

Alex Fong

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Florida Photonics Quarterly The Florida Photonics Cluster Newsletter

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FROM THE PRESIDENT - Alex Fong

I was recently asked by the staff editors of OSA's publication *Optics and Photonics News* for what I thought were the photonics major trends and stories this past year and I thought I would share an abbreviated summary here. Perhaps the biggest positive headline this year related to optics this year was the NASA Curiosity Mars Rover because it demonstrated to the broad public what role optics and photonics can play in furthering our knowledge (BTW, FPC member Ocean Optics had an instrument on Rover!). The worst was probably the failure of Solyndra which conflated solar photovoltaic technology with negative politics, which as we have seen can impact future public and private support and investment in otherwise broadly beneficial development. The least-covered story was how resilient the optics and photonics industry has been, given the incredibly challenging economic backdrop. Many photonics businesses not only survived but grew! This is due in large part to how ubiquitous the technology is in our lives, reflecting a built-in hedge through diversification. Still by far, the most important event was the release of the U.S. National Academies report "Optics and Photonics, Essential Technologies for Our Nation," aka Harnessing Light II which will without doubt shape policy for years to come (see the HL-II article in this newsletter).



How about you? What did you think was the most important story for our industry this past year?

Member Company Spotlight: American Photonics Company

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This month we are fortunate to present a spotlight on one of our newer members, American Photonics Company. Barry Tyler is the Vice-President of American Photonics Company (APC), a manufacturer of high power CO2 and precision infrared optics. APC works solely with zinc selenide, zinc sulfide, silicon, germanium, calcium fluoride and gallium arsenide. APC capabilities range from prototype quantities and high production, as well as coating services for 3 to 14 μm . Barry originally hails from Richmond, Virginia but now makes his home in Bradenton, Florida, and holds a Bachelor of Science in Aerospace Engineering from the University of Virginia.

FPC: Can you tell us about your company history?

BT: The company started out of a realization that the second largest manufacturer in the CO2 industry was acquired by the industry's largest and that created a competitive void. To obtain long term stability, we started a manufacturing facility complete with the latest optical fabrication technology. APC was a true scratch start business. APC has grown over 60% in the last 2 years, creating a whole new set of challenges: new building, new employees, more equipment and the list goes on.

FPC: What are some challenges you face today? How are you coping with the current economic conditions?

BT: Let me answer this by saying that we exist to bring infrared optics manufacturing back to the United States. The industry leader is in Pennsylvania, but do the majority of their manufacturing in Asia. Our machining background brings some fresh ideas to optical manufacturing, thus making us more competitive with optics out of Asia. With low cost manufacturing and an unwavering dedication to the highest quality, the market has access to the great product. Couple that with many stock items and a small business customer service attitude, the market then has all it needs to take advantage of APC optics.

FPC: What distinguishes your company/organization from your competitors or other, similar organizations?

BT: The company is run by two engineers with limited optical background, but a tremendous amount of manufacturing background. There is strong belief in R&D and innovation, thus creating better and faster ways of producing optics. We have to push conventional wisdom to new levels to compete globally. I am not sure if I can label our discoveries as accidental, I can tell you there have been a lot of them and will continue to be so.

FPC: Do you seek to partner/collaborate with other

organizations: universities, companies, other? If so, is it for research, marketing, manufacturing, other?

BT: Our business is heavy CO2 optics, but we know the central Florida area has a lot of infrared optics applications, and our hope is to partner with that industry. Doing business with local companies provides obvious advantages. Our shop is open to our customers, so visits are less expensive and there is peace of mind when you can physically see your product being manufactured. Our capabilities are both prototype or production, whichever suits the requirement.

FPC: Do you have a memorable success story you'd like to share?

