

NCC AND QUICKSTEP SIGN LETTER OF INTENT

The National Composite Center (NCC) and Australian advanced materials group Quickstep Holdings Limited (ASX: QHL – “Quickstep”) announced that they have signed a Letter of Intent for collaboration which includes NCC’s acquisition of a QS20 composites production machine and the commitment of Quickstep resources to establish a new Center of Excellence at NCC.



Quickstep capabilities

Expected to be operational in September 2006, the new center represents the third global regional facility of its kind to be established by Quickstep. The Center will allow Quickstep to showcase its unique composites manufacturing technology to some of the largest automotive, aerospace, marine and infrastructure companies in North America.

Quickstep’s CEO, Nick Noble, said the agreement with NCC was consistent with one of the company’s core commercialization strategies to establish demonstration centers for its technology on strategic continents and in close proximity to key target industries.

“The centers of excellence already in operation at Manchester in the UK and Geelong in Australia have been very effective in providing a conduit to bring the Quickstep Process directly to the doorstep of potential end-users, including material suppliers, producers of components for heavy trucks, commercial and general aviation aircraft, personal watercraft and industrial/infrastructure projects,” Noble said. “We are delighted to have finalized this landmark agreement with NCC, which has played a pioneering role in promoting, developing and applying advanced composites technology to a range of different industries in North America.”

In support of the development of this showcase center in Dayton, Quickstep and NCC obtained letters of support and collaboration from more than 10 companies, including Boeing, General Motors, Huntsman Chemical, Applied Sciences Inc., which produces carbon nanofibres, Vermont Composites and University of Dayton Research Institute (UDRI). The new Center will give North American OEMs the opportunity to fully evaluate the merits of the Quickstep Process

and its associated performance characteristics, namely lower costs and higher volumes in composite production when compared with traditional manufacturing methods.

Quickstep’s US-based Chief Operating Officer, Dale Brosius, commented: “NCC has a long history in successfully introducing emerging and innovative technologies to the US composites marketplace. “NCC is well positioned geographically with respect to the US automotive and aerospace industries – key potential users of Quickstep’s technology – and already has existing infrastructure and relationships in place with major composite companies,” he continued.

“In addition, a number NCC’s complementary technologies, including closed molding, rapid fiber preforming, nanotechnologies, design optimization, and Long Fiber Reinforced Thermoplastics (LFT), have the potential to be significantly enhanced by Quickstep’s rapid curing process.”

For NCC, the agreement provides the opportunity for NCC’s skilled staff to work closely with Quickstep’s senior technical personnel in the establishment of the Center and use the Quickstep QS20 machine to demonstrate the production of large composite components.

Under the terms of the Letter of Intent, NCC will acquire a Quickstep QS20 machine with a



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perpetual technology license at commercial rates and will also provide the premises, facilities and support personnel for the operation of the Quickstep Center for a minimum of three years, with an option to extend based on the success of the collaboration.

For its part, Quickstep will commit resources (including cash and in-kind contributions) over a 3-year period towards the operating costs of the Center, including a full-time trained engineer to support customers in evaluating the Quickstep Process and making prototypes. The project will also be partially funded by the State of Ohio and the City of Dayton.

NCC AND COMPOSITES INNOVATION CENTRE COLLABORATE

NCC and Composites Innovation Centre (CIC) Manitoba Inc. have signed a Letter of Intent to collaborate in the development and commercialization of composite materials and process technologies. Cooperative projects will target sheet molding compounds, process technologies for nano-, bio- and long fiber thermoplastic and thermoset materials and applications for closed molding, preforming, rapid prototyping and design optimization and analysis.

The collaboration will facilitate the transition of technology commercialization for OEMs and suppliers alike that work across this common national border.

“The CIC supports industry in rapidly developing and commercializing composite technologies,” said Sean McKay, Executive Director for CIC. “This is accomplished, in part, through collaboration with technical experts in the field. CIC felt that by having a strong relationship with the NCC, we would be much more effective in meeting our clients’ expectations and requirements and, conversely, so would the NCC. This agreement provides the mechanism that will allow our unique skills and technologies to be readily available for each other’s use.”

The agreement between the two Centers is supported by CIC’s federal funding agency Western Economic Diversification Canada (WD) through the Enhanced Representation Initiative (ERI) to enhance and formalize the relationship between Ohio and Manitoba-based companies, NCC and CIC.

