During our brief San Marcos/Star Park site visit with Quantum Materials Corp. in late July, we had a chance to sit down and chat briefly with QMC’s founder and CEO Stephen Squires and CFO Craig Lindberg. Here is a transcript of that impromptu Q&A session.

CC:
As always it’s great to see you both and thanks again for your time today. Before we get started on some of the more recent developments at QMC, I’d like to take just a couple of minutes to orient some of the investors we work with that are presently just getting up to speed on the whole quantum dot evolution. Could you start today with just a quick overview of how you got involved in this end of the nano-materials industry - and a few of the key milestones that have occurred along the way?

SS:
Sure thing, well my background is in aerospace and I really started my first business as an advanced materials company so it was really a natural progression to go from those advanced materials into the nano-materials. The interest in quantum dots as such really came about after I left the aerospace industry and I was looking for the next big thing and with the real focus on solar technology at the time
I quickly recognized that there was an opportunity to be able to harness the unique characteristics of quantum dots for solar applications which is something that we still intend to commercialize in time.

CC:
Great, sound's like it's been an exciting journey so far with the best part hopefully still to come. We discussed how you got into this business, now could you now give us a quick primer on quantum dots and what they are capable of doing in terms of harnessing the power of photonic light for making a number of products work both better and more efficiently.

SS:
Sure, quantum dots are a nano-material. Basically they're an atomic crystal and they have a lot of really interesting features - but I would say the one that is getting the most attention is their ability to do up-conversion and down-conversion - which is basically the ability to be able to be excited by either light or electricity to emit either an electron or a photon. So for very basic applications such as displays it allows us to be able to emit color based on excitation by a basic light source.

CC:
In June of this year you announced a proprietary new class of quantum dots that go by the brand name of QDX™. Now it was reported in the release that this cadmium-free variant not only maintains high performance specs but more importantly is quite robust in the ability to perform in adverse environments. Can you share with us the importance of these improved performance characteristics and how does this product help you grow the business and establish QMC as a leading player in the quantum dot market space at this time.

SS:
Well we're really excited about the QDX™ product. It's really a stable quantum dot, which is something that the market has been striving for and yet nobody's been able to deliver up until now. What's important about a stable quantum dot is it can withstand the environmental effects whether it's heat, moisture or oxidation that they would be exposed to. So they can withstand a lot of more extreme environmental exposure that are typically seen when you're processing these materials into a resin, into a film, into any type of an actual application. Typically these materials degrade when they're exposed to any kind of environmental condition - even just being in open ambient air temperature can degrade them - so with QDX it's really a big advancement in being able to see these materials commercialized and be able to have robust performance long term.

CC:
When you look at QMC in comparison to many of the primary material suppliers and/or potential customers that could use your product, it would be safe to say at this time that you are a much smaller company. Have you had any pushback from prospective clients about the size and economic condition of QMC - and if you were to get a sizable order to supply quantum dots, how would you go about putting the company in a position to satisfy that order.

SS:
You know we certainly have had these types of discussions with some of the potential customers we've been working with and we've arranged with some of the major distributors to be able to provide some additional support in terms of extended terms and larger terms for our raw materials that would more than support us in those types of orders.
I’d add that while we may be smaller in terms of the size of the balance sheet, our capacity to produce quantum dots is at par or better than any of our competitors as far as we know and so is our ability to scale up - we believe we can scale significantly faster and at significantly lower cost. Even with our smaller balance sheet, we were able to build capacity ourselves; we didn’t have to license our technology to anyone else, giving away a big chunk of the profit, as did one of our [air quotes] “larger” competitors. If I’m a manufacturer, certainly I’m concerned about the financial stability of my suppliers but I’m also very interested in their ability to make materials with the performance I need and to quickly scale their capacity as demand increases.

Stephen, there was a recent EU Parliament vote regarding the restriction of using cadmium based electronics in Europe going forward. Can you give us some background on this issue, where you see the market headed at this time in terms of heavy metal use in displays and how the Company plans to navigate these restrictions going forward.

Clearly there are some concerns about the use of cadmium in consumer electronics products. I think that the concerns are kind of blown out of proportion because of the small amount of cadmium that would be used. We’re actually less concerned about those regulations than just simply the pushback that we’re getting from prospective customers who at a corporate level have made the decisions that they’re not going to work with heavy metals in their products. So regardless of whether the EU would approve or disapprove of cadmium, I would say the more pressing issue is the fact that simply most of the Asia-based prospective companies that we are working with at a corporate level won’t use the heavy metals. So that’s why we’ve really shifted a lot of our emphasis to developing the cadmium free materials and really pushing the performance level of those materials.

