



Composites in actuation systems

Wolverhampton-based Goodrich Actuation Systems has worked with local SME Rojac and Advanced Composites Group to develop an actuator gear box housing in composite materials to replace traditional aluminium die-casting. The component is 60 per cent lighter. Following rigorous successful tests by Goodrich, the technology was inserted into the Airbus-led Next Generation Composites Wing Programme.

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Innovative heat transfer system

Birmingham and Coventry's Meggitt Control Systems worked with the University of Birmingham and two local SMEs – Solihull's Arden Precision and PAB Coventry – to perfect a heat transfer system that improves heat exchanger efficiency. The technology involves a novel nickel-based metal foam (Retimet) and has proved to be a more effective heat transfer medium in a range of environments inside and outside aerospace.

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Low-cost bonding

The University of Wolverhampton, Ajax Toco and Unipart worked with HS Marston on a lower-capital-equipment-cost process with wide applications for aerospace and other manufacturers and led to a patent and further funding from other sources.

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Nano-coatings for tooling

Teer Coatings of Redditch and Anapol Coatings of Birmingham linked up to improve the life of tools for forging with nano-coatings technology, working with end-user Rolls-Royce.

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Courtesy Rolls-Royce



New alloys in heat exchangers

Wolverhampton-based HS Marston Aerospace worked with Telford SME Advanced Chemical Etchings to develop high temperature heat exchangers for aircraft engines made from new alloys. The new alloy heat exchanger can operate at up to 300°C hotter than existing units.

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Novel materials for springs

SMEs G&O Springs, Alloy Wire and Reliable Spring Manufacturing worked with the Institute of Spring Technology (IST), Aero Engine Controls and BAE Systems to characterise springs in novel materials such as titanium and various nickel alloys. Data enable accurate fatigue predictions for springs for the first time.

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Coatings without hazardous elements

Indestructible Paint worked with fellow SMEs Ashton & Moore and Clean Burner Systems, technologists at CERAM and customers Messier-Dowty and Rolls-Royce to remove chrome from engine-surface coatings.

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Courtesy Airbus

New design methods for tyres

Dunlop Aircraft Tyres has developed new Finite Element Modelling techniques with the University of Birmingham. Airbus, the customer, regularly provided input to validate the models on existing and new tyres.

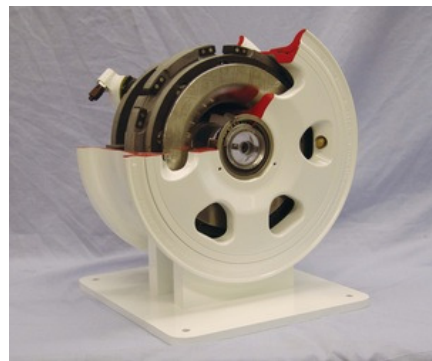
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Using surfaces as coolers

HS Marston, with SME Advanced Chemical Etching and the University of Wolverhampton, modelled novel surface coolers and validated the models on a new test rig.

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Ceramics in aircraft brakes

Meggitt Aircraft Braking Systems worked with SME James Kent Ceramic Materials, technology experts CERAM and customers Embraer and BAE Systems to investigate new ways to extend the life of aircraft brakes.

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Manufacturing novel aluminium alloy

The Aeromet-led project with SME partner Grainger & Worrall, the University of Birmingham, materials provider London & Scandinavian Metals and customer Aero Engine Controls developed manufacturing processes for a novel high-strength aluminium alloy, A20X.

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