To:	Universal Display Corporation (tmdocketny@kenyon.com)
Subject:	TRADEMARK APPLICATION NO. 78274542 - PHOLED DOPANTS - 10052/
Sent:	2/27/05 8:31:39 AM
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UNITED STATES PATENT AND TRADEMARK OFFICE

SERIAL NO: 78/274542

APPLICANT: Universal Display Corporation

[redacted]

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CORRESPONDENT EMAIL ADDRESS:
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1. Filing date, serial number, mark and applicant's name.
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Serial Number 78/274542

Applicant is requesting reconsideration of a final refusal dated August 19, 2004.

After careful consideration of the law and facts of the case, the examining attorney must deny the request for reconsideration and adhere to the final action as written since no new facts or reasons have been presented that are significant and compelling with regard to the point at issue. Moreover, the examining attorney presents additional evidence showing the descriptiveness nature of the mark with the goods. In an Office action denying the applicant's request for reconsideration, the examining attorney

may introduce additional evidence directed to the issue(s) for which reconsideration is sought. TBMP §1207.04; TMEP 715.03(a)

Accordingly, applicant's request for reconsideration is *denied.* It is noted that applicant has filed an appeal on February 22, 2005. 37 C.F.R. Section 2.64(b); TMEP Section 715.03(c).

NOTICE: FEE CHANGE

Effective January 31, 2005 and pursuant to the Consolidated Appropriations Act, 2005, Pub. L. 108-447, the following are the fees that will be charged for filing a trademark application:

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/William T. Verhosek/
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PHOLED

Print Request: Selected Document(s): 1,17-26

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1. 6720961 , April 13, 2004 , Method and apparatus for displaying an image in three dimensions, Tracy, Thomas M. - 68 Mendon St., Uxbridge, Massachusetts, 01569, 008345 (10)

CORE TERMS: display, slice, processor, three-dimensional, two-dimensional, layer, configured, flat, displaying, rear ...

... FOLED (Flexible OLED) or **PHOLED** (Phosphorous OLED). In ...

17. 20020105516 (Note: This is a Patent Application only.), August 8, 2002 , Method and apparatus for displaying an image in three dimensions, Tracy, Thomas, M. - Uxbridge, Massachusetts, United States (US), 008345 (10)

CORE TERMS: display, slice, processor, three-dimensional, two-dimensional, layer, configured, flat, displaying, rear ...

... FOLED (Flexible OLED) or **PHOLED** (Phosphorous OLED). In ...

18. 20040257352 (Note: This is a Patent Application only.), December 23, 2004 , Method and apparatus for controlling, Naugler, W., Edward, JR. - Escondido, California, United States (US); Reddy, Damoder - Los Gatos, California, United States (US), 841198 (10), Nuelight Corporation, 02

CORE TERMS: pixel, sensor, voltage, row, display, transistor, emission, array, optical, coupled ...

... UDC) phosphorescent LED (**PHOLED**) or any other type of OLED is ...

19. 20040257354 (Note: This is a Patent Application only.), December 23, 2004 , Controlled passive display, apparatus and method for controlling and making a passive display, Naugler, W., Edward - Escondido, California, United States (US); Reddy, Damoder - Los Gatos, California, United States (US), 872268 (10), Nuelight Corporation, 02

CORE TERMS: sensor, voltage, pixel, display, row, array, optical, emission, transistor, brightness ...

... UDC) phosphorescent LED (**PHOLED**) or any other type of OLED is ...

20. 20040009586 (Note: This is a Patent Application only.), January 15, 2004 , Instrument for monitoring nucleic acid sequence amplification reaction, Oldham, Mark, F. - Los Gatos, California, United States (US); Young, Eugene, F. - Marietta, Georgia, United States (US), 456196 (10)

CORE TERMS: beam, dye, filter, excitation, emission, sequence, detector, nucleic acid, sample, splitter ...

