \$3,751,890 and \$1,711,970, respectively, compared to \$3,599,677 and \$828,371, respectively, for the same period in 2007. For the year ended December 31, 2008, the majority of our commercial chemical revenue and our royalty and license revenues were from Samsung SDI Co., Ltd., whose OLED business was transferred to Samsung Mobile

Display Co., Ltd. (Samsung SMD) in September 2008. Samsung SMD represented approximately 68% of our commercial revenue and approximately 42% of our total revenue in 2008. We also recorded commercial chemical revenue and license revenue from sales of small quantities of our proprietary OLED materials to two other commercial chemical customers during the year. For the year ended December 31, 2007, the majority of our commercial chemical revenue and our royalty and license revenues were also from Samsung SMD. For 2007, we also recorded commercial chemical revenue and license revenue from sales of small quantities of our proprietary OLED materials to three other commercial chemical customers. We cannot accurately predict how long our material sales to Samsung SMD or other customers will continue, as they frequently update and alter their product offerings. Continued sales of our OLED materials to these customers will depend on several factors, including, pricing, availability, continued technical improvement and competitive product offerings.

We recorded royalty revenue of \$796,838 for the year ended December 31, 2008, compared to \$61,317 for the same period in 2007. The increase in royalty revenue was due mainly to increased sales of licensed products by Samsung SMD. For both 2008 and 2007, we received royalty revenue from Samsung SMD under a patent license agreement entered into in April 2005. Under this agreement, we receive royalty reports at a specified period of time after the end of the quarter during which royalty-bearing products are sold by Samsung SMD. Consequently, our royalty revenues from Samsung SMD for the years ended December 31, 2008 and 2007 represent royalties for licensed products sold by Samsung SMD during the 12-month periods ended September 30, 2008 and 2007, respectively. In addition, we recorded a small amount of royalty revenue from two other customers in 2008.

License revenue for the years ended December 31, 2008 and 2007 included license fees of \$915,132 and \$767,054, respectively. For both years, we received license revenue under our patent license agreement with Samsung SMD and under a cross-license agreement we executed with DuPont Displays, Inc. (DuPont) in December 2002. License revenue for the year ended December 31, 2008 also included amounts received under a patent license agreement we entered into with Konica Minolta Holdings, Inc. (Konica Minolta) in August 2008, a joint development agreement we previously entered into with a subsidiary of Konica Minolta, and two other agreements we entered into during the fourth quarter of 2008. Under our agreements with Samsung SMD, DuPont and Konica Minolta, we received upfront payments that have been classified as deferred license fees and deferred revenue. The deferred license fees are being recognized as license revenue over the term of the agreement with Samsung SMD and, based on current assumptions, over 10 years with DuPont and Konica Minolta.

Commercial revenue for the year ended December 31, 2008 also included \$166,898 in commercialization assistance revenue that we received under a business support agreement executed during the fourth quarter of 2008. We received no such revenue for the year ended December 31, 2007.

We earned \$2,815,062 in contract research revenue from agencies of the U.S. Government for the year ended December 31, 2008, compared to \$4,600,693 in corresponding revenue for the same period in 2007. The decrease was due principally to the timing of work performed and costs incurred in connection with several new and completed government programs during 2008. However, the overall value of our government contracts remained relatively constant during both years.

We earned \$2,047,823 in development chemical revenue for the year ended December 31, 2008, compared to \$1,049,854 in corresponding revenue for the year ended December 31, 2007. Our development chemical customer base increased significantly during 2008, as did the average dollar value of development chemical sales per customer. We cannot accurately predict the timing and frequency of development chemical purchases by our customers due to participants in the OLED industry having differing OLED technology development and product launch strategies, which are subject to change at any time.

We recognized \$581,581 in technology development revenue for the year ended December 31, 2008, compared to \$1,227,312 in corresponding revenue for the same period in 2007. Technology development revenue for 2008 included amounts received under a new joint development agreement we entered into in August 2008. Payments received under this new agreement are classified as deferred revenue and are being recognized as technology development revenue over a period of three years. During 2007, we completed work on a major joint development program with another customer. Payments received under this agreement accounted for all of our technology development revenue for 2007. In 2008, we began work on two new joint development programs with this customer, but neither of these programs is as large as the program completed in 2007. Technology development revenue for 2008 also included amounts received for a technical assistance program that began in November 2008. The amount and timing of our receipt of fees for technology development and similar services is difficult to predict due to participants in the OLED industry having different technology development strategies, which are subject to change at any time.

We received \$3,715,580 and \$1,150,000 in cash payments during 2008 and 2007, respectively, from various customers for license rights granted to these customers, and/or for joint development work performed or technical assistance provided at the request of these customers. These payments were recorded as deferred revenue and deferred license fees and we are recognizing these over the life of the agreements to which they relate.

We incurred research and development expenses of \$22,257,634 for the year ended December 31, 2008, compared to \$20,909,262 for the year ended December 31, 2007. The increase was mainly due to:

- an increase in patent costs of \$800,099;
- an increase of \$396,885 attributable to higher operating costs associated with our Ewing facility; and
- an increase of \$344,087 in personnel costs due mainly to increased personnel during 2008.

General and administrative expenses were \$10,170,593 for the year ended December 31, 2008, compared to \$9,569,381 for the same period in 2007. The increase was mainly due to an increase of \$593,032 in personnel costs.

Interest income decreased to \$2,607,897 for the year ended December 31, 2008, compared to \$3,599,229 for the same period in 2007. The decrease was mainly attributable to decreased rates of return on investments during 2008, compared to rates of return during 2007. Due to current market conditions, we anticipate that these lower rates of return will continue for the foreseeable future.

During 2008, we sold approximately \$12.5 million of our state-related income tax net operating losses (NOLs) under the New Jersey Technology Tax Certificate Transfer Program. In 2008, we received proceeds of \$962,478 from our sale of these NOLs and research and development tax credits, and we recorded these proceeds as an income tax benefit. In 2007, we received proceeds of \$804,980 from corresponding sales of approximately \$7.8 million in NOLs and research and development tax credits. We expect to sell a similar quantity of NOLs and tax credits to New Jersey under the program in 2009, if approved.

#### Year Ended December 31, 2007 Compared to Year Ended December 31, 2006

We had a net loss of \$15,975,841 (or \$0.47 per diluted share) for the year ended December 31, 2007, compared to a net loss of \$15,186,804 (or \$0.49 per diluted share) for the year ended December 31, 2006. The increase in net loss was primarily due to:

- a decrease in revenues of \$615,385; and
- an increase in operating expenses of \$1,866,356.

The increase in operating loss was offset to some extent by an increase of \$1,430,296 in interest income. The decrease in net loss per diluted share, despite the increase in total net loss, resulted from an increase in the weighted average number of shares of our common stock outstanding in 2007, as compared to 2006.

Our revenues were \$11,305,907 for the year ended December 31, 2007, compared to \$11,921,292 for the year ended December 31, 2006. Commercial revenue increased to \$4,428,048 for 2007 from \$4,276,250 for 2006. Developmental revenue decreased to \$6,877,859 in 2007 from \$7,645,042 for 2006.

Our commercial chemical revenue and our royalty and license revenues for the year ended December 31, 2007 were \$3,599,677 and \$828,371, respectively, compared to \$1,876,071 and \$2,400,179, respectively, for the same period in 2006. The increase in commercial chemical revenue was due to increased purchases of our proprietary OLED materials for use in commercial OLED products. In the fourth quarter of 2006, we began supplying our proprietary OLED materials to Samsung SMD for use in a commercial active-matrix OLED display product. This activity

continued in 2007, with Samsung SMD being responsible for the vast majority of our commercial chemical revenue for the year. As discussed further below, we also began recognizing royalty revenue from Samsung SMD in 2007.

In 2007, we began supplying our proprietary OLED materials to Chi Mei EL Corporation and LG Display Co., Ltd. (formerly LG.Philips Co., Ltd.), with whom we signed commercial supply agreements during the year. These agreements are similar to the agreement we had entered into with AU Optronics Corporation, in that we record both commercial chemical revenue and license revenue from our sales of OLED materials under these agreements. A small portion of our commercial chemical revenue and our license revenue for 2007 were from sales of our proprietary OLED materials to Chi Mei EL and LG Display.



For the first seven months of 2006, we supplied one of our proprietary OLED materials to AU Optronics for use in a commercial OLED display product. For 2006, we recognized commercial chemical revenue of \$886,676 and license revenue of \$1,773,324 on account of our sales of this material to AU Optronics. However, those sales ended when AU Optronics discontinued manufacturing its commercial OLED display product during the third quarter of 2006. Commercial chemical revenue and license revenue from sales of our proprietary OLED material to AU Optronics represented a substantial component of our revenues for 2006.

Our royalty and license revenues for 2007 decreased substantially from 2006 due in large part to the difference in our business agreements with Samsung SMD and AU Optronics. As previously indicated, under the terms of our agreement with AU Optronics we recognized license revenue at the time we sold our proprietary OLED material to AU Optronics. In contrast, under the terms of our agreement with Samsung SMD, we recognize royalty revenue when Samsung SMD reports to us the sale of licensed products that use our proprietary OLED materials or technologies. This can occur up to six months or more after the date on which we sell our OLED materials to Samsung SMD. For 2007, we recognized \$61,317 in royalty revenue on account of sales of these licensed products reported to us by Samsung SMD for the first three quarters of the year. There was no corresponding royalty revenue reported to us by Samsung SMD for 2006.

Our royalty and license revenues for 2006 did, however, include license fees and upfront royalty payments received under our patent license agreement with Samsung SMD, as well as license fees received under our cross-license agreement executed with DuPont. All of these payments have been classified as deferred revenue. The deferred license fees are being recognized as license revenue over the life of our agreement with Samsung SMD, and over 10 years for our agreement with DuPont. The deferred royalties are being recognized as royalty revenue when sales of licensed products are reported to us by Samsung SMD.

We earned \$4,600,693 in contract research revenue from agencies of the U.S. Government for the year ended December 31, 2007, compared to \$3,821,903 in corresponding revenue for the same period in 2006. The increase was mainly attributable to increased work performed under our government contracts and the achievement of milestones as specified within certain of those contracts. We commenced work on 10 new government contracts during 2007 and completed work on eight government programs during the year.

We earned \$1,049,854 in development chemical revenue for the year ended December 31, 2007, compared to \$1,656,851 in corresponding revenue for the year ended December 31, 2006. The decrease was mainly due to a decreased volume of development chemical purchases as a result of Samsung SMD transitioning from exclusively development chemical purchases in 2006 to primarily commercial chemical purchases in 2007.

We recognized \$1,227,312 in technology development revenue for the year ended December 31, 2007, compared to \$2,166,288 in corresponding revenue for the same period in 2006. Technology development revenue for 2007 was derived from one technology development contract that we renewed and continued working under for the entire year. For 2006, we derived technology development revenue from this and three other contracts for technology development and similar services. Although in 2007 we continued working with all of the companies from which we derived technology development revenue for 2006, our business arrangements with these companies changed as the OLED industry evolved and our customers refined their technology development strategies. For example, we received a non-refundable payment for the continuation of one of these technology development agreements in the third quarter of 2006, which payment is creditable against future amounts payable under a commercial license agreement with the customer, if one is executed by a specified date. Due to this business arrangement, the payment has been recorded as deferred license fees rather than technology development revenue. The amount and timing of our receipt of fees for technology development and similar services is difficult to predict due to business changes such as this one, and participants in the OLED industry having different technology development strategies, which are subject to change at any time.

We incurred research and development expenses of \$20,909,262 for the year ended December 31, 2007, compared to \$19,562,004 for the year ended December 31, 2006. The increase was mainly due to:

- an increase of \$1,916,862 attributable to higher operating costs associated with our Ewing facility;
- a refund received from Princeton University in 2006 for unspent research and development funds of \$1,011,358; and
- an increase of \$724,254 in personnel costs due mainly to increased salaries during 2007; and

- an increase of \$242,281 relating to the recognition of expenses for stock issuances to non-employee members of our Scientific Advisory Board, and for the vesting of shares of restricted stock previously issued to these individuals.

