

## Senior Process Engineer

Leading Edge Crystal Technologies, Inc.  
Boston Area

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### Company Overview

Leading Edge Crystal Technologies (LECT) is revolutionizing semiconductor wafer manufacturing. We are commercializing the first single crystal direct wafer manufacturing process with a dramatically lower-cost, high performance advantage over the 70-year-old incumbent technology. In the largest global wafer market of solar photovoltaics (solar PV), the LECT process can generate over \$15BN of annual value and eliminate over 1 GT/year of greenhouse gas (GHG) emissions in the manufacturing process. After a decade of technology development and over 100 patents, LECT is developing this technology for a commercial pilot and market entry in 2022.

LECT was formed in 2018 as a technology spin-out from Applied Materials. Development has been financed by federal grants (>\$4.7M) and private venture capital (DSM Venturing and Clean Energy Venture Fund). As a team of 10, we have operated out of the Gloucester Applied Materials campus and will be moving into a new facility nearby north metro Boston.

LECT is a fast-paced, agile environment. We are growing and plan to add seven new team members by February 2020. Team members wear many hats and we expect them to take initiative and ownership from day one. Strong communication and disciplined organizational skills are critical in this collaborative environment, as well as a passion for commercializing next-gen, high impact technologies.

### Scope of Role

Lead in-depth research & development, discovery and problem-solving related to synthesis of single-crystal materials used in the solar and semiconductors industries. Provide domain expertise on material synthesis and characterization, plan and execute independent research and experimentation, direct activities with the aid of engineering and research associates, work independently on multiple projects, and be able to shift priorities as needed.

### Primary Responsibilities

- Make independent and collaborative research & development contributions on processes for the production of single crystal materials for applications including solar silicon wafer development
- Develop improvements to existing crystal growth processes for improved material performance, increased production yields and reduced cost structures.
- Lead conception, submittal, management and execution of federally-funded contract research and development (CRAD), including establishing project goals/schedules, managing milestones and deliverables, writing reports, and presenting/ reporting to government POCs
- Plan, design, and carry out experiments, as well as direct activity of engineers and technicians carrying out experiments. Analyze data and report results to managers and team members on a weekly basis. Must be able to plan experiments from conception to completion.
- Compile reports and participate in customer reviews.
- Maintain essential inventory and ensure common areas of the lab are well kept and orderly
- Participate in advanced training programs to increase product and technology knowledge with ability to share learnings with team and more junior staff.
- May have additional support activities including assumption of indirect activities (safety, IT, IP, etc.)

## Required Skills & Qualifications

- Ph.D. degree in Physics, Solid-State Chemistry, Physical Chemistry, Materials Science, Chemical Engineering or Master's degree with significant relevant industrial experience.
- Proven experience in hands-on high-temperature crystal growth, defect analysis, and material characterization.
- Solid-state synthesis & wet chemistry experienced desired.
- Excellent analytical and problem-solving skills. CFD modeling experience is a bonus.
- Excellent hands-on laboratory skills and familiarity with laboratory test and measurement analysis equipment
- Ability to use Statistical Process Control (SPC) and Design of Experiments (DOE) techniques to accelerate experiment planning and process development
- Independently act to drive experimentation & testing to ensure project goals are met.
- Ability to effectively communicate and interact with team members and customers
- Write clear, concise and understandable technical proposals and/ or project reports.
- Compile data and project updates to be shared across the organization on a weekly basis
- Strong Microsoft Office (Excel, PowerPoint, etc.) skills required
- Travel (both domestic and international) expectation is <10%

## Benefits

LECT offers highly competitive salaries, excellent benefits, and unparalleled growth and development opportunities -- all to create a compelling and rewarding work environment.

LECT is an Affirmative Action and Equal Opportunity Employer and all qualified applicants will receive consideration for employment without regard to race, color, religion, gender, sexual orientation, national origin, genetic information, age, disability, veteran status, or any other legally protected basis.

## Agency

LECT does not accept unsolicited agency resumes and will not pay fees to any third-party agency or firm that does not have a signed agreement with LECT.

## Seniority Level

Director

## Industry

Manufacturing Systems and Equipment

## Employment Type

Full-time

## Job Functions

Process Development & Improvement

Crystal Growth