... a phosphorescent OLED (**PHOLED**). As used herein, the terms " ...

21. 20040014202 (Note: This is a Patent Application only.), January 22, 2004 , Apparatus and method for differentiating multiple fluorescence signals by excitation wavelength, King, Howard, G. - Berkeley, California, United States (US); Boege, Steven, J. - San Mateo, California, United States (US); Young, Eugene, F. - Marietta, Georgia, United States (US); Oldham, Mark, F. - Los Gatos, California, United States (US), 440852 (10)

CORE TERMS: wavelength, sample, dye, excitation, emission, filter, detector, light source, beam, fluorescent ...

... a phosphorescent OLED (**PHOLED**). [0048] As used herein, the ...

22. 20040038390 (Note: This is a Patent Application only.), February 26, 2004 , Optical instrument including excitation source, Boege, Steven, J. - San Mateo, California, United States (US); Oldham, Mark, F. - Los Gatos, California, United States (US); Young, Eugene, F. - Marietta, Georgia, United States (US), 440719 (10)

CORE TERMS: region, beam, excitation, lens, filter, emission, sample, bundle, transition, detector ...

... a phosphorescent OLED (**PHOLED**). If an OLED is used, the OLED ...

23. 20040072335 (Note: This is a Patent Application only.), April 15, 2004 , Optical instrument including excitation source, Boege, Steven, J. - San Mateo, California, United States (US); King, Howard, G. - Berkeley, California, United States (US); Young, Eugene, F. - Marietta, Georgia, United

States (US); Sluis, Johannes, P. - El Granada, California, United States (US); Oldham, Mark, F. - Los Gatos, California, United States (US), 440920 (10)

CORE TERMS: lens, beam, filter, excitation, region, light source, emission, sample, array, detector ...

... a phosphorescent OLED (**PHOLED**). [0048] According to various ...

24. 20040178357 (Note: This is a Patent Application only.), September 16, 2004 , Excitation and emission filter, King, Howard, Greg - Berkeley, California, United States (US), 735339 (10), Applera Corporation, California, 94404, 02

CORE TERMS: filter, excitation, wavelength, sample, emission, detector, array, dye, fluorescent, fluorescent light ...

... TFELD), phosphorescent OLEDs (**PHOLED**), inorganic-organic LEDs, ...

25. 20050036142 (Note: This is a Patent Application only.), February 17, 2005 , Electrophoretic system with multi-notch filter and laser excitation source, Oldham, Mark, F. - Los Gatos, California, United States (US); Nordman, Eric, S. - Palo Alto, California, United States (US); Reel, Richard, T. - Hayward, California, United States (US); Shigeura, John, S. - Portola Valley, California, United States (US); Shigeura, Janice, G. - Portola Valley, California, United States (US), 887528 (10), Applera Corporation, California, 02

CORE TERMS: filter, marker, detection, zone, analyte, wavelength, detector, channel, dye, array ...

... a phosphorescent OLED (**PHOLED**). As used herein, the terms " ...

26. 20050030534 (Note: This is a Patent Application only.), February 10, 2005 , Time-delay integration in a flow cytometry system, Oldham, Mark, F. - Los Gatos, California, United States (US); Nordman, Eric, S. - Palo Alto, California, United States (US); Reel, Richard, T. - Hayward, California, United States (US); Shigeura, John, S. - Portola Valley, California, United States (US); Shigeura, Janice, G. - Portola Valley, California, United States (US), 887486 (10), Applera Corporation, California, 02

CORE TERMS: filter, marker, detection, wavelength, zone, analyte, dye, detector, channel, excitation ...

... a phosphorescent OLED (**PHOLED**). As used herein, the terms " ...