Where do you stand right now in relation to those cadmium free products? Have you reached a specification level that meets the requirements of some of your prospective clients or customers?

Clearly the QDX™ product that we introduced recently is a performance product using cadmium free materials and we think that with that product we can meet all the benchmarks that our customers are requiring. And for customers looking for the superior performance of cadmium-based products, we can do that as well.

One of the Key differentiators for your manufacturing process is your ability to utilize a patent portfolio which defines your “continuous flow chemistry” process for making large volumes of quantum dots efficiently. Can you give us some additional information on this topic and what benefits this type of production affords the company?

Certainly. The continuous flow technology is a processing method that’s used in other industries. We’ve gotten through several years of advanced research to be able to adapt the continuous flow process for our manufacture of nanoparticles and quantum dots - and really what we have found is that it just allows us to be able to scale up more quickly, more efficiently and with a side benefit of having much
more high quality material because you just get a lot higher level of consistency by having a computer controlled process than by having a manual controlled process.

CC:
Now let’s discuss a topic that I know many of our investors are anxious to know more about. After a number of years in the development stages, you announced recently a Joint Development Agreement or “JDA” with a major flat panel display manufacturer. I know you are limited in what you can discuss with us here - but what can you tell us about this relationship and what will it likely mean for the company going forward from here.

SS:
Well as you know, we have reported on several occasions that we have entered into non-disclosure agreements with a number of consumer electronics companies. I think the Joint Development Agreement is part of a natural progression from the sampling that we do typically with a non-disclosure or material transfer agreement, and this is the kind of natural progression in moving these materials into a commercial application - and so we see this as a stepping stone to being able to really enter into supply agreements.

CC:
Stephen, you’ve had a front row seat as this market for quantum dot driven flat panel displays has been gearing up over the last 24 to 36 months. How do you see the market at this time and would you like to venture a guess as to where this is all headed?

SS:
I think that the major consumer display manufacturers have all recognized now and accepted the fact that quantum dots in displays is going to happen – that it’s a really major improvement for not a huge investment on their part as compared to what an OLED factory would cost. I think it’s taken some time for some of the bigger players to really accept that is going to be the case – and now what we see is just really a race between these major display manufacturers to get the products into market. So we’re really bullish on this material being in displays - and I think that all the consumer electronics companies we’re working with have internally made commitments that they’re going to integrate these materials into their products.

CC:
We have noticed reporting from several media outlets over the past year or two that QMC has not been able to keep pace with competitors and they cite as their reasoning the fact that QMC has yet to sign any customers that have produced electronics using your quantum dot materials. Would you care to comment why you think this has occurred and what has changed now to put you in a position to move forward with partners in providing them with product.

SS:
The first thing I think about when I hear that question is who’s kept pace with who? From the reporting companies there’s not very much quantum dots sold. We don’t really know how much some of our competitors sell. But what’s important when keeping pace? Keeping up with someone’s trivial amount of orders? Who’s really keeping pace when we are out announcing environmentally tolerant heat, moisture and air stable quantum dots – or we are announcing extremely efficient production methods. At this stage of the game we feel that it’s more important to keep pace in technology innovations than in headlines.
We have spent most of our time on the flat panel display market but quantum dots have the potential to change a number of industries. Can you comment about any of Quantum Materials’ development projects in other areas at this time?

I can briefly, obviously we are focusing a lot of our emphasis on the display market because we think it is the fastest road for us to generate revenues. In parallel to that we’re working on integrating quantum dots into the solid-state lighting or LED market where our QDX™ product’s high heat tolerance could be very important. That works for us both in the display as well as the lighting markets because a lot of the displays can eventually be integrated with a quantum dot based LED. I would say after that our next focus - and I think we have made this somewhat clear is in the anti-counterfeiting applications. We’re building quite a bit of expertise in that area and we think it holds a great deal of opportunity as a next large revenue generating industry for us and then we’re looking at a variety of applications beyond that including catalysts, some work with the lithium batteries and quantum dot-based solar cells. We think that there is quite a lot of opportunities for these materials to expand into a much larger market.

Do you have a master plan for Quantum Materials Corp. and where do you see the business in 5 years from now.

I think we have made it clear all along that our focus is to become the worlds’ largest manufacturer of quantum dots and nano-particles – so we’re keeping our eye on the ball when it comes to that. You know there are some platform applications that we’ll exploit like the anti-counterfeiting because we think that is going to help create more opportunities for us to sell more quantum dots into those markets.

Great. Thanks a lot guys. We really appreciate your time today.