

## Introducing the Center's New Webinar Sessions

The Center has a request for proposals for this current round May 18, 2009 – July 31, 2009. To assist potential proposers, the Center is offering a webinar on June 19, 2009 11:00 am – 12:00 pm. In this webinar, the Center will explain the proposal criteria, the Center's Technology Roadmap, and answer any questions which potential proposers may have. To sign up for this webinar, e-mail: [Mrs. Tricia Straw](mailto:Mrs. Tricia Straw)  
Note: sign up early since space is limited.

*Please stay tuned on our website for future webinar sessions!*



## this issue

Business Success Story

New Center "Webinars"

Energy Innovation Workshops

### Nano Center Helps Crystalplex's Light Shine

By: Kevin Lane

For Crystalplex CEO Matt Bootman, the Pennsylvania NanoMaterials Commercialization Center was just the catalyst that his start-up nanotech company needed to bring its intellectual property to light. Bootman's company develops and manufactures semiconductor nanocrystals, commonly referred to as quantum dots (QDs). Crystalplex's QDs provide high-performance, solid-state light emission for color display, general lighting and organic light-emitting diode applications. They also have application in photovoltaics.

Crystalplex's QDs employ a proprietary technology called Advanced Isolation Mechanism (AIM™). This new technology enables the emission of any desired light from a single light-emitting diode (LED) source and provides greater freedom of design in LED-based display backlights and lighting applications, and it does so more cost-efficiently than current methods. The AIM™ QDs improve stability and lifetime significantly when compared to standard phosphors and conventional QDs. They also eliminate the need for active-feedback color stabilization circuits and multiple LEDs to produce a desired light emission, thereby also reducing the cost of manufacturing. Current processes require wasteful dicing and binning operations which lead to higher manufacturing costs. Crystalplex's new AIM™ QDs eliminate this costly step, allowing faster adoption of more energy efficient LED's in displays and lighting.

In 2007, the Pennsylvania NanoMaterials Commercialization Center awarded Crystalplex a grant from its DCED funding in the amount of \$220,000. This sum and other vital resources provided by the Center were used to achieve several critical milestones in commercializing Crystalplex's technology.

Funding was used to develop a prototype for use in demonstrating the AIM™ QD technology to potential customers. Funding also was used in attempting to secure the necessary IP protection and patents for Crystalplex's proprietary AIM™ technology, and it enabled the company to employ two additional people since the grant was awarded.

But the Nano Center's contribution went beyond the awarding of a grant. It also offered significant technical assistance and advice in the field of optical polymers. In addition, it was instrumental in assisting Crystalplex to focus its strategic planning on the solid state lighting industry, and it was a catalyst for the company to form proprietary partnerships within the industry.

### Director's Comments:

Welcome to this new version of our Quarterly Newsletter. In this edition we are introducing a new, shorter format which provides just the key information for our partners and members. In each edition, we plan to spotlight one or our portfolio companies through an interview with that company's CEO. In this issue, we spotlight Crystalplex Inc., an up and coming Quantum Dot company here in Pittsburgh. In addition to this success story, we are providing just the information related to the Center and omitting general nano topics of interest. Our web site will still carry the more general nano information. We hope you like this new format. Drop us an email and let us know.

Alan G. Brown, Ph.D.  
Executive Director



Although currently there are no supplier, commercial or joint development agreements in place yet, expectations are high for revenue streams to begin in 2010, says Bootman. And he remains high on the Nano Center, too.

“The Pennsylvania NanoMaterials Commercialization Center has been superior when compared to other state and federal agencies of its type,” said Bootman. “The Center completely understands the challenges of small companies that have few resources other than their intellectual property. The terms of our company’s award was structured in a way that was very advantageous for our future growth and expansion, and we believe it is a good model for small companies in the nanotech space.” Watch for more new and innovative products and applications coming to light at Crystalplex.

Visit  
[www.pananocenter.org](http://www.pananocenter.org)  
[www.crystalplex.com](http://www.crystalplex.com)

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## **Nano Center News**

The Center has just been **awarded funding** from the Department of Community and Economic Development for a **new initiative in Energy**. This program will begin in May 2009 and run until December 2010. It will follow a similar approach to the Center’s existing commercialization activities but will focus on using advanced materials for dual use applications in energy, both renewable and non-renewable. Invitations for innovative ideas, white papers and proposals for funding support will be announced in the fall of 2009.

The Center is **funding two new projects** from the Fifth Round of Proposals. Congratulations to Arkema, Inc. and nanoGriptech, LLC for submitting winning proposals. For more information on these two projects please [click here](#).

**Sixth Round of Proposals** opened up on May 18, 2009. If you wish to submit an “Idea Submission” for preliminary feedback on concept suitability the deadline is June 30<sup>th</sup>. If you submit your proposal before July 1<sup>st</sup> the Center will provide you with feedback on your submitted proposal. The cutoff date to submit your final proposal for the Sixth Round is July 31, 2009. For further information please [click here](#).

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## **Around the Region**

[DOE Announces Proposals for Industry-University Consortia on Critical Wind Energy Challenges](#)

[DOE Announces \\$ 50 Million for Advanced Materials Research in Support of Advanced Clean Energy Technologies and Energy Intensive Processes](#)

[Pennsylvania Incentives for Renewable and Efficient Energy](#)

[Small Times recognizes Three of the Center’s Universities in Nano Research](#)

## **Energy Innovation Workshops**

The Center, in partnership with The Pennsylvania State University, and the University of Pittsburgh, is organizing a series of Energy Innovation Workshops in the fall of 2009. These workshops will bring together advanced materials researchers, with industry and federal laboratories interested in commercializing these technologies for energy products and solutions.

## **New Energy Report for Pennsylvania**

Coming soon, the Center will release a report entitled “Pennsylvania Opportunities in Advanced Materials for Energy”. This report provides an analysis of the opportunities and challenges for Pennsylvania based on advanced materials for energy applications. The report also includes an analysis and forecast of the energy materials markets to 2015 as well as Pennsylvania’s research assets and industry base in energy materials. The report is free for all partners and members of the Center.

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