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1. The New York Times, November 2, 2003 Sunday, Late Edition - Final , Section 14NJ; Column 3; New Jersey Weekly Desk; Pg. 6, 844 words, NEW JERSEY & CO.; Let There Be Sheets of Light, By JESSICA BRUDER, EWING
... light-emitting devices, or **pholeds** (pronounced FO-leds). ...
... filament light bulbs, **pholed** technology will offer ...
... Universal Display estimates that **pholed** lighting technology will be ...
... plastic covered in **pholeds.** To make the sheets, light- ...
... Universal Display expects **pholed** technology to be used in ...
... in flexible white **pholed** sheets, making them into cylinders of ...
... most compelling aspect of **pholed** technology, however, goes beyond the ...
... electricity input to heat. **Pholeds** have the potential to convert nearly ...
... Universal Display to develop **pholed** technology, has big expectations. " ...
... light-emitting devices, or **pholeds** -- being developed at ...

2. Investor's Business Daily, September 18, 2003 Thursday, SECTION INTERNET & TECHNOLOGY; NATIONAL EDITION; Pg. A05, 536 words, Fancy Thin Displays Start To Hit Market; Alternative To LCDs; Universal Display Corp. and others have waited for OLEDs to take hold, BY MICHAEL KREY
... UDC's phosphorescent OLED, or **PHOLED,** technology also came into play ...
... on some of its SBIR **PHOLED** and TOLED projects. The feds and/or ...

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Time of Request: February 27, 2005 07:21 AM EST

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2. Advanced Imaging, January 1, 2005, No. 1, Vol. 20; Pg. 8; ISSN: 1042-0711, 245 words, Universal Display Corp. lands SBIR award; industry news; Small Business Innovation Research; Brief Article
... OLED display technologies (**PHOLED**). The focus of this project, entitled " ...
... substrates, including the company's **PHOLEDs** that address the need for ...

3. Display Development News, January 2005, EMISSIVE DISPLAYS; Vol. 9, No. 10, 347 words, Ink-Jet Printing of Phosphorescent OLEDs
... for the future production of **PHOLED,** or phosphorescent OLED displays ...
... work to apply UDCs **PHOLED** technology to the high-speed ...
... Seiko Epson to adapt our **PHOLED** technology to be used with ink- ...
... number of years and UDCs **PHOLED** technology has the potential to help ...

4. Display Development News, January 2005, EMISSIVE DISPLAYS; Vol. 9, No. 10, 347 words, Ink-Jet Printing of Phosphorescent OLEDs
... for the future production of **PHOLED,** or phosphorescent OLED displays ...
... work to apply UDCs **PHOLED** technology to the high-speed ...
... Seiko Epson to adapt our **PHOLED** technology to be used with ink- ...
... number of years and UDCs **PHOLED** technology has the potential to help ...

9. Electric Materials Update EMU, December 2004, GRANTS AND FUNDING; Vol. 18, No. 11, 393 words
... white phosphorescent OLEDs [**PHOLEDs**], while the other grant ...
... light extraction efficiency of **PHOLEDs.**

24. Laser Focus World, June 1, 2004, No. 6, Vol. 40; Pg. 75; ISSN: 1043-8092, 2559 words, OLEDs bring the sunshine in: organic-LED technology is emerging as the next generation of ambient white light for general illumination; Optoelectronic applications: light & illumination; Cover Story, Kincade, Kathy
... in phosphorescent OLEDs (**PHOLEDs**) for displays. According to the ...
... light is a subset of our **PHOLED** technology," said Janice ...
... extraction efficiencies for **PHOLEDs** by using a ...

26. CONSUMER ELECTRONICS DAILY, May 26, 2004, Wednesday, TODAY'S NEWS, 656 words, DUPONT DROPS PASSIVE MATRIX OLEDs
... company's phosphorescent OLED (**PHOLED**) technology. Universal's **PHOLED** display has power efficiency of ...
... company officials said. **PHOLED** technology allows for ...

48. Display Development News, October 2003, INDUSTRY NEWS; Vol. 7, No. 8, 350 words, Display Wins Quality Award
... proprietary phosphorescent OLED [**PHOLED**] and transparent OLED [TOLED] ...
... validation of our industry-leading **PHOLED** and TOLED technologies and innovative ...

