

NCC MOVING NANOTECHNOLOGY PROJECT FORWARD

NCC is poised to initiate work activity for a new fabrication process for carbon nanofibers and nanotube membranes or “buckypapers.” NCC has signed a teaming agreement with an electrospinning company called NanoStatics to look at tapping their technology for producing nano materials in a membrane form.

“This may be a good fit for the Florida State University (FSU), Tallahassee Buckypaper development project or be considered as a stand alone technology for several industries,” said Lou Luedtke, President and CEO of NCC. “Funding this year for continuous membrane carbon nanotubes is working its way to the Air Force Research Laboratory (AFRL) at Wright-Patterson Air Force Base with a white paper and we expect a statement of work in the next few weeks.”

This activity follows the recent award of \$1.5 million to NCC for the production, acceleration and commercialization of buckypapers. Led by NCC, the team includes AFRL’s Materials and Manufacturing Directorate, FSU’s Florida Advanced Composite Center of Technology (FACCT) headed by Dr. Benjamin Wang and the Wright Materials Research Company based in Beavercreek. In addition to making the technology more cost effective for industry, the

application of nanotube buckypapers to composites will improve the performance and strength of military vehicles and aerospace structural materials, as well as reduce fuel and structural maintenance costs.



NCC’s advanced capabilities, skilled staff, engineering expertise and state-of-the-art facility continue to position the Center for programs like nanotechnology.

Super strong and lightweight, the nanofibers and nanotubes also have application for lightning strike protection and directional thermal and electrical conducting applications in materials and devices. “Nano manufacturing process scale-up will be a significant part of the NCC growth strategy for years to come,” said Luedtke.

FROM THE DESK OF JAY BATTEN

Last month I introduced NCC’s new total solution package. Leveraging the strength of the Center’s core

competencies, the package includes the latest technologies in materials knowledge, design tools (including design for fatigue) and diversified process expertise.

This month I want to provide you with more detail about this exciting offering. The four components I outlined, typically referred to as Stages of Business (Design Analysis, Component Demonstration, Product Validation and Turn-Key Deliverables), are key activities we can perform for our partners, members and prospective new customers. Each Stage of Business is defined by four levels of complexity:

- Category I - Very similar to an earlier development activity or technology
- Category II - Similar, but with some notable variations
- Category III - Similar, but having major variations
- Category IV - Completely different from anything NCC, and/or industry have performed in the past.

NCC’s extensive history of past projects and in-depth hands on experience gives our staff the unique capability to zoom in on a Rough Order Magnitude (ROM) project plan as a quick reference tool for approximating capital costs, development costs, length of project and other essential elements.

Typically, we will perform a “Value Added Value Engineering” (VAVE)



workshop to further define customer expectations and thus our deliverables. Once this has been done, we can fine tune project planning costs and timelines. In future newsletters we will showcase some of these successes.

NCC is a not-for-profit organization with a primary mission to create jobs. The Center also has the capacity to help companies bring products to market quicker, develop new manufacturing processes and in many cases, provide capital funding. As a result, the Center is strongly positioned and best suited to offer affordable project solutions to its partners. To accelerate the manufacture of affordable composites, NCC is working on enabling technologies, such as: low cost tooling, rapid low cost processing, and affordable nano materials. Look for more about these enablers in future issues of the newsletter. If you have questions for Jay or want to find out more about NCC's total solution package email Jay at jbatten@compositecenter.org.

UPDATE ON NCC PROJECTS AND PROPOSALS

The Ohio Wright Capital proposals NCC submitted December 15 are still being evaluated but some results are expected to be issued sometime in March. In addition to the Wright Capital proposals, NCC is leading the effort for a 2007 Army plus-up program called Sustaining Weaponry by Alternate Part Substitution (SWAPS).

NCC has partnered with firms from South Carolina and Nevada for this effort. The project will combine NCC's design capabilities with existing programs the ARMY uses for evaluating alternatives for legacy weapon rebuilding and maintenance.

The Center is also laying the groundwork for 2007 funding by working with member company, the University of Dayton Research Institute (UDRI), on an AFRL plus-up request for NanoSpense – Production of Nanocomposites for Aerospace Applications.

