

AEROSPACE MATERIALS & STRUCTURES CAPABILITIES STATEMENT

EXPERTISE: The Materials and Structures thematic group is interested in new materials & materials discovery. It has a diverse range of expertise in material modelling, structural dynamics and materials science & characterisation. The interests of the group also span supply chain mapping and management.

- **THERMACH** - A thermally assisted machining process to addresses the significant manufacturing challenges and products using advanced Metal Matrix Composites and other difficult-to-cut materials.
- **PRoGrESS** - An Innovate UK collaboration to create Britain's first wind turbine blade recycling pilot plant.

Specific areas of expertise lie within and across:

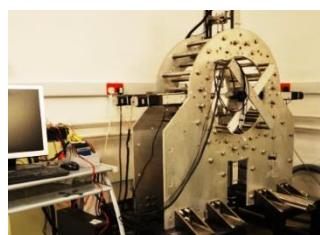
Composites	Advanced Manufacturing	Material Characterisation	Modelling	Structures	Supply Chain
Composite materials manufacturing	Machining	Mechanical experimentation	Machine learning	Corrosion	Mapping and management
Materials discovery	Laser materials processing	Elemental composition	Error estimation	Aeroelasticity	Blockchain technologies
Sustainability	Coatings	Mechanical Testing	Process modelling	Stress Analysis	Product Traceability Systems
Cementitious materials	AI	Component testing	FEA	Structural dynamics	Digital transformation

PEOPLE: Over 50 academics and researchers work within and across this diverse range of research themes to deliver novel, cross-disciplinary, integrated research projects to both industry and research funders.

RESEARCH FACILITIES: Across our research entities, we can provide access to:

Structures Lab - Large scale structural testing, cutting/coring, temp/humidity	XRD, Raman, thermal spray equipment, steam rig, furnace	2kW multimode fibre laser; 1kW single mode fibre laser
Machine tools and SEM related characterisation equipment	Mechanical test frames. Denison dead weight creep testing, high temperature	AMB Composites manufacturing lab, Automated fibre deposition equipment

TRACK RECORD: Our specialist aerospace and space teams at UoN work in partnership with a range of major aerospace companies and SMEs. We also have an extensive track record in securing key UK and EU funding from Horizon Europe (and its predecessor programmes), Innovate UK, ATI, EPSRC and others.



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