

# THE STEWART REPORT INVESTOR HOTLINE

## Special Investment Update: Applied Nanoscience, Inc. (NASDAQ/Pink Sheets: APNN – \$0.05)

### Overview: The 6<sup>th</sup> Revolution

**Dana Point, CA, December 19, 2008** – History shows that technology revolutions occur about every 50 years. The 5<sup>th</sup> Revolution brought atomic energy, aerospace, computing, lasers and plastics into practical usage. Magnificent investment returns were achieved in each of these areas. At the forefront of the current revolution is cleantech (the application of technology to optimize the use of natural resources), biotech and nanotechnology.

Nanotech involves engineering fantastically small materials and is the next logical step in miniaturization. At the nano level (there are 25,400,000 nanometers in an inch), materials have far larger surface areas relative to volume, meaning more surface is available for interaction with other materials around them. Properly engineered, these interactions can produce unusual properties that differ greatly from those produced by the same material in bulk. For example, gold, at the bulk level, is an excellent conductor of heat and electricity, but not of light. Properly structured gold nanoparticles, however, start absorbing light. That light can be turned into heat – enough heat, in fact, to act like miniature thermal scalpels that can kill unwanted cells such as cancer in the human body.

Inasmuch as it will affect so many things, nanotechnology is not a separate industry, per sé, but rather a revolutionary new science that applies to virtually all industries. Most of what's published in the science journals and magazines (such as MIT's *Technology Review*) is focused on nanotechnology breakthroughs in medicine, as with the gold/thermal scalpel in the above example. But, of the \$1 trillion total noted below, you'll see that the Materials sector will be the biggest beneficiary, one-third greater than Pharmaceuticals and Healthcare combined.

### Potential Impact of Nanotechnology

Sector	Size (\$B)	Share	Sector	Size (\$B)	Share
Materials	\$340	31%	Sustainability	45	4%
Electronics	300	28%	Healthcare	30	3%
Pharmaceuticals	180	17%	Tools	20	2%
Chemical Manufacture	100	9%			
Aerospace	70	6%	<b>Total</b>	<b>\$1,085</b>	<b>100%</b>

Source: National Science Foundation

**Applied Nanoscience, Inc. (NASDAQ/Pink Sheets: APNN) \$0.05**, is a publicly traded pure play in the nano-materials sector – and the only nano-pure play in the air filtration sector. The global market for air filters in residential and commercial real estate, as well as for use government buildings and military installations, aircraft cabins, cruise liners and automobiles, hospitals and in personal protection masks, is almost too massive to quantify. Regardless of specific application, most types of air filters have to be replaced at least once a year, providing manufacturers with continuous and predictable revenue streams. But, they face a problem of differentiation. In most cases, a filter is a filter is a filter. Certainly, size, shape, quality, cost and efficiency are considerations. Even so, air filters are essentially generic items, lacking enough distinction to set one manufacturer distinctly apart from another.

Applied Nanoscience, Inc., believes the stand-alone health, safety and Green benefits provided by its patented nano-coating methods, combined with its patent-pending nano-formulation, can be licensed to manufacturers – industry by industry, use by use, and nation by nation – providing the respective licensees with an enormous marketing edge over all other competitors. The Company believes this edge will command a large and residual premium.

To date, APNN has been a strictly developmental-stage company. Virtually all efforts have been to develop and protect its intellectual properties from infringement. Since 2004, over \$1 million has been successfully invested in product development and the attainment of six patents in as many key countries. A separate patent for its proprietary formulation is now pending in the United States. Once granted, APNN can safely and aggressively pursue licensing agreements worldwide. We believe granting of this patent is very close at hand, which is the basis for our Strong, Highly Speculative **BUY** Recommendation at this time.

– JDS

## Moore's Law

In 1965, when there were approximately 60 devices on a computer chip, Intel co-founder Gordon Moore stated, "The number of transistors and resistors on a chip will double every 18 months." It sounded almost insane at the time, but four decades later, Intel placed 1.7 billion transistors on a single chip.

As for the transistors themselves, prior to their Nobel Prize-winning discovery by Bill Shockley, every television and radio was built using vacuum tubes. If it weren't for his solid-state alternative to glass vacuum tubes, the electronics on a modern jet would be too large and heavy for the plane to even take off. As for consumer electronics, everything that has been miniaturized to now fit in a cell phone would have previously required a small warehouse.

Prior to the emergence of nanotechnology, experts expected the limitations of Moore's Law to be reached by 2017. But at the nano scale, classical gives way to quantum physics. New doors are opened. Akin to the splitting of the first atom, which brought us into the Atomic Age, the ability to manipulate and engineer particles just three atoms wide has launched an explosive new era of technological development. With each new development will come a corresponding investment opportunity. Already, these opportunities are finding commercial success in everyday household products.

