

Senior Staff Engineer - Barrier

Here at Rayleigh Solar Tech Inc. Our mission is to be the lowest-cost provider of clean electrons to drastically increase access to renewable energy and enable the green technology transition. Our company is united by our commitment to change the planet for the better. We push the boundaries of what's possible, our passion for deep tech to solve hard engineering problems, our insatiable curiosity that forces us to ask questions, and our relentless drive for excellence in everything we touch.

Summary:

Do you thrive in fast-paced environments, solving complex research challenges to bring breakthrough technologies to market? Join Rayleigh Solar Tech as a **Senior Staff Barrier Engineer**, where you'll play a pivotal role in scaling the next generation of perovskite solar modules. In this role, you'll drive internal R&D on thin-film barrier development, process development, and characterization with deep domain expertise in in polymer formulation and thin-film deposition methods.

Responsibilities:

- You've developed thin-film moisture barriers in your other roles and understand the optimization around design, process, and cost.
- A proactive problem-solver who excels in high-impact roles and is passionate about renewable energy.
- Barrier layer design: Lead the design, execution, and optimization of a moisture barrier that meets both technical and cost requirements. This includes composite materials systems and thin film deposition methods
- Process Optimization: Develop R&D technical specifications and process development plan for potential barriers that meet cost models, materials choices and capital equipment.
- Cost model: Develop cost models for potential barriers that meet R&D technical specifications that inform process development, materials choices, and capital equipment. This requires working closely with the Program Manager on delivering 'should cost' models for barrier candidates
- Characterization and Analysis: Possess deep thin-film analysis knowledge across a suite of characterization methods [XRD, SEM, ellipsometry, AFM, confocal, mechanical, and optical testing] to support optimal design choices and process development and mentoring on the team

- **Product Development:** Contribute to the product development team on design validation related to choice of polymeric materials, design validation, and optimization

Core Competencies:

- **Critical Problem-Solving:** Ability to identify the right questions and engage the right people at the right time.
- **Curiosity & Inventiveness:** Strong desire to innovate and drive new solutions to complex challenges.
- **Execution & Follow-Through:** Commitment to delivering results and empowering others to do the same.
- **Structured Approach:** Ability to bring order and clarity to complex tasks through methodical processes, mentorship, and documentation.
- **Teamwork:** Proven ability to work effectively across cross-functional teams, including product design, quality, production, supply chain, and external vendors.

Qualifications:

- Ph.D. or M.S. in Polymer Chemistry, Materials Science, Chemical Engineering or a related field.
- 12+ years of experience in polymer formulation, coatings, or thin-film barrier Technology.
- Strong analytical skills with experience using FTIR, SEM, DSC, TGA, and rheology for material evaluation.
- Demonstrated track record in working in a multi-disciplinary team that designed, optimized, and executed on a moisture barrier
- Deep domain expertise in composite barrier materials to lead on design and optimization, working closely with teammates in the full stack design
- Acute understanding of how process decisions impact barrier cost and the ability to lead on optimization efforts to meet cost metrics set by Strategy team
- Strong knowledge of polymer chemistry, barrier layer deposition techniques, and material characterization.
- Experience with moisture permeability testing methods (e.g., MOCON, gravimetric analysis, calcium degradation tests).

- Hands-on experience with barrier film vacuum processing fabrication (e.g., sputtering, atomic layer deposition, extrusion coatings or collaboration with such tools] and wet coating processes [slot-die coating, gravure
- Familiarity with polymer processing techniques, including solvent casting, thermal lamination, and plasma treatment
- Understanding of adhesion science, polymer compatibility, and crosslinking strategies to enhance barrier performance.

Diversity & Inclusion

At Rayleigh, we know that diversity makes a strong team. We encourage all qualified applicants to apply for this position and we will never discriminate against race, ethnicity, gender identity, gender expression, sexual orientation, disability, religion, marital status or family status. Instead, we work to celebrate the things that make us unique and create an inclusive environment for all employees.

Don't meet all the requirements outlined above but still find yourself excited about this position and Rayleigh's mission? If you believe that you have the skills and experience to excel in this role, we would love to see your application!

To apply

Submit your resume and cover letter in one PDF file to careers@rayleighsolartech.com. We are unable to accept applications in any other document format.