



E-news

March 06

National Composites Network

growing a successful UK composites industry

NCN website: www.ncn-uk.co.uk

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If you think they would like to receive NCN E-news regularly, please [tell us](#)

Official opening of NDT Validation Centre

The third Centre of Excellence under the NCN banner was opened on 6 February 2006 by the Rt Hon Alun Michael, Minister of State for Industry and the Regions, and Andrew Davies, Welsh Assembly Government Minister for Economic Development and Transport.

Located at TWI's Port Talbot site, the NDT Validation Centre has been launched by a £2.25M tri-party funding initiative between the DTI, the Welsh Development Agency and industry.

The Centre is an independent organisation managed by TWI Ltd and run in collaboration with Swansea Institute of Higher Education and Swansea University. The Centre focuses on development of procedures and standards to take new inspection techniques from the laboratory into industry, as part of their fully validated QA/QC and in-service inspection assessment process.

The Centre addresses the NDT needs of all structural materials but, specifically for composites with their own distinct challenges, techniques such as thermography and shearography are now being further developed and calibrated for use in the assessment of full structural parts.

Under [NCN tech support services](#), the Centre's expertise and facilities can be accessed by industry to assist understanding, implementation and development of operator skills in the full range of inspection techniques.



Left to right: TWI Chief Executive Bob John; Andrew Davies AM; Alun Michael MP; and Philip Wallace, manager of the NDT Validation Centre.

For further information on the Centre and on facilities at Swansea Institute and Swansea University, contact, in the first instance, the NCN Helpdesk on 01223 894 662 or e-mail info@ncn-uk.co.uk

TWI's website has [more information](#) on the official opening.

Technology road-mapping for the automotive sector

The NCN is now in the midst of a series of sector-focused technology road-mapping workshops. The first of these considered the automotive sector and involved facilitated brainstorming by key representatives from all levels of the supply-chain, with the primary aim of addressing these questions:

- where are we now?
- where do we want to be?
- what is stopping us getting there?
- what needs to be done to overcome the barriers?

Key areas for future activity can be summarised as:

- The UK has strengths in innovation and R&D, but attention is needed to avoid repetition within, and across, sectors.
- The UK is strong in the use of composites in niche areas of the automotive, aerospace and marine industries, but all would benefit from more interaction.
- Thermoplastic composite structures have the potential to replace metal parts but more attention is needed to better processing and automation.
- There is a gap in the knowledge for integration of metals, thermosets, thermoplastics and other hybrids.
- Attention is needed for the repair infrastructure and associated technologies.
- The use of smart materials for in-service health monitoring should be Investigated.
- Recycling issues for composites need to be addressed.
- Improved design tools and property database needed for composites.

These and the full findings of the workshop will be used to form an agenda for further activities both within the NCN and for key players in this sector. The recommendations will also be fed through to appropriate IGTs (Innovation and Growth Teams) and funding bodies.

A full report of findings and recommendations is available on the NCN website. To access this, first you must register or login. Then, on the homepage, click *Activities*, *Roadmapping* and finally *NCN automotive sector roadmap*. To the [NCN website](#)

. . . and for the marine sector -

A technology road-mapping workshop for the marine sector will be held in the south-west region on 28 March 2006. This will follow the successful format of the automotive workshop described above.

A number of places are still available on the workshop: if you're interested in finding out more, or taking part, please contact Deborah Pullen **as soon as possible**: e-mail deborah.pullen@twi.co.uk or tel 01223 891 162.

Register with the NCN for detailed technical information

Registration with NCN gives you web access to technical information on composites (in the form of FAQs, Best Practice Guides, etc contributed by NCN programme partners); training and expertise directories; latest industry news; and information on upcoming events. [Register with NCN](#)

. . . for even more composites information -

For an even wider selection of technical information on composite materials, visit the composites portal of the [Materials Knowledge Transfer Network](#). Registration is free and gives you access to information on

composite materials, processes and applications, as well as online databases for materials selection, standards and other topics. [Register for the Materials Knowledge Transfer Network](#)

Spotlight on NCN expert subcontractor

James Quinn Associates Ltd

James Quinn is an engineering consultant with a wealth of experience in the design and production engineering of polymer composites. Firms can benefit directly from this expertise through NCN free tech support services.

His practice has experience in the design of a large variety of components and structures including:

- Beams and columns
- Cylindrical and rectangular tanks to BS4994
- Multi-sphere tanks system for underground storage
- Hyperbolic paraboloid roof structures
- Flagpoles
- Various process plant walkways
- Handrails and their associated structural support platforms
- Marine radome structures
- Design and proof testing of cable tray systems
- Support framework for the Channel Tunnel FEA
- Laminate and classical analysis.



James Quinn

The company's production engineering capability covers pultrusion, compression moulding autoclave, vacuum and intermediate processes such as RTM.

Contact details: James Quinn Associates Ltd., 415 Woolton Road, Liverpool L25 4SY
Tel: 0151 428 9362. Fax: 0151 438 2783. E-mail: quinn@jqal.co.uk

FREE technical support from NCN

Your company can benefit from free tech support in any aspect of composite materials, design, manufacture or use. The NCN provides -

- Direct access to technologies, facilities and expertise
- FREE information and advice
- FREE consultancy/problem-solving services

All you have to do is contact the NCN Helpdesk: Tel 01223 894 662 or email info@ncn-uk.co.uk

As well as providing information, the Helpdesk sets up one-to-one consultations with experts and organises direct practical assistance through NCN's *Information*, *Diagnostics* and *Solutions* range of in-depth tech support services, summarised in a [printable leaflet](#) on the NCN website (www.ncn-uk.co.uk).