“NCC is recognized as a premier commercialization agent for advanced materials technology,” said Lou Luedtke, President and CEO of NCC. “The Center is in the business of helping companies leverage the advantages of composites by continually developing cost effective processes and manufacturing techniques that make that possible. This agreement provides another critical component in our objective to extend the reach of NCC both nationally and internationally. By continuing to make global

connections in a global economy, NCC is able to place the strength of these resources at the fingertips of member companies, Ohio businesses and US industries.”

MEMBER MEETING 2006

NCC’s sixth annual Member Meeting attracted nearly 80 participants and for the first time included nonmembers during opening day activities. Companies such as Key Bank, Gem City Engineering, NestONE Solutions and ZUND North America took advantage of the nonmember invitation to find out more about NCC and its programs. Some 15 companies exhibited.



Highlights included introduction of and a presentation by Composites Innovation Centre (CIC) Manitoba Inc. The growing relationship between the two Centers

demonstrates NCC's commitment to be an internationally recognized commercialization agent. Presentations included NCC's technical staff and companies such as Composite Advantage, Delphi, PolyNova, University of Dayton Research Institute (UDRI), Red Cedar Technology Inc., and PolymerOhio. In addition to talks about advanced technology, presentations were also given on topics like banking and finance for start-up companies.

The event's first day concluded at the historic Engineers Club of Dayton with guest speaker Martin B. Foil, Executive Director of the National Brain Federation. He discussed brain injuries and trauma linking a portion of his presentation to one given earlier in the day by NCC's Dr. Brian Knouff on the design of composite helmets.

Keynote speaker Dr. Charles Browning headlined day two of the event. Installed as the new endowed Torley Chair for Composites at the University of Dayton's (UD) School of Engineering, Dr. Browning shared his vision for his new position.

He is implementing a plan to create a world class network of specialists that encompasses the advanced materials expertise in the Dayton region and link it to the academic and research and development talent at UD. NCC will play a pivotal role as a conduit between industry, the Torley chair and the new network.

Guest interest in NCC's facility prompted a number of unscheduled tours. At the close of the program many attendees stayed to continue talking with NCC's senior engineers and other participants. Feedback on the event was substantial. In addition to being intrigued with the history of the Engineers Club, a number of members expressed their appreciation for the type and variety of events as well as the networking. One company reported attracting the interest of several other businesses in its product line.

NCC TECHNICAL OVERSIGHT COMMITTEE AWARDS 2006 PROJECT

During Member Meeting 2006, the NCC Technical Oversight Committee (TOC) announced a project award of \$69,000 to team members Dr. Brian Knouff, Program Manager for NCC; Jessica Ravine, Chemical Engineer and Pritam Das, Lead Engineer for NCC's LFT Division. The project will focus on developing a process control system for Long Fiber Reinforced Thermoplastics (LFT) materials and integrating Finite Element Analysis (FEA) and Mold Flow Analysis (MFA) for maximum design optimization.

NCC has successfully established and demonstrated its LFT materials processing cell. Though the cell consists of a continuous impregnation line and an extrusion compression molding unit, the product development cycle needs additional fine tuning to deliver end



(l to r) Jessica Ravine, Harry Couch and Pritam Das

products to customers in a timely manner. This project will develop a set of guidelines for a well defined process control system for LFT materials and explore the colorability of LFT materials. Expertise will also be developed to integrate FEA and MFA for ultimate design and optimization of LFT materials. This will give NCC the ability to predict issues like moldability and warpage in LFT parts before actually molding the final part.

The project will also examine the integration of a supply chain for process development of LFT materials by linking Ticona as an LFT material supplier with the technical expertise of the University of Alabama at Birmingham (UAB) and the advanced software capability of Red Cedar Technology.

STUDENTS EXPERIENCE VIRTUAL LAB

NCC successfully demonstrated the concept of virtual laboratory by hosting a long distance learning program with the University of Alabama at Birmingham (UAB). The program required setting up a system that made it possible for

UAB students to view in real time industrial processing of composite material without ever leaving the campus. Network cameras tied into the internet and strategically placed at NCC, allowed UAB students to virtually “visit” NCC and watch work processes as they occurred.



UAB students observe NCC operations via web camera

Students were also able to control the direction of individual cameras or zoom in to observe the detail of a specific part. This unique approach allows students to learn about advanced technologies without the university incurring the cost and time associated with travel.