

Sverkhnovaya Realnost July 2008 issue

Readers of this article should get a June 2008 copy of Sverkhnovaya Realnost to get a full understanding of a major opportunity for Russia in the area of nanotechnology and creating high tech jobs. The magazine is available to order from Sverkhnovaya Realnost magazine or readers can get a copy of the article in English or Russian at:

<http://www.rense.com/general82/karl.htm>

C.K: Hello Mr. Schwarz, as the Sverkhnovaya Realnost article [June 2008 issue] is just now available to readers, and there have been developments since that article was completed, the following questions are a follow up to that story. As I have developed this article with you it is apparent to me that nanotechnology has the promise of changing many things in this world for the better. Do you think that is a fair assessment to draw?

K.S: Yes, and for many reasons there are changes coming that literally are not possible with current technology. This is an exciting new field but the biggest excitement to me is the absolute need to ponder the future, assess and find a way to get from “today” Point A to that “future” Point B. Everything is a process but nanotechnology is a process unlike any other.

C.K.: Can you elaborate on that some more for our readers?

K.S: Yes, the materials of nanotechnology are the fabric of the Universe, just smaller particle size and focus on very high purity levels is an absolute requirement. It is the difference between a natural process (planetary or universe in scale) versus man-made manipulation at the atom-to-atom level. It is learning to manipulate matter at that scale that is producing some stunning results and some far reaching possibilities, such as the Hydrogen Power Systems we have worked on for years, or nanofilters that can do what no current filter can.

I have stated on a radio show that God is an expert in nanotechnology and one of these days we are going to learn that ET (extraterrestrial beings) are too. We cannot get to the next star with our current technology and I am convinced that it is nanotechnology that will take mankind to the stars.

This science is pushing mankind up the technology ladder, if we do it right. This is a most remarkable breakthrough for mankind and it does not need to be squandered by those who have myopic thinking or selfish agendas.

C.K: And as you stated in the June article in Sverkhnovaya Realnost, you do not think military applications are the right way to head with this new science?

K.S: Exactly, to me there are big differences in legitimate defense applications to protect a nation and those used in offensive military tactics arising out of greed, fear, believing the propaganda of lies, coveting what does not belong to them, etc. The ability

of our planet to sustain the current processes are breaking down, that is apparent all over the world whether it is energy, food, medical care, ability to employ or even house and provide energy for a growing population.

C.K: So this science could fundamentally change the *status quo* on this planet as we know it today. Is that accurate?

K.S: Yes, very accurate. One of my favorite cartoons in America is called “Shoe” and is about a sharp-eyed hawk and a wise owl running a newspaper publication from a tree and a desk sitting on a limb of the tree. My favorite one was about *Status Quo*. The journalist hawk was looking that phrase up, “*status quo, Latin for the mess we are in.*” I think most rational minds know this planet is in a very big mess right now.

I saved that cartoon over 20 years ago and its lesson is still accurate. We can accept the *status quo* as we see the world today or we can move up to a much higher status level that repudiates the current and builds a better future for all. That to me is the greatest challenge mankind faces.

It is not that our Earth cannot sustain say 6, 10 or 15 billion people. What is clear is our species cannot sustain itself doing things as they are being done now. What we are doing now and how we are doing it is failing in major ways. Our *current status quo* is failing.

C.K: When the June article for Sverkhnovaya Realnost had been completed and was in final edit for publication, you made the comment that only the scientists of Novosibirsk had responded to your offer to collaborate with Russia. Has there been any change in that status?

K.S: Yes, we were recently contacted by Rosnanotech and they expressed their desire to work with our company on this matter for Russia and what we are doing in Austria and Slovakia. I plan to travel to Moscow soon to have detailed discussions on what is possible for Russia and working with our company on this effort. We are also meeting soon with the governments and scientists of Ukraine, Malaysia and Indonesia about long-term collaboration.

C.K: That seems to be a very positive step forward.

K.S: I believe it is. I had suspected that being a new entity Rosnanotech was dealing with some internal organizational matters so they could get it operational and moving forward. That seems to be the case and we look forward to meeting soon with Rosnanotech and representatives of the Russian Academy of Sciences.

I also have reason to believe that the change in power from Putin to Medvedev, and the recent elections were why we did not get a response from higher levels. We saw the same trend in the recent elections in Armenia and Malaysia and things got on track after their elections.

What is clear is that Russia is now putting a major emphasis on nanotechnology and that is what we were most concerned about seeing.