NCC SPINS OFF PERSONNEL

NCC program manager Ela Kos has been selected to support the composite airfield mat program for WebCore Technologies, Inc. Kos will continue to consult for NCC on the Center's bridge programs and head its infrastructure column in CM Magazine while working full-time for WebCore. NCC bridge



Kos will continue to consult for NCC's bridge programs.

work includes the Anacostia River waterfront in Washington, D.C., the newly released 29th Street project and final installation of the Summit

county bridge under the Center's C4I program. Kos will spend about 10 hours per week (Monday and Thursday afternoons) at NCC. The move caps a string of NCC incubation services that have helped WebCore grow from fledgling research and development status to an established Dayton-based manufacturer.

NCC's Manufacturing Accelerator Campus concept creates a nurturing atmosphere for organizations like WebCore by providing floor space and other important support needs. Previously housed at the Center for four years, WebCore also used NCC's pilot production facility to mature its proprietary composite core technology.

WebCore manufactures its family of core products under the trade name TYCOR® using a process that places glass or carbon fiber reinforcements through-the-thickness of closed cell foam sheets. A sponsor of a Small Business Research Innovation Program (SBIR) for WebCore, NCC also included the company in a state-backed composite bridge program. As a result, TYCOR® panels were used in the first composite bridge deck installed on federal property; the Hebble Creek bridge site located at Wright-Patterson Air Force Base (WPAFB).

NCC also helped generate critical contacts in the aerospace and infrastructure markets to further



position WebCore for growth. “We felt the airfield mat concept was a good fit for WebCore,” said Lou Luedtke, President and CEO of NCC. “Through our support WebCore was able to secure initial funding and position themselves for the early trial phase and additional funding. WebCore is a good example of the range of services NCC can provide to companies from infrastructure support to access through our Member Program to critical business opportunities.”

While at NCC WebCore grew into 18,750 square feet of manufacturing space and expanded its business development operations. In 2005 the company moved to a new location in Dayton that gives WebCore more than 60,000 square feet of manufacturing and office space.

“By incubating and accelerating our operations at NCC we were well prepared to define WebCore’s business needs and core production operations in our new plant,” said Dan Hutcheson, President of WebCore. “Our relationship with NCC was and continues to be a beneficial one.”

“NCC isn’t just about the growth, development and commercialization of the composite industry,” said Luedtke. “The Center is dedicated to helping grow businesses and our most important resource - skilled professionals.”

NCC NAMES DIRECTOR OF BUSINESS DEVELOPMENT

NCC has named Philip Mowry Director of Business Development. Mowry will work to build relationships with Ohio’s manufacturers and help grow the sector through the transition of composite technologies.

In addition to helping to increase awareness about NCC among manufacturers, Mowry will manage NCC’s member program and work with commercial associations and government agencies such as the Ohio Department of Development (ODOD). He will also develop new and diverse project funding to foster sustainable growth for NCC while helping to identify and open new markets for the Center.

Mowry comes to NCC from LexisNexis where he held the position of Vice President and General Manager. Holding several key positions at LexisNexis, Mowry also worked as a Trade Relations Negotiator/Purchasing Manager for Reynolds & Reynolds. Mowry reached the rank of Major in the United States Air Force and served as a full-time faculty member at the International Law Department, Air University in Montgomery, Alabama. Prior to his military career, Mowry served as an Assistant to the Attorney General for the State of Ohio.

He holds a Bachelor of Arts degree from Earlham College, Richmond,

Indiana and a Juris Doctorate from the University of Dayton School of Law. Mowry is a graduate of the Command and Staff College United States Air Force Leadership College in Montgomery and the Executive Business Program, Finance and Marketing at the University of Michigan Business School in Ann Arbor, Michigan.

Mowry brings in-depth business strategy, formal innovation training, business start-up and general manager experience as well as operational leadership to his new position at NCC. For more information contact Mowry at pmowry@compositecenter.org.



Philip Mowry – NCC’s new Director of Business Development.