The increase was offset to some extent by a decrease of \$1,673,560 in amounts paid to PPG Industries under our OLED Materials Supply and Service Agreement, as we started performing at our Ewing facility certain the work previously performed for us by PPG Industries.

General and administrative expenses were \$9,569,381 for the year ended December 31, 2007, compared to \$8,902,462 for the same period in 2006. The increase was mainly due to:

- an increase of \$465,243 in personnel costs due mainly to increased salaries during 2007; and
- an increase of \$153,493 attributable to higher operating costs associated with our Ewing facility.

Royalty and license expenses were \$305,846 for the year ended December 31, 2007, compared to \$687,436 for the same period in 2006. The decrease was due to a reduction of \$370,998 in royalties owed to Motorola. For 2006, we had a minimum royalty obligation to Motorola of \$500,000. Beginning with 2007, however, we were no longer required to make minimum royalty payments to Motorola.

Interest income increased to \$3,599,229 for the year ended December 31, 2007, compared to \$2,168,933 for the same period in 2006. The increase was mainly attributable to increased cash for investment due to funds received from a common stock offering that we completed in May 2007, as well as higher rates of return on investments during 2007.

During 2007, we sold approximately \$7.5 million of our state-related income tax NOLs and approximately \$263,000 of our research and development tax credits under the New Jersey Technology Tax Certificate Transfer Program. In 2007, we received proceeds of \$804,980 from our sale of these NOLs and research and development tax credits, and we recorded these proceeds as an income tax benefit. In 2006, we received proceeds of \$544,567 from corresponding sales of approximately \$7 million in NOLs and research and development tax credits.

#### Liquidity and Capital Resources

As of December 31, 2008, we had cash and cash equivalents of \$28,321,581 and short-term investments of \$49,132,619, for a total of \$77,454,200. This compares to cash and cash equivalents of \$33,870,696 and short-term investments of \$49,788,961, for a total of \$83,659,657, as of December 31, 2007. The decrease in cash and cash equivalents of \$5,549,115 was primarily due to the usage of cash in operating activities.

Cash used in operating activities was \$7,785,164 for 2008, compared to \$10,439,279 for 2007. The decreased usage of cash in operating activities was mainly due to a net increase in deferred license fees and deferred revenue of \$2,838,284 related to cash payments from various customers for license rights granted to these customers, and/or joint development work performed or technical assistance provided at the request of these customers.

Cash provided by investing activities was \$600,444 for 2008, compared to \$32,670,039 of cash used in investing activities for 2007. In 2007 we increased our net investments by \$31,444,182 primarily from the investment of the proceeds from the sale of common stock. There were no stock sales in 2008.

Cash provided by financing activities was \$1,635,605 for 2008, as compared to \$45,882,481 for 2007. In May 2007 the Company completed a public offering of 2,800,000 shares of our common stock at a price of \$14.50 per share. The offering resulted in proceeds to us of \$38,000,023, net of \$2,599,977 in underwriting discounts and commissions and other costs associated with completion of the offering.

Working capital decreased to \$64,600,256 as of December 31, 2008, from \$73,979,638 as of December 31, 2007. The decrease was mainly due to the use of cash and cash equivalents of \$5,549,115, an increase in accounts payable of \$723,587, an increase in accrued expenses of \$718,286, and a net increase in deferred license fees and deferred revenue of \$1,537,101. We anticipate, based on our internal forecasts and assumptions relating to our operations (including, among others, assumptions regarding our working capital requirements, the progress of our research and development efforts, the

availability of sources of funding for our research and development work, and the timing and costs associated with the preparation, filing, prosecution, maintenance and defense of our patents and patent applications), that we have sufficient cash, cash equivalents and short-term investments to meet our obligations through at least 2009.

We believe that potential additional financing sources for us include long-term and short-term borrowings, public and private sales of our equity and debt securities and the receipt of cash upon the exercise of warrants and options. It should be noted, however, that additional funding may be required in the future for research, development and commercialization of our OLED technologies and materials, to obtain, maintain and enforce patents respecting these technologies and materials, and for working capital and other purposes, the timing and amount of which are difficult to ascertain. There can be no assurance that additional funds will be available to us when needed, on commercially reasonable terms or at all, particularly in the current economic environment.

### Contractual Obligations

As of December 31, 2008, we had the following contractual commitments:

Contractual Obligations	Total	Payments due by period			
		Less than 1 year	1-3 years	3-5 years	More than 5 years
Sponsored research obligation	\$ 1,064,691	\$ 1,064,691	\$ —	\$ —	\$ —
Minimum royalty obligation (1)	500,000	100,000	200,000	200,000	0,000/year(1)
Total (2)	\$ 1,564,691	\$ 1,164,691	\$ 200,000	\$ 200,000	0,000/year(1)

(1) Under our Amended License Agreement with Princeton University, the University of Southern California and the University of Michigan, we are obligated to pay minimum royalties of \$100,000 per year until such time as the agreement is no longer in effect. The agreement has no scheduled expiration date.

(2) See Note 11 to the Consolidated Financial Statements for discussion of obligations upon termination of employment of executive officers as a result of a change in control of the Company.

### Off-Balance Sheet Arrangements

As of December 31, 2008, we had no off-balance sheet arrangements in the nature of guarantee contracts, retained or contingent interests in assets transferred to unconsolidated entities (or similar arrangements serving as credit, liquidity or market risk support to unconsolidated entities for any such assets), or obligations (including contingent obligations) arising out of variable interests in unconsolidated entities providing financing, liquidity, market risk or credit risk support to us, or that engage in leasing, hedging or research and development services with us.

### Recently Issued Accounting Pronouncements

Recently issued accounting pronouncements are addressed in Note 2 in the Notes to Consolidated Financial Statements.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

We do not utilize financial instruments for trading purposes and hold no derivative financial instruments, other financial instruments or derivative commodity instruments that could expose us to significant market risk. As such, a change in interest rates of 1 percentage point would not have a material impact on our operating results and cash flows. Our primary market risk exposure with regard to financial instruments is to changes in interest rates, which would impact interest income earned on investments.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

Our Consolidated Financial Statements and the relevant notes to those statements are attached to this report beginning on page F-1.

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

None.

ITEM 9A. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

Our management, with the participation of our Chief Executive Officer and Chief Financial Officer, evaluated the effectiveness of our disclosure controls and procedures as of December 31, 2008. Based on that evaluation, the Chief Executive Officer and Chief Financial Officer concluded that our disclosure controls and procedures, as of the end of the period covered by this report, are functioning effectively to provide reasonable assurance that the information required to be disclosed by us in reports filed or submitted under the Securities Exchange Act of 1934, as amended, is (i) recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms, and (ii) accumulated and communicated to our management, including the Chief Executive Officer and Chief Financial Officer, as appropriate to allow timely decisions regarding disclosure. However, a controls system, no matter how well designed and operated, cannot provide absolute assurance that the objectives of the controls system are met, and no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, within a company have been detected.

Management's Report on Internal Control over Financial Reporting and Report of Independent Registered Public Accounting Firm on Internal Control over Financial Reporting

The report of management on our internal control over financial reporting and the associated attestation report of our independent registered public accounting firm are set forth in Item 8 of this report.

Changes in Internal Control over Financial Reporting

There were no changes in our internal control over financial reporting during the quarter ended December 31, 2008 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

ITEM 9B. OTHER INFORMATION

None.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

Information with respect to this item is set forth in our definitive Proxy Statement for the 2009 Annual Meeting of Shareholders, which is to be filed with the Securities and Exchange Commission no later than April 30, 2009, (our “Proxy Statement”), and which is incorporated herein by reference. Information regarding our executive officers is included at the end of Part I of this report.

ITEM 11. EXECUTIVE COMPENSATION

Information with respect to this item is set forth in our Proxy Statement, and is incorporated herein by reference.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND  
MANAGEMENT AND RELATED STOCKHOLDER MATTERS

Information with respect to this item is set forth in our Proxy Statement, and is incorporated herein by reference.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND  
DIRECTOR INDEPENDENCE

Information with respect to this item is set forth in our Proxy Statement, and is incorporated herein by reference.

ITEM 14. PRINCIPAL ACCOUNTING FEES AND SERVICES

Information with respect to this item is set forth in our Proxy Statement, and is incorporated herein by reference.



## PART IV

## ITEM 15. EXHIBITS, FINANCIAL STATEMENT SCHEDULES

(a) The following documents are filed as part of this report:

## (1) Financial Statements:

Management's Report on Internal Control Over Financial Reporting.....	F-2.....
Reports of Independent Registered Public Accounting Firm.....	F-3.....
Consolidated Balance Sheets.....	F-5.....
Consolidated Statements of Operations.....	F-6.....
Consolidated Statements of Shareholders' Equity and Comprehensive Loss.....	F-7.....
Consolidated Statements of Cash Flows.....	F-9.....
Notes to Consolidated Financial Statements.....	F-10.....

## (2) Financial Statement Schedules:

None.

## (3) Exhibits:

The following is a list of the exhibits filed as part of this report. Where so indicated by footnote, exhibits that were previously filed are incorporated by reference. For exhibits incorporated by reference, the location of the exhibit in the previous filing is indicated parenthetically, together with a reference to the filing indicated by footnote.

Exhibit Number	Description
3.1	Amended and Restated Articles of Incorporation of the registrant (1)
3.2	Amendment to Amended and Restated Articles of Incorporation of the registrant (2)
3.3	Bylaws of the registrant (1)
10.1#	Warrant Agreement between the registrant and Julia J. Brown, dated as of April 18, 2000 (3)
10.2#	Amendment No. 1 to Warrant Agreement between the registrant and Julia J. Brown, dated as of April 18, 2000 (1)
10.3 #*	Amended and Restated Change in Control Agreement between the registrant and Sherwin I. Seligsohn, dated as of November 4, 2008

- 10.4 Amended and Restated Change in Control Agreement between the registrant and Steven V. Abramson, dated as of November 4, 2008  
#\*
- 10.5 Amended and Restated Change in Control Agreement between the registrant and Sidney D. Rosenblatt, dated as of November 4, 2008  
#\*
- 10.6 Amended and Restated Change in Control Agreement between the registrant and Julia J. Brown, dated as of November 4, 2008  
#\*
- 10.7 Amended and Restated Change in Control Agreement between the registrant and Janice K. Mahon, dated as of November 4, 2008  
#\*
- 10.8 # Non-Competition and Non-Solicitation Agreement between the registrant and Sherwin I. Seligsohn, dated as of February 23, 2007 (4)