Many nations are talking a lot about nanotechnology but fundamentally not doing anything worthwhile in turning their talk into actions. I think Russia is very close to putting the words into some significant actions.

C.K: What affect will lack of World Trade Organization status have on your business plans for Russia?

K.S: Actually it will have no effect whatsoever. I am quite aware of how WTO and their Western masters use the WTO status as a carrot and stick approach to get their way. It is no secret to some in the West that forces in the UK and US wish to carve up Russia and its assets such as oil and gas, natural resources so that they will not be a powerhouse for Russian growth.

In a way they desire to plunder Russia as they have Africa and other areas of the world. The recent \$9 billion agreement China signed with the Congo is a good example of what is possible if all parties pursue a worthy objective.

There are many ways for a multinational high technology company to go around such bureaucratic obstacles. Our operations in Austria and Slovakia collaborating directly with Russia and its many scientists are one such way.

C.K: What the plants in Russia produce in the way of finished products, if located in Russia?

K.S: We have been quietly looking at many areas of Russia, their current industry base, the training that would be necessary to support those industries. In Kirov we plan to have a nanofilter plant that would be making a wide range of highly specialized filters for home, industry, medical, and environmental.

C.K: We heard recently that your company is now involved in a major environmental project in the EU. Is that accurate?

K.S: Yes, we were approached by a group that has secured a major funding commitment from the EU to address pollution, environmental and other problems in an entire river drainage basin. That is the Tisza River and involves parts of Slovakia, Hungary, Serbia, Romania and Ukraine. There is a much larger project in the works for the entire Danube River basin and would involve the same principals and nanotechnology applications.

C.K: What type of technologies would your company be providing for that project?

K.S: Environmental mitigation, nanofilters for air, water and industrial, geothermal heat sinks, alternative energy systems, and even extending into new types of self-

sustaining housing, new types of cellular applications and wi-fi to make up for areas that have serious infrastructure deficiencies or total lack of say clean water, energy and good housing.

C.K: Does that relate to what we discussed in the June 2008 article about new, super strong materials?

K.S: Yes, very lightweight, very strong, and properties unlike what is used today for housing. Imagine storm proof, self-powering, self-heating, things like that.

C.K: Could some of these applications be made in Russia?

K.S.: Yes, the environmental filters are part of what would be made in Kirov. The type of carbon composites could be made at one of several locations and then converted into new types of very strong, very easy to ship housing. There is a huge need in many parts of the world for the types of activities that the river basin environmental project will be addressing.

C.K: What other types of plants and finished products?

K.S: In Kazan it would be possible to put an aerospace operation that is focused on helicopters and provide advanced components for next generation helicopters. In Moscow we see two possibilities that would include aerospace to further next generation commercial airliners and the R&D and machining needed for these next generation machines. Every application we have developed has required the design, manufacturing and perfection of new machines that can produce quality control at the nanotechnology scale, since this is too small to be seen with the human eye.

Since Russia is now involved with Airbus, and that was the exact reason that China tried to recruit us, there are multiple possibilities to put special component plants around Russia in areas that can produce the finished products needed for jet airplanes.

C.K: What type of operations do you foresee for Sankt Peterburg?

K.S: It could be one of several. The recent initiatives put forth by President Putin have many automakers looking at that area and there are many ways to apply this science to the cars of the future from power plants to automobile bodies, paints, and new types of polymers. Also, it might be a good idea to look at putting computer and electronics related applications there since shipping would be easy to do.

C.K: What type of site is needed for a primary Carbon Nanostructure plant?

K.S: Ocean ports are the first logical choice due to the tonnages involved in ethylene and other required materials. We think Black Sea and Pacific Ocean ports are the best places to look for these larger plants. We could consider inland locations if ethylene is

readily available in those areas and can meet the specifications we need on what is our primary feed stock to make the carbon nanotubes and carbon nanofibers.

Many steam cracker plants that isolate ethylene from petroleum cannot produce the purity we need without drastically increasing our costs to purify the ethylene before it is piped into our process machines. Our first preference is ethylene made from natural gas and the more pure the natural gas is the better.

We were recently advised by a LUKOil subsidiary that they plan a new gas-concentrate ethylene cracker in Russia and if it can meet our specifications much of that ethylene would be headed to our nanotechnology facilities rather than being turned into plastics and other products made from ethylene.

C.K: In some of our communications you have hinted at the difference in current technology and nanotechnology. Could you elaborate on that for our readers?

