G6 Materials Corp. a leader in the production of Graphene Products has developed a Graphene Infused Air Filter to Protect Against COVID-19

Daniel Stolyarov
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Interview conducted by:  
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CEO: Mr. Stolyarov, give us a little history on G6 Materials Corp, how long you’ve been with the company and how you became its CEO?  
Mr. Stolyarov:  Thanks for having me. We founded the company in 2009 when my wife was working at Columbia University as a scientist with Andre Geim and Konstantin Novaselyov, who later were given a Nobel Prize for the discovery of graphene, and that was a scientific project. At that moment we were deciding what to do with our lives and we decided with our scientific interest that this material would present tremendous commercial potential. Therefore, we built our company around the idea of commercializing this graphene.

CEO: On your website it says you are a team of experts in graphene. How so?  
Mr. Stolyarov:  As I mentioned we started very early when graphene was not that popular. It became popular after the Nobel Prize was awarded. We developed the expertise, but our interest was aligned mostly in the commercialization of material rather than the scientific property, although they go hand-in-hand. We started gathering people around us, mostly scientists who were willing to work with this material and that is where we are right now.

CEO: What is graphene and where does it come from?  
Mr. Stolyarov:  Scientifically graphene is a two-dimensional material built of carbon atoms bonded to each other to form a flat sheet that is only one atom thick, with the carbon forming a hexagonal grid. In real life it has two forms, one is the film being deposited on some sort of substrate, usually a silicon wafer, piece of glass or transparent plastic, depending on location. This form of graphene is used to make very fast electronics, or if it is a transparent electrically conductive material, making it a flexible transparent conductor. With graphene, you can make flexible cell phone screens or flexible displays or flexible solar cells.

The other form of graphene is called nanoplatelets, which are microscopic pieces of graphene that appears like a black fluffy powder. The application of this powder is an additive to polymers, cement or concrete. It makes those materials stronger or in some cases electrically conductive. It is also used for battery application so batteries can be charged very quickly.

CEO: Are your products sold into all of those categories?  
Mr. Stolyarov:  Yes, somewhat.
CEOCFO: Where does graphene come from? Is it developed in a lab or does it involve mining materials?

Mr. Stolyarov: It is manufacturing; mining has little to do with it. Originally for the graphene platelets the most industrious way to make them is to start with graphite, which is mining material but realistically the graphene is sold by grams and the graphite is sold by tonne. It does not really matter; we can use the best graphite money can buy and it still is not going to affect the price of graphene because the rest of the steps are more expensive.

CEOCFO: You mentioned that graphene has some electricity conductive ability useful in applications such as with batteries. Would you tell us about that?

Mr. Stolyarov: What graphene has is the ability to pass charge carriers like electrons, through itself without having any resistance. That is used to make really fast electronics because if there is no resistance the electronics become really, really fast. On the other hand, graphene is not as conductive as metals such as copper. However, what is interesting in graphene is that, let’s say we have polymer used in plastics that is insulating and we add a fraction of a percent of graphene into the plastic, then the plastic becomes conductive. You cannot do that with any other material.

CEOCFO: Is that a big area for you?

Mr. Stolyarov: Yes, we use this interesting property of graphene, to make our conductive glues. We have a series of conductive glues. Usually they are made out of silver; we also use silver but we also use graphene, which makes them better.

"We were one of the first companies working with graphene... We are working on the bleeding edge of science and filling the gap between scientific development and commercialization." Daniel Stolyarov

CEOCFO: With the announcement of the COVID-19 virus back earlier this year, which escalated into a pandemic, many people in the world have been living in fear of contracting the virus, but you offer a product that could help with that. Would you tell us about your efforts to develop a disinfectant product to help fight COVID-19?

Mr. Stolyarov: Yes, we are living in fear and we should not live like that. We have a virus out there but on the other hand if there is a problem, there is a way to fix it. What we are offering is one way to mitigate the virus. All this quarantine and isolation is affecting trying to deal with the situation. However, the problem is we cannot always wear masks and we have to have some sanctuary where we can be sure there is not a virus around.

The way the virus gets from one person to another is through that air. G6 Materials through our research and development team has found a unique method to incorporate graphene in the air filtration systems making them more efficient in killing germs. We are currently conducting internal testing, and will apply for the appropriate accreditations once the testing is completed.

CEOCFO: You mentioned that it will be incorporated in filters. Could it be incorporated in for example HEPA filters that are used in air cleaning devices or filters used in HVAC units for home or industrial use? Finally, will your graphene additive actually kill and not just trap the virus?

Mr. Stolyarov: Yes, the filter itself will be very deadly for the COVID-19 virus. The filter itself is an air filter, a special kind of HEPA filter. The problem with the other filters on the market today is that they only trap the mold, bacteria and viruses, but they don’t kill them. This is especially true and dangerous with COVID-19, because COVID-19 can live for up to five days. However, our filter with graphene incorporated makes the filter more effective by deactivating the virus.

