

Ceramic Matrix Composites

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The ability of ceramics to survive high temperature environments and maintain chemical stability makes them ideal for extreme applications. Utilising these properties in advanced composite materials opens up a variety of opportunities. ATL provides chemical vapour deposition coatings and equipment for CMC development worldwide. We use decades of experience to contribute to every stage of development. We can develop new coating techniques, optimise these for your application and take it to small scale production. ATL also offers equipment building services which range from small reactors for research purposes to large scale production installations. Whatever your requirements, ATL can help.

Fibre Interface Coatings

•	Carbon	•	Boron Nitride	•	Si-Doped BN
•	Silicon carbide	•	Silicon nitride	•	Yttria

ATL provides interface coatings for fibres that are proven to be effective for oxide, non-oxide and metal composites. These are then coated with matrix material such as silicon carbide to protect the interface and retain the desired geometry. Following the interface coating, our samples are suitable for full densification via chemical vapour infiltration, polymer impregnation and pyrolysis (PIP) and a thin additional coating of carbon improves the wetting of liquid silicon making LSI easier.



Bespoke Coating Solutions

We can produce coated yarns, sheets of fabric and shaped preform components with controlled geometries and fibre volume fractions. Currently ATL produce batch coatings, but are working towards a continuous reel to reel coating method to improve the uniformity of coated fibre production. Using our knowledge and experience in the field, we can design specialist jigging, perform complex coating processes and collect thickness and uniformity data all to optimise our coatings to your requirements.

Fabric sheets

Exterior Coatings

ATL can also provide exterior coatings to components to further enhance properties. Silicon carbide and silicon nitride are common, and ATL also have the capability to deposit carbon nanotubes infiltrated with silicon carbide as shown. We also have experience in UHTCs such as zirconium boride, and are in the research stages of developing mixed oxide coatings such as yttrium silicate.



Solutions developed for ceramic composites







Matrix and Preform formation



Process Equipment

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