

Alex Fong

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Florida Photonics Quarterly

The Florida Photonics Cluster Newsletter

In This Issue

[FROM THE PRESIDENT](#)

[ARTICLE HEADLINE](#)

[RSVP Now! Next FPC meeting](#)

[WELCOME NEW FPC MEMBERS](#)

[FPC Member Supplier Companies](#)

[Randy Berridge receives Leadership Florida 2012 Distinguished Member Award](#)

[UCF's Economic Gardening Institute receives 2012 Marketing Award](#)

[Harnessing Light II](#)

[Photonics Technician Certifications Now Available!](#)

[Florida Virtual Entrepreneur Center](#)

[FPC 12/6/11 Meeting Notes](#)

[FPC 4/12/12 Meeting Notes](#)

August 2012

FROM THE PRESIDENT - Alex Fong

"History will have to record that the greatest tragedy of this period of social transition was not the strident clamor of the bad people, but the appalling silence of the good people.", Martin Luther King, Jr.

Public-private partnership. There I said it and I truly hope that no one is as offended by the notion as seems to be the case in current political discourse. Public-private partnerships are a central theme throughout the history of American innovation and economic success it is needed now more than ever.

Countries like China and India that now compete with us have learned by example from us the value of this approach from which we built our vast infrastructure, from our railways to our information super highways. It is how America landed on the moon and how it invented MRIs. The Chinese government spends vast amounts of government capital in a wide array of firms that develop everything from photonics based commercial products such as lasers, LEDs and optical routers to satellite technology. While there is central planning at work the investments are often quite broad. They are not picking winners and losers - like we have done so in the past they are helping to seed industries.

I was reminded of the importance of public-private partnerships at the recent executive forum where Ken Kaufman of Hamamatsu passionately noted that many of the panelists beside him worked for laser firms such as Trumpf that had spun-off government research labs. I was grateful for the reminder.

So how is it that America the nation that invented public-private



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partnerships through organizations such as NIST and NASA has so forgotten its own history that is now vilifying one of the cornerstones of its success? Sure, it's a political season and every is throwing out anything and everything to make their case for a vote but ignoring a recipe for success that has worked so well for us that others now emulate it is economic suicide. With that in mind I urge you to loudly remind our leaders both acting and those in waiting to study carefully their history. Whatever you may feel about the parties or candidates let's remind them how we got here and what that formula for success involved. Fact and our future should not be a partisan issue.

COMPANY SPOTLIGHT: INRAD OPTICS

A New Yet Familiar Name



Recently, Alex Fong was able to sit down and talk with Amy Eskilson, Vice President, Sales and Marketing and an Officer of the Company at Inrad Optics, Northvale, NJ and Sarasota, FL. Amy recently led the effort to rename and re-brand the organization, which was originally founded in 1973 as Inrad, Inc., one of the seminal non-linear crystal growth companies.

Previously Director of Business Development for Thorlabs from 2001 to 2011, Amy began her career in Photonics at Thorlabs in 1992, and assumed various sales and marketing roles, including Inside Sales and Technical Support Manager. During her tenure at Thorlabs she was also involved in photonic start-ups Nova Phase, Inc., Menlo Systems, Inc. and Idesta Quantum Electronics, and currently serves on the Board of IdestaQE.

Inrad Optics (OTC Bulletin Board: INRD) is a publically held, vertically integrated photonics manufacturer offering crystal-based optical components and devices, custom optical components from both glass and metal, and precision optical and opto-mechanical assemblies.

Manufacturing capabilities include solution and high temperature crystal growth, extensive optical fabrication capabilities, including precision diamond turning and the ability to handle large substrates, optical coatings and in-process metrology expertise.

AF: Can you tell us about your company background and history?

AE: Inrad Optics was originally established in 1973 as Inrad, Inc. in Northvale NJ. Founded by Dr. Warren Ruderman, an early leader in the area of novel materials development, the business focused on its crystal products in the early years, and later added fabrication of traditional optical glasses. In 2003 the Company acquired Laser Optics of Bethel CT., and in 2004 added MRC Precision Metal Optics, Sarasota

FL.

The "growth by acquisition" strategy set the stage for a name change from Inrad to Photonic Products Group, Inc. in 2003, and the name was kept in place for the next nine years. In 2011 we undertook a significant review of our brand position and concluded that the name "Photonics Products Group" had not achieved a standard of brand equity over the years. In other words, no one could remember our name! Our anecdotal experience was backed up by marketing science - it seems that when a company name is composed of very common words used within any particular industry it becomes very difficult to create a memory around that company name.

The recent name change leverages the positive historical brand equity of the original Inrad name, and more clearly communicates the Company's business activities to both the photonics marketplace and the investment community. As we are a small publically traded Company, we need to differentiate ourselves in front of both audiences.

