

UGLA – University of Glasgow, School of Engineering, Centre for Aerospace Research:

- Established in 1451 in Glasgow, Scotland, UK with branches in Singapore and Chengdu
- Performs fundamental research, demonstrates, validates, implements and deploys engineering technologies

Technical contribution:

KGT2; Airframe flight physics.

- Unsteady aerodynamic loads, wake phenomena, gusts and fluid-structure interactions
- Flow control actuators, systems, architectures; their application using wind tunnel testing (plasma, pneumatics etc), and their integration into the wing design
- Flow diagnostics for validation studies and aerodynamics studies of UAS (including NAV and MAV)

KGT3: Environmental friendly materials and structures.

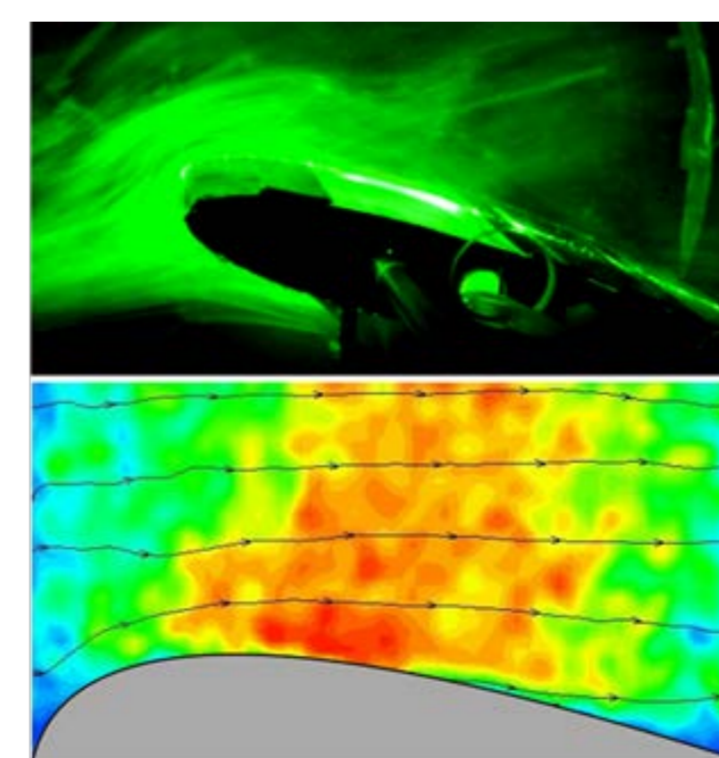
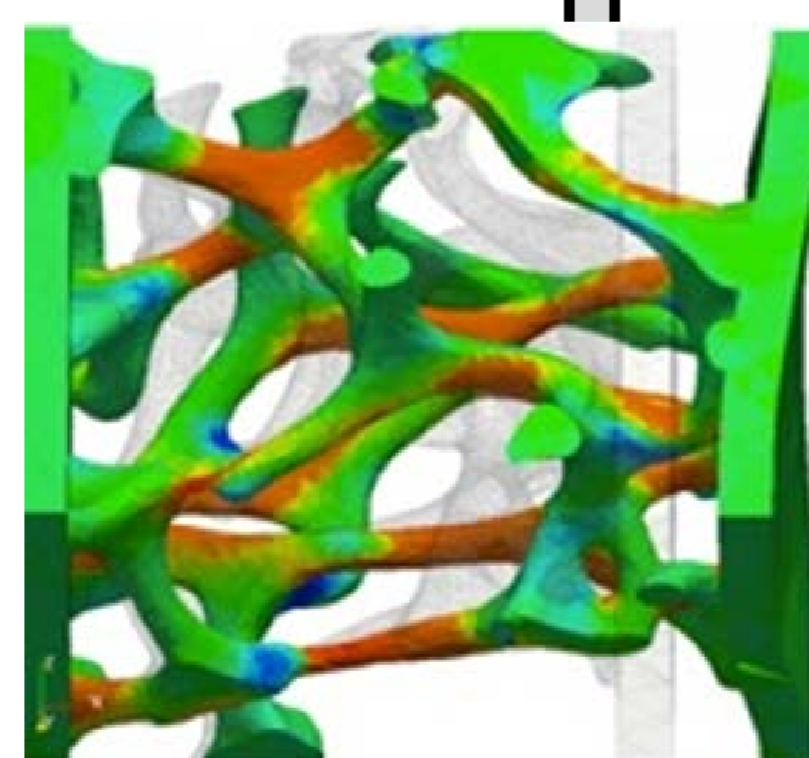
- Surface coating technologies for extending the operating temperature range of gas turbines and improving their performance

Projects:

- **Fluid Mechanics:** unsteady flows, helicopter aerodynamics, CFD, wind turbine aerodynamics, flow/flight control, gyroplanes, flow diagnostics, integrated wind design tools and processes aeroacoustics, noise control, transonics/supersonics, biomimetics
- **Flight Systems:** mathematical modelling & simulation, autonomous systems, flight dynamics
- **Structures and Materials:** laminate tailoring, smart materials and coatings, computational structural mechanics

Present and Future activities:

- Load, flow and flight control systems
- Gust control and load alleviation
- Transition and turbulence
- Studies on roughness and separated flows
- Aeroelastics, morphing, structural deformation
- Intakes and exhaust flows
- Trailing edge and junction flows
- MALE / HALE concepts
- Plasma and energy deposition systems
- Transonic junction design and efficiency



Flow over NACA0015,
Re=1.5x10⁵



3D bumps for boundary layer control

Selected Publications:

- Synthetic jet control effectiveness on stationary and pitching airfoils, A Rehman, K Kontis, Journal of Aircraft 43 (6), 1782-1789
- Flow control by spanwise blowing on a NACA 0012, C Wong, K Kontis, Journal of Aircraft 44 (1), 337-340
- Experimental Studies on Transitional and Closed Cavity Configurations Including Flow Control, C Lada, K Kontis, Journal of Aircraft 47 (2), 723-729
- Plasma actuator: Influence of dielectric surface temperature, R Erfani, H Zare-Behtash, K Kontis, Experimental Thermal and Fluid Science 42, 258-264

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