49. Investor's Business Daily, September 18, 2003 Thursday, SECTION INTERNET & TECHNOLOGY; NATIONAL EDITION; Pg. A05, 536 words, Fancy Thin Displays Start To Hit Market; Alternative To LCDs; Universal Display Corp. and others have waited for OLEDs to take hold, BY MICHAEL KREY
... UDC's phosphorescent OLED, or **PHOLED,** technology also came into play ...
... on some of its SBIR **PHOLED** and TOLED projects. The feds and/or ...

DOPANTS

Print Request: Selected Document(s): 6-9,12,13,18,20,25,28-30

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Research Information:

Markets and Industry News
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6. ELECTRONIC MATERIALS UPDATE [EMU], December, 2001, ELECTRONIC POLYMERS; Vol. 15, No. 12, 370 words, Phosphorescent Doped OLEDs Patented
... in the use of phosphorescent **dopants** in **OLEDs [PHOLEDs]**.
Phosphorescent **dopants** are important because they can improve **OLED** power efficiency, a ...
... began using fluorescent **dopants** in **OLEDs** in the mid- 1980s. ...
... USC discovered that phosphorescent **dopants** could be used in **OLEDs** to provide significant advances ...
... UDC and its partners have developed **OLEDs** using these phosphorescent **dopants,** demonstrating world-record ...

7. Video Business, December 01, 2001, Technology News; Materials Science; Pg. 46, 221 words, High-Efficiency Red OLED Material, Brian Dance, Contributing Editor
... complexes as red phosphorescent **dopants** for full-color **OLED** displays that his company calls "**PHOLED**" technology. They were developed in ...

8. Electronics Weekly, November 21, 2001, TECHNOLOGY; Pg. 20 20, 449 words, LIGHT EMITTING POLYMERS SHINE BRIGHTER THAN EARLY ESTIMATES, Harry Yeates; Harry Yeates and Steve BushP15LEAD POLYMER DISPLAYS
... covering the use of phosphorescent **dopants** in **OLEDs,** calling them **PHOLEDs.** The technology can improve **OLED** power efficiency by ...

9. DISPLAY DEVELOPMENT NEWS, November, 2001, MATERIALS; Vol. 6, No. 10, 378 words, Red OLED Materials Are More Efficient
... complexes as red phosphorescent **dopants** for full-color **OLED** displays. These red materials and the **OLED** architectures into which they are incorporated are a ...

12. DISPLAY DEVELOPMENT NEWS, August, 2001, MATERIALS; Vol. 6, No. 7, 371 words, Cesium Deposition Controlled
This is good news for **OLED** manufacturing. Cesium is commonly used as a **dopant** in the electron transport layer for **OLEDs.** Co- evaporation processes ...

13. Business Wire, July 16, 2001, Monday, 422 words, Luxtron Announces Control of Cesium Deposition Used in OLED Manufacturing, SANTA CLARA, Calif., July 16, 2001
... commonly used as a **dopant** in the electron-transport-layer for **OLEDs.** These layers are typically formed ...

18. DISPLAY DEVELOPMENT NEWS, October, 2000, LIGHT EMITTING DISPLAYS; Vol. 5, No. 10, 401 words, Paper Describes Active Matrix Efficiency
... driven, small molecule **OLED** displays, and each incorporating high efficiency electrophosphorescent **dopants.** Hack's research includes ...

20. DISPLAY DEVELOPMENT NEWS, September, 2000, LIGHT EMITTING DISPLAYS; Vol. 5, No. 9, 313 words, Three Patents for OLEDs
... layer for enhanced **OLED** efficiency using phosphorescent **dopants.** UDC has pioneered the use of these **dopants** in **OLED** technology, which have demonstrated significantly higher efficiencies than conventional **OLED** materials. The second patent, ...