Inrad Optics today offers unique expertise in the areas of Crystals and Devices, Custom Optics and Metal Optics. We also leverage the synergistic overlap between the three product areas, and have designed a formidable set of capabilities and services.

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

AE: We face some of the same challenges that many small photonics companies face. We have a great set of core capabilities and resources that are necessary to maintain in order to offer real value to our customers. Most of our business is custom in nature, and in this economic environment not all our capabilities are fully utilized at all times. We work to mitigate potential downtime by carefully cross-training on the production floor and maximizing production planning efficiencies wherever possible.

Defense sector business is roughly 50% of our total revenue. We are currently assessing the effect that any federal defense spending sequestration might have on our business. We have been working to diversify our business over the last several years, and we are continuing to push into other markets, chiefly the medical and industrial laser markets.

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

AE: Our chief differentiator is broad and deep optical materials expertise. In Sarasota, we have expertise in unique materials such as Beryllium and AlBuMet, as well as in aluminium and stainless. Additionally, we are processing experts in electroless nickel and electrolytic gold plating.

In the Northvale facility our materials expertise runs from traditional glass materials to non-linear crystals and devices. We have capabilities to grow over ten different materials in house, from UV through the IR spectrum. We are one of 3 companies worldwide that grow Zinc

Germanium Phosphide (ZGP), a material well suited across the IR spectrum as an OPO and a harmonic generator. ZGP is also a material of great interest in THz arena.

We also specialize in multi-element optical assemblies and large optics, up to 24" in diameter in glass and up to 1 meter in metal. I believe that our customers derive a great deal of value from our ability to solve complex optical problems, from guidance in choice of material through optimization of a customer's design for manufacturability.

AF: Do you seek to partner/collaborate with other organizations: universities, companies, other? If so, is it for research, marketing, manufacturing, other?

AE: Inrad Optics has a long history of collaboration with Universities and the National Labs, as well as more commercial organizations in the defense market and general photonics. One of the more well-known collaborations has been with Lawrence Livermore National Lab, beginning in the mid 1990's. This effort resulted in a novel crystal growth technique called fast solution growth, and we grew KD*P crystals on the order of 600 lbs. in 54 days.

More recently, we have partnered with LLNL on solution growth techniques for radiation detection crystals, specifically materials for the detection of fast neutrons. We recently received an SBIR Phase II grant from the Domestic Nuclear Detection Office of the Department of Homeland Security to further develop this material.

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

AE: Inrad Optics was founded in 1973, nearly 40 years ago, and has had its share of successes over the years. One recent success story has a common thread that I believe is integral to many such stories - that of collaboration. Our Custom Optics group is finally celebrating production level deliveries on a very complicated beamsplitter assembly for a defense prime. This is an effort that was over a year in the making, and a success that could not have been possible without the collaboration of our customer. We persisted with the effort because the customer was there with us every step of the way. We encountered many technical and supply chain hurdles, but the effort has also produced valuable experience that we are now leveraging with a commercial customer on a somewhat similar complex multi-element assembly. We are working hard at Inrad Optics, and I believe that the hard work is preparing us for new challenges and future success.

AF: Thanks for talking to us!

AE: My pleasure!

RSVP Now: Upcoming Joint FPC-MACF Meeting, September 27

The next FPC meeting will be held jointly with the Manufacturers Association of Central Florida Thursday, September 27, 2:00pm-5:00pm followed by a networking reception, and no-host dinner for those interested.

Program:

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. **FPC business & overview**; **Alex Fong**, FPC President; Sr. VP, Life Sciences & Instrumentation, Gooch & Housego
5. **"MACF Overview"**: **Sherry Reeves**, Executive Director, Manufacturers Assoc. of Central FL (MACF)
6. **Overview of FSEC**; **Dr. Jim Fenton**, Director of FSEC & Professor, UCF/MMAE
7. Seminar on **"Advances occurring and needed in manufacturing for energy reduction and/or energy generation without fossil fuels"**; **Dr. Jim Fenton and/or Dr. Winston Schoenfeld**
8. Seminar on **Photovoltaic Manufacturing Consortium**; **Dr. Winston Schoenfeld**, Associate Professor of Optics & the Florida Solar Energy Center (FSEC)
9. **Tour of FSEC**, followed by reception & networking; hosted by FPC, MACF, and FSEC
10. **Go to no-host dinner at nearby restaurant**

Where: Florida Solar Energy Center. 1679 Clearlake Rd., Cocoa, FL. (321)638-1019

Hosted by: FSEC, Florida Photonics Cluster, Manufacturers Association of Central Florida

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 17 September 2012.**

WELCOME NEW FPC MEMBERS!

The FPC is delighted that 6 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. Infrared Systems Development Corp
4. Inrad Optics
5. OptoSigma
6. 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.