Advanced lightweight structures

The performance car, commercial aircraft and wind energy sectors have all experienced rapid innovation over the past year through use of new composite materials and processing techniques. SAMPE UK & Ireland organised a one-day conference on 23 February 2006 to disseminate and discuss progress. This was supported by Cranfield University, the NCN, Nottingham University Composites Club, and Saint-Gobain Technical Fabrics.

TWI composites specialist Dr Faye Smith attended the event, and her [one-page](#) report provides further information on the technical presentations which covered -

- Producing a panel that paints like a metal but has the cost and performance of a composite

- InCore RTM process for fabricating part of the Mercedes McLaren SLR
- Airbus use of composites for the A350
- NOTS (Nodal Optimisation of Truss Structures) project: developing know-how and innovation in joints and joining for the manufacture of aerospace truss test structures
- Coretex technique for producing a carbon fibre space-frame for the Caterham 7
- Affordable Lightweight Body Structures (ALBOS) project: investigating use of discontinuous fibre performing (DCFP) in car bodies
- Current use of wood blade technology for manufacturing large wind turbine blades.

News of upcoming events

Composite Product Development: Meet the Experts

23 March 2006; Delcam, Birmingham

Changing patterns in the use of composites offer significant opportunities to component manufacturers and the toolmakers that support them. This free seminar will show where the opportunities are and describe new technology to help companies benefit. [More information and enrolment details](#) on Delcam's website.

Fibre Reinforced Healthcare: one-day international symposium highlighting medical applications of composites

5 April 2006; Nottingham

An opportunity to examine advancements in research and technology, and find out about issues surrounding: medical devices and equipment; implant materials; clinical needs; and external prosthetics.

Information and registration: Jane England, Secretary to Dean of Engineering, Coates Building (B100), University of Nottingham, University Park, Nottingham, NG7 2RD.

Tel 0115 951 3770, Fax 0115 951 4001 email jane.england@nottingham.ac.uk

[Event leaflet and registration form](#) available on the NCN website.

Composites, and Asset Integrity Monitoring

5 April 2006; UCL NDE Centre, London

13th SIMoNET Meeting. Information from Prof. WD Dover, UCL: tel: 020 7679 7184;

fax: 020 7383 0831; email: wddover@btinternet.com. SIMoNET is a network for exchanging information and experience on structural integrity monitoring.

What can Composites do for Me?

6 April 2006; Newcastle

Welding & Joining Society meeting in association with Newcastle University and the NCN. [More information](#) on the NCN website.

Allowing for Residual Stresses in Design

3 May 2006; MIRA, Nuneaton

Engineering Integrity Society (EIS) seminar. Further information and enrolment: go to www.e-i-s.org.uk and click *Forthcoming Events – 2006* or contact Catherine Pinder, EIS; tel: 0114 262 1155; fax: 0114 262 1120; e-mail: cpinder@e-i-s.org.uk

Composites processing 2006

27 April 2006; Haydock, St.Helens

Annual conference of the Composites Processing Association. Four sessions covering: processing; research and development; case studies and applications; and the composites industry present and future. Includes table-top exhibition and poster papers. [More information](#) on the NCN website.

Advanced Metallic Manufacturing – The Need for Speed

10 May 2006; Rotherham

This seminar will address manufacturing issues common to the motorsports and aerospace industries and their supply-chains. [Further information](#) on TWI's website. Registration: visit www.imeche.org.uk/events/ammm - alternatively, contact Zoe Thomas on 0207 973 1291 or e-mail z_thomas@imeche.org.uk

Advanced Materials for Defence 2006
18-19 May 2006; London

A major, three-day conference to analyse the use of structural composites in military applications. Full details in [brochure](#) on the NCN website.

Smart Composites
25 May 2006; IOM3, London

Organised by SMART.mat and the NCN, this workshop will review a range of smart material technologies and their applications in composite structures. Topics include: self-healing materials; shape-memory polymers; auxetic materials; structural health monitoring; and novel application of smart composites. Further information soon on the SMART.mat web pages at www.smartmat.org.uk

Modelling of manufacturing processes
May 2006; IMechE HQ, London

The Structural Technology & Materials Group of the Institution of Mechanical Engineers is holding this seminar, which will cover recent research on the development of material behaviour models and their practical application. More information soon on the ImechE website at <http://www.imeche.org.uk>

End of Life Vehicle Directive – challenges for the UK
20-21 September 2006; Warwick University

The focus of this two-day conference is challenges for designing and dismantling vehicles to comply with current and future ELV directives. Delegates are expected to include materials producers, and designers and manufacturers from the automotive supply sector. The [call for papers/information leaflet](#) is on the NCN website.

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Further information

For more information on any aspect of the National Composites Network, please contact -

NCN Helpdesk: 01223 894 662
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Fax: 01223 891 284
Website: www.ncn-uk.co.uk



NCN is a node of the
Materials Knowledge Transfer Network

