

FLORIDA PHOTONICS QUARTERLY

The Florida Photonics Cluster Newsletter

Florida
Photonics
Cluster

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FROM THE PRESIDENT



In the 1500s and 1600s, Polish astronomer Nicolaus Copernicus, German astronomer Johannes Kepler and Italian astronomer Galileo Galilei seemed to have made a convincing case for the Earth being round. However, the title of Pulitzer prize winning journalist, Thomas L. Friedman's new book implores, "The World is Flat: A Brief History of the Twenty-First Century" (Farrar, Straus and Giroux, 2006). Of course the title is a euphemism for the new global marketplace. However, does this latest round of globalization really mean that

we are all now playing on a truly even field? Obviously that is a gross overstatement. There will always be advantages conferred by local economies, such as low cost labor in developing nations, and the scale of economies intrinsic in the armies of multi-national companies. There are still Davids and Goliaths. It doesn't mean the world is now 'more fair'. It doesn't mean that things are 'less fair' either.

What it does mean and what is the thrust of Friedman's book, is that with the widespread availability of sophisticated telecommunications tools that are affordable to almost everyone we are all now competitive in terms of broadcasting and accessing information. For those of us in the technical and industrial sales and marketing realm, it means that we are now competing with an unprecedented field of rivals.

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PHOTONICS COMMUNITY EVENTS

LIA - ICALEO 2007

Dates: 29 Oct - 1 Nov 2007

Location: Orlando, FL USA

Exhibition Date: 30 Oct 2007

SPIE - Photonics West

Dates: 19-24 January 2008

Location: San Jose, CA USA

Exhibition: 22-24 Jan 2008

UPCOMING FPC "WEBINAR" & SPECIAL EDITION OF THE FPC QUARTERLY ON THE FLORIDA PHOTONICS VENTURE CAPITAL OUTLOOK

The FPC will be hosting its first ever webinar on the topic of Venture Capital and the Photonics Industry, presented by Dennis Pape of AlphaLaunch. In addition, our next newsletter will be a dedicated discussion of venture capital funding trends for photonics companies with special emphasis on Florida edited by Dennis. Keep an eye out for details on the webinar and don't miss out on what promises to be two very informative, enlightening and valuable FPC events!



FROM THE PRESIDENT, CONTINUED...

Things just got even more exciting... and more challenging. We can no longer depend upon limited access to information as a barrier to competition; but then neither can the big dogs. Price information flows fluidly around the world by word of mouth, phone, email and the Internet. It's tough to keep secrets in a 24/7 wired world.

A lot has been written about this phenomenon and Friedman's observations, including a recent white paper by Robert Miller of Miller Heiman, and my comments follow along the same lines as others. But I want to emphasize that it is something much closer to home and less abstract than one might imagine, in particular for our businesses.

With change comes opportunity.

Those with the courage and vision to seize upon these tools and view them as weapons in their arsenal and differentiate themselves from the competition to compete at the next level will survive and prosper. Those who struggle to maintain the status quo will, as history has shown time and again, fall by the wayside.

I view my organization as that of a network of independent business people and I believe that is how many of you see yourselves. With such independence comes the power to decide how you will sell your products in terms of pricing, positioning and promotion. It also comes with the responsibility to make the right decisions in order to be successful not only for us but for the future of our business.

How will you set yourself apart from the crowd? A good relationship with the customer isn't enough and price alone won't do it – unless you're Wal-Mart and even then... Neither will features and performance alone, or having the best service but out of scale pricing or poor products.

The answer lies in delivering a combination of these parameters that customers' value. That is something that has not changed and will not change. So ask yourselves – what value am I offering to my customers? Do I know what they want? Asking yourself these questions are the first steps toward delivering it and winning in the flat world and standing toe-to-toe against giants, even those of biblical proportions.

Yours, Alexandre Fong

GROWTH OF BIOTECH HAS RESONANCE FOR PHOTONICS INDUSTRY -- ERIC USHKOWITZ, METRO ORLANDO ECONOMIC DEVELOPMENT

Recently, TechJournal South, published an article about Metro Orlando's growing technology industry and specifically the addition of bio-tech to an already robust Photonics and Optics industry. They mentioned the launch of the Metro Orlando



Economic Development Commission's *bioOrlando*; which was created to help support this burgeoning biotech and life sciences sector. *bioOrlando* will operate as a council within the Metro Orlando Eco-

omic Development Commission, dedicated to making Central Florida a major-league biomedical hub. There is a natural convergence between Orlando's already established Photonics & Optics industry and the new life science cluster. The opportunities here, including non-invasive surgery, are limitless.

