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DOW SELECTS NCC FOR NEW DEVELOPMENT FACILITY

The Dow Chemical Company selected the National Composite Center (NCC) as an incubation site for development of the company's breakthrough FULCRUM thermoplastic composite technology. DOW experts, supported by NCC specialists, will work to accelerate the commercialization of FULCRUM applications with key licensees.

FULCRUM thermoplastic composites offer several key advantages over traditional composite materials. Specifically designed for the fabrication of continuous fiber composites, FULCRUM thermoplastic material is environmentally friendly, offers tougher and more damage-resistant finished composites and greater design freedom. Production rates have also proven to be significantly faster than traditional thermoset composites - helping to reduce capital and infrastructure investment.

A center for excellence, NCC was selected for the incubation site due to its broad composite experience and ability to provide a ready-to-use facility. The

FULCRUM development line is expected to be operational in the first quarter of 2003. The incubation site will house a number of developmental forming and prototyping processes critical to a variety of future applications. DOW also has plans to tap NCC's membership for potential capabilities and technologies that may prove a good fit for other projects the company is involved in.

NCC TO ATTEND MID-AMERICA TRUCKING SHOW AND 2003 MIDWEST COMPOSITES CONFERENCE IN MARCH

NCC will attend the 2003 Mid-America Trucking Show with licensee Liteflex LLC and exhibit at the 2003 Midwest Composites Conference in March. NCC and Liteflex will have a presence at Booth # 3115.

A premier event for the trucking industry, Mid-America will be held March 20-22 at the Kentucky Fair & Exposition Center in Louisville, Kentucky. The trade show expects an attendance of nearly 70,000 visitors and offers NCC a key opportunity to help promote Liteflex LLC's composite leaf spring technology along with the

Center's own patented Litecast™ process.

NCC's Litecast™ allows integral metal attachments to be used on composite structures. Litecast™ produces lighter weight suspension link assemblies by making it possible to cast aluminum end fittings onto composite rods. The process eliminates adhesive bond failure and offers suspension links in several sizes for the medium to heavy-duty truck markets. Mid-America is also expected to provide a platform for a special announcement on behalf of Liteflex. NCC members will want to stay tuned as this breaking news unfolds.

NCC is also exhibiting at the 2003 Midwest Composites Conference. NCC plans to showcase Liteflex, Litecast™ and its preforming technology at Booth # 308. NCC will give special emphasis to commercial successes that include Lion Revolution Helmets, Chevrolet Corvette and GM EV Electric Vehicles. In addition, NCC staff will present a paper on the advantages of preforming. The trade show is slated for March 13 - 14 at Century Center in South Bend, Indiana.



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NCC SUBMITS PROPOSAL TO THE WRIGHT CAPITAL PROJECT FUND

NCC has submitted a proposal to the Wright Capital Project Fund (WCPF) in the area of advanced materials. NCC is asking for capital funds to purchase and install a Large Scale Preformer needed to produce and qualify large composite parts that can significantly benefit from the Center's Rapid Fiber Preform technology. The aerospace and defense industries are key target markets for NCC.

Once installed, the preformer will act as the cornerstone piece for future research to uncover more cost effective composite parts processing methods. The research will also act as a springboard for NCC's plans to launch an Ohio-based aerospace composite parts manufacturing company. The WCPF award process earmarks up to \$10 million for fiscal year 2003 and is being conducted by the Ohio Department of Development (ODOD).

WCPF supports commercialization collaborations involving Ohio universities, nonprofit research organizations and companies targeting

information technology, power and propulsion, advanced materials and instruments, controls and electronics. WCPF is part of Governor Bob Taft's Third Frontier Project – a \$1.6 billion 10-year plan to secure Ohio's position as a national leader in the high-tech economy of the 21st century.

NCC ENTERS TECHNICAL PHASE OF RAPID FIBER PREFORM DEMO TO PRODUCE PARTS FOR THE AEROSPACE INDUSTRY

This month NCC is completing the technical phase of a Rapid Fiber Preform (RFP) demonstration to produce C-17 cockpit overhead switch panels. Preforms, fabricated at NCC, are being vacuum infused on a production molding tool at Boeing's Mesa, Arizona facility.

The selected resin, vinyl ester, passed the Boeing DMS 1510 specification for flame resistance as well as the ambient and elevated temperature tensile strength requirements. NCC expects to complete the demonstration phase and move to actual parts production this year. Through development projects, NCC modified its equipment and took its signature

RFP technology to a new level making it possible to rapidly place and orient carbon fibers – a critical ingredient required for production of high performance, low cost aerospace parts.

NCC COLLABORATES ON WRIGHT CENTER OF INNOVATION PROPOSAL

On the leading edge of composite development, NCC is collaborating with the Wright Brothers Institute (WBI) on a Wright Center of Innovation proposal that supports the establishment of a center of excellence for nanocomposites.

The proposal asks for \$10 million in capital funds to purchase equipment that would be used to process nano-particles into a resin matrix for both thermoplastic and thermoset resins. NCC will team with the University of Dayton, Ohio State University, the University of Cincinnati, Case Western Reserve, General Electric, Goodrich, Delphi Corporation and WebCore Technologies Inc., on the effort.

Current research reveals that if a nano-particle could be effectively incorporated in the matrix resin that the amount of reinforcement



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could be reduced resulting in a lower cost/weight savings ratio. Distribution of fibers could be more effectively controlled and a network formed to create a more isotropic part.

NCC, along with its team members, will work to develop an interphase for the nano-fibers to allow an effective bond, develop a product form for clays, pigments and nano-fiber that can be consistently handled in a commercial environment and develop a process permitting maximum reinforcement value. The project's initial focus will target commercialization through automotive applications.

NCC PARTICIPATES IN INAUGURAL TECHFEST 2003

NCC opened up the exciting world of composites to the local community at the first TechFest 2003. Held at Sinclair Community College Feb. 21 – 23, the event combined a festival-like atmosphere with exhibits showcasing the science, engineering and technology activities and products of Greater Dayton businesses, academia and professional societies.

The event created a special atmosphere where visitors

ranging from children to senior citizens could learn about the technology of the past, present and future. TechFest also made information available on schools, careers, job opportunities and technical and professional societies.

NCC used its booth to talk with visitors about what composite material is and highlight its benefits. The Center also displayed parts made from composites such as fire helmets, skateboards and golf clubs.