- 10.9 # Non-Competition and Non-Solicitation Agreement between the registrant and Steven V. Abramson, dated as of January 26, 2007 (4)
- 10.10 # Non-Competition and Non-Solicitation Agreement between the registrant and Sidney D. Rosenblatt, dated as of February 7, 2007 (4)
- 10.11 # Non-Competition and Non-Solicitation Agreement between the registrant and Julia J. Brown, dated as of February 5, 2007 (4)
- 10.12 #\* Non-Competition and Non-Solicitation Agreement between the registrant and Janice K. Mahon, dated as of February 23, 2007
- 10.13 Equity Compensation Plan, dated as of June 29, 2006 (5)
- 10.14 Sponsored Research Agreement between the registrant and the University of Southern California, dated as of May 1, 2006 (6)
- 10.15 \* Amendment No. 1 to the Sponsored Research Agreement between the registrant and the University of Southern California, dated as of May 1, 2006
- 10.16 1997 Amended License Agreement among the registrant, The Trustees of Princeton University and the University of Southern California, dated as of October 9, 1997 (7)
- 10.17 Amendment #1 to the Amended License Agreement among the registrant, the Trustees of Princeton University and the University of Southern California, dated as of August 7, 2003 (8)
- 10.18 Amendment #2 to the Amended License Agreement among the registrant, the Trustees of Princeton University, the University of Southern California and the Regents of the University of Michigan, dated as of January 1, 2006 (8)
- 10.19 Termination, Amendment and License Agreement by and among the registrant, PD-LD, Inc., Dr. Vladimir S. Ban, and The Trustees of Princeton University, dated as of July 19, 2000 (9)
- 10.20 Letter of Clarification of UDC/GPEC Research and License Arrangements between the registrant and Global Photonic Energy Corporation, dated as of June 4, 2004 (4)
- 10.21 + License Agreement between the registrant and Motorola, Inc., dated as of September 29, 2000 (9)
- 10.22 + OLED Materials Supply and Service Agreement between the registrant and PPG Industries, Inc., dated as of July 29, 2005 (10)
- 10.23 Amendment No. 1 to the OLED Materials Supply and Service Agreement between the registrant and PPG Industries, Inc., dated as of January 4, 2008 (11)

- 10.24 OLED Patent License Agreement between the registrant and Samsung SDI Co., Ltd., dated  
+ as of April 19, 2005 (12)
- 10.25 OLED Supplemental License Agreement between the registrant and Samsung SMD Co.,  
+ Ltd., dated as of April 19, 2005 (12)
- 10.26 Amendment No. 1 to the OLED Patent License Agreement between the registrant and  
+ Samsung SDI Co., Ltd., dated as of July 30, 2008 (13)
- 10.27 Settlement and License Agreement between the registrant and Seiko Epson Corporation,  
+ dated as of July 31, 2006 (14)
- 10.28 Commercial Supply Agreement between the registrant and Chi Mei EL Corporation, dated  
+ as of April 5, 2007 (15)

- 10.29 Commercial Supply Agreement between the registrant and LG.Philips LCD Co., Ltd. (now  
+ known as LG Display), dated as of May 23, 2007 (15)
- 10.30 Amendment No. 1 to the Commercial Supply Agreement between the registrant and  
\* LG.Philips LCD Co., Ltd. (now known as LG Display), dated as of November 21, 2008
- 10.31 OLED Technology License and Technical Assistance Agreement between the registrant and  
+ Kyocera Corporation, dated as of July 28, 2008(13)
- 10.32 Commercial OLED Material Supply Agreement between the registrant and Kyocera  
+ Corporation, dated as of July 28, 2008(13)
- 10.33 OLED Technology License Agreement between the registrant and Konica Minolta  
+ Holdings, Inc., dated as of August 11, 2008(13)
- 21 \* Subsidiaries of the registrant
- 23.1 \* Consent of KPMG LLP
- 31.1 \* Certifications of Steven V. Abramson, Chief Executive Officer, as required by Rule  
13a-14(a) or Rule 15d-14(a)
- 31.2 \* Certifications of Sidney D. Rosenblatt, Chief Financial Officer, as required by Rule  
13a-14(a) or Rule 15d-14(a)
- 32.1 Certifications of Steven V. Abramson, Chief Executive Officer, as required by Rule  
\*\* 13a-14(b) or Rule 15d-14(b), and by 18 U.S.C. Section 1350. (This exhibit shall not be  
deemed “filed” for purposes of Section 18 of the Securities Exchange Act of 1934, as  
amended, or otherwise subject to the liability of that section. Further, this exhibit shall not  
be deemed to be incorporated by reference into any filing under the Securities Act of 1933,  
as amended, or the Securities Exchange Act of 1934, as amended.)
- 32.2 Certifications of Sidney D. Rosenblatt, Chief Financial Officer, as required by Rule  
\*\* 13a-14(b) or Rule 15d-14(b), and by 18 U.S.C. Section 1350. (This exhibit shall not be  
deemed “filed” for purposes of Section 18 of the Securities Exchange Act of 1934, as  
amended, or otherwise subject to the liability of that section. Further, this exhibit shall not  
be deemed to be incorporated by reference into any filing under the Securities Act of 1933,  
as amended, or the Securities Exchange Act of 1934, as amended.)

Explanation of footnotes to listing of exhibits:

- \* Filed herewith.
- \*\* Furnished herewith.
- # Management contract or compensatory plan or arrangement.  
+ Confidential treatment has been accorded to certain portions of this exhibit pursuant to  
Rule 406 under the Securities Act of 1933, as amended, or Rule 24b-2 under the  
Securities Exchange Act of 1934, as amended.

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- (1) Filed as an Exhibit to the Annual Report on Form 10-K for the year ended December 31, 2003, filed with the SEC on March 1, 2004.
- (2) Filed as an Exhibit to a Current Report on Form 8-K, filed with the SEC on December 21, 2007.
- (3) Filed as an Exhibit to the Annual Report on Form 10-K for the year ended December 31, 2000, filed with the SEC on March 29, 2001.
- (4) Filed as an Exhibit to the Annual Report on Form 10-K for the year ended December 31, 2006, filed with the SEC on March 15, 2007.

- (5) Filed as an Exhibit to the Definitive Proxy Statement for the 2006 Annual Meeting of Shareholders, filed with the SEC on April 27, 2006.
- (6) Filed as an Exhibit to the Quarterly Report on Form 10-Q for the quarter ended June 30, 2006, filed with the SEC on August 9, 2006.
- (7) Filed as an Exhibit to the Annual Report on Form 10K-SB for the year ended December 31, 1997, filed with the SEC on March 31, 1998.
- (8) Filed as an Exhibit to the Quarterly Report on Form 10-Q for the quarter ended September 30, 2003, filed with the SEC on November 10, 2003.
- (9) Filed as an Exhibit to the amended Quarterly Report on Form 10-Q for the quarter ended September 30, 2000, filed with the SEC on November 20, 2001.
- (10) Filed as an Exhibit to the Quarterly Report on Form 10-Q for the quarter ended September 30, 2005, filed with the SEC on November 7, 2005.
- (11) Filed as an Exhibit to the Quarterly Report on Form 10-Q for the quarter ended March 30, 2008, filed with the SEC on May 8, 2008.
- (12) Filed as an Exhibit to the Quarterly Report on Form 10-Q for the quarter ended June 30, 2005, filed with the SEC on August 9, 2005.
- (13) Filed as an Exhibit to the Quarterly Report on Form 10-Q for the quarter ended September 30, 2008, filed with the SEC on November 6, 2008.
- (14) Filed as an Exhibit to the Quarterly Report on Form 10-Q for the quarter ended September 30, 2006, filed with the SEC on November 6, 2006.
- (15) Filed as an Exhibit to the Quarterly Report on Form 10-Q for the quarter ended June 30, 2007, filed with the SEC on August 9, 2007.

Note: Any of the exhibits listed in the foregoing index not included with this report may be obtained, without charge, by writing to Mr. Sidney D. Rosenblatt, Corporate Secretary, Universal Display Corporation, 375 Phillips Boulevard, Ewing, New Jersey 08618.

- (b) The exhibits required to be filed by us with this report are listed above.
- (c) The consolidated financial statement schedules required to be filed by us with this report are listed above.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized:

UNIVERSAL DISPLAY CORPORATION

By: /s/ Sidney D. Rosenblatt  
 Sidney D. Rosenblatt  
 Executive Vice President, Chief Financial  
 Officer,  
 Treasurer and Secretary

Date: March 12, 2009

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

Name	Title	Date
/s/ Sherwin I. Seligsohn Sherwin I. Seligsohn	Founder and Chairman of the Board of Directors	March 12, 2009
/s/ Steven V. Abramson Steven V. Abramson	President, Chief Executive Officer and Director	March 12, 2009
/s/ Sidney D. Rosenblatt Sidney D. Rosenblatt	Executive Vice President, Chief Financial Officer, Treasurer, Secretary and Director	March 12, 2009
/s/ Leonard Becker Leonard Becker	Director	March 12, 2009
/s/ Elizabeth H. Gemmill Elizabeth H. Gemmill	Director	March 12, 2009
/s/ C. Keith Hartley C. Keith Hartley	Director	March 12, 2009
/s/ Lawrence Lacerte Lawrence Lacerte	Director	March 12, 2009



UNIVERSAL DISPLAY CORPORATION AND SUBSIDIARIES

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## MANAGEMENT'S REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING

Our management is responsible for establishing and maintaining adequate internal control over financial reporting for the Company. Internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of consolidated financial statements for external purposes in accordance with generally accepted accounting principles. Our system of internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the Company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the Company are being made only in accordance with authorizations of management and directors of the Company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of the Company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Management performed an assessment of the effectiveness of our internal control over financial reporting as of December 31, 2008 based upon criteria in Internal Control — Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO"). Based on this assessment, management determined that the Company's internal control over financial reporting was effective as of December 31, 2008, based on the criteria in Internal Control-Integrated Framework issued by COSO.

The effectiveness of our internal control over financial reporting as of December 31, 2008, has been attested to by KPMG LLP, an independent registered public accounting firm, as stated in its report which appears on the following page.

Steven V. Abramson  
President and Chief Executive Officer

Sidney D. Rosenblatt  
Executive Vice President and Chief Financial  
Officer

March 12, 2009

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

The Board of Directors and Shareholders  
Universal Display Corporation:

We have audited Universal Display Corporation's internal control over financial reporting as of December 31, 2008, based on criteria established in Internal Control - Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). Universal Display Corporation's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Report on Internal Control Over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit.

We conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audit also included performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

In our opinion, Universal Display Corporation maintained, in all material respects, effective internal control over financial reporting as of December 31, 2008, based on criteria established in Internal Control - Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the consolidated balance sheets of Universal Display Corporation and subsidiaries as of December 31, 2008 and 2007, and the related consolidated statements of operations, shareholders' equity and comprehensive loss and cash flows for each of the years in the three-year period ended December 31, 2008, and our report dated March 12, 2009 expressed an unqualified opinion on those consolidated financial statements .

/s/ KPMG LLP

Philadelphia, Pennsylvania  
March 12, 2009

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

The Board of Directors and Shareholders  
Universal Display Corporation:

We have audited the accompanying consolidated balance sheets of Universal Display Corporation and subsidiaries as of December 31, 2008 and 2007, and the related consolidated statements of operations, shareholders' equity and comprehensive loss and cash flows for each of the years in the three-year period ended December 31, 2008. These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of Universal Display Corporation and subsidiaries as of December 31, 2008 and 2007, and the results of their operations and their cash flows for each of the years in the three-year period ended December 31, 2008, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), Universal Display Corporation's internal control over financial reporting as of December 31, 2008, based on criteria established in Internal Control — Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO), and our report dated March 12, 2009 expressed an unqualified opinion on the effectiveness of the Company's internal control over financial reporting.