To read the complete article, click on the following link:

http://www.bioorlando.com/core/fileparse/Documents/EDC%20Documents/Recent%20Articles/bioOrlando/TechJournalSouth_070907.pdf

For more information, visit:
www.orlandoedc.com

or contact:

Eric Ushkowitz, Director,
Technology Industry Development,
Metro Orlando EDC
407.422.7159.

UCF CREOL PROFESSORS AWARDED USAF SBIR FOR WORK ON QUANTUM DOT LASERS

Professors Dennis Deppe and Peter Delfyett recently received an SBIR Award from the Air Force to investigate the potential of quantum dot



Peter Delfyett

based semiconductor lasers for the generation of high peak power, ultrashort optical pulses from mode-locked diode lasers. The SBIR is in collaboration with a relatively new company: *sdPhotonics*, which is headed by Dr. Sabine Freisem. The company has key expertise in molecular beam epitaxial growth and fabrication of semiconductor optoelectronic devices.

Professor Deppe is an expert in the growth of quantum dot semiconductor material, and Professor Delfyett is an expert in mode-locked semiconductor diode lasers.

A salient feature of the quantum dot gain media that will be investigated in this Small Business Investigative Research award is the potential for ultralow waveguide loss, which has the beneficial effects of reducing the current threshold and increasing the saturation output power.

The overall goal is to demonstrate the generation of high repetition rate (~ several gigahertz) optical pulse trains, with subpicosecond pulse durations, and with a peak

power exceeding 5 watts from a monolithic mode-locked oscillator and flared amplifier.

Contact information for Professors



Dennis Deppe

Delfyett and Deppe is available from the UCF CREOL website at:

<http://www.creol.ucf.edu/People/Directory.aspx?grpID=1>



UNIVERSITY OF CENTRAL FLORIDA
COLLEGE OF OPTICS AND PHOTONICS
CREOL & FPCE

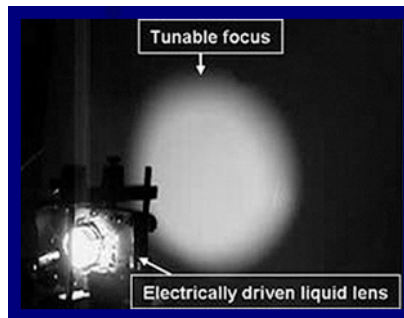
UCF AND HOLOCHIP CORPORATION ANNOUNCE GLOBAL LICENSING AGREEMENT FOR ZOOM LENS PATENTS

University of Central Florida has signed a licensing agreement with Holochip Corporation for a portfolio of technologies that



will allow zoom lenses, such as those used in digital cameras and camera phones, to be manufactured at a dramatically smaller size without compromising clarity.

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Shin-Tson Wu, Provost-Distinguished Professor of Optics, and his research team at CREOL & FPCE, The College of Optics and Photonics, have developed and patented technologies in the field of adaptive lenses, some of which closely replicate the working of the human eye.

For more information, go to the full UCF news release (July 20, 2007) at the link below:

<http://news.ucf.edu/UCFnews/index?page=newsarchive&year=2007>

COMPANY SPOTLIGHT -- OCEAN OPTICS

ALEX FONG INTERVIEWS ROB MORRIS



Ocean Optics is arguably one of the best known hi-tech success stories to emerge in recent history, not only within the photonics industry and in Florida but beyond. Ocean Optics recently joined the FPC and FPC President Alex Fong recently had a chance to sit down and chat with an always busy Rob Morris, Director of Marketing and Customer Relations at Ocean Optics and get his thoughts on how far they've come and where they think they are headed.

AF: Ocean Optics has come a long way since the small ads for miniature spectrometers first appeared in *Physics Today* and it's been terrific to watch a photonics company, as a spectator, achieve such a broad recognition in the marketplace. I remember the 10X10 booth with the surfboard at Aerosense! You were there from the start, what was it like from the inside?

RM: *It was quite an adventure in those early days. It seemed as if each phone call either introduced us to some discipline or application we couldn't have imagined before ("You want to do what?") or inspired an idea for a new product. We quickly learned that if you design a miniature spectrometer, people expect you to design miniature accessories to complement it. The other thing is, we were growing so fast that we started getting clever in how we measured milestones. For example, I remember thinking we had really arrived when our booth space at PITTCON was bigger than the space in our first office.*

AF: When we last talked you had that terrific 'Food Network' type set at Photonics West 2007 which was an

amazing thing to see at that show. I was surprised to learn that Ocean Optics had done so much business in the food and nutritional science segment. Do you find customers pull you into these new growth areas or does it come from a targeted strategy or both?