BT: Laser calorimetry, our way of measuring absorption in high power CO2 laser optics, cannot be purchased off the shelf. Our measurements always exceeded industry standards, so the accuracy of our numbers came into question. Initiated by one of our competitors, three companies measured the same optics and compared notes. When we learned our laser calorimeter was very accurate, we knew all our efforts were rewarded. We were supplying the lowest absorption lenses in the industry. We do something different every day. The optics business presents many challenges, and it can be humbling at times, but to build optics that help our society in so many ways is very rewarding. From rockets to dog tags, our optics are everywhere.

FPC: Future plans?

BT: We will continue to grow at a rate that keeps our business financially strong. We will continue to develop new and innovative coatings that allow lasers to explore new markets. Our goal is to be the absolute best at manufacturing infrared optics, and not necessarily the biggest. Our company is build to last, and we intend to be a positive and proactive player in the laser optics field.

FPC: Thanks so much for talking to us!

BT: Most welcome, it was fun!

SAVE THE DATE! FPC Annual Meeting, Wednesday 12 December.

The next FPC meeting will be held December 12, 3:00pm-5:00pm followed by a networking reception, and no-host dinner for those interested.

Where: ER Precision Optical Corporation, 805 W. Central Blvd, Orlando, FL 407-292-5395 www.eroptics.com

Hosted by: ER Precision Optical Corporation & Florida Photonics Cluster

Program: The program includes a presentation on Customer Relationship Management (CRM) and an overview and tour of ER Precision Optical facilities.

To attend: send an RSVP email to Jim Pearson, FPC Executive Director - jpearson@mail.ucf.edu with name, company, title, and contact information (phone, email). Also, indicate interest in staying for the reception and for attending a no-host dinner at a nearby restaurant after the meeting. All interested parties are welcome to attend.

Attendance is free, but **RSVP is needed by 5 December 2012**. The complete agenda and other details will be sent to all who RSVP.

Congratulations to Lightpath Technologies!

Lightpath Technologies - Orange County received one of the 2012 William C. Schwartz Industry



Innovation Awards at the annual Metro Orlando EDC awards event held Thursday, September 6, 2012.

Central Florida Research Park-based Lightpath Technologies pioneered the development of precision glass molded chalcogenide lens, which has a significant cost advantage to previous technologies while providing higher quality optics and superior performance. The glass molded lenses can be used in numerous infrared optics applications such as thermal imaging, security and surveillance, target tracking and identification and automotive vision enhancement. They are an industrial affiliate of CREOL at the University of Central Florida and an active member of the Florida Photonics Cluster.

Congratulations to Optigrate!

Optigrate Receives MACF Award

FPC Member Optigrate Corp. received the 2012 Small Manufacturer of the Year award from the Manufacturers Association of Central Florida (MACF) at its Annual President's Dinner on November 1.

"This award is a significant milestone for us," says Dr. Alexei Glebov, OptiGrate's CEO and President. "OptiGrate being recognized as a small

manufacturer of the year clearly shows that we succeeded in transitioning advanced university research into commercial



Dr. Glebov accepting award from MACF President Tom Muller

products that we manufacture now at our own new production plant in Oviedo, FL, and deliver to hundreds of customers all over the globe".

Today, OptiGrate is a company with 30 employees that more than doubled in the last 3 years. OptiGrate spun out from the College of Optics at the University of Central Florida (UCF/CREOL) in 1999. "OptiGrate demonstrates a good example of efficient synergy between academic research, government funding, and commercial success", adds Alexei Glebov.

Congratulations to Dr. MJ Soileau!

Dr. M.J. Soileau, UCF's Vice President for Research and Commercialization, recently earned the first Distinguished Service Appreciation Medal from the Institute of Photonic Sciences in Barcelona, Spain, for his role in establishing and supporting the organization, one of the world's foremost independent optical science research centers.



Dr. Soileau served as the first director of UCF's Center for Research and Education in Optics and Lasers (CREOL) before being named a UCF vice president in 1998. He currently serves as a member of the FPC Board of Directors.

