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## **Advanced Composite Group Ltd. and Integran Technologies Win JEC 2011 Composite Innovation Award – Equipment Category**

Advanced Composites Group Ltd. (ACG), part of Umeco Composites Structural Materials (UCSM) – a Division of Umeco plc, along with Integran Technologies Inc., a world leader in “Nanovate” nanometal materials, have won the JEC 2011 Composite Innovation Award - Equipment Category for Carbovar - Nanovate -NV surface composite tooling.



The innovation combines the hardness, durability and damage tolerance of the nanometal coating with the lightweight, low thermal mass of a carbon fibre composite mould tool to deliver a durable and cost effective solution. The Nanovate surface is an ultra-hard, nanocrystalline nickel/iron alloy coating that has a low coefficient of thermal expansion (CTE) matching the CTE of the composite mould tool.

The Nanovate surface increases the longevity of the mould, becoming comparable to that of a conventional metallic mould tool. Composite tooling saves the energy required for the heat-up and cool-down phases, and the energy required to lift, rotate and manoeuvre them within the working environment, and during the lay-up process (faster material deposition rates).



The successful development of this metal/composite hybrid mould technology is the result of a 5-year joint collaborative research and development programme between ACG and Integran Technologies Inc. The technology was recently presented during a number of top-level visits to major European and US aerospace composite companies. Both partners are eager to develop this technology further and would welcome enquiries from interested parties.

At an average cost of £250,000 per tool for the Dreamliner alone, the potential market value for tooling over a 4-year period is in the region of £250 million. Converting just 10% of these “safe” metallic mould tools to a Nanovate surfaced composite mould tools could equate to a possible saving of over £5 million.

Photograph: ©ACG Ltd 2011 - Carbovar - Nanovate - NV Surface Composite Tooling

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