/s/ KPMG LLP

Philadelphia, Pennsylvania  
March 12, 2009

## UNIVERSAL DISPLAY CORPORATION AND SUBSIDIARIES

## CONSOLIDATED BALANCE SHEETS

	December 31,	
	2008	2007
<b>ASSETS</b>		
<b>CURRENT ASSETS:</b>		
Cash and cash equivalents	\$ 28,321,581	\$ 33,870,696
Short-term investments	49,132,619	49,788,961
Accounts receivable	2,450,444	2,395,416
Inventory	2,209	41,165
Other current assets	462,908	673,931
Total current assets	80,369,761	86,770,169
PROPERTY AND EQUIPMENT, net	12,859,628	13,525,714
ACQUIRED TECHNOLOGY, net	2,929,344	4,624,416
OTHER ASSETS	69,772	79,772
<b>TOTAL ASSETS</b>	<b>\$ 96,228,505</b>	<b>\$ 105,000,071</b>
<b>LIABILITIES AND SHAREHOLDERS' EQUITY</b>		
<b>CURRENT LIABILITIES:</b>		
Accounts payable	\$ 1,585,015	\$ 861,428
Accrued expenses	5,296,433	4,578,147
Deferred license fees	6,148,267	7,178,268
Deferred revenue	2,739,790	172,688
Total current liabilities	15,769,505	12,790,531
DEFERRED LICENSE FEES	3,407,037	2,454,900
DEFERRED REVENUE	337,500	538,683
Total liabilities	19,514,042	15,784,114
<b>COMMITMENTS AND CONTINGENCIES (Note 11)</b>		
<b>SHAREHOLDERS' EQUITY:</b>		
Preferred Stock, par value \$0.01 per share, 5,000,000 shares authorized, 200,000 shares of Series A Nonconvertible Preferred Stock issued and outstanding (liquidation value of \$7.50 per share or \$1,500,000)	2,000	2,000
Common Stock, par value \$0.01 per share, 50,000,000 shares authorized, 36,131,981 and 35,563,201 shares issued and outstanding at December 31, 2008 and 2007, respectively	361,320	355,632
Additional paid-in capital	256,696,849	250,240,994
Unrealized gain (loss) on available-for-sale securities	126,497	(50,202)
Accumulated deficit	(180,472,203)	(161,332,467)

Total shareholders' equity	76,714,463	89,215,957
TOTAL LIABILITIES AND SHAREHOLDERS' EQUITY	\$ 96,228,505	\$ 105,000,071

The accompanying notes are an integral part of these consolidated financial statements.

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## UNIVERSAL DISPLAY CORPORATION AND SUBSIDIARIES

## CONSOLIDATED STATEMENTS OF OPERATIONS

	Year Ended December 31,		
	2008	2007	2006
<b>REVENUE:</b>			
Commercial revenue	\$ 5,630,758	\$ 4,428,048	\$ 4,276,250
Developmental revenue	5,444,466	6,877,859	7,645,042
<b>Total revenue</b>	<b>11,075,224</b>	<b>11,305,907</b>	<b>11,921,292</b>
<b>OPERATING EXPENSES:</b>			
Cost of chemicals sold	912,094	893,276	659,507
Research and development	22,257,634	20,909,262	19,562,004
General and administrative	10,170,593	9,569,381	8,902,462
Royalty and license expense	397,817	305,846	687,436
<b>Total operating expenses</b>	<b>33,738,138</b>	<b>31,677,765</b>	<b>29,811,409</b>
Operating loss	(22,662,914)	(20,371,858)	(17,890,117)
INTEREST INCOME	2,607,897	3,599,229	2,168,933
INTEREST EXPENSE	(47,197)	(8,192)	(10,187)
<b>LOSS BEFORE INCOME TAX BENEFIT</b>	<b>(20,102,214)</b>	<b>(16,780,821)</b>	<b>(15,731,371)</b>
INCOME TAX BENEFIT	962,478	804,980	544,567
<b>NET LOSS</b>	<b>\$ (19,139,736)</b>	<b>\$ (15,975,841)</b>	<b>\$ (15,186,804)</b>
<b>BASIC AND DILUTED NET LOSS PER COMMON SHARE</b>	<b>\$ (0.53)</b>	<b>\$ (0.47)</b>	<b>\$ (0.49)</b>
<b>WEIGHTED AVERAGE SHARES USED IN COMPUTING BASIC AND DILUTED NET LOSS PER COMMON SHARE</b>	<b>35,932,372</b>	<b>33,759,581</b>	<b>30,855,297</b>



The accompanying notes are an integral part of these consolidated financial statements.

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## UNIVERSAL DISPLAY CORPORATION AND SUBSIDIARIES

## CONSOLIDATED STATEMENTS OF SHAREHOLDERS' EQUITY AND COMPREHENSIVE LOSS

	Series A		Common Stock		Additional Paid-in Capital
	Nonconvertible Preferred Stock Shares	Amount	Shares	Amount	
BALANCE, JANUARY 1, 2006	200,000	\$ 2,000	29,545,471	\$ 295,455	\$ 187,609,407
Exercise of common stock options and warrants	—	—	1,432,655	14,326	6,267,442
Stock-based employee compensation, net of shares withheld for employee taxes	—	—	123,922	1,239	1,720,481
Stock-based non-employee compensation	—	—	—	—	105,011
Issuance of common stock to Board of Directors and Scientific Advisory Board	—	—	73,766	738	837,062
Issuance of common stock, options and warrants in connection with the development agreements	—	—	209,594	2,096	2,966,578
Net loss	—	—	—	—	—
Unrealized gain on available-for-sale securities	—	—	—	—	—
Comprehensive loss	—	—	—	—	—
BALANCE, DECEMBER 31, 2006	200,000	2,000	31,385,408	313,854	199,505,981
Issuance of common stock through a public offering, net of expenses of \$2,599,977	—	—	2,800,000	28,000	37,972,023
Exercise of common stock options and warrants	—	—	1,169,648	11,696	8,528,247
Stock-based employee compensation, net of shares withheld for employee taxes	—	—	70,238	703	2,049,554
Stock-based non-employee compensation	—	—	—	—	23,336
Issuance of common stock to Board of Directors and Scientific Advisory Board	—	—	37,796	378	714,364
Issuance of common stock in connection with the development and license agreements	—	—	100,111	1,001	1,447,489
Net loss	—	—	—	—	—
Unrealized gain on available-for-sale securities	—	—	—	—	—
Comprehensive loss	—	—	—	—	—
BALANCE, DECEMBER 31, 2007	200,000	2,000	35,563,201	355,632	250,240,994

Exercise of common stock options and warrants	—	—	352,864	3,529	2,403,631
Stock-based employee compensation, net of shares withheld for employee taxes	—	—	86,340	863	2,085,315
Stock-based non-employee compensation	—	—	174	2	6,099
Issuance of common stock to Board of Directors and Scientific Advisory Board	—	—	42,932	429	744,558
Issuance of common stock in connection with the development and license agreements	—	—	86,470	865	1,216,252
Net loss	—	—	—	—	—
Unrealized gain on available-for-sale securities	—	—	—	—	—
Comprehensive loss	—	—	—	—	—
BALANCE, DECEMBER 31, 2008	200,000	\$ 2,000	36,131,981	\$ 361,320	\$ 256,696,849

The accompanying notes are an integral part of these consolidated financial statements.

(Continued)

## UNIVERSAL DISPLAY CORPORATION AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF SHAREHOLDERS' EQUITY AND  
COMPREHENSIVE LOSS — (Continued)

	Unrealized Gain (Loss) on Available-for-Sale Securities	Accumulated Deficit	Total Equity
BALANCE, , JANUARY 1, 2006	\$ (120,577)	\$ (130,169,822)	\$ 57,616,463
Exercise of common stock options and warrants	—	—	6,281,768
Stock-based employee compensation, net of shares withheld for employee taxes	—	—	1,721,720
Stock-based non-employee compensation	—	—	105,011
Issuance of common stock to Board of Directors and Scientific Advisory Board	—	—	837,800
Issuance of common stock, options and warrants in connection with the development agreements	—	—	2,968,674
Net loss	—	(15,186,804)	(15,186,804)
Unrealized gain on available-for-sale securities	37,731	—	37,731
Comprehensive loss	—	—	(15,149,073)
BALANCE, DECEMBER 31, 2006	(82,846)	(145,356,626)	54,382,363
Issuance of common stock through a public offering, net of expenses of \$2,599,977	—	—	38,000,023
Exercise of common stock options and warrants	—	—	8,539,943
Stock-based employee compensation, net of shares withheld for employee taxes	—	—	2,050,257
Stock-based non-employee compensation	—	—	23,336
Issuance of common stock to Board of Directors and Scientific Advisory Board	—	—	714,742
Issuance of common stock in connection with the development and license agreements	—	—	1,448,490
Net loss	—	(15,975,841)	(15,975,841)
Unrealized gain on available-for-sale securities	32,644	—	32,644
Comprehensive loss	—	—	(15,943,197)
BALANCE, DECEMBER 31, 2007	(50,202)	(161,332,467)	89,215,957
Exercise of common stock options and warrants	—	—	2,407,160
Stock-based employee compensation, net of shares withheld for employee taxes	—	—	2,086,178
Stock-based non-employee compensation	—	—	6,101
Issuance of common stock to Board of Directors and Scientific Advisory Board	—	—	744,987

Issuance of common stock in connection with the development and license agreements	—	—	1,217,117
Net loss	176,699	—	176,699
Unrealized gain on available-for-sale securities	—	(19,139,736)	(19,139,736)
Comprehensive loss	—	—	(18,963,037)
BALANCE, DECEMBER 31, 2008	\$ 126,497	\$ (180,472,203)	\$ 76,714,463

The accompanying notes are an integral part of these consolidated financial statements.

## UNIVERSAL DISPLAY CORPORATION AND SUBSIDIARIES

## CONSOLIDATED STATEMENTS OF CASH FLOWS

	Year Ended December 31,		
	2008	2007	2006
<b>CASH FLOWS FROM OPERATING ACTIVITIES:</b>			
Net Loss	\$ (19,139,736)	\$ (15,975,841)	\$ (15,186,804)
Non-cash charges to statement of operations:			
Depreciation	1,943,184	1,774,236	1,828,551
Amortization of intangibles	1,695,072	1,695,072	1,695,072
Amortization of premium and discount on investments	(1,044,499)	(311,613)	(158,182)
Stock-based employee compensation	3,663,575	3,391,394	3,028,807
Stock-based non-employee compensation	5,110	23,336	105,011
Non-cash expense under Development and License Agreements	1,232,668	926,582	2,968,074
Stock-based compensation to Board of Directors and Scientific Advisory Board	745,016	754,711	509,600
(Increase) decrease in assets:			
Accounts receivable	(55,028)	(282,153)	(169,164)
Inventory	38,956	(10,567)	5,833
Other current assets	211,023	(67,664)	(108,521)
Other assets	10,000	10,000	10,000
Increase (decrease) in liabilities:			
Accounts payable and accrued expenses	621,440	(1,816,543)	244,976
Deferred license fees	(77,864)	(511,600)	3,188,401
Deferred revenue	2,365,919	(38,629)	(2,078,788)
Net cash used in operating activities	(7,785,164)	(10,439,279)	(4,117,134)
<b>CASH FLOWS FROM INVESTING ACTIVITIES:</b>			
Purchases of property and equipment	(1,277,098)	(1,225,857)	(2,349,033)
Purchases of investments	(96,859,458)	(61,336,182)	(24,374,659)
Proceeds from sale of investments	98,737,000	29,892,000	25,589,000
Net cash provided by (used in) investing activities	600,444	(32,670,039)	(1,134,692)
<b>CASH FLOWS FROM FINANCING ACTIVITIES:</b>			
Net proceeds from issuance of common stock	—	38,000,023	—
Proceeds from the exercise of common stock options and warrants	2,407,160	8,539,943	6,281,768
Payment of withholding taxes related to stock-based employee compensation	(771,555)	(657,485)	(586,658)
Net cash provided by financing activities	1,635,605	45,882,481	5,695,110
(DECREASE) INCREASE IN CASH AND CASH EQUIVALENTS	(5,549,115)	2,773,163	443,284
CASH AND CASH EQUIVALENTS, BEGINNING OF YEAR	33,870,696	31,097,533	30,654,249
CASH AND CASH EQUIVALENTS, END OF YEAR	\$ 28,321,581	\$ 33,870,696	\$ 31,097,533

The accompanying notes are an integral part of these consolidated financial statements.