CEOCFO: Is there a product on the market today with your special graphene incorporated filter, and if so, where can people purchase it?

Mr. Stolyarov: Yes, we do have an air filtration product on the market today, and it is sold on Amazon. Right now what we are offering as a product is a device that is the size of a file cabinet which pumps air through a HEPA filter and filters out the nasty germs and viruses.
CEOCFO: Your Graphene Laboratories Inc. subsidiary recently licensed out IP to a pharma company. Would you tell about that and what it means for you?
Mr. Stolyarov: Interestingly enough, this particular project has nothing to do with graphene. We have an excellent team of scientists and they came to me with an idea to help a pharma company that was developing a drug, but had a problem making this drug. Drugs are made out of building blocks, usually some other chemicals. Our scientists found a way to make one of the building blocks very efficiently. All of a sudden, this drug had some development and we just happened to be the only people that knew a good way to make this building block. The drug is designed to treat certain pulmonary conditions including Idiopathic Pulmonary Fibrosis (IPF).

CEOCFO: How many subsidiaries do you have and would you tell us about some of the other accomplishment of your subsidiaries?
Mr. Stolyarov: The way this company is meant to be from the start is that we have a variety of scientific materials and scientific products. Our goal is to commercialize graphene, to sell graphene products to people who know nothing about graphene and really do not want to know, but they just want to enjoy using products made out of graphene; it will be useful for them. The way it works is we have this company Graphene Laboratories and we run an online store called Graphene Supermarkets where we work with scientists that have a lot of ideas.

There are a lot of complications for graphene and it is proven scientifically that the applications really work, so they do not contradict the laws of nature. The next step is to find an application that not only works, but is also commercially viable, can be done with reasonable money and can successfully compete with existing materials, which probably do not perform as well as graphene but are less expensive because they have been around for a while. That is how this business operates. Graphene Laboratories, which kind of incubates a lot of projects, working with scientists, researchers and companies, helping them to find a way to use graphene.

Originally, we implemented this idea when 3D printing was emerging and we thought that graphene can help to make a very good 3D printing material. Therefore, we developed a conductive polymer for 3D printing. That is how we got another subsidiary, Graphene 3D Lab.

CEOCFO: You changed your name from Graphene 3D Lab Inc. back in January of this year. What was the reason and purpose of the name change?
Mr. Stolyarov: This is because originally we were pushing this 3D printing material but there was other products. This 3D printing materials is an excellent product and we are planning to sell it more but this is not the only one and it is not going to take the company where we would like to be. There are other products, for example we are making the composite materials for marine applications and we would like to commercialize them as well. We are also making these conductive glues / conductive adhesives. In the beginning it was about 3D printing, but now we have more projects and 3D printing is important but not the most important one. To reflect this change, we rebranded and renamed the company.

CEOCFO: How are the actual products developed and brought to market. Are some of these products developed, manufactured and marketed through G6 Materials or is everything done through partnering? What is your business model?
Mr. Stolyarov: Absolutely and the air filter is a very good example of that. We are a chemical company that would like to make graphene or graphene solutions and some sort of compounds, as graphene is tough to make. We would like to insert ourselves in the other technological processes, for example making air filters. We do not really want to make our filters ourselves or assemble the units and deal with all the electronics, fans and things like that. Therefore, we would have to partner. We want to focus on where our expertise is.

Our strategy as a company is that we are trying to find the way of least resistance. In addition, as with the air filtration unit, we make sure that in the process of manufacturing this air filtration system, our intervention is minimal, or does not add cost to the product too much. The same is true when doing the marine composites. We came up with a solution which is an additive so they are doing it the way they usually do. They are building the boats the way they usually do, but at some point they just use our additives, but we are trying to keep it to a minimum. Graphene cannot really help to save money. Graphene products are going to be more expensive than non-graphene products. It is just going to be a better product and we are just trying to keep the price addition to a minimum.
CEO CFO: Are you looking for potential investors and are you looking to raise funds? 
Mr. Stolyarov: We are constantly looking to raise funds. This is because we would like to be conservative in a sense that we do not like to raise excessive amounts of funds, just to keep the dilution for previous investors to a minimum. Instead of raising a big chunk of money we raised just enough to get us to the next step. We have this idea of air purifiers with graphene and we raised some money and now we are at a certain step of commercialization. We are going to raise it to another step and finalize this product.

CEO CFO: In closing, what gives you that competitive edge in the industry and why should investors be interested in G6 Materials Corp? 
Mr. Stolyarov: First of all, we have been around for quite a while already. We were one of the first companies working with graphene. Since then, we got a huge customer database and we have more than 12,000 customers, which includes a lot of companies from the Fortune 500 list and probably almost all the universities. We are working on the bleeding edge of science and filling the gap between scientific development and commercialization. Why should potential investors invest? Once we are able to connect the dots with these products, our company will undergo a tremendous development and see explosive growth.