25. DISPLAY DEVELOPMENT NEWS, July, 1999, CATHODE RAY TUBES; Vol. 4, No. 7, 308 words, LIGHT EMITTING DIODES High Efficiency OLED Demonstrated
... new iridium-based **dopant** molecule that emits light based on the mechanism of **OLED** electrophosphoresence.

28. Chemistry and Industry, March 1, 1999, No. 5; Pg. 173; ISSN: 0009-3068, 4292 words, In search of the blue light; includes related article on semiconductors and lasers; blue-light-emitting diodes and lasers, Martin, Robert
... efficiency orange and yellow **LEDs** soon followed as the use of different semiconductor compounds and/or **dopants** extended the colour range to ...

29. Electronic Engineering Times, December 16, 1996, Technology, Pg. 33, Tech Files, 209 words, Polymer contacts boost plastic LEDs
... anodes for plastic **LEDs.** By trying a wide variety of different **dopants,** the project has demonstrated that high- ...

30. Electronic Business Buyer, June, 1995, No. 6, Vol. 21; Pg. S317237732, 864 words, Suppliers face big challenges inside small portable system designs; shrinking portable systems necessitate integrated passive component design, West, James
... dielectric constant materials has **led** not only to the development of **dopants** for the traditional barium ...

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Utility, Design and Plant Patents
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1. 6852429 , February 8, 2005 , Organic electroluminescent device based on pyrene derivatives, Li, Xiao-Chang Charles - Union City, California; Okamura, Yoshimasa - Sunnyvale, California; Ueno, Kazunori - Ebina, Japan (JP); Tashiro, Masashi - Los Angeles, California; Tashiro, Hideki - Los Angeles, California; Prakash, G. K. Surya - Los Angeles, California, 634755 (10), Canon Kabushiki Kaisha, Tokyo, Japan (JP), 03

CORE TERMS: layer, atom, transport, emissive, pyrene, compound, hole, electron, aryl, substituted ...

... a charge transport **dopant.** Optionally, the **OLEDs** of the present invention contain ...

2. 6841267 , January 11, 2005 , Efficient electroluminescent device, Brown, Christopher T. - Rochester, New York; Kondakov, Denis Y. - Rochester, New York, 131011 (10), Eastman Kodak Company, Rochester, New York, 02

CORE TERMS: layer, luminance, compound, host, ring, emission, dopant, cathode, organic, atom ...

... a broad range of **OLED** applications. Another useful class of **dopants** is the indenoperylene class of materials ...

... solved to provide a **dopant** compound for a light- emitting layer of an **OLED** device that exhibits improved ...

5. 6830834 , December 14, 2004 , Organic light emitting devices with host-guest bonding, Li, Xiao-Chang Charles - Union City, California; Chen, Jian Ping - Palo Alto, California; Ueno, Kazunori - Ebina, Japan (JP), 424972 (10), Canon Kabushiki Kaisha, Tokyo, Japan (JP), 03

CORE TERMS: moiety, layer, host, guest, emissive, compound, hole, electron, transport, energy ...

... in the emissive layer of an **OLED,** or as a **dopant** dispersed in a ...
... light emitting device (**OLED**) which provides some of the benefits of conventional host-**dopant** layers while avoiding some of the ...
... devices using the conventional **host**-dopant **system.** An OLED is made using the general procedure **for** OLED fabrication described ...
... doped with 1% blue **Idemitsu** dopant. **Another** OLED using a ...

7. 6824895 , November 30, 2004 , Electroluminescent device containing organometallic compound with tridentate ligand, Sowinski, Allan F. - Rochester, New York; Deaton, Joseph C. - Rochester, New York; Huo, Shouquan - Webster, New York, 729246 (10), Eastman Kodak Company, Rochester, New York, 02

CORE TERMS: layer, ring, compound, host, organometallic, atom, emission, ligand, organic, cathode ...

