

# Innovate UK

## Results of Competition:

**Aerospace Technology Institute - Strategic R&D Projects - Batch 18**

**Competition Code: 1309\_SPEC\_TRA\_ATI\_batch18**

**Total available funding for this competition is £38,443,210**

**Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.**

<b>Participant organisation names</b>	<b>Project title</b>	<b>Proposed project costs</b>	<b>Proposed project grant</b>
<b>NCC Operations Ltd</b>	Automated Technologies for the Manufacture of Composite Propulsion and Aero-Structures (AUTOPROSTRUCT)	£9,839,401	£9,839,401
<b>Project description - provided by applicants</b>			
Awaiting Public Project Summary			

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<b>University of Oxford</b>	Infrastructure Investment Proposal for the University of Oxford Osney Thermo-fluids Laboratory (OSNEY Upgrade)	£6,125,255	£6,125,255

### **Project description - provided by applicants**

The Osney Thermofluids Laboratory is a global centre of excellence for turbomachinery research which has made significant contributions to the technology of jet engines over the last 3 decades. The Laboratory is part of the Rolls-Royce University Technology Centre network and specialised in Heat Transfer and Aerodynamics (founded 1990). The largest contribution to the Laboratory's research is Rolls-Royce however research is performed for GKN aerospace, industrial gas turbine manufacturers (Siemens (UK), Alstom (UK) and Mitsubishi Heavy Industries), the MoD and QinetiQ. Programmes are funded through PV, EU Framework programmes, EPSRC, TSB/Innovate UK and MoD. These programmes are quite often collaborative with other European Gas turbine manufacturers such as GKN Aerospace, Snecma, ITP, MTU, TURBOMECA. Heat transfer and aerodynamics research is also carried out in other areas such as hypersonics and internal combustions engines. The Lab hosts the EPSRC Centre for Doctoral Training in Gas Turbine Aerodynamics which will educate 85 doctoral students recruited in the period 2014-19 at Oxford, Cambridge and Loughborough. This ATI grant will be used to achieve a step change in capability to measure and research the cooling performance and hot stage technologies essential for the operation of high pressure (HP) turbine stages of Large Civil Engines. The investment will enhance the existing Oxford Turbine Research Facility (OTRF) to measure metal temperature of turbine blades and vanes under accurately controlled conditions; improve the accuracy of the Engine Component Aerothermal Facility used to research HP nozzle guide vanes and dramatically improve our instrumentation laboratory and manufacture capability.

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Rolls-Royce PLC Altair Engineering Ltd	POSTIE: Physical Optimisation of Structural Topology for Integrating Engines	£18,014,984	£9,007,492
<b>Project description - provided by applicants</b>			
Physical Optimisation of Structural Topology for Integrating Engines (POSTIE) POSTIE will develop a weight-optimised structural solution for the Rolls-Royce UltraFan™ geared aero engine and additionally investigate the potential added benefits of topology optimisation. POSTIE is led by Rolls-Royce plc. in partnership with Altair, and will strengthen the UK Fast Make supply chain. The project duration is three years and is due to be completed at the end of Q2 2020.			

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Rolls-Royce PLC University of Leeds	SUSSUDIO (System Understanding & Sub-System Utopia through Design Integration & Optimisation)	£19,526,626	£9,763,306
<b>Project description - provided by applicants</b>			
SUSSUDIO: System Understanding & Sub-System Utopia through Design Integration & Optimisation This project, led by Rolls-Royce, will develop the detailed design of a UHBR aero gas turbine engine demonstrator, aimed at verifying advanced technologies for the next generation of large civil engines at a whole system level. In establishing the detailed design, the project will prove the feasibility of the demonstrator and reduce the risks associated with the demonstrator to a low enough level to allow the full launch of manufacture of the demonstrator vehicle.			

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Rolls-Royce PLC Bladon Jets (UK) Ltd University of Nottingham University of Oxford University of Sheffield	COAST: Critical Oil and Air System Technologies	£7,415,196	£3,707,709
<b>Project description - provided by applicants</b>			
COAST – Critical Oil and Air System Technologies COAST looks at maturing the readiness level of a range of engine technologies including advanced seals for gas turbines application, cabin blower and modelling of oil flows and heat transfer in gas turbines bearing chambers through architecture concept studies, rig testing, modelling work and development of designs suitable for engine demonstrator testing. COAST is led by Rolls-Royce plc. in collaboration with Bladon Jet Ltd and the Universities of Nottingham, Oxford and Sheffield. The project duration is three years and is due to be completed by Q4 2019.			

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