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## UNIVERSAL DISPLAY CORPORATION AND SUBSIDIARIES

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

## 1. BUSINESS:

Universal Display Corporation (the “Company”) is engaged in the research, development and commercialization of organic light emitting diode (“OLED”) technologies and materials for use in flat panel display, solid-state lighting and other product applications. The Company’s primary business strategy is to develop and license its proprietary OLED technologies to product manufacturers for use in these applications. In support of this objective, the Company also develops new OLED materials and sells those materials to product manufacturers. Through internal research and development efforts and relationships with entities such as Princeton University, the University of Southern California (“USC”), the University of Michigan (“Michigan”), Motorola, Inc. and PPG Industries, Inc., the Company has established a significant portfolio of proprietary OLED technologies and materials (Notes 3, 5 and 7).

## 2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES:

## Principles of Consolidation

The consolidated financial statements include the accounts of Universal Display Corporation and its wholly owned subsidiaries, UDC, Inc. and Universal Display Corporation Hong Kong, Ltd. All intercompany transactions and accounts have been eliminated.

## Management’s Use of Estimates

The preparation of financial statements in conformity with U.S. generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. The estimates made are principally in the area of revenue recognition for license agreements and useful life of acquired technology. Actual results could differ from those estimates.

## Cash, Cash Equivalents and Short-term Investments

The Company considers all highly liquid debt instruments purchased with an original maturity of three months or less to be cash equivalents. The Company classifies its existing marketable securities as available-for-sale. These securities are carried at fair market value, with unrealized gains and losses reported in shareholders’ equity. Gains or losses on securities sold are based on the specific identification method.

Short-term investments at December 31, 2008 and 2007 consist of the following:

Investment Classification	Amortized Cost	Unrealized Gains	Unrealized (Losses)	Aggregate Fair Market Value
December 31, 2008-				
Certificates of deposit	\$ 10,318,000	\$ 35,577	\$ (3,323)	\$ 10,350,254
U.S. Government bonds	38,688,122	96,121	(1,878)	38,782,365



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	\$ 49,006,122	\$ 131,698	\$ (5,201)	\$ 49,132,619
December 31, 2007-				
Corporate bonds	\$ 25,486,974	\$ —	\$ (22,154)	\$ 25,464,820
Certificates of deposit	14,073,000	—	(29,108)	14,043,892
U.S. Government bonds	9,779,189	1,351	(291)	9,780,249
Municipal bonds	500,000	—	—	500,000
	\$ 49,839,163	\$ 1,351	\$ (51,553)	\$ 49,788,961

All short-term investments held at December 31, 2008 will mature in 2009.

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The Financial Accounting Standards Board (“FASB”) issued Statement of Financial Accounting Standards (“SFAS”) SFAS No. 157, Fair Value Measurements (“SFAS 157”), which clarifies the definition of fair value, establishes a framework for measuring fair value and expands disclosures on fair value measurements. SFAS 157 is effective as of an entity’s first fiscal year that begins after November 15, 2008.

SFAS 157 establishes a valuation hierarchy for disclosure of the inputs to valuations used to measure fair value. This hierarchy prioritizes the inputs into three broad levels as follows: Level 1 inputs are quoted prices (unadjusted) in active markets for identical assets or liabilities. Level 2 inputs are quoted prices for similar assets and liabilities in active markets or inputs that are observable for the asset or liability, either directly or indirectly through market corroboration, for substantially the full term of the financial instrument. Level 3 inputs are unobservable inputs based on management’s own assumptions used to measure assets and liabilities at fair value. A financial asset or liability’s classification within the hierarchy is determined based on the lowest level input that is significant to the fair value measurement.

The following table provides the assets and liabilities carried at fair value measured on a recurring basis as of December 31, 2008:

	Total carrying value	Fair Value Measurements, Using Significant		
		Quoted prices in active markets (Level 1)	other observable inputs (Level 2)	Significant unobservable inputs (Level 3)
Investments	\$ 49,132,619	\$ 49,132,619	\$ —	\$ —

#### Fair Value of Financial Instruments

Cash and cash equivalents, accounts receivable, other current assets, and accounts payable are reflected in the accompanying financial statements at fair value due to the short-term nature of those instruments.

#### Property and Equipment

Property and equipment are stated at cost and depreciated generally on a straight-line basis over the estimated useful life of 30 years for building, 15 years for building improvements, and three to seven years for office and lab equipment and furniture and fixtures. Repair and maintenance costs are charged to expense as incurred. Additions and betterments are capitalized.

#### Inventory

Inventory consists of chemicals held at the Company’s Ewing, New Jersey facility and is valued at the lower of cost or market, with cost determined using the specific identification method.

#### Acquired Technology

Acquired technology consists of license rights and know-how obtained from PD-LD, Inc. and Motorola, Inc. (Note 5). Acquired technology is amortized on a straight-line basis over its estimated useful life of 10 years.

### Impairment of Long-Lived Assets

Company management continually evaluates whether events or changes in circumstances might indicate that the remaining estimated useful life of long-lived assets may warrant revision, or that the remaining balance may not be recoverable. When factors indicate that long-lived assets should be evaluated for possible impairment, the Company uses an estimate of the related undiscounted cash flows in measuring whether the long-lived asset should be written down to fair value. Measurement of the amount of impairment would be based on generally accepted valuation methodologies, as deemed

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appropriate. As of December 31, 2008, Company management believed that no revision to the remaining useful lives or write-down of the Company's long-lived assets was required. No such revisions were required in 2007 or 2006.

#### Net Loss Per Common Share

Basic net loss per common share is computed by dividing the net loss by the weighted-average number of shares of common stock outstanding for the period. Diluted net loss per common share reflects the potential dilution from the exercise or conversion of securities into common stock. For the years ended December 31, 2008, 2007 and 2006, the effects of the combined outstanding stock options and warrants of 4,577,775, 5,172,041 and 6,812,601, respectively, were excluded from the calculation of diluted EPS as the impact would have been anti-dilutive.

#### Revenue Recognition and Deferred License Fees

Commercial revenue relates to the incorporation of OLED technologies and materials into the Company's customers' commercial products, and includes commercial chemical revenue, royalty and license revenues, and commercialization assistance revenue. Developmental revenue relates to OLED technology and material development activities for which the Company is paid, and includes contract research revenue, development chemical revenue and technology development revenue.

Commercial chemical revenue represents revenues from sales of OLED materials to manufacturers for the production of commercial products. This revenue is recognized at the time of shipment, or at time of delivery and passage of title, depending upon the contractual agreement between the parties.

The Company has received non-refundable advance license and royalty payments under certain development and technology evaluation agreements. Certain of these payments are creditable against future amounts payable under commercial license agreements that the parties may subsequently enter into and, as such, are deferred until such license agreements are executed or negotiations have ceased and Company management determines that there is no appreciable likelihood of executing a license agreement with the other party. Revenue would then be recorded over the expected useful life of the relevant licensed technology, if there is an effective license agreement, or at the time Company management determines that there is no appreciable likelihood of an executable license agreement. Advanced payments received under technology development and evaluation agreements that are not creditable against license fees are deferred and recognized as technology development revenue over the term of the agreement. Royalty revenue is recognized when earned and the amount is fixed and determinable.

Development chemical revenue represents revenues from sales of OLED materials to product manufacturers for evaluation and development purposes. Revenue is recognized at the time of shipment and passage of title. The customer does not have the right to return the materials.

Contract research revenue represents reimbursements by government entities for all or a portion of the research and development costs the Company incurs in relation to its government contracts. Revenues are recognized proportionally as research and development costs are incurred, or as defined milestones are achieved.

## Research and Development

Expenditures for research and development are charged to operations as incurred. Research and development expenses consist of the following:

	Year Ended December 31,		
	2008	2007	2006
Development and operations in the Company's facility	\$ 13,778,398	\$ 13,169,527	\$ 11,891,852
Patent prosecution, maintenance and other costs	3,348,851	2,548,753	2,411,331
Costs incurred to Princeton University and USC under the 2006 and 1997 Research Agreements (Note 3), net of refunded amounts from Princeton University	1,003,749	812,221	(551,220)
PPG Development and License Agreement (Note 7)	2,055,798	2,181,408	3,854,969
Amortization of intangibles	1,695,072	1,695,072	1,695,072
Scientific Advisory Board compensation	375,766	502,281	260,000
	\$ 22,257,634	\$ 20,909,262	\$ 19,562,004

## Patent Costs

Costs associated with patent applications, patent prosecution, patent defense and the maintenance of patents are charged to expense as incurred. Costs to successfully defend a challenge to a patent are capitalized to the extent of an evident increase in the value of the patent. Costs that relate to an unsuccessful outcome are charged to expense.

## Statement of Cash Flow Information

The following non-cash activities occurred:

	Year Ended December 31,		
	2008	2007	2006
Unrealized gain on available-for-sale securities	\$ 176,699	\$ 32,644	\$ 37,731
	—	21,915	22,515

Common stock issued under a Development Agreement that was earned in a previous period			
Common stock issued for royalties that was earned in a previous period	66,403	499,993	—
Common stock issued to Board of Directors and Scientific Advisory Board that was earned in a previous period	299,968	260,000	588,200
Common Stock issued to employees that was earned in a previous period	867,510	944,115	838,854
Common stock issued to non-employee that was earned in a previous period	991	—	—

#### Income Taxes

Deferred tax assets and liabilities are determined based on the difference between the financial statement and tax bases of assets and liabilities. Deferred tax assets or liabilities at the end of each period are determined using the tax rate expected to be in effect when taxes are actually paid or recovered. The Company accounts for the sale of its net state operating losses on a cash basis; therefore, it does not record an income tax benefit until the cash is received. The Company has adopted FASB Interpretation No. 48, Accounting for Uncertainty in Income Taxes, an Interpretation of SFAS No. 109 (“FIN 48”) effective January 1, 2007, and pursuant to its provisions classifies interest and penalties, if any, as a component of tax expense.

## Share-Based Payment Awards

SFAS No. 123(R), Share-Based Payment (“SFAS 123(R)”), addresses all forms of share-based payment awards, including shares issued under employee stock purchase plans, stock options, restricted stock and stock appreciation rights. It requires companies to recognize in the statement of operations the grant-date fair value of stock options and other equity-based compensation issued to employees and directors.

The grant-date fair value of stock options is determined using the Black-Scholes valuation model. The fair value of share-based awards is recognized as compensation expense on a straight-line basis over the requisite service period, net of estimated forfeitures. The Company relies primarily upon historical experience to estimate expected forfeitures and recognizes compensation expense on a straight-line basis from the date of the grant. The Company issues new shares upon the exercise or vesting of share-based awards.

## Recent Accounting Pronouncements

In February 2008, the FASB issued FASB Staff Position 157-2, Effective Date of FASB Statement No. 157 (“FSP 157-2”), which delays the effective date of SFAS 157’s fair value measurement requirements for non-financial assets and liabilities that are not required or permitted to be measured at fair value on a recurring basis to fiscal years beginning after November 15, 2008. Non-recurring, non-financial assets and liabilities for which the Company has not applied the provisions of SFAS 157 include long-lived assets measured at fair value for an impairment assessment under FASB Statement No. 144, Accounting for the Impairment or Disposal of Long-Lived Assets. Management does not expect the adoption of SFAS 157 for non-recurring, non-financial assets and liabilities to have a significant impact on the Company’s consolidated financial statements.

In February 2007, the FASB issued SFAS No. 159, The Fair Value Option for Financial Assets and Financial Liabilities (“SFAS 159”). SFAS 159 permits entities to measure many financial instruments and certain other items at fair value on specified election dates. Under SFAS 159, any unrealized holding gains and losses on items for which the fair value option has been elected are reported in earnings at each subsequent reporting date. If elected, the fair value option (1) may be applied instrument by instrument, with a few exceptions, such as investments otherwise accounted for by the equity method; (2) is irrevocable (unless a new election date occurs); and (3) is applied only to entire instruments and not to portions of instruments. SFAS 159 is effective as of an entity’s first fiscal year that begins after November 15, 2007 (non-financial instruments deferred under SFAS 159 to fiscal years beginning after November 15, 2008). The adoption of SFAS 159 did not have any impact on the Company’s results of operations or financial position.