... excitons formed in an **OLED** device transfer their energy to the excited state of the **dopant.** However, it is generally believed that only ...
... proper choice of host and **dopant,** to collect energy from both the ...
... excitons created in an **OLED** device and to produce a very ...

8. 6824893 , November 30, 2004 , Organic element for electroluminescent devices, Hoag, Benjamin P. - Rochester, New York; Kondakov, Denis Y. - Rochester, New York, 086067 (10), Eastman Kodak Company, Rochester, New York, 02

CORE TERMS: layer, organic, compound, ring, dopant, host, substituent, atom, cathode, emission ...

... solved to provide a **dopant** compound for a light- emitting layer of an **OLED** device that exhibits improved ...

10. 6807211 , October 19, 2004 , White-light laser, Cok, Ronald S. - Rochester, New York; Spoonhower, John P. - Webster, New York, 445980 (10), Eastman Kodak Company, Rochester, New York, 02

CORE TERMS: laser, layer, organic, cavity, pixel, beam, individually, substrate, addressable, white-

light ...

... as the active layer **dopant,** the emitted **OLED** 14 light is blue, ...

PHOLED

Acronym Finder

PHOLED

***PHOLED** is an acronym for ...*
* PHosphorescent Organic Light Emitting Diode

More information about the definition of **PHOLED** may appear below:

Searched for more definitions; no definitions of **PHOLED** found.

Every attempt has been made to provide you with the correct acronym for **PHOLED**. If we missed the mark, we would greatly appreciate your help by entering the correct or alternate meaning in the box below.

Definitions have been compiled from popular search engines and multiple results provided for your review.

PHOLED

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PHOLED (phosphorescent organic light-emitting device) is a proprietary display technology developed by the Universal Display Corporation (UDC) that uses soluble phosphorescent small molecule materials to create organic light-emitting devices (OLEDs). **PHOLED** technology works on the principle that certain organic molecules emit light when an electric current is applied.

Although **PHOLED** was originally developed as a display technology for use in mobile phones, the U.S. Department of Energy awarded UDC $200,000 in contracts to develop **PHOLED** products for general lighting applications. In the United States, approximately 20% of the energy currently consumed is used to light buildings and public areas. **PHOLED**-based lighting sources, such as glowing walls, are expected to provide cost-effective and energy-efficient alternatives to traditional incandescent and fluorescent lighting.

UDC is working on a several other OLED technologies, including transparent OLED (TOLED) and stacked OLED (SOLED) displays.

>> Find white papers, products and vendors related to **PHOLED**.

Read more about it:

>> Universal Display provides a press release about the DuPont/UDC partnership for **PHOLED** research.
>> The Society for Information Display Industry News features a report, "DOE Awards UDC Contracts to Study Feasibility of OLEDs in General Lighting."

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Last updated on: Jan 13, 2003

Advances in Phosphorescent OLED Technology Provide Additional Power Efficiency Gains for White Lighting

July 30 2004

Latest News By Email

Universal Display Corporation, a leading developer of organic light emitting device (OLED) technologies for flat panel displays, lighting and other opto-electronic applications, has been awarded a $100,000 Small Business Innovation Research (SBIR) Phase I contract by the U.S. Department of Energy (DOE). The goal of this new program is to demonstrate an innovative approach using Universal Display's TOLED® transparent OLED and PHOLED™ phosphorescent OLED technologies to increase the power efficiency of white OLED lighting.

In a program entitled "Transparent, Highly-Efficient White OLEDs for Lighting Applications," Universal Display's work will involve developing and fabricating a white transparent **PHOLED** light source that is coupled to an external reflector. This approach is expected to yield improvements in optical extraction efficiency over conventional OLED designs. This novel light source may find application in diffuse lighting applications in the commercial, residential and industrial sectors. Based on features that include its thin, lightweight form and transparency, such a light source may also be used in future architectural, automotive, and wearable electronic applications.

