



Successful Partnership Between Crystalplex and Pennsylvania NanoMaterials Commercialization Center

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Crystalplex 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 and general lighting. They also have applications in organic light-emitting diodes (OLEDs) and photovoltaics.

In 2007, Crystalplex was the recipient of a grant from the Pennsylvania NanoMaterials Commercialization Center (PANMCC) to support commercialization of this technology. PANMCC funding resulted in an expansion of Crystalplex's QD technology with the development of the Advanced Isolation Mechanism (AIM™) for QDs.

AIM™ QDs have significantly improved stability and lifetime compared to standard phosphors and conventional QDs. Crystalplex intends to replace standard phosphors and multiple LED combinations with AIM™ technology. This will eliminate the need for active-feedback color-stabilization circuits and multiple LEDs to produce a desired light emission. It enables the emission of any desired light from a single LED source and provides greater freedom of design in LED-based display backlights and lighting applications.

In addition, the use of Crystalplex AIM™ QDs will significantly reduce the cost of manufacturing LED's. Current manufacturing requires wasteful dicing and binning operations which lead to higher manufacturing costs. Crystalplex's new AIM™ QD technology will eliminate this costly manufacturing step, thereby allowing faster adoption of more energy efficient LED's in displays and lighting.

Overall, Crystalplex has made significant advances in quantum dot technology as a direct result of the grant from the Pennsylvania NanoMaterials Commercialization Center. The PANMCC receives its support from the Department of Community and Economic Development for the Commonwealth of Pennsylvania and the Department of Defense, Air Force Research Laboratories at Wright Paterson Air Force base. For more information on PANMCC, go to www.pananocenter.org.