Randy Berridge receives Leadership Florida 2012 Distinguished Member Award

The FPC extends its strongest congratulations to Randy Berridge, President of the Florida High Tech Corridor Council (FHTCC) on receiving the Leadership Florida 2012 Distinguished Member Award at the recent annual meeting of the Florida Economic Development Council (FEDC). Randy and the FHTCC have supported the FPC since its founding. The FHTCC continues to be a vital FPC member through both direct financial and in-kind support, which makes the FHTCC a Silver Patron of the FPC. Congratulations Randy, and thanks for your support of the FPC!

UCF's Economic Gardening Institute receives 2012 Marketing Award

The FPC congratulates Dr. Tom O'Neal, Associate Vice President of Research and Commercialization at the University of Central Florida (UCF), and Executive Director of the UCF Business Incubation Program (UCFBIP) and the Florida Economic Gardening Institute (FEGI), along with his team at the FEGI on receiving one of the 2012 Promotional and Marketing Innovation Awards at the recent 2012 Florida Economic Development Council (FEDC) Conference. The 2012 FEDC Promotional and Marketing Award winners are recognized for their exceptional accomplishment in outstanding creativity, strategy and tactics. Several UCF organizations are FPC members including the Business Incubator, Photonics Incubator, and Small Business Development Center.

Harnessing Light II

The Harnessing Light II (HLII) 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 HLII project will speak 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 HLII project by the National Academies, "Capitalizing on Optical Science Trends and Challenges for Future Research" (COST) is sponsored by DARPA, NSF, NIST, ARO, DOE, and National Research Council Funds. The project is supported by SPIE, OSA, The IEEE Photonics Society, and USAC/ICO and others.

The committee working with the National Academies can be found at <http://www8.nationalacademies.org/cp/committeevue.aspx?key=49336>.

The HLII report is scheduled to be released by the end of August 2012.

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 Virtual Entrepreneur Center (FLVEC)

The Florida Virtual Entrepreneur Center (www.flvec.com) is a free web portal designed to connect entrepreneurs with business support organizations, programs and service providers who can support their new or growing business.

Entrepreneurs: Navigating the VirtualEntrepreneurCenter is easy and free. Are you starting a business? How about expanding an existing operation? Considering relocating? By simply selecting any of these topic areas and many others, you will instantly be connected with local, state, regional and national resources, programs and service providers who can support all of your business needs.

Business Owners & Service Providers: If you are a local business or service provider offering business-related products and/or services meeting the needs of entrepreneurs and/or businesses, you can register your company with the VirtualEntrepreneurCenter at no cost. Once registered you can upload your company information to the online web portal and become a resource for other businesses.

Major funding and support for the FLVEC is provided by the Florida High Tech Corridor Council (FHTCC - www.floridahightech.com). The FHTCC is also a member and strong supporter of the Florida Photonics Cluster.

FPC Annual Meeting December 6, 2012

An FPC meeting was held December 6, 2012 at Northrop Grumman Corporation Laser Systems (NGC/LS). Attendees included the Photonics Academy instructor, Steven Lindauer from Wekiva High School, and several of his students. The program had four presentations:

- "How UCF Accelerates the Knowledge-based Economy by a Strong Coupling to the Academic Enterprise", Dr. MJ Soileau, Vice President for Research, UCF
- New baccalaureate program in Laser & Photonics at Valencia College; Ali Notash, Department Chair for Electrical and Computer Engineering Technology, & Nasser Hedayat, Assistant Vice President for Career and Workforce Education
- Photonics Academy (dual high-school/AS degree program) status; Jim Lipscomb, Advanced Projects Manager, NGC/LS
- Programs and Technologies at NGC/LS; Jim Lipscomb, Advanced Projects Manager, NGC/LS

Following a tour of the facilities at NGC/LS, the attendees enjoyed a reception and networking; hosted by NGC/LS and the FPC.

Florida Photonics Cluster meeting, April 12, 2012

An FPC meeting was held April 12, 2012 at the National Entrepreneur Center (NEC) of the Orlando U.S. Export Assistance Center. The program had the following elements:

1. Overview of NEC and US Export Assistance Center; Kenneth R. Mouradian, Director, Orlando U.S. Export Assistance Center
2. National Export Initiative (NEI) business roundtable: discussion on international challenges and trade barriers facing U.S. suppliers of high tech instruments (focusing on optics, lasers, and photonics) as well as which markets/countries to target for export growth. The results of the roundtable will help refine and validate OTEC's NEI sector strategy for high tech instruments. Led by Indrek Grabbi, Senior International Trade Specialist, Office of Technology & E-commerce (OTEC), U.S. International Trade Administration, Washington, DC.
3. Tour of NEC, followed by a reception & networking; hosted by FPC and Orlando U.S. Export Assistance Center

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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.cardsystems.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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