Lluís Torner, director of the institute, credited Soileau with supplying the necessary direction to establish a center capable of conducting cutting-edge research in optics and photonics at the highest international level. Torner said the center benefited from Soileau's experience, specifically relating to technology transfer.

Jenoptik's Michael Mertin elected by Photonics 21

Michael Mertin, President of Jenoptik AG, has been elected president of Photonics21 by the Board of Stakeholders at a meeting on 13 November in Brussels. Photonics21 is the European Technology Platform for photonics that represents photonics research priorities at European level and aims to implement a common photonics strategy for Europe and to align synergies between industry, science and politics.

Jenoptik Optical Systems in Jupiter, FL is an FPC member company.

Medical Imaging 2013 in Orlando

SPIE Medical Imaging

This internationally recognized forum will take place 9-14 February 2013, at Disney's Coronado Springs Resort, Lake Buena Vista (Orlando Area), Florida. The extensive technical program covers the latest advancements in medical imaging including a special emphasis on medical image acquisition, display, processing, analysis, perception, decision support, imaging informatics,



and more. Plan to participate or attend. For more information, visit <http://spie.org/x12166.xml>.

WELCOME NEW FPC MEMBERS!

The FPC is delighted that 7 new members have joined the association so far in 2012. Information on these new members as well as on the 50 continuing members is available on the FPC website at

<http://www.floridaphotonicscluster.com/florida-photonics-members/index.php>. The following is a list of the new members:

1. Applicote Associates, LLC
2. Custom Calibration Solutions, LLC
3. Florida League of Defense Contractors
4. Infrared Systems Development Corp
5. Inrad Optics
6. OptoSigma
7. Small Business Development Center at UCF

Please help us welcome these new participants in and supporters of the FPC!

Utilize the services and discounts provided by FPC member supplier companies!

One of the advantages of FPC membership is the network of suppliers to our industry, and particularly the suppliers who have joined the FPC and some of whom offer discounts to FPC members. Here is a brief list; further information is on the FPC website under the Members listing.

- **[Bond, Schoeneck, & King, PLLC Attorneys.](#)** Provides a full range of Intellectual Property services
- **[Diamond Level Service.](#)** Event Design and Management services for trade shows, special events, conferences, and business presentations. Discounts are provided to FPC members.
- **[Laser Focus World & BioOptics World.](#)** Discounts provided to FPC members for ads in the magazines: 20% for print media, 15% for digital media.
- **[Laser Institute of America.](#)** Discounts provided on LIA membership when joining for the first time, on ads in LIA media, and exhibit space at LIA meeting events.
- **[OnTarget Web Solutions.](#)** Provider of internet marketing and web design services, including FPC web design and hosting.
- **[Optics Professionals, LLC.](#)** Professional recruiting services, representing companies and individuals in optics and imaging technologies and related industries.
- **[Williams & Associates.](#)** Provides wide range of promotional products and marketing services. 10% discount to FPC members.

In addition, if not yet a member, please urge your company to become a member of our partner associations:

- **[Florida League of Defense Contractors.](#)** A

statewide, state-focused advocacy and networking group with the mission to promote the business interests of Florida defense contractors and defense economic stakeholders.

- **Laser Institute of America**. Corporate Members receive quantity discounts on all LIA products and services, reduced advertising rates in LIA's Journal of Laser Applications®, Membership Directory and LIA TODAY, a free web link from LIA's website to the web address, and a complimentary fifty word listing with company logo in LIA's annual Membership Directory.
- **Manufacturers Assoc. of Central Florida**. A non-profit organization enhancing the manufacturing industry in Central Florida.
- **Metro Orlando Economic Development Commission**. The EDC provides key services and support, which range from relocation and expansion expertise to export counsel to long-term planning with our community partners.
- **Optoelectronics Industry Development Assoc.** OIDA provides a wide range of programs and services including: workshops, industry/roadmap reports, policy and funding advocacy, idea exchange sessions, professional networking activities, a multi-media publication and presentation archive, and exclusive member benefits.
- **SPIE Corporate Membership**. The SPIE Corporate Membership program provides exhibition booth "priority points", discounts, brand exposure, business networking opportunities, as well as access to information, education, government relations, student outreach, and more.
- **CREOL Industrial Affiliates**. The Industrial Affiliates program provides to industrial corporations, organizations, and individuals many benefits.

