

Coating Engineer – Device Fabrication

Are you driven by hands-on experimentation and eager to shape the future of perovskite photovoltaics? Join our **Device Engineering Team** as a **Coating Engineer**, where you'll play a key role in developing and refining thin-film deposition processes to improve the **performance and stability** of next-generation solar cells. Your work will focus on solution-based coatings, film formation control, and process integration — closely linked with **laser patterning, sample handling, and electrical testing** – steps that are critical parts of our fabrication workflow. You will also contribute to encapsulation development to ensure overall device robustness.

Primary Responsibility

Lead and support the development, optimization, and implementation of scalable thin-film coating processes, contributing to improved device performance, stability, and fabrication consistency.

Key Responsibilities

- Develop and optimize thin-film coating strategies (e.g., slot-die, blade coating) for active layers and interlayers in perovskite solar cells.
- Ensure coating process compatibility with downstream steps including laser scribing and testing.
- Collaborate with cross-functional teams to understand how upstream and downstream process variations impact final device performance and yield.
- Assist in improving interfacial stability through controlled coating deposition and materials integration.
- Support encapsulation efforts with a focus on process integration, barrier layer compatibility, and stability testing.
- Conduct optical, morphological, and electrical characterizations (e.g., SEM, AFM, confocal, profilometry) to evaluate film quality and uniformity.
- Run tests for coating integrity, adhesion, and mechanical/thermal durability under accelerated aging conditions.
- Help define and maintain SOPs and process documentation across fabrication steps.
- Analyze experimental data and provide insights for continuous process improvement.

Key Performance Indicators (KPIs)

- **Device Performance Contribution** – Impact of coatings on efficiency, fill factor, and reproducibility.
- **Stability Metrics** – Contribution to improved shelf-life and operational lifetime.
- **Process Reliability** – Film uniformity, low defect rates, and reproducibility across coating runs.
- **Integration Quality** – Compatibility and alignment with laser patterning, testing, and encapsulation.
- **Team Collaboration** – Clear communication, feedback integration, and contribution to team-wide goals.

Qualifications & Skills

Education & Experience

- B.Sc. or M.Sc. in Materials Science, Chemical Engineering, Mechanical Engineering, or a related field.
- 1–3 years of hands-on experience with thin-film coatings in photovoltaics, flexible electronics, or similar applications.

Technical Skills

- Strong background in solution-based deposition methods (slot-die, blade coating, etc.).
- Understanding of film formation, wetting, drying, and substrate interactions.
- Exposure to encapsulation strategies and environmental degradation mechanisms.
- Familiarity with process-adjacent steps like laser scribing, contact formation, and electrical testing.
- Proficient with relevant characterization tools (e.g., SEM, AFM, XRD, FTIR, ellipsometry).

Core Competencies

- Problem-solving and critical thinking in an R&D environment.
- Strong attention to detail and rigorous documentation practices.
- Ability to work cross-functionally and communicate effectively.
- Curiosity and drive to iterate quickly and learn from process feedback.

Diversity and 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.