



**FOR IMMEDIATE RELEASE**

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Contact: Ken Acer – Director, Business Development  
+1 412 246 2044  
[ken@crystalplex.com](mailto:ken@crystalplex.com)

**Patent Granted by USPTO for Crystalplex Corp.'s *Sapphire*<sup>TM</sup> Quantum Dots**

PITTSBURGH, **September 28, 2016**— Crystalplex Corp. today announced the U. S. Patent and Trademark Office (USPTO) issued U. S. Patent No. 9,425,253, “Passivated Nanoparticles,” assigned to Crystalplex. The patent, which claims the fabrication and use of *Sapphire*<sup>TM</sup> quantum dots, or passivated quantum dots with improved stability, was granted to inventors Lianhua Qu and Gregory Miller.

The patent is directed to processes for synthesizing an alloy gradient nanoparticle with a Zn:S shell and an outside coating of aluminum oxide that provides a barrier to environmental degradation. In addition to providing improved photo, thermal, and environmental stability, the quantum dots demonstrate longer lifetimes, as the optically transparent aluminum oxide outer layer serves as a shield against degradation by humidity and oxygen. The passivation technology is applicable to Crystalplex’s alloy gradient cadmium-free quantum dots, as well.

“The protection provided by the *Sapphire*<sup>TM</sup> quantum dot shell makes passivated nanoparticles particularly well suited to the demanding requirements of optoelectronic applications,” said Dr. Qu, Chief Technical Officer at Crystalplex Corp. “They have proven to be quite resilient.” In August, Dr. Qu presented his findings on the use of passivated quantum dots in a thermally processable matrix at the 26<sup>th</sup> International Liquid Crystal Conference (ILCC) at Kent State University in Ohio. (See Dr. Qu’s technical paper [www.crystalplex.com](http://www.crystalplex.com) and click on ***Technological Developments***)

“The granting of the passivation patent further strengthens our robust patent portfolio,” said Crystalplex CEO Matt Bootman. In addition, these air-stable quantum dots have been melt processed in polymer substrates. To our knowledge no other manufacturer’s quantum dots can withstand such extreme heat.” (See video of quantum dot/polymer composite being co-extruded with PMMA at over 200°C: at [crystalplex.com/#LiveContent\[quantumdots\]](http://crystalplex.com/#LiveContent[quantumdots]))

Crystalplex Corp. is a private firm with 12 years of R&D directed to quantum dot technology. The company maintains a fully integrated synthesis and pilot application plant in Pittsburgh, PA, USA.

For more information about Crystalplex Corp.: [www.crystalplex.com](http://www.crystalplex.com)

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