As general lighting is responsible for more than 20% of the energy consumption in the U.S., new broadband white-lighting sources such as these are sought to offer significant gains in power efficiency and color quality while having less environmental impact than traditional incandescent and fluorescent lights. Recent breakthroughs in Universal Display's highly-efficient **PHOLED** technology have created an enthusiasm for this technology.

"We are very excited to win this contract from the U.S. Department of Energy. The continued support by the DOE indicates their commitment to fund novel approaches to next-generation lighting technologies," stated Steven V. Abramson, President and Chief Operating Officer of Universal Display Corporation. "Our **PHOLED** and TOLED technologies hold great potential for the general lighting industry, and we look forward to taking yet another step toward making OLEDs a viable competitor to traditional lighting sources."

[Comments]

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37

Novel High Performance OLED Lighting Sources--Universal Display Corporation, 375 Phillips Boulevard, Ewing, NJ 08618-1428; 609-671-0980, www.universaldisplay.com
Dr. Mike Weaver, Principal Investigator, mikeweaver@universaldisplay.com
Ms. Janice K. Mahon, Business Official, jkmahon@universaldisplay.com
DOE Grant No. DE-FG02-02ER83565
Amount: $750,000

Conventional sources of general illumination are relatively inefficient and produce a significant amount of heat. New sources of solid state lighting, based on high efficiency phosphorescent organic light emitting devices (PHOLEDs) offer the potential for significant energy savings and other environmental benefits. This project will further develop two novel approaches to use high efficiency PHOLEDs to produce white lighting sources. The first approach uses a single **dopant** electrophosphorescent organic light emitting device that produces white light through the formation of two distinct monomer and excimer emitting species. In the second approach, low-cost, high-efficiency, general illumination OLED light sources, comprising a series of striped PHOLEDs, will be fabricated. Phase I demonstrated the technical feasibility of the two novel approaches to produce white lighting sources. Specifically, with fabricated striped R-G-B light sources, it was demonstrated that stripe widths of 2mm appear featureless through a diffuser and that stripe pitches of 0.5mm will not present undesirable features as a lighting source. Also, a monomer-excimer single **dopant** white light source achieved greater than 8 lm/W at 500 cd/m^2, and a path to achieve >100 lm/W with PHOLEDs was designed. Phase II will: (1) demonstrate a monomer-excimer based white **PHOLED** light source on a glass substrate with an efficiency of 20 lm/W at a luminance of 800 cd/m^2; (2) further develop white **PHOLED** light sources based on a series of monochrome striped light sources to achieve the same performance; and (3) demonstrate and deliver 6" x 6" prototype lighting panels based on both striped and monomer-excimer **PHOLED** lighting sources.

Commercial Applications and Other Benefits as described by awardee: The technology should enable high efficiency phosphorescent light sources to become a viable technology for general illumination. It is anticipated that these improvements will form the basis for the introduction of commercial OLED lighting products.

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UDC demonstrates phosphorescent OLEDs

By Wolfgang Gruener, Senior Editor
June 17, 2004 - 15:56 EST

Ewing (NJ) - Universal Display Corporation (UDC) offered at its shareholder meeting a peek at its phosphorescent OLED (PHOLED) technologies in red, green, blue and white colors. The firm believes that the technology will decrease power comsumption and incraese the lifetime of flat panel displays.

According to the company, **PHOLED** technology can be up to four times more efficient than current technologies, which makes it a potential future technology for portable communications devices such as cell phones, PDA's, DVD players and notebooks. A side effect of lower power consumption is the extension of the lifetime of large-area OLED displays.

UDC also demonstarted its proprietary, flexible OLED (FOLED) technology on plastic. The company mentioned that it has started to use FOLEd with thin metallic substrates which are more rugged and heat-resistant than glass or plastic and may accelerate the commercialization of FOLED technology.

The use of flexible plastic or metallic substrates may lead to rollable, retractable and rugged displays with a small and lightweight form factor for use in consumer and military products.