## Closer to Home

A friend of mine is building a new Laguna Beach home with brightly polished aluminum garage doors. The architect is having each door treated with a nano-coating that will make them 300 times more resistant to the staining effects of weather. In my own garage, I now have a pair of nano-formulated car-care products by Eagle One. Last month, I bought their patent-pending Nano-wax. It sealed the paint surface on my Corvette so thoroughly that, when it rained the other day, the water didn't just bead up – it fell off. For a similar reason, the nano-based vinyl and leather conditioner I purchased works almost too well. (Because the chemical particulates are so infinitely small, the pores of the seat surface fill up with the conditioner and become super-smooth. During heavy cornering I found that, if I didn't have the lap belt extra tight, I tended to slide off the seat.)

While the closet isn't a fraction as important as The Garage, in 2009, the arrival of nano-coated fabrics in the clothing industry will likely rival the importance of permanent press back in 1964. I have yet to see them on the racks, but I'm told you can now buy trousers that offer nano-enhanced stain protection. Unlike the car-care products, I can't vouch for the advantages first hand, but supposedly you can spill ink on these pants and it won't stain because the ink molecules are too large to permeate the fabric.

For purposes of this *Report*, however, the dullest, most prosaic closet in the house is the most important place of all: The utility closet. This is where the air filter for your central heating and air conditioning system is located. I can't attest to that statement either because I'm not a handyman, and here at the beach nobody has air conditioning. Doesn't matter. Most everyone else does ...

## ... From Ultra-Micro to Mega-Macro

Hard and fast statistics to evidence the aggregate size of the air-filtration industry are not easily found, in part because the sector's so large and varied. But, suffice it to say that, even if you ignore commercial, government, military and transportation sectors, the annual market for home filters alone is as mammoth as nanoparticles are miniscule.

This is why Applied Nanoscience's nano-formulation for greatly enhanced air filtration will be so world-class valuable. Even if the Company captures only a small piece of any one segment, anybody who owns even a small piece of the Company is going to make a big piece of money.

In the U.S. alone, census estimates suggest there are 115 million single-family residences – 60%-65% of which have central heating and/or air. Filter replacements are like oil changes in that different people change filters at different intervals – except more so. A great many factors influence the frequency of filter changes: Climate (extreme hot/cold), whether you live where it's particularly dusty, whether you have allergies, pets, problems with mold, etc. So, again, it's hard to come up with a perfect estimate – but, after calling several hardware stores in several cities, the consensus I came up with was two changes a year. As for price, \$5 per filter seems like the standard almost everywhere – in part because, as I said earlier, air filters are a generic product. If you put a pencil to all of the above, the estimates support the assumption that Americans probably spend over \$700 million annually on home heating/air-conditioning filters.

If you are not aware, in virtually every statistical instance, the whole of the European market is, dollar for dollar, virtually identical the U.S. market; Canada always equates to 10 percent. These comparisons are almost always true, regardless of what “total” is being compared – be it population, number of cars owned, diamond sales at Christmas time, you name it. So, already we’re talking a \$1.47 billion air-filter market ... And then there’s the rest of the world’s nations, and all the sectors besides residential housing that need air filters – and filter replacements, too. So “yes,” the air-filtration segment is quite large – certainly large enough to propel a peanut-sized company with proprietary nanoparticle technologies to great heights.

Believing the fastest turn to revenues will be in nations where there’s less government regulation, Applied Nanoscience has thus far been focused on Russia, India, Taiwan, Singapore and Australia. Patent protection has been granted in each of these nations. Just as importantly – and as I have said several times before – the patent is so all-encompassing that what’s covered qualifies as a true Platform Technology. The patents are deep and the scientific documentation supporting them is thick. The four-year effort to achieve them was a nightmare, and the million-plus dollars it took to get there was everything CEO Tom Allen had. And then some.

Still, it’s a nano-sized investment relative to the top-line revenues the Company can generate – especially when this is the Bottom Line statement: If anybody wants to treat any kind of air filter with any kind of nano-formulation and apply that formula in, a) Granular form to sit beside the filter; b) Using a coating that sticks on top of the filter; or, c) By impregnation so it resides in the filter this (which is virtually everything that can be done!), then it’s simple: You must pay Applied Nanoscience for the right. That’s what makes this a Platform Technology. That’s why this Company could earn hundreds of millions of dollars in licensing fees.

Why hasn’t it done so yet? Basically, it hasn’t tried. In fact, for the most part, APNN has avoided making any sales calls of any kind to all but the smallest of companies. The reason is simple, too: It still needs one more patent to be granted before it can safely show its full hand. Existing patents cover the methods by which the nano-formulation can be applied (or anyone’s nano-formula, for that matter), but not the formula itself. Everyone is working on such a formula. There isn’t a Fortune 500, Boeing-type company on Earth that doesn’t have a state-of-the-art nano facility, and many of them are working to develop what Applied Nano already has. As CEO Tom Allen explained months ago, “If anyone had it, believe me, the whole scientific world would know it.” Furthermore, these organizations have the best equipment and the brightest people. If APNN were to give them a sample to test for efficiency, they could reverse-engineer it in a New York minute. “After that, it would be The Battle of The Checkbooks, and we all know who has the smallest.” And finally, by his own admission, if Allen were to present the Company’s patented method of applying nanoparticles to filter manufacturers, they’d probably say, “Great!” – just before they asked, “But do you have the particles themselves?” At that point, he’d look silly – and they’d probably hang up.