K.S: Yes, that is easy to state. The Industrial Revolution started off with high employment, pretty much what I call “dumb technology” compared to today. Over time automation and global competition has changed the nature of the employment that such industries can sustain. Those industry sectors are producing more output with fewer employees and they are now heavily impacted by global competition.

The IT revolution started off as high employment levels but has also been affected by automation and even moving jobs from high wage areas to low wage areas to produce cheaper. That is part of what is creating such economic dislocations in the United States and Canada right now where high paying jobs are being lost and exported to low paying areas.

Nanotechnology is such that automation is extremely difficult to impossible to do with what is available now. Also, the skills needed are not low wage skills so what is happening is high skill, higher paying jobs are being created and the demand for such skills will increase to huge proportions in the coming years.

This sector requires very high skill levels and due to lack of automation abilities, now or maybe forever, nanotechnology is going to create tens of millions, maybe hundreds of millions of desperately needed high paying jobs. Where other industries are waning and producing less in terms of GDP or gross domestic product, nanotechnology is going to fill that slot in the coming years.

C.K: That must be the underlying reason why so many nations are maneuvering for domination in certain sectors of nanotechnology.

K.S: That is exactly what some are trying to do, most noticeably the US and UK. They are trying to devise all sorts of new policies to assure they can dominate nanotechnology.

C.K: In our previous discussions you have indicated that your company will be putting the carbon nanostructures plant in Slovakia, the R&D Center and your headquarters and nanomachine group in Austria. Do you envision that an R&D Center in Moscow might be in the future?

K.S: If Rosnanotech and the Russian Academy of Sciences wish to collaborate with us across the board that would certainly be a possibility. Another possibility might be to collaborate with the new R&D Center that has been proposed by Mikhail Prokhorov. We have more directed R&D projects right now than scientists to fill the slots.

C.K: Is it accurate to say that you see a need for the many scientific and mathematical minds Russia has?

K.S: Yes, that is completely accurate. First, it is no secret that one of the great failings of the US education system over the past 30 years has been a de-emphasis on mathematics and science, or they have been teaching basically worthless knowledge in those two areas. Secondly, we realized years ago what the sheer demands are for brains and talent in nanotechnology.

For example, Slovakia has about 300 scientists who specialize in nanotechnology. Our first CNS plant will have 4,330 employees so we will have to find and recruit talent from elsewhere to staff that plant. Same applies to Austria. We cannot brain drain every high tech company and educational center they have and not harm other areas of their economy. As part of our agreements with those two nations, we will be bringing in many foreigners, training them just to operate this first CNS plant and they will have to fund specific training programs to increase the skills within their own nations in this science.

C.K: Is it accurate to say that you see the talent needed in Russia, Ukraine and other nations?

K.S: Yes, but as I said in the June SNR article, not as a means to brain drain Russia of its talent. One of the least known features of our first main plant is we will be rotating at least 200 scientists per year out of production and into our R&D Center. Once they learn how to make this science at the building block level, we want them to then apply that knowledge and their training at the R&D level to create more opportunities.

Therefore, if we had say 600 key scientists and technicians from Russia as part of the Slovakia production operations, all of them would be rotated out of production and into R&D within several years. Those people could then be reassigned to the Austria R&D Center and a Russia based R&D Center.

I tend to be the type of manager and leader that will let the cream rise to the top and not hold back their creative talents. Many are getting their MS and PhD degrees and cannot find a job in the field they trained for, so they can call us because our demands for their training will be very large.

C.K: Boeing recently announced that they are using carbon nanotechnology on their new 787 Dream Liner, can you elaborate on that for our readers?

K.S: Certainly, they are using carbon nanofibers in certain components of the wings to make them both stronger and lighter. I think if the matter was looked at closely they are actually using carbon fibers like are used in automobile tires, not carbon nanofibers literally. China wanted our technology due to the new Airbus A320 XLR that is being built in Tianjin China right now. Since Russia has signed a major agreement with Airbus the same reasons China wanted our technology could now apply to Airbus manufacturing in Russia.

Aluminum is not the best or strongest material for airplane bodies; it is just the cheapest and lightweight. Every airplane crash proves how fragile and how easily sheered aluminum is when forces are exerted upon it. Our approach to that same application is not the same as Boeing but discussing it here would not be prudent.

C.K: In the last article we discussed new types of carbon composites that would be much stronger than most metals. Are uses for airplanes and automobiles considered as some of their applications?