In June 2007, the FASB approved Emerging Issues Task Force Issue No. 07-03, Accounting for Nonrefundable Advance Payments for Goods or Services to be Used in Future Research and Development Activities (“Issue No. 07-03”). Issue No. 07-03 requires that nonrefundable advance payments for future research and development activities be deferred and capitalized. Such amounts should be recognized as an expense as goods are delivered or the related services are performed. Issue No. 07-03 is effective for fiscal years beginning after December 15, 2007. The adoption of Issue No. 07-03 did not have any impact on the Company’s results of operations or financial position.

In April 2008, the FASB issued FSP 142-3, Determination of the Useful Life of Intangible Assets (“FSP 142-3”), which amends the list of factors an entity should consider in developing renewal or extension assumptions used in determining the useful life of recognized intangible assets under SFAS No. 142, Goodwill and Other Intangible Assets. The new guidance applies to (1) intangible assets that are acquired individually or with a group of other assets and (2) intangible assets acquired in both business combinations and asset acquisitions. Under FSP 142-3, entities estimating the useful life of a recognized intangible asset must consider their historical experience in renewing or extending similar arrangements or, in the absence of historical experience, must consider assumptions that market participants would use about renewal or extension. This FSP is effective for financial statements issued for fiscal years

beginning after December 15, 2008, and interim periods within those fiscal years. The Company has not determined the impact that FSP 142-3 will have on its results of operations or financial position.

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In June 2008, the Emerging Issues Task Force (“EITF”) issued EITF Issue 07-5, Determining Whether an Instrument (or Embedded Feature) Is Indexed to an Entity's Own Stock (“EITF 07-5”), to address concerns regarding the meaning of “indexed to an entity's own stock” contained in SFAS 133, Accounting for Derivative Instruments and Hedging Activities. This issue relates to the determination of whether a freestanding equity-linked instrument should be classified as equity or debt. If an instrument is classified as debt, it is valued at fair value, and this value is remeasured on an ongoing basis, with changes recorded on the statement of operations in each reporting period. EITF 07-5 is effective for financial statements for fiscal years beginning after December 15, 2008. At December 31, 2008, the Company had warrants to purchase 838,446 shares of common stock outstanding that contain a “down-round” provision and the fair value of these warrants, based on utilizing a Black Scholes valuation model, was approximately \$2,538,000. The value of these warrants will be reclassified from equity to a liability on January 1, 2009.

#### Correction of Prior Year Consolidated Financials Amounts

Management has determined that the shares withheld to cover employee payroll taxes on stock-based compensation should have been recorded as a cash outflow from financing activity in the 2007 and 2006 consolidated cash flow statement. The immaterial error results in a decrease in net cash used in operating activities and a decrease in net cash provided by financing activities of \$657,485 and \$586,658 for the year ended December 31, 2007 and 2006, respectively. This correction did not change any amounts on the consolidated balance sheet or statement of operations. Management believes that the effects of the corrections are not material to the Company's financial position, results of operations or liquidity for any period presented.

#### 3. RESEARCH AND LICENSE AGREEMENTS WITH PRINCETON UNIVERSITY, UNIVERSITY OF SOUTHERN CALIFORNIA AND THE UNIVERSITY OF MICHIGAN:

The Company funded OLED technology research at Princeton and, on a subcontractor basis, at USC, for 10 years under a Research Agreement executed with Princeton in August 1997 (the “1997 Research Agreement”). The Principal Investigator conducting work under the 1997 Research Agreement transferred to Michigan in January 2006. Following this, the 1997 Research Agreement was allowed to expire on July 31, 2007.

As a result of the transfer, the Company entered into a new Sponsored Research Agreement with USC to sponsor OLED technology research at USC and, on a subcontractor basis, Michigan. This new Research Agreement (the “2006 Research Agreement”) was effective as of May 1, 2006, and has a term of three years. The 2006 Research Agreement supersedes the 1997 Research Agreement with respect to all work being performed at USC and Michigan. Under the 2006 Research Agreement, the Company is obligated to pay USC up to \$4,636,296 for work actually performed during the period from May 1, 2006 through April 30, 2009. Payments under the 2006 Research Agreement are made to USC on a quarterly basis as actual expenses are incurred. Through December 31, 2008, the Company had incurred \$1,806,733 in research and development expense under the 2006 Research Agreement.

On October 9, 1997, the Company, Princeton and USC entered into an Amended License Agreement (as amended, the “1997 Amended License Agreement”) under which Princeton and USC granted the Company worldwide, exclusive license rights, with rights to sublicense, to make, have made, use, lease and/or sell products and to practice processes based on patent applications and issued patents arising out of work performed by Princeton and USC under the 1997 Research Agreement. Under this agreement, the Company is required to pay Princeton royalties for licensed products sold by the Company or its sublicensees. For licensed products sold by the Company, the Company is required to pay Princeton 3% of the net sales price of these products. For licensed products sold by the Company's sublicensees, the Company is required to pay Princeton 3% of the revenues received by the Company from these sublicensees. These royalty rates are subject to renegotiation for products not reasonably conceivable as arising out of the 1997 Research Agreement if Princeton reasonably determines that the royalty rates payable with respect to these products are not fair and competitive.

The Company is obligated under the 1997 Amended License Agreement to pay to Princeton minimum annual royalties. The minimum royalty payment is \$100,000 per year. The Company incurred \$223,901, \$163,007 and \$177,436 of royalty expense in connection with the agreement for the years ended December 31, 2008, 2007 and 2006, respectively.

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The Company also is required under the 1997 Amended License Agreement to use commercially reasonable efforts to bring the licensed OLED technology to market. However, this requirement is deemed satisfied if the Company invests a minimum of \$800,000 per year in research, development, commercialization or patenting efforts respecting the patent rights licensed to the Company.

In connection with entering into the 2006 Research Agreement, the Company amended the 1997 Amended License Agreement to include Michigan as a party to that agreement effective as of January 1, 2006. Under this amendment, Princeton, USC and Michigan have granted the Company a worldwide exclusive license, with rights to sublicense, to make, have made, use, lease and/or sell products and to practice processes based on patent applications and issued patents arising out of work performed under the 2006 Research Agreement. The financial terms of the 1997 Amended License Agreement were not impacted by this amendment.

#### 4. PROPERTY AND EQUIPMENT:

Property and equipment consist of the following:

	December 31,	
	2008	2007
Land	\$ 820,000	\$ 820,000
Building and improvements	11,151,956	11,126,189
Office and lab equipment	14,462,838	11,502,305
Furniture and fixtures	324,773	285,573
Construction-in-progress	2,678	1,784,344
	26,762,245	25,518,411
Less: Accumulated depreciation	(13,902,617)	(11,992,697)
Property and equipment, net	\$ 12,859,628	\$ 13,525,714

Depreciation expense was \$1,943,184, \$1,774,236 and \$1,828,551 for the years ended December 31, 2008, 2007 and 2006, respectively.

#### 5. ACQUIRED TECHNOLOGY:

Acquired technology consists of acquired license rights for patents and know-how obtained from PD-LD, Inc. and Motorola, Inc. These intangible assets consist of the following:

	December 31,	
	2008	2007
PD-LD, Inc.	\$ 1,481,250	\$ 1,481,250
Motorola, Inc.	15,469,468	15,469,468
	16,950,718	16,950,718
Less: Accumulated amortization	(14,021,374)	(12,326,302)
Acquired technology, net	\$ 2,929,344	\$ 4,624,416

On July 19, 2000, the Company, PD-LD, Inc. (“PD-LD”), its president Dr. Vladimir Ban and the Trustees of Princeton entered into a Termination, Amendment and License Agreement whereby the Company acquired all PD-LD’s rights to certain issued and pending OLED technology patents in exchange for 50,000 shares of the Company’s common stock which was valued at \$1,481,250. Pursuant to this transaction, these patents were included in the patent rights exclusively licensed to the Company under the 1997 Amended License Agreement.

On September 29, 2000, the Company entered into a License Agreement with Motorola, Inc. (“Motorola”). Pursuant to this agreement, the Company licensed from Motorola what are now 74 issued U.S. patents and corresponding

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foreign patents relating to OLED technologies. These patents expire in the U.S. between 2012 and 2018. The Company has the sole right to sublicense these patents to OLED product manufacturers. As consideration for this license, the Company issued to Motorola 200,000 shares of the Company's common stock (valued at \$4,412,500), 300,000 shares of the Company's Series B Convertible Preferred Stock (valued at \$6,618,750) and a warrant to purchase 150,000 shares of the Company's common stock at \$21.60 per share. The 300,000 shares of the Series B Convertible Preferred Stock issued were converted into shares of the Company's common stock on September 29, 2004. The warrant was recorded at a fair market value of \$2,206,234, based on the Black-Scholes option-pricing model, and was recorded as a component of the cost of the acquired technology. The warrant expired on September 29, 2007, without having been exercised.

The Company also issued a warrant to an unaffiliated third party to acquire 150,000 shares of the Company's common stock as a finder's fee in connection with the Motorola transaction. The original exercise price of this warrant was \$21.60 per share and the exercise period was seven years. This warrant was accounted for at its fair value based on the Black-Scholes option pricing model and \$2,206,234 was recorded as a component of the cost of the acquired technology. Based on anti-dilution adjustments, the number of warrant shares was adjusted to 191,028 shares, and the exercise price was adjusted to \$16.96 per share. The warrant was exercised on a cashless basis on August 13, 2007.

In total, the Company recorded an intangible asset of \$15,469,468 for the technology acquired from Motorola. This includes \$25,750 of direct cash transaction costs. Amortization expense was \$1,695,072 for each of the years ended December 31, 2008, 2007 and 2006. For 2009 amortization expense will be \$1,695,072 and for 2010 it will be \$1,234,272.

The Company is required under the License Agreement to pay Motorola royalties on gross revenues earned by the Company from its sales of OLED products or components, or from its OLED technology licensees, whether or not these revenues relate specifically to inventions claimed in the patent rights licensed from Motorola. For the two-year period ended December 31, 2006, the Company issued to Motorola 37,075 shares of the Company's common stock, valued at \$499,993, and paid Motorola \$500,007 in cash to satisfy the minimum royalty obligation of \$1,000,000. The Company is no longer subject to a minimum royalty obligation under this agreement and for the years ended December 31, 2008 and 2007, the Company recorded royalty expenses of \$163,916 and \$132,839, respectively. To satisfy the royalty obligation, the Company issued to Motorola 12,015 and 3,801 shares of the Company's common stock, valued at \$81,954 and \$66,403 and paid \$81,962 and \$66,436 in cash, respectively.

#### 6. ACCRUED EXPENSES:

Accrued expenses consist of the following:

	December 31,	
	2008	2007
Compensation	\$ 3,453,062	\$ 3,087,650
Royalties	387,817	295,846
Consulting	326,469	299,969
Professional fees	437,547	432,719
Subcontracts	170,324	90,113
Research and development agreements	377,786	308,497
Other	143,428	63,353
	<b>\$ 5,296,433</b>	<b>\$ 4,578,147</b>

7. EQUITY AND CASH COMPENSATION UNDER THE PPG AGREEMENTS:

On October 1, 2000, the Company entered into a five-year Development and License Agreement (“Development Agreement”) and a seven-year Supply Agreement (“Supply Agreement”) with PPG. Under the Development Agreement, a team of PPG scientists and engineers assisted the Company in developing its proprietary OLED materials and supplied the Company with these materials for evaluation purposes. Under the Supply Agreement, PPG supplied the Company with its proprietary OLED materials that were intended for resale to customers for commercial purposes.

