



Polymer Chemist (Ph.D.)

Full Time Position

Cypris Materials, Inc.

Alameda, CA

Company Overview

Color is a crucial component to nearly every consumer market and is understandably the first feature that product design teams focus on when differentiating their new product. Color is the primary reason consumers say they've purchased a certain product over another. Yet, the industry has not changed in design nor underlying technology in the last few decades. Currently, chemists must painstakingly produce one color at a time, leading to endless recipes for production, the use of dangerous contaminants, and one-off manufacturing processes. New methods to generate color are necessary to overhaul the highly pollutive methods of current manufacturing and expand the global color gamut. Cypris wants to give the industry a much-needed make-over.

Structural color has been viewed by environmentalists as the holy grail to realize a safer alternative to toxic organic dyes, pigments, and effect pigments. Recognized by the Biomimicry Institute and funded by the Environmental Protection Agency and National Science Foundation, Cypris' team creates polymers (referred to as "binders") that when formulated into a paint or ink and applied to virtually any surface will self-assemble into structured coatings upon drying that reflect specific wavelengths of light based on the size of the polymers. This mechanism for creating color, called "structural color", is similar to how the Cypris Morpho butterfly achieves the vivid blue color on its wing.

Cypris Materials decouples color production from the messy "one-chemistry one-color" status quo, setting color free from limitation. The company was founded in Berkeley and has over 14 issued or pending patents to commercialize a color platform that broadens the color gamut, reduces manufacturing hassle, simplifies formulation, and doesn't pollute the environment.

Position Profile

Cypris is looking for a motivated synthetic polymer chemist who is driven by the opportunity to make a significant impact as an individual contributor at the ground level of a small energetic team with an innovative technology. The successful candidate will be a curious and fast learner that can work efficiently and take initiative. They will have the ability to wear many hats and adapt to changing environments, making good, independent judgement calls and work well in a team to accomplish the highest priority goals.

The person will have a direct responsibility for strengthening the company's performance and impact by:

- Designing and optimizing robust syntheses and standard operating procedures for scalable materials
- Interfacing with manufacturing partners to scale to >1T scales + ensure maintained quality
- Using cost modeling to inform synthetic routes, propose alternative chemistries and improve chemical sourcing
- Applying fundamental knowledge of chemistry and polymers to formulation and coating systems
- Organizing and prioritizing workflow to meet aggressive project milestones in coordination with external partners, customers, and funding agencies
- Driving internal R&D and pursuing fundamental discoveries that strengthen the next generation of Cypris offerings

The individual will report directly to the CTO and ultimately own the workflow for optimizing individual polymer synthesis and processing steps, work collaboratively with the team to formulate the next generation of paints and inks, and communicate results to internal stakeholders and external partners.

Background and Experience

The ideal candidate will have a background in scaling new chemistries to kilo/pilot/process scales, will demonstrate the ability to strategically address technical challenges, and provide creative solutions to compelling scientific questions. Key skills and previous experience:

- Ph.D. in polymer chemistry, organic chemistry, chemical engineering, or related field
- Experience performing living polymerizations (e.g. Anionic and ROMP) and post-polymerization modification
- Experience performing syntheses on ≥ 1 kg scale
- Excellent organization, communication, and project reporting skills
- Experience with common analytical techniques including UV-Vis-NIR spectroscopy, DSC, TGA, NMR, and GPC.
- Understanding of material structure-property relationships
- Previous experience in inks, paints, and/or coatings a major plus



Candidates who meet the eligibility requirements (<https://iperf.asee.org/eligibility/>) to be partially supported by a National Science Foundation I-PERF fellowship award will be given preference.

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