



NASA Offers Composite Processing Technologies

Leverage NASA Langley Research Center's advanced composites expertise.

Benefits

Langley's composite processing technologies and expertise offer many benefits:

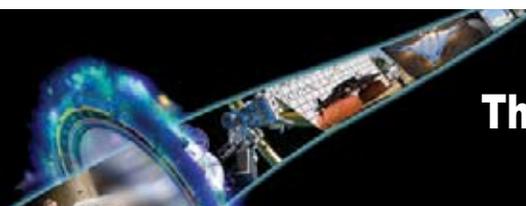
- High-temperature composite processing
- Experimental batch prepregging
- Larger part sizes from non-autoclave processing
- Ability to produce complex, curved laminate structures
- High-quality, low-void-content hybrid laminates with high fiber volumes
- Superior volatile management
- Elimination of complex tooling, thus reducing costs

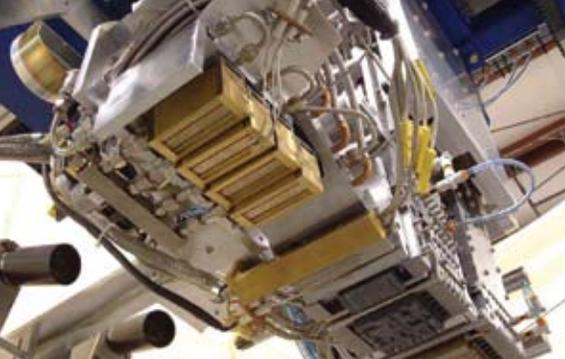
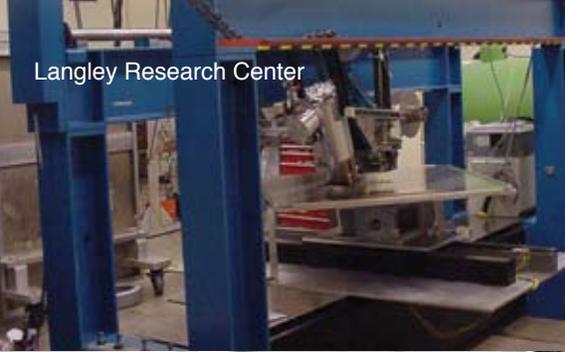
NASA Langley Research Center leads agency initiatives in materials research by developing composite processing and manufacturing technologies required to improve performance and reduce the weight and cost of aerospace structures. By making materials stronger and lighter with faster and less expensive processing, Langley's composite processing research has already positively affected NASA, the military, and industry.

Langley has the expertise and intellectual property associated with a variety of autoclave and non-autoclave processing methods, including:

- prepregging
- tape fabrication
- automated tape placement (ATP)
- heated head cure-on-the-fly ATP
- vacuum bag processing
- resin transfer molding (RTM)
- vacuum-assisted resin transfer molding (VARTM)
- electron beam cure-on-the-fly
- traditional oven curing
- autoclave processing

NASA has numerous patent families associated with these areas, many of which are still available for licensing.





Leverage Langley's research in composite processing by licensing one of our innovative technologies. Experienced Langley engineers, using our top-notch facilities, help licensees infuse processing technologies into their organizations by conducting additional research and development, modifying the technology for specific applications, and testing and validating the technology. Langley can support your technology development from the laboratory to large-scale production.

Capabilities

Prepregging – solution and reverse roll coating, film casting, 12" wide material

Autoclave – 800°F, 400 psi, 24" x 48"

Tape fabrication using either powder-coated tow or solution-coated prepreg

Automated tape placement of large singly or doubly curved composite structures with cure-on-the-fly via either thermal or electron-beam radiation

Double-vacuum-bag process developed at Langley that improves processing of reactive resin or solvent-based matrix systems

Improved VARTM techniques for unique net-shaped structures and high-temperature applications

Electron beam cure-on-the-fly, offering advantages of low-temperature curing and lower residual stress and energy consumption

License a technology from us or engage us in a joint development project. Langley's innovative research in composite processing has led to patented technologies that offer wide-ranging market applications, including aeronautics structures: for example, fuselage, floors, liners, cargo containers; automotive structures; pressure vessels and storage tanks; complex composite parts requiring non-autoclave production; oil lines and other piping structures.

For More Information

If your company is interested in licensing or joint development opportunities associated with this technology, or if you would like additional information on partnering with NASA, please contact:

The Technology Gateway

National Aeronautics and Space Administration

Langley Research Center

Mail Stop 218

Hampton, VA 23681

757.864.1178

LARC-DL-technologygateway@mail.nasa.gov

technologygateway.nasa.gov