Harnessing Light II

The Harnessing Light II (HL-II) project is an update of the report by the National Academies on the Optics and Photonics industry in the USA done in 1998 (see http://www.nap.edu/catalog.php?record_id=6404 for a free PDF download of that report). The 1998 HL report spoke mainly to the science of optics and photonics. The HL-II report speaks strongly also to engineering and the impact of optics and photonics on the US economy and the significant work being done in other countries in the field that will impact US competitiveness if the US does not accelerate its emphasis on manufacturing as well as R&D in optics and photonics.

The HL-II report, titled "Optics and Photonics: Essential Technologies for Our Nation", is available on the National Academies Press website for purchase or a free download of a PDF pre-publication version:

http://www.nap.edu/catalog.php?record_id=13491

Corridor Universities Ranked by U.S. News & World

Report

Universities within the Florida High Tech Corridor's 23-county region received national recognition recently when U.S. News & World Report released its annual "Best Colleges" rankings. Of the 199 schools ranked on the list, the University of Florida (UF) came in at No. 54, while the University of South Florida (USF) placed 170th. The Florida Institute of Technology, a private college in Brevard County, was listed at No. 160, making it the second-highest ranked private school in the state behind only the University of Miami. The University of Central Florida (UCF) moved up three spots this year to No. 174 and was ranked as one of the country's top 10 "up-and-coming schools" for the fifth straight year. UF and UCF also made the top 100 public schools in the nation, coming in at 17th and 98th, respectively.



In addition, USF St. Petersburg was recognized as one of the top 30 public regional universities in the South. Embry-Riddle Aeronautical University, based in Daytona Beach, received national recognition as well, as its undergraduate aerospace engineering program was named best in the nation for the 13th straight year. U.S. News & World Report also ranked Embry-Riddle among the top universities in the South, coming in at No. 13, marking the 11th straight year that Embry-Riddle has placed among the top 25 schools in this category.

USF's graduate entrepreneurship program continued its ranking on a list of the top 25 graduate programs compiled by The Princeton Review and Entrepreneur Magazine, coming in at the No. 11 spot. The program has seen nearly 100 businesses started by graduates over the last decade.

For more information and a full list of U.S. News & World Report's rankings, visit <http://colleges.usnews.rankingsandreviews.com/best-colleges/rankings>

Photonics Technician Certifications Now Available!

The Photonics Technician Certifications developed by the FPC with the support of many other organizations are now available from ETA-International (<http://www.etainternational.org>). Two categories of certification - Photonics Technician and Precision Optics Technician - are in place, each of which have 2 subcategories. See http://www.eta-i.org/stand_alone_certifications.html and scroll to "Fiber Optics and Data Cabling" to view the criteria and learn more about the certifications, which are the first ones in the US for photonics technicians, with the exception of the fiber optics technician categories that ETA-I has had for several years.