RM: *It's a combination of both. Our bread-and-butter has always been to target the researcher, regardless of what industry or discipline she came from. If optical sensing can be part of the application, we are interested. Now, we envision growth opportunities in targeting some of those applications and market areas in a more focused way, as we have with an educational line we've developed in the last year or so.*

AF: You must get a lot of unusual requests now that the Ocean Optics products are so ubiquitous. What's the strangest thing they have asked you to measure with your spectrometer?

RM: *That's a tough one to answer, because there have been all sorts of them. One category is all the icky stuff – bovine sperm, yak feces, rat brains, fish eyes, caterpillar guts – you name it. But the one crazy one that comes to mind is the guy who wanted us to donate a spectrometer to him so he could measure extraterrestrial objects – UFO debris and all that sort of stuff.*

AF: I personally love the marketing you guys have done over the past few years. They're a lot of fun and really grab your attention. What's Ocean Optics philosophy on marketing in this otherwise very conservative business?

RM: *We set out to distinguish ourselves first by actually investing in sales and marketing in a significant way, and then by approaching it as if we were selling to consumers. Regardless of who the audience is, it ultimately comes down to making an emotional connection. We*

used to joke that "the gaudier the better" was our design philosophy. In the end, if what we were doing seemed to be just over the top, that meant it was probably just about right.

AF: A lot of organizational changes have happened in the past few years for Ocean Optics including the purchase by Halma, your parent, of Labsphere. How do you view the potential synergies between these two leading brands in photonics?

RM: *We've worked on and off with Labsphere over the years, and have always had enormous respect for their technical leadership. There are a number of opportunities that we can pursue and have even begun to talk about. I think we complement each other well and can do great things together.*

AF: How do you see the future unfolding for the photonics industry and Ocean Optics role in it?

RM: *Just when it seems you have a fix on what makes photonics click, something changes – it's challenging that way. There will always be emerging technologies that people pursue – and we'll be there right with them – but ultimately, I think it will be about applying optical-sensing technologies to solve both existing and emerging measurement problems in new and better ways. For Ocean Optics, the things that really define us – that we're smart, innovative, flexible and solvers – will carry us into the photonics industry of the future.*

AF: Thanks for your time Rob!

RM: *Happy speaking with you and all the best!*

PRESS RELEASE

LIGHTPATH TECHNOLOGIES ANNOUNCES COMMON STOCK SALE -RAISES 3.2 MILLION OF EQUITY CAPITAL

**July 26, 2007 (NASDAQ: LPTH)
LightPath Technologies, Inc.**

announced that it has raised gross proceeds of approximately \$3.2 million through the sale of 800,000 shares of common stock to certain institutional and private investors at \$4.00 per share. LightPath, a leader in optics for laser-based applications, will use the net proceeds from the offering for working capital to promote continued growth of the business in imaging applications with new product development and equipment acquisition and development, including proprietary lens press equipment.

Investors also received warrants for the future purchase of up to 240,000 shares of the Company's common stock. The warrants are exercisable for a period of 5 years beginning on January 26, 2008 at \$5.50 per share. If all of the warrants are ultimately exercised, LightPath will receive additional proceeds in the amount of \$1.32 million. First Montauk Securities Corp. acted as exclusive placement agent for the offering.

Neither the shares purchased in this private placement nor the shares issuable upon exercise of the warrants have been registered under the Securities Act of 1933, as amended, and may not be offered or sold in the United States absent registration or an applicable exemption from registration. The Company has agreed to cause the shares issued in the private placement and the shares issuable upon exercise of the warrants to be registered for resale with the Securities and Exchange Commission. This release does not constitute an offer to sell securities. Ken Brizel, President & CEO of LightPath, said, "LightPath is now pursuing new opportunities in the imaging market.

This capital raise will provide additional resources for manufacturing expansion and development with the necessary working capital to accomplish our objectives. We are pleased that these investors recognize the progress we have made in diversifying our customer base and expanding our product offerings while continuing to improve our profitability and cash flow performance. We continue to be optimistic that our future results will confirm the confidence in our prospects that this investment demonstrates."