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On July 29, 2005, the Company entered into an OLED Materials Supply and Service Agreement with PPG (the "OLED Materials Agreement"). The OLED Materials Agreement superseded and replaced in their entirety the Development Agreement and Supply Agreement effective as of January 1, 2006, and extended the term of the Company's relationship with PPG through December 31, 2008. Under the OLED Materials Agreement, PPG continues to assist the Company in developing its proprietary OLED materials and supplying the Company with those materials for evaluation purposes and for resale to its customers. On January 4, 2008, the term of the OLED Materials Agreement was extended for an additional three years, through December 31, 2011.

Under the OLED Materials Agreement, the Company compensates PPG on a cost-plus basis for the services provided during each calendar quarter. The Company is required to pay for some of these services in all cash and for other of the services through the issuance of shares of the Company's common stock. Up to 50% of the remaining services are payable, at the Company's sole discretion, in cash or shares of the Company's common stock, with the balance payable in all cash. The actual number of shares of common stock issuable to PPG is determined based on the average closing price for the Company's common stock during a specified number of days prior to the end of each calendar half-year period ending on March 31 and September 30. If, however, this average closing price is less than \$6.00, the Company is required to compensate PPG in all cash.

On April 19, 2006, the Company issued 1,957 shares of common stock to PPG based on a final accounting for actual costs incurred by PPG under the Development Agreement for the year ended December 31, 2005. Accordingly, the Company accrued \$22,515 of additional research and development expense as of December 31, 2005, based on the fair value of these additional shares as of the end of 2005.

In 2008, 2007 and 2006, the Company issued to PPG 82,669, 58,930 and 210,639 shares of the Company's common stock, respectively, as consideration for services provided by PPG under the applicable agreement(s). For these shares, the Company recorded charges of \$1,150,714, \$926,582 and \$2,619,439 to research and development expense for 2008, 2007 and 2006, respectively. The charges were determined based on the fair value of the Company's common stock as of the end of each period. The Company also recorded \$905,084, \$936,322 and \$886,895 to research and development expense for the cash portion of the work performed by PPG during 2008, 2007 and 2006, respectively.

In accordance with the agreements with PPG, the Company is also required to reimburse PPG for its raw materials and conversion costs for all development chemicals produced on behalf of the Company. The Company recorded \$0, \$318,504 and \$0 in research and development expense related to these costs during 2008, 2007 and 2006, respectively. The remainder of these costs is included in cost of chemicals sold.

For work performed through the end of 2006, the Company was required under its agreements with PPG to grant options to purchase shares of the Company's common stock to PPG employees performing certain development services for the Company, in a manner consistent with that for issuing options to its own employees. Subject to certain contingencies, these options were to vest one year following the date of grant and were to remain exercisable for up to 90 days after the individual PPG employee ceased performing development services for the Company. However, in connection with the conclusion of the development program on December 31, 2006, the exercise periods for these options were extended. In the case of certain PPG employees who were hired by the Company as full-time employees in April 2006, the exercise period was extended to run for so long as they remain employees of the Company, plus an additional period of up to one year thereafter, just as other Company employees are treated under the Company's Equity Compensation Plan. For those PPG employees not hired by the Company, the exercise period was extended for three years through December 31, 2009.

On December 30, 2005 and January 18, 2006, the Company granted to PPG employees performing development services under the Development Agreement options to purchase 31,500 and 30,500 shares, respectively, of the Company's common stock at exercise prices of \$10.51 and \$8.14, respectively. As a result of the Company hiring

certain of the PPG employees in April 2006, the Company accelerated the vesting of 18,500 of the options granted on December 30, 2005. Accordingly, the Company recorded \$225,882 in research and development costs related to these options in 2006. The Company also recorded \$100,838 in research and development costs for the remaining 13,000 options during 2006.

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The Company determined the fair value of the options earned during 2006 using the Black-Scholes option-pricing model with the following assumptions: (1) risk free interest rate of 4.4 and 5.1%, respectively, (2) no expected dividend yield, (3) contractual life of 3.25 and 10 years, respectively and (4) expected volatility of 51% and 77%, respectively.

In lieu of stock options, and consistent with awards made to the Company's own employees, shares of stock were granted to certain PPG employees performing development services on the Company's behalf during 2006. On January 9, 2007, the Company issued 1,500 shares of its common stock as a bonus to these PPG research and development team members for the year ended December 31, 2006. Accordingly, the Company accrued \$21,915 as of December 31, 2006 in research and development costs relating to the issuance. The Company has no obligation to issue options or shares of stock to any PPG employees in 2007 or thereafter.

#### 8. PREFERRED STOCK:

The Company's Articles of Incorporation authorize it to issue up to 5,000,000 shares of preferred stock with designations, rights and preferences determined from time-to-time by the Company's Board of Directors. Accordingly, the Company's Board of Directors is empowered, without shareholder approval, to issue preferred stock with dividend, liquidation, conversion, voting or other rights superior to those of shareholders of the Company's common stock.

In 1995, the Company issued 200,000 shares of Series A Nonconvertible Preferred Stock ("Series A") to American Biomimetics Corporation ("ABC") pursuant to a certain Technology Transfer Agreement between the Company and ABC. The Series A shares have a liquidation value of \$7.50 per share. Series A shareholders, as a single class, have the right to elect two members of the Company's Board of Directors. This right has never been exercised. Holders of the Series A shares are entitled to one vote per share on matters which shareholders are generally entitled to vote. The Series A shareholders are not entitled to any dividends. The Series A shares were valued at \$1.75 per share, which was based upon an independent appraisal.

#### 9. SHAREHOLDERS' EQUITY:

Effective as of each of March 31, 2008, June 30, 2008, September 30, 2008, the Company issued 5,276 shares and, as of December 31, 2008, the Company issued 5,272 shares of fully vested common stock to members of its Board of Directors as partial payment for services performed for the three-month periods ended on such dates. The fair value of the shares issued was \$369,250, which was recorded as a compensation charge in general and administrative expense for the year ended December 31, 2008.

There are outstanding warrants to purchase 1,611,659 shares of the Company's common stock as of December 31, 2008. These warrants are exercisable at a weighted average exercise price of \$14.22, and they expire between 2009 and 2012. For the years ended December 31, 2008, 2007 and 2006, respectively, 135,415, 685,129 and 1,081,623 warrants were exercised, resulting in proceeds of \$1,187,050, \$4,987,903 and \$3,718,404, respectively.

In May 2007, the Company sold 2,800,000 shares of its common stock through a public offering at \$14.50 per share. The offering resulted in net proceeds to the Company of \$38,000,023, net of \$2,599,977 in associated costs.

In January 2009, 2008 and 2007, the Company granted a total of 194,955, 105,165 and 124,497 shares of fully vested common stock to employees and non-employee members of the Scientific Advisory Board for services performed in 2008, 2007 and 2006, respectively. The fair value of the shares issued was \$1,673,352, \$1,627,767 and \$1,559,283, respectively, for employees and \$299,997, \$299,968 and \$260,000, respectively, for non-employee members of the Scientific Advisory Board, which amounts were accrued at December 31, 2008, 2007 and 2006, respectively. In connection with the issuance of these grants, approximately 63,372, 29,708 and 40,359 shares, with a fair value of \$641,707, \$544,845, \$589,645 were withheld in satisfaction of employee tax withholding obligations in 2009, 2008

and 2007, respectively. The stock awards were recorded as a compensation charge in general and administrative expense for 2008, 2007 and 2006 of \$1,162,221, \$1,143,792 and \$1,135,933, respectively, and research and development expense of \$811,128, \$783,944 and \$683,350, respectively. In 2007, the Company issued 500 shares to an employee and \$8,750 was charged to research and development expense as the fair value of these shares.

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## 10. STOCK-BASED COMPENSATION:

## Equity Compensation Plan

In 1995, the Board of Directors of the Company adopted a Stock Option Plan (the “1995 Plan”), under which options to purchase a maximum of 500,000 shares of the Company’s common stock were authorized to be granted at prices not less than the fair market value of the common stock on the date of the grant, as determined by the Compensation Committee of the Board of Directors. Through December 31, 2008, the Company’s shareholders have approved increases in the number of shares reserved for issuance under the 1995 Plan to 7,000,000, and have extended the term of the 1995 Plan through 2015. The 1995 Plan was also amended and restated in 2003, and is now called the Equity Compensation Plan. The Equity Compensation Plan provides for the granting of incentive and nonqualified stock options, shares of common stock, stock appreciation rights and performance units to employees, directors and consultants of the Company. Stock options are exercisable over periods determined by the Compensation Committee, but for no longer than 10 years from the grant date. At December 31, 2008, there were 1,344,636 shares that remained available to be granted under the Equity Compensation Plan.

The following table summarizes the stock option activity during the year ended December 31, 2008 for all grants under the Equity Compensation Plan:

	Options	Weighted Average Exercise Price
Outstanding at January 1, 2008	3,226,101	\$ 9.77
Granted	4,000	18.34
Exercised	(263,735)	6.16
Forfeited	—	—
Cancelled	(250)	17.43
Outstanding at December 31, 2008	2,966,116	10.10
Vested and expected to vest	2,964,857	10.10
Exercisable at December 31, 2008	2,938,116	10.08

The weighted average grant date fair value of stock options granted in 2008, 2007 and 2006 was \$8.80, \$8.65 and \$10.66, respectively. The fair value of the stock options granted was estimated using the Black-Scholes option-pricing model. The Black-Scholes option-pricing model considers assumptions related to volatility, risk-free interest rate and dividend yield. Expected volatility was based on the Company’s historical daily stock price volatility. The risk-free rate was based on average U.S. Treasury security yields in the quarter of the grant. The dividend yield was based on historical information. The expected life was determined using historical information and management estimates. The following table provides the assumptions used in determining the fair value of the stock options for the years ended December 31, 2008, 2007 and 2006, respectively:

	2008	2007	2006
Dividend yield rate	0%	0%	0%
Expected volatility	49.4%	48.1 – 52.5%	73.4 – 79.9%
	2.8%		

Risk-free interest rates	3.8 – 4.8%	4.6 – 5.0%
Expected life	5 Years	5 Years 7 Years

The following table summarizes the status of unvested stock options at December 31, 2008, and the weighted-average grant date fair value of these stock options at December 31, 2008:

	Options	Weighted Average Grant Date Fair Value
Unvested options at January 1, 2008	52,000	\$ 9.82
Granted	4,000	8.80
Vested	(28,000)	9.75
Forfeited	—	—
Unvested options at December 31, 2008	28,000	\$ 9.69

A summary of stock options outstanding and exercisable by price range at December 31, 2008, is as follows:

Exercise Price	Outstanding				Exercisable			
	Number of Options Outstanding at December 31, 2008	Weighted- Average Remaining Contractual Life (Years)	Weighted- Average Exercise Price	Aggregate Intrinsic Value (A)	Number of Options Outstanding at December, 31 2008	Weighted- Average Remaining Contractual Life (Years)	Weighted- Average Exercise Price	Aggregate Intrinsic Value (A)
\$ 3.75–8.14	968,630	3.94	\$ 6.25	\$ 3,099,432	968,630	3.94	\$ 6.25	\$ 3,099,432
8.15–9.50	611,000	2.83	8.93	321,488	604,000	2.79	8.92	319,548
9.51–10.51	685,028	5.49	10.39	—	685,028	5.49	10.39	—
10.52–18.13	635,458	4.63	15.34	—	614,458	4.54	15.39	—
18.14–24.38	66,000	1.83	24.01	—	66,000	1.83	24.01	—
\$ 3.75–24.38	2,966,116	4.17	\$ 10.10	\$ 3,420,920	2,938,116	4.14	\$ 10.08	\$ 3,418,980

(A) The difference between the stock option's exercise price and the closing price of the common stock at December 31, 2008.

The total intrinsic value of stock awards exercised during the years ended December 31, 2008, 2007 and 2006 was \$1,820,464, \$4,607,227 and \$2,403,556, respectively. At December 31, 2008, there was \$215,392 of total unrecognized compensation cost from stock-based compensation arrangements granted under the Equity Compensation Plan, which cost is related to non-vested options. The compensation expense is expected to be recognized over a weighted-average period of approximately one year.

