PROJECT NUMBER

21692

Lightweight ultra and extreme high vacuum compatible composite material for high electromagnetic shielding

Novel design for lightweight composite material that is compatible with ultra and extreme high vacuums and provides high electromagnetic shielding.

Applications: High energy physics, quantum computing, aerospace, automotive industry, electric vehicles, medical devices

Features	Benefits
Novel manufacturing method allows homogenous materials to be incorporated into composite structures with resulting uniform thickness	Thinner structures can be consistently manufactured to tolerance; Easy way to lightweight structures for multiple uses
The ultra-thin lightweight composite material is compatible with ultra and extreme high vacuums	No outgassing from the material into the vacuum; One or both sides of the material can be hermetically sealed
Material provides high EMI/RFI shielding, and approaches net zero magnetic permeability	Provides lightweight electromagnetic shielding; Reduces the amount of material needed for shielding

Features	Benefits
Can be manufactured to fit complex bespoke geometries	Cost effective and reduces complexity as it can be incorporated or retrofitted into desired design
The layers can be manufactured at micron level thickness and the type of material can be varied flexibly throughout a single composite object	Balance between EMI/RFI shielding, mechanical strength and thickness can be varied
The manufacturing method allows composite objects to be safely formed of non-hazardous low-Z materials	Minimises unwanted absorption of entities passing through the composite object

Available for

- Co-development
- Consulting
- Licensing

To find out more, contact enquiries@innovation.ox.ac.uk and quote the project number.