Therefore, make no mistake: Attainment of the U.S. patent is absolutely cornerstone to success – and it looks like the corner itself will soon be turned. The basis for optimism is well-founded. For starters, we know the formula works. Exhaustive testing has proven that to a certainty. Second, all patent searches strongly suggest there has been nothing submitted to the U.S. Patent Office to compete with it yet – and anything that comes after our Graham Bell would be just another frustrated Marconi. Third, although it is not possible to say how many months it takes to get a patent of this kind, most would guess two years if they were pressed. (I know, because I pressed.) Applied Nanoscience’s application was filed in August of 2006. Finally, the most telling sign of all has to do with the back-and-forth action a patent filing takes once the application has been made. In the early stages, it goes nowhere fast. As it clears various hurdles, the pace quickens a bit – with the patent applicant able to monitor the activity on line. Allen told me a month ago that APNN’s file was definitely in play. Now, he says he checks it every morning, sometimes before coffee.

Of course, he could be way off, timing-wise. The patent could still be years away – if it comes at all. That’s what makes APNN a “speculation.” A nickel-per-share price is what makes it “a wonderful speculation.” Regardless of the outcome, all I can tell you is that I know Tom Allen to be an honest man, and this man is honestly anxious to get up in the mornings. He really believes U.S. Patent approval is that close.

As for myself, I’m short on room, but long on math. The numbers I’ve come up with relative to the licensing potential of the technology keep trying to push off my calculator screen. In the next *Report*, I’ll share my figures, and how I arrived at the numbers. I’m actually quite impressed. This really could be big. My advice is to take a flyer on APNN down here. I think everyone who got tired and thought about selling is already gone – meaning you’ll likely have to bid up for your shares. But, even at a dime, the risk-to-reward ratio is just too attractive to pass up. **BUY**.

## And Finally, Some Brief Updates

**Amarillo Biosciences, Inc. (NASDAQ/BB: AMAR) \$0.07** – The next Hotline is tentatively scheduled for mid-January, with the expectation that it might coincide with an announcement from AMAR. Very recently, the Company has made presentations to government officials in Kansas, and last Friday Dr. Cummins also gave a presentation in Minnesota to representatives of 45 cities. Both were to explore the possibilities of relocating Amarillo Biosciences; both were by invitation; both offers would provide AMAR with substantial sums of cash and other financial perks if accepted. Other than that, Dr. Cummins was very tight-lipped – for good and obvious reasons.

I have no way of knowing how much money might be involved, but relocation incentives generally run into the millions of dollars – even for smaller NASDAQ enterprises. For consideration only: If AMAR is offered just \$3 million, on a per-share basis, the stock would be selling for a 30 percent discount to cash in the bank!

Believing several of these relocation invitations to be serious – and any government offers to be 100 percent bona fide – there exists a fairly intriguing reason to speculate on the stock. But the real reason to **BUY** Amarillo Biosciences would be the original reason: It's the world leader in oral interferon, with nine patents, three patents pending, development partners in 21 countries and a very promising pharmaceutical that could enable a \$2 million biotech to participate in the multi-billion-dollar worldwide COPD market.

**International Card Establishment, Inc. (NASDAQ/BB: ICRD) \$0.03** – Probably three months ago, I was talking with ICRD CEO Bill Lopshire. We were just chatting, really, because he had nothing concrete or public to report. So it was almost by accident that he mentioned an employee of the Company who had just returned from a wedding in Belgium. (There was a wedding epidemic at the time. In fact, it was probably the mention of my own wedding plans that triggered his thought.) Anyway, while the ICRD guy was there, he took an afternoon to educate himself a little bit as to Europe's version of the bankcard industry. What he learned may have given accidental birth to a remarkably fortuitous business opportunity for rapid growth and international expansion.

Apparently, Europe is way ahead of the U.S. when it comes to smartcard technology. Unlike America, where it's still in its infancy, virtually all of Europe's point-of-sale terminals are set up to handle smartcards, which are the preferred bankcard technology. Ours, by contrast, are of the magnetic strip variety, which provides far less data. In turn, they are far less useful in providing retailers with marketing benefits – but preferred by thieves everywhere because they are so much easier to counterfeit, use in ATM's, pass at registers, etc.

Concurrently, the European bankcard industry is as new to the whole idea of gift cards as it is sophisticated in the use of smartcards. Gift & Loyalty cards are booming overseas – much as they were here in the U.S. a few years ago. Long story short, ICRD is in the smartcard business – and Europe is already 100 percent geared towards their use. ICRD's smartcards are unique because they support Gift & Loyalty programs. Bill connected the two ideas and is said to have run with it – and fast. No official word of any kind ... yet. My belief, however, is that ICRD is working to situate itself in Europe as I write. Still operating at a small profit or a small loss, with no long-term debt and ready access to more than a half million dollars in growth capital, I continue to rank this stock a very good long-term **BUY**.

As always, thank you for subscribing – and Happy, Happy Holidays to one and all !!!



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