In 2008, 46,286 shares of common stock, valued at \$404,976, were tendered to settle the exercise of 90,000 options.

The Company has issued restricted stock to employees and non-employee members of the Scientific Advisory Board with vesting terms of three years. The fair value is equal to the market price of the Company's common stock on the date of grant. Expense for restricted stock is amortized ratably over the vesting period for the awards issued to employees and using a graded vesting method for the awards issued to non-employee members of the Scientific Advisory Board. The following table summarizes the restricted stock activity:

	Number of Shares	Weighted- Average Grant-Date Fair Value
Unvested, January 1, 2008	124,026	\$ 14.44
Granted	222,280	17.53
Vested	(172,485)	16.45
Cancelled	(3,500)	19.84
Unvested, December 31, 2008	170,321	\$ 16.39

For the years ended December 31, 2008, 2007 and 2006, the Company recorded as compensation charges related to all restricted stock awards included in general and administrative expense of \$647,666, \$323,377 and \$7,090, respectively, and research and development expense of \$445,318, \$387,986 and \$25,224, respectively. In connection with the vesting of deferred and restricted stock awards during the year ended December 31, 2008, 2007 and 2006, respectively, 13,183, 4,339 and 0 shares, with an aggregate fair value of \$226,710, \$67,840 and \$0, were withheld in satisfaction of tax withholding obligations.

In addition, on January 6, 2009, the Company granted a total of 164,864 shares of restricted common stock to employees and non-employee members of the Scientific Advisory Board for services to be rendered. The restricted stock had a fair value of \$1,668,500 on the date of grant and vests over three years from the date of grant.

## 11. COMMITMENTS AND CONTINGENCIES:

### Commitments

Under the terms of the 1997 Amended License Agreement with Princeton (Note 3), the Company is required to pay Princeton minimum royalty payments of \$100,000 per year. To the extent that the royalties otherwise payable to Princeton under this agreement are not sufficient to meet the minimum amount for the relevant calendar year, the Company is required to pay Princeton the difference between the royalties paid and the minimum royalty.

The Company has agreements with five executive officers which provide for certain cash and other benefits upon termination of employment of the officer in connection with a change in control of the Company. The executive is entitled to a lump-sum cash payment equal to two times the sum of the average annual base salary and bonus of the officer and immediate vesting of all stock options and other equity awards that may be outstanding at the date of the change in control, among other items.

### Notice of Opposition to European Patent No. 0946958

On December 8, 2006, Cambridge Display Technology, Ltd. (“CDT”), which was acquired in 2007 by Sumitomo Chemical Company (“Sumitomo”), filed a Notice of Opposition to European Patent No. 0946958 (the “EP ‘958 patent”). The EP ‘958 patent, which was issued on March 8, 2006, is a European counterpart patent to U.S. patents 5,844,363, 6,602,540, 6,888,306 and 7,247,073. These patents relate to the Company’s FOLED technology. They are exclusively licensed to the Company by Princeton, and under the license agreement the Company is required to pay all legal costs and fees associated with this proceeding.

The European Patent Office (the “EPO”) set a date of May 12, 2007 for the Company to file a response to the facts and arguments presented by CDT in its Notice of Opposition. The response was timely filed. The opponents then filed their reply to the Company’s response on December 7, 2007. The Company has decided that there is no need to file another response before the oral hearing date is set. The Company is currently waiting for the EPO to notify it of the date of the oral hearing.

At this stage of the proceeding, Company management cannot make any prediction as to the probable outcome of this opposition. However, based on an analysis of the evidence presented to date, Company management continues to believe there is a substantial likelihood that the patent being challenged will be declared valid, and that all or a significant portion of its claims will be upheld.

### Notices of Opposition to European Patent No. 1449238

On March 8, 2007, Sumation Company Limited (“Sumation”), a joint venture between Sumitomo and CDT, filed a first Notice of Opposition to European Patent No. 1449238 (the “EP ‘238 patent”). The EP ‘238 patent, which was issued on November 2, 2006, is a European counterpart patent, in part, to U.S. patents 6,830,828, 6,902,830, 7,001,536 and

7,291,406, and to pending U.S. patent application 11/879,379, filed on July 16, 2007. These patents and this patent application relate to

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the Company's PHOLED technology. They are exclusively licensed to the Company by Princeton, and under the license agreement the Company is required to pay all legal costs and fees associated with this proceeding.

Two other parties filed additional oppositions to the EP '238 patent just prior to the August 2, 2007 expiration date for such filings. On July 24, 2007, Merck Patent GmbH, of Darmstadt, Germany, filed a second Notice of Opposition to the EP '238 patent, and on July 27, 2007, BASF Aktiengesellschaft, of Mannheim, Germany, filed a third Notice of Opposition to the EP '238 patent. The EPO combined all three oppositions into a single opposition proceeding.

The EPO set a January 6, 2008 due date for the Company to file its response to the opposition. The Company requested a two-month extension to file this response, and the Company subsequently filed its response in a timely manner. The Company is currently waiting for the EPO to notify it of the date of the oral hearing. The Company is also waiting to see whether the other parties in the opposition file any additional documents, to which the Company may respond.

At this stage of the proceeding, Company management cannot make any prediction as to the probable outcome of the opposition. However, based on an analysis of the evidence presented to date, Company management continues to believe there is a substantial likelihood that the patent being challenged will be declared valid, and that all or a significant portion of its claims will be upheld.

## 12. CONCENTRATION OF RISK:

One non-government customer accounted for approximately 42%, 35% and 14% of consolidated revenue for the years ended December 31, 2008, 2007 and 2006, respectively. Accounts receivable from this customer were \$657,000 at December 31, 2008. In addition, one non-government customer also accounted for approximately 11% of consolidated revenue in 2007 and another non-government customer also accounted for approximately 24% of consolidated revenue in 2006.

Revenues derived from contracts with government agencies represented 25%, 41% and 32% of the consolidated revenue for the years ended December 31, 2008, 2007 and 2006, respectively.

Revenues from outside of North America represented 72%, 57% and 65% of the consolidated revenue for the years ended December 31, 2008, 2007 and 2006, respectively.

All chemical materials were purchased from one supplier. See Note 7.

## 13. INCOME TAXES:

The components of the income tax benefit are as follows:

	Year ended December 31,		
	2008	2007	2006
Current	\$ (962,478)	\$ (804,980)	\$ (544,567)
Deferred	(7,962,201)	(6,907,000)	(8,092,992)
	(8,924,679)	(7,711,980)	(8,637,559)
Increase in valuation allowance	7,962,201	6,907,000	8,092,992
	\$ (962,478)	\$ (804,980)	\$ (544,567)

The difference between the Company's federal statutory income tax rate and its effective income tax rate is due to state income tax benefits, non-deductible expenses, general business credits and the increase in the valuation allowance.

As of December 31, 2008, the Company had net operating loss and credit carry forwards. The Company's net operating loss carry forwards differ from the accumulated deficit principally due to the timing of the recognition of certain expenses. A portion of the Company's net operating loss carry forwards relate to tax deductions from stock-based compensation that would be accounted for as an increase to additional-paid-in-capital for financial reporting purposes to the

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extent such future deductions could be utilized by the Company. In accordance with the Tax Reform Act of 1986, utilization of the Company's net operating loss and general business credit carry forwards could be subject to limitations because of certain ownership changes. The following table summarizes Company tax loss and tax credit carry forwards at December 31, 2008:

	Related Tax Deduction	Deferred Tax Asset	Expiration Date
Loss carry forwards:			
Federal net operating loss	\$ 142,960,000	\$ 48,606,000	2011 to 2028
State net operating loss	97,686,000	5,795,000	2011 to 2028
Total loss carry forwards	\$ 240,646,000	\$ 54,401,000	
Tax credit carry forwards:			
Research tax credit	n/a	\$ 4,012,000	2018 to 2028
State tax credits	n/a	1,253,000	2014 to 2023
Total credit carry forwards	n/a	\$ 5,265,000	

Significant components of the Company's deferred tax assets are as follows:

	December 31,	
	2008	2007
Gross deferred tax assets:		
Net operating loss carry forwards	\$ 54,401,000	\$ 46,270,000
Capitalized start-up costs	—	1,961,000
Capitalized technology license	3,543,000	3,318,000
Stock options and warrants	304,000	589,000
Accruals and reserves	380,000	332,000
Deferred revenue	5,046,000	4,132,000
Other	354,000	466,000
Tax credit carry forward	5,265,000	4,263,000
	69,293,000	61,331,000
Valuation allowance	(69,293,000)	(61,331,000)
Net deferred tax asset	\$ —	\$ —

During the years ended December 31, 2008, 2007 and 2006, the Company sold approximately \$12.5 million, \$7.5 million and \$7.0 million, respectively, of its net state operating losses and \$0, \$263,000 and \$0 of its research and

development tax credits under the New Jersey Technology Tax Certificate Transfer Program, and received net proceeds of \$962,478, \$804,980 and \$544,567, respectively, during these years. The Company recorded the proceeds as an income tax benefit.

A valuation allowance was established for all of the deferred tax assets because the Company has incurred substantial operating losses since inception and expects to incur additional losses in 2009. At this time, Company management has concluded that these deferred tax assets will not be realized.

The Company adopted FIN 48 effective January 1, 2007. No transition adjustment was recorded as a result of the adoption of FIN 48 and the Company does not have any liability recorded for uncertain tax positions as of December 31, 2008 and December 31, 2007. Company management does not anticipate any material change in the Company's FIN 48 position in the next twelve months. The Company's federal income tax returns for 2005 through 2008 are open tax years and

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are subject to examination by the Internal Revenue Service. State tax jurisdictions (Pennsylvania, New Jersey, Idaho and California) that remain open to examination range from 2003 to 2008.

#### 14. DEFINED CONTRIBUTION PLAN:

The Company maintains the Universal Display Corporation 401(k) Plan (the "Plan") in accordance with the provisions of Section 401(k) of the Internal Revenue Code (the "Code"). The Plan covers substantially all full-time employees of the Company. Participants may contribute up to 15% of their total compensation to the Plan, not to exceed the limit as defined in the Code, with the Company matching 50% of the participant's contribution, limited to 6% of the participant's total compensation. For the years ended December 31, 2008, 2007 and 2006, the Company contributed \$200,956, \$195,697 and \$164,050, respectively, to the Plan.

#### 15. QUARTERLY SUPPLEMENTAL FINANCIAL DATA (UNAUDITED):

The following tables present certain unaudited consolidated quarterly financial information for each of the eight quarters in the two-year period ended December 31, 2008. In the opinion of Company management, this quarterly information has been prepared on the same basis as the consolidated financial statements and includes all adjustments (consisting of only normal recurring adjustments) necessary to present fairly the information for the periods presented. The results of operations for any quarter are not necessarily indicative of the results for the full year or for any future period.

Year ended December 31, 2008:

	March 31	June 30	Three Months Ended September 30	December 31	Total
Revenue	\$ 2,716,819	\$ 2,145,598	\$ 2,625,639	\$ 3,587,168	\$ 11,075,224
Net loss	(4,193,385)	(5,205,790)	(5,302,983)	(4,437,578)	(19,139,736)
Basic and diluted loss per share	(0.12)	(0.15)	(0.15)	(0.11)	(0.53)

Year ended December 31, 2007:

	March 31	June 30	Three Months Ended September 30	December 31	Total
Revenue	\$ 3,014,630	\$ 2,315,170	\$ 3,077,281	\$ 2,898,826	\$ 11,305,907
Net loss	(4,583,801)	(5,175,371)	(2,960,565)	(3,256,104)	(15,975,841)
Basic and diluted loss per share	(0.15)	(0.16)	(0.08)	(0.08)	(0.47)