K.S: Yes, we have been in discussions with many potential co-producers on such new types of composites. We are also pushing into some areas of R&D that potentially would change how airplanes and automobile bodies would be made. Those same new materials can be used in many ways, cell phones for example and extremely strong, lightweight housing.

C.K: Does that by any chance have to do with your interest in fractals and mathematicians?

K.S: Yes, it does, but how it does is not something we can discuss right now.

C.K: Getting back to Kirov as an example. Would the actual filter material be made in Kirov or just the filters in final form for the global markets?

K.S: Initially the fabric base of those nanofilters would be made with a production partner in the Czech Republic. The nanotech application part of it would be done by our scientists working with that company. That is a step in the process where we take the high purity CNT and modify them to be applied to that fabric. The finished bolts of fabric would then be shipped to Kirov to be cut and assembled into the final form of the filters.

If we build a major CNT production plant at say Novorossiysk, the CNT modification and application to the fabric could then be moved to Russia and produce even more jobs.

There is no need to replicate the plant and machine that makes the fabric. It is what we do to that fabric that makes it unique. Those machines cost about €47,000,000 each not

including the price for land, building, feed stock for the plant and the staff to run it 24 hours a day.

C.K: So you are already pulling together teams that are needed to produce these new types of products enhanced by nanotechnology.

K.S: Yes, we cannot take on building every component of the value chain. That is what excited the European Investment Bank about our technology. It will reach many levels into the EU economy to produce many opportunities that only exist due to this new science. Any place we put a major CNS plant will produce the same results down stream.

The analogy I use is we are like a major anchor tenant in a shopping mall. Once the major tenant is there and generates traffic (nanotechnology opportunities) then the smaller operations are much needed for the general development of finished products. We cannot take on the entire value chain ourselves and remain competitive and meet our expansion targets.

C.K: Referring to these proposed operations in Russia, would you use existing buildings by renovating them or build new facilities from the ground up?

K.S: That would depend much on what is available. If there are existing facilities that are suitable for renovation and do not have some dangerous environmental legacy that is harmful to the employees, renovation of existing buildings is a possibility. In some instances the nature of the processes are such that the only way to efficiently do it is to design and build a new facility. Each is a case-by-case decision on what is best and what is needed.

C.K: Do you foresee that Russian partners might be involved with your company in this effort?

K.S: That is a definite possibly in three possible areas.

C.K: Can you elaborate on what those might be for our readers?

K.S: Yes, if there are existing facilities that are suitable we may well be working with that owner or possibly a bank or investment fund that owns a defaulted or non-performing asset. The second way would be to meet with various Russian producers and work out the same types of co-production arrangements we have on the nanofilter fabric and other types of applications. The third possibility might be to engage with certain Russian investors. I have little desire to take on debt; we prefer operating on a cash basis to the greatest extent possible. That would of course depend on who that investor is but with 12 years experience on Wall Street I can take care of myself and few do due diligence to the level I do.

C.K: Could some of these technology spin-offs wind up being traded on the Russian stock exchange?



K.S: That is a possibility and if not there, it will be in Germany or Switzerland. It will be a long time before Wall Street gets any of my business. I think as the Russian economy continues to grow in this and other sectors, listing some of these spin offs in Russia might be a good way to address the growth needs for those spin offs.

C.K: Why would you prefer to not work with Wall Street in such public offerings?

K.S: Simply stated, I know who and how Wall Street and their major clients use illegal means to take over companies through manipulation of debt and equity securities. That is why our parent, the owner of the Intellectual Property, is always going to stay private. I am not going to give them a chance to knife us in the back to take us over, for they have done it many times to many valuable companies and they have tried to do it to us. If they want to control my company and our technology they have to be man enough to meet me face-to-face and pitch their proposal.

The answer is probably going to be no to any such offers.

C.K: Why would the answer to Wall Street be no?

K.S: Because they would then try to divert much of our technology into the US defense industry because it is so lucrative to them and secondly, they would try to suppress certain technologies that threaten their dominance of key areas of the markets.

C.K: It is going to be interesting to watch all of this play out. Seems your background in architecture / engineering, Wall Street, telecoms and now nanotechnology have been helping you to acquire the skills necessary to be effective at what you do now.

K.S: I think that is accurate, and yes, it will be interesting to watch all of this play out. The real battle for mankind's future is just beginning. The mission is going to be whether mankind wants more of the same we have seen over the past hundred years or does mankind want to move up the ladder to a higher level. Neither you nor I can control that but we will put the options and solutions on the table and let the people of Earth decide which way they want to go.