

Senior Testing Engineer

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:

Are you an experienced engineer passionate about renewable energy and eager to drive the future of solar technology? Join our Roll-to-Roll Readiness team as a **Senior Testing Engineer**, where you'll play a key role in advancing scalable fabrication processes for flexible perovskite solar modules.

In this role, you'll design and implement rigorous testing protocols to assess the quality, performance, and long-term stability of our solar PV cells and modules. Your expertise in solar PV test standards will help push the boundaries of efficiency and durability, ensuring our technology is ready for real-world deployment. You'll collaborate with cross-functional teams, tackle complex technical challenges, and contribute to innovations that bring perovskite solar closer to mass production.

Responsibilities:

- **Project Ownership:** Lead and manage key projects that contribute to the team's goals and deliverables, ensuring alignment with process development objectives. Own specific functions and drive initiatives in testing and process improvement.
- **Testing Strategy & Execution:** Define the scope and objectives for testing activities, and create detailed test plans, protocols, and methodologies. Develop, implement, and execute test strategies for solar PV cells and modules.
- **Cross-Functional Collaboration:** Collaborate with multidisciplinary teams to generate risk analyses, work instructions, and test procedures. Foster communication and knowledge sharing to drive improvements across the product development lifecycle.
- **Failure Mode Analysis:** Conduct in-depth failure analysis on finished and aged solar PV modules. Identify root causes of issues in fabrication and stress testing, working to improve defect density, process variations, and failure modes.

- **Quality Assurance & Control:** Design and implement quality analysis and control processes, establishing and communicating quality standards to team members across functions. Provide training and guidance to ensure adherence to industry standards.
- **Data Analysis & Visualization:** Perform data analysis on test results from prototypes/samples and current products. Develop and maintain data processing, management, and visualization tools to support the further development of perovskite modules.
- **Method Optimization:** Apply statistical and engineering methods to enhance testing processes. Drive continuous improvement by sharing best practices across teams, supporting process optimization for ongoing prototyping experiments.
- **Team Leadership & Mentorship:** Mentor engineers and technicians, providing direction and guidance to ensure successful project execution. Support the professional growth of team members and ensure compliance with safety and industry standards.

Core Competencies:

- **Critical Problem-Solving:** Ability to identify the right questions and engage the right people at the right time.
- **Curiosity & Inventiveness:** Strong drive to innovate and overcome 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 & Skills:

- Bachelor's degree in an engineering discipline or similar technical field with 5+ years of relevant experience in the solar industry, OR
 - Master's degree with 2+ years of relevant experience OR
 - Ph.D. directly related to stability testing of solar cells and modules.

- Hands-on experience with solar testing tools and equipment (JV, PL/TRPL, TPC, EL, LIT); experience in designing and building such tools is a strong asset.
- Deep knowledge of solar PV test standards (e.g., ISOS, UL, IEC).
- Familiarity with thin-film solar literature, including emerging perovskite technology and testing protocols.
- Proficiency in 3D modeling, drawing generation, and finite element modeling/analysis using CAD software such as Solidworks, Autodesk Fusion, etc.
- Hands-on experience of structural, chemical, and electrical characterization techniques (e.g., XRD, SEM, TOF-SIMS, EIS), or at least the ability to interpret results.
- Advanced knowledge of testing techniques, including acceleration factor determination.
- Strong experience in statistical data analysis, design of experiments (DOE), and measurement system analysis (MSA).
- Proficiency with statistical software (JMP preferred).
- Experience in risk analysis, including P/DFMEA (Process/Design Failure Mode and Effects Analysis) and root cause analysis.

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.