OPT INDUSTRIES

OPPORTUNITY MARKETING PIECE

HEAD OF R&D

LOCATION | **Medford, MA**

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OPT INDUSTRIES

OPTINDUSTRIES.COM

ABOUT **OPT INDUSTRIES**

Based in the Boston Area, MA, OPT Industries is an advanced digital manufacturing suite, specializing in designing and mass-producing consumer products whose functions and performance necessitate extreme precision at the micron scale. Their cross-disciplinary design teams help their clients develop novel product concepts and bring them successfully to commercialization. OPT's most recent products include InstaSwab™, a high-performance nasal swab designed in record time and trusted by leading healthcare providers.

At OPT Industries they combine computational design, automation engineering, and material science to manufacture materials with micron-scale precision. Through their technology, they bring new product concepts and rapidly scalable production capacity to globally-recognized brands.

Unlike other 3D printing companies, OPT takes a product-centric approach to additive manufacturing technology. While they have already developed one of the most unique 3D printing platforms, their vision is to develop and build highly functional and useful end-use products for customers, much like 3M. OPT owns the products they make, not just the technology that makes them.

QUICK FACTS

MEDFORD, MA
HEADQUARTERS

JIFEI OU
CHIEF EXECUTIVE OFFICER

11–50 EMPLOYEES

THE **PROCESS** AT OPT

01

MATERIAL EVALUATION

The process begins by reviewing incoming requests from customers interested in using OPT materials and technology. They send a collection of material samples that best represent their needs.

02

PRODUCT CO-DEVELOPMENT

After approving the initial samples, the customer interfaces with OPT's teams to develop prototypes that meet the visual and functional requirements needed for their product's success.

03

COMMERCIAL PRODUCTION

Finally, the validated prototype will be directly manufactured at OPT's USA-based production facility. They scale throughput based on customer needs and deliver right to their facility.

A NEW HORIZON OF MATERIALS AT OPT INDUSTRIES

At OPT Industries, they combine computational design, automation engineering, and material science to produce materials with micron-scale precision.

Informed by the natural and synthetic materials that shape the world, their base polymers can be manufactured into multi-scale architectures to meet the visual and functional requirements needed for commercial success.

Through their technology, they bring new product concepts and rapidly scalable production capacity to globally-recognized brands in healthcare, automotive, interior, and consumer goods industries.

HIERARCHICAL IN NATURE

OPT offers a line of proprietary polymers optimized for micron-scale printing. Their formulations are developed to meet industry requirements and customer specifications for a range of commercial uses.

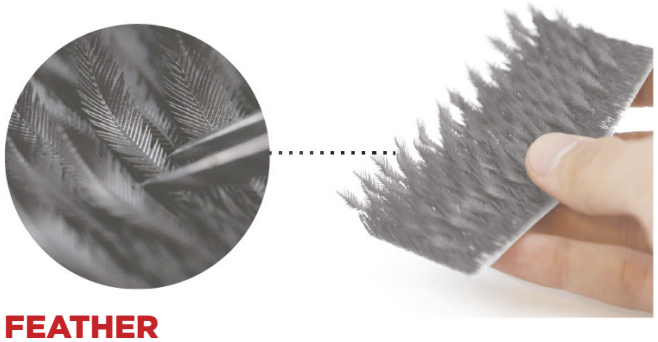
MICROSCALE MODELING

Their team's expertise ensures that their customers' design intentions are accurately captured. Using their computational design platform, they lift their customers' ideas off paper and into manufacturable 3D models.

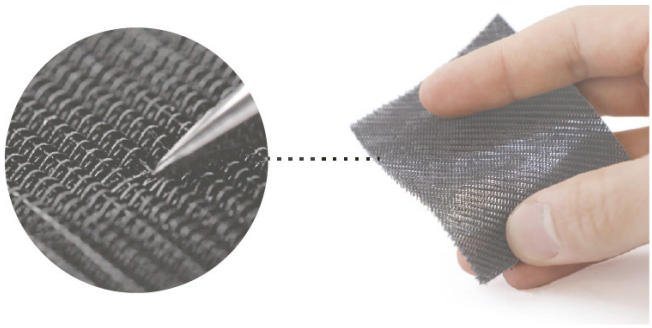
MULTI-LAYERED FUNCTIONS

RAMP™ is OPT's additive manufacturing system that provides print resolution down to 50 µm. RAMP™ produces materials featuring free-form structures, fine surface textures, and with no limit in production length.

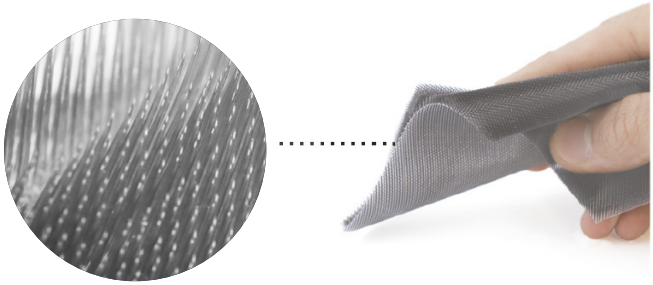
OPT INDUSTRIES



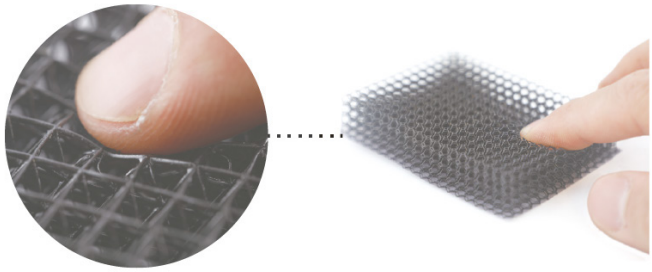
FEATHER
Fractal branching for lightweight appearance.



FABRIC
Interwoven layers for tailored elasticity.



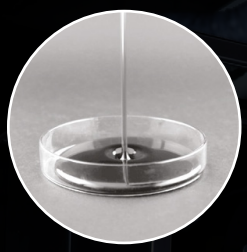
FUR
Lofted surface patterning for customized tactility.



FOAM
Selective placement of soft-to-stiff cushioning.

BUILT WITH PATENTED TECHNOLOGIES

To design and manufacture our materials and products we're continuously improving our full stack of additive manufacturing technologies. Our technology includes custom-formulated polymers, CAD software, and patented roll-to-roll 3D printers.



IN-HOUSE POLYMERS

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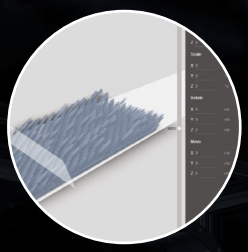

MATERIAL DESIGN

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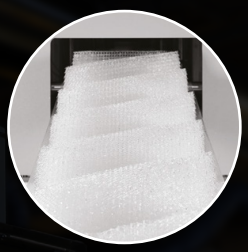