Florida HIGH TECH 2012 magazine released

Check out the mid-year digital release of the annual magazine, florida.HIGH.TECH 2012 at <http://read.dmtmag.com/i/83317>

The main cover story feature includes a look at high tech manufacturing and technologies that are "Made in the Corridor," including Ocean Optics. To go directly to the page, use this link, which includes the page number for the article: <http://read.dmtmag.com/issue/83317/58>

FPC-MACF Joint meeting, September 27, 2012

A joint meeting of the FPC and the Manufacturers Association of Central Florida (MACF) was held Sept. 27, 2012 at the Florida Solar Energy Center (FSEC) The program had the following elements:

1. Presentation and discussion on *Harnessing Light II* report, recently released. Dr. Paul McManamon, Exciting Technology, LLC; SPIE Past President (2006); and co-chair of the report.
2. Presentation on "*Economic Impact of Optics and Photonics*". Steve Anderson, SPIE Industry and Market Strategist
3. Update on "Southeast Regional Laser and Fiber Optics Center", Dr. Chrys Panayiotou, Professor and Department Head, Electronics Engineering Technology, Indian River State College
4. Seminar on "Electric Cars Fueled by Solar to Electric Panels Manufactured in Florida at \$1.08 a gallon"; Dr. Jim Fenton
5. Seminar on "Photovoltaic Manufacturing Consortium"; Dr. Winston Schoenfeld, Associate Professor of Optics & the Florida Solar Energy Center (FSEC)
6. Overview and tour of FSEC

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Why Join FPC? To Make Money!

Benefits of FPC 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 all Benefit!

FPC Membership Benefits Include:

The strength of a unified industry voice for:

- Marketing and increased visibility of the photonics industry and FPC members through strategic marketing efforts
- Developing local and state executive and legislative support
- Interaction with economic development groups
- Workforce development, and advancement and improvement of educational infrastructure
- Obtaining group discounts
- Opportunities to participate in state and national sales and marketing efforts

And even more:

- Visibility for and ready access to your company through links from FPC's website, marketing literature, and trade show displays.
- An expansive resource network that includes partnerships with Enterprise Florida, area economic development organizations, the Florida High Tech Corridor Council, and UCF's CREOL, The College of Optics & Photonics to provide access to incentives, business development programs, research, and education.
- Annual and regional meetings of membership for networking
- Participation in optics/photonics-focused data collection with an annual survey monitoring the pulse of the industry
- Opportunities designed to develop Florida photonics companies into worldwide market participants
- Opportunities to participate in curriculum development at state universities and colleges
- Facilitated access to Florida's best and brightest students and the additional ability to recruit nationwide through the FPC website
- Membership Directory
- Visibility to potential customers
- Access to service providers that can assist your company and provide discounts
- Spotlight on member companies and products through periodic newsletter
- Several FPC member discount opportunities from photonics professional organizations, publishers, and service providers.

**[Join FPC today and enjoy the benefits of membership!
For more information, visit floridaphotonicscluster.com.](http://floridaphotonicscluster.com)**

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[The Florida Photonics Cluster \(FPC\) Website now accepts donations, member dues, and other payments through Card Systems, Inc. \(http://www.cardsystems.com\)](http://www.floridaphotonicscluster.com)

Card Systems is a fast, convenient and safe way to make online purchases and transactions via credit card. Note that submission of a membership application is still required for new applicants joining the FPC, and for updating renewing memberships. A link is provided from the new FPC website.

Greetings FPC Members and Friends,

The Florida Photonics Cluster is designed to support the growth and profitability of the Florida photonics industry through the strength of a unified voice to make Florida the place to go for photonics solutions.

The FPC is dedicated to enhancing the industry through effective collaboration by bringing together the knowledge, expertise, and service that each of its members organizations has to offer.

FPC Goals

- Foster the expansion and growth of Florida's optics and photonics industry by partnering with economic development organizations, the state universities, and community colleges, and local and state governments.
- Market Florida's optics and photonics companies worldwide.
- Facilitate and provide a means of communication within the business community.
- Partner with the Florida education community to enhance and develop a competent statewide optics and photonics-based workforce.
- The FPC is a 501c(6) not-for-profit corporation, registered with the Florida State Division of Corporations.

[For more information, visit www.floridaphotonicscluster.com today!](http://www.floridaphotonicscluster.com)

Sincerely,

Alexandre Fong, President
Florida Photonics Cluster

Jim Pearson, Executive Director

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