



<https://windlift.com/careers/senior-structural-analysis-engineer-aircraft-composites/>

## Senior Structural Analysis Engineer – Aircraft Composites

### Description

Windlift's mission is to produce energy for a sustainable civilization, which we believe is the defining challenge of our time. Our approach harnesses wind energy using 90% less material than traditional turbines and will cut the cost of wind energy in half. We have successfully demonstrated the core technology and are expanding our team to:

- Produce a fully functioning tech demonstrator
- Develop a production-ready design for our early-adopter government customers
- Design, build, and test a commercial offshore system

If you are passionate about our mission and want to join a team developing technology with the potential to produce scalable, low-cost sustainable energy, we'd like to talk with you.

Windlift is hiring a Senior Composites Structural Analysis Engineer to support our APG Aircraft Design team. The APG Aircraft Design team is responsible for the development of all airborne systems, sub- systems and structures for Windlift's APGs, including design, analysis and testing of primary and secondary structures as well as propellers/turbines.

This position will support the Aircraft Design team by taking the lead in performing structural analysis of aircraft structures and structural subassemblies that are designed to be made primarily from composite materials such as carbon fiber/epoxy and fiberglass/epoxy. These analyses will include static, dynamic and fatigue analysis. Further, the Senior Composites Structural Analysis Engineer will be relied upon to lead the structural testing efforts that will be required to verify analysis results and ensure long-lived and functional APG structures. As a Senior Composites Structural Analysis Engineer, you:

- Have a BS/MS in Aerospace or Mechanical Engineering with 10+ years of experience analyzing composite structures. At least 7 of those years of

### Employment Type

Full-time

### Job Location

Durham, NC

### Date posted

August 9, 2023

### Base Salary

\$ 110000 - \$ ?

experience will be in an industry (non-academic) role applying your skills to aircraft, automotive, or towered wind structural analysis and testing with composite materials. Have demonstrated experience modeling and analyzing composite structures using Finite Element Analysis tools, such as FEMAP/NASTRAN, as well as applying hand calculations/handbook methods where appropriate. Have practical experience with analysis of composite structures subjected to both static and dynamic loads.

- Have demonstrated practical experience with evaluating structural designs for life-cycle determination, including performing fatigue analysis and structural failure modes and effects
- Have demonstrated experience validating models via testing.
- Have a strong understanding of composite structural analysis, failure modes of composite structures, how to set up structural analysis models and methods to ensure that those failure modes are clearly understood and margin to failure is quantified.
- Have demonstrated experience developing load cases, determining inertial loads on components/sub-assemblies from provided dynamic flight data and integrating externally produced distributed aerodynamic loads into FE models.
- Have a strong understanding of composites manufacturing methods utilized both in prototyping and production and how selected manufacturing methods impact both design decisions and probable failure modes for the structures.
- Have experience extracting geometry from CAD models to build FE models using FEMAP or similar tools.
- Have extensive experience analyzing joints between composite structures, including both permanently bonded joints as well as detachable mechanically fastened joints.
- Love to work on difficult problems, build cool things, experiment at the edge of what is possible, learn new skills, and share your experience with the team.
- Look forward to working with a diverse team of engineers, builders, dreamers, and doers.

The ideal candidate will also:

- Have experience as a structural engineer/stress analyst on small to medium sized aircraft, preferably Unmanned Aerial Vehicles.
- Have familiarity with stress and failure analysis with traditional engineering materials such as metals, plastics, etc.
- Have experience with CAD, preferably using CATIA V5.
- Be comfortable developing test procedures and conducting structural testing of prototype aircraft structural assemblies and correlating test and analysis results.
- Be comfortable mentoring less experienced structural design and/or analysis engineers in composite structural analysis methods and techniques.
- Have experience evaluating performance of composite structures in coastal and/or marine environments where corrosion, humidity/wet conditions are a factor.
- Understand structural requirements development within a Department of Defense context.

This is an incredible opportunity to join Windlift at an inflection point in growth and make a real contribution to our mission of producing energy for a sustainable civilization.

We cultivate a culture of inclusion for all employees that respects their individual strengths, views, and experiences. We believe that our differences enable us to drive innovation, make better decisions, and accomplish extraordinary things.

Medical, dental, and vision benefits are provided. Windlift is located close to Raleigh, Durham, Cary, and Research Triangle Park, NC, all of which are great places to work, live, and play.