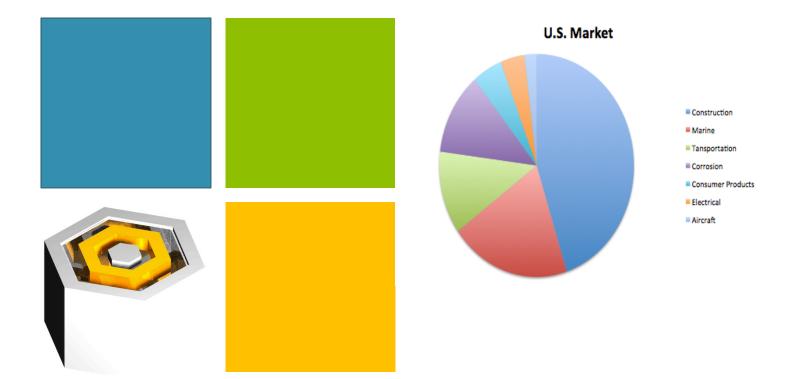
# **SOHMIUMe**





## The Future Element of Technology

For SOHMIUMe, the frontier of nano-technology begins with a single carbon atom. It is here where the structures of the future begin to take shape. Although the material may be infinitesimally small, their applications are potentially endless. SOHMIUMe was founded to pursue the imminent emergence of carbon nanotubes (CNTs). Our proprietary technology implements a cost efficient process for production of CNTs in commercial quantities.



## Solution to Market:

Since the carbon nanotubes (CNTs) market is expected to grow in the foreseeable future, it is crucial that a high yield process be designed while keeping costs and resources in mind. SOHMIUMe intends to enter the market by constructing an efficient process that will provide the commercial quantities needed to grow the market. There are three major categories that will determine SOHMIUMe's commercial viability, which include, the product, market potentials, and market competition. Multi-Wall Carbon Nanotubes (MWCNTs) is the primary product Sohmiume will produce as a raw material to manufacturing companies. The R&D phase will include perfecting experiment conditions to efficiently control yield and CNT type to meet customer demand. The initial target market consists of composite materials, textiles, and

coatings. CNTs will been an additive, enhancing performance of the base material. CNTs are 100 times stronger than steel, with only one-sixth the weight, while also providing stiffness 40 times than that of aluminum. As of 2013, the current market of manufacturing MWCNTs is estimated to be 1,670 Tons/year with an estimated level growth of 39.6% by 2018. Manufacturing levels in 2018 are forecasted to be approximately 8,847 Tons/year. The market value for MWCNTs is the U.S. was estimated to be 350 million for 2013 and expected to grow to 760 million by 2018.

## Applications:

Through SOHMIUMe proprietary MWCNT Chemical Vapor Deposition (CVD) production process, MWCNT produced can be tailored to the downstream user. This means that with proper manipulation of process conditions MWCNT are manufactured based on downstream users desired specifications. The manufacturing flexibility allows SOHMIUMe to supply CNTs to a variety of industries, and to be involved in multiple markets.



#### Defense:

"To maintain a competitive edge in defense, there is an urgent need for a new generation of multifunctional materials to improve combat systems in space, air, ground and sea." - Peter Antoinette, president of Nanocomp Technologies



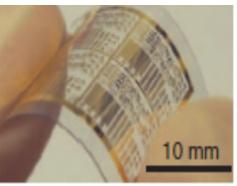
#### **Energy:**

To efficiently harvest wind energy, CNTs with their high strength to mass ratio, would enable the development of larger rotors, allowing for more energy to be captured.



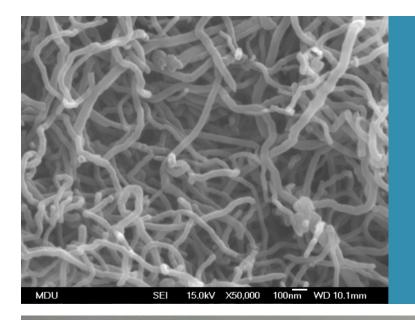
#### **Aerospace:**

Space exploration is ever inhibited by the high cost of fuel, and also the overall weight of the transportation system. Composite materials enhanced by CNT exceptional mechanical properties, would reduce the overall weight needed for liftoff. This reduction in weight would allow for more scientific payload, while reducing fuel consumption and cost.

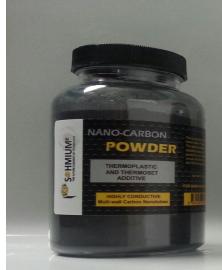


#### **Electronic:**

With semiconducting and metallic properties, CNTs are breaking new ground in the electronic industry in a big way. For instance, researchers at MIT have a developed a "bionic plant" which hosts CNTs in the chloroplasts, enhancing photosynthesis for possible solar cells, while also allowing the plant to act as a chemical sensor.



# **PRODUCTS**



## **POWDER**

Multi-wall CNTs for host material dispersion



## SOLUTION

Dispersed Multi-wall CNTs in chemical solution defined by customer specifications



## **PELLETS**

Multi-wall CNTs functionalized in ABS, 3D printer ready.

## **SOHMIUMe**

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