About LightPath: *LightPath manufactures optical products including precision molded aspheric optics, GRADIUM® glass products, proprietary collimator assemblies, laser components utilizing proprietary automation technology, higher-level assemblies and packing solutions. LightPath has a strong patent portfolio that has been granted or licensed to us in these fields. LightPath common stock trades on the Nasdaq National Market under the stock symbol LPTH.*

**Contact: Ken Brizel, President & CEO
or Dorothy Cipolla, CFO
407- 382-4003 www.lightpath.com
Email: inv_rel@lightpath.com**

This news release includes statements that constitute forward-looking statements made pursuant to the safe harbor provisions of the Private Securities Litigation Reform Act of 1995. This information may involve risks and uncertainties that could cause actual results to differ materially from such forward-looking statements. Factors that could cause or contribute to such differences include, but are not limited to, factors detailed by LightPath Technologies, Inc. in its public filings with the Securities and Exchange Commission. Except as required under the federal securities laws and the rules and regulations of the Securities and Exchange Commission, we do not have any intention or obligation to update publicly any forward-looking statements, whether as a result of new information, future events or otherwise.



FLORIDA PHOTONICS CLUSTER MEMBERS

- AlphaLaunch**
www.alphalaunch.com
- Analog Modules, Inc.**
www.analogmodules.com
- Florida High Tech Corridor Council**
www.floridahightech.com
- Harris Corporation**
www.harris.com
- High Tech Photonics**
www.HT-PhotonicsUSA.com
- L3/ALST**
www.l-3com.com/ALST/
- LaserPath Technologies**
www.laserpathtech.com
- LightPath Technologies**
www.lightpath.com/index.html
- Lockheed Martin Missiles & Fire Control**
<http://www.lockheedmartin.com/mfc/>
- Metro Orlando Economic Development Commission (EDC)**
www.orlandoedc.com
- Northrop Grumman Laser Systems**
www.dsd.es.northropgrumman.com/laser/
- Ocean Optics**
www.oceanoptics.com
- Opnext, Inc.**
www.opnext.com
- Optronic Laboratories, Inc.**
www.olinet.com
- Product Design Solutions**
www.productdesign.com
- Ray Williamson Consulting**
www.ray-optics.com
- UCF CECS, Dept of Engineering Technology**
www.ent.ucf.edu
- UCF College of Optics and Photonics**
www.creol.ucf.edu
- UCF Office of Research & Commercialization**
www.research.ucf.edu
- University of South Florida**
www.usf.edu
- VLOC**
www.vloc.com/vlochome.htm



WHY JOIN THE FPC?

MAKING MONEY STARTS WITH A GOOD CONNECTION.

BENEFITS OF MEMBERSHIP:

- Identify common needs and interests
- Leverage to develop opportunities through joint efforts, pooled resources and knowledge
- Regional, Statewide, National and International Reach
- Small, Medium, Large Corporations, Academe and Government Benefit!
- Networking opportunities through annual and regional membership meetings
- Discounts (10%) on exhibit space and other special benefits at SPIE and OSA conferences. Typical benefit per show starts from over \$300 (10' X 10' booth) and \$600 (10' X 20' booth).
- Assisted access to venture capital and opportunities to help develop Florida photonics companies into worldwide participants

FPC MEMBERSHIP BENEFITS INCLUDE:

- Discounted membership rate with the University of Central Florida's CREOL Industrial Affiliates Program
- Admission to all Florida Photonics Cluster Events – for all your employees – included in membership
- Access to service providers that can assist your company with the actions that are necessary for sustaining your business, such as banks, suppliers, and professional marketing, communications and legal services organizations at preferred rates
- An expansive resource base that includes partnerships with Enterprise Florida, area economic development organizations, the Florida High Tech Corridor Council, and UCF CREOL -- to provide access to incentives and business development programs and research
- Opportunities to participate in the curriculum development in state universities and community colleges and advanced access to Florida's best and brightest students and the additional ability to recruit nationwide through the FPC website
- The strength of a unified industry voice, providing a platform for local and state legislative support
- Visibility for your company through FPC's website, marketing literature, and trade show displays with member spotlight on companies and products and opportunities to participate in state and national sales and marketing efforts
- Liaison opportunity with other international photonics organizations such as other photonics clusters (Arizona, Rochester, UK), scientific societies (OSA, SPIE) and industry trade organizations (OIDA).

For full information on the FPC and an application form, go to <http://www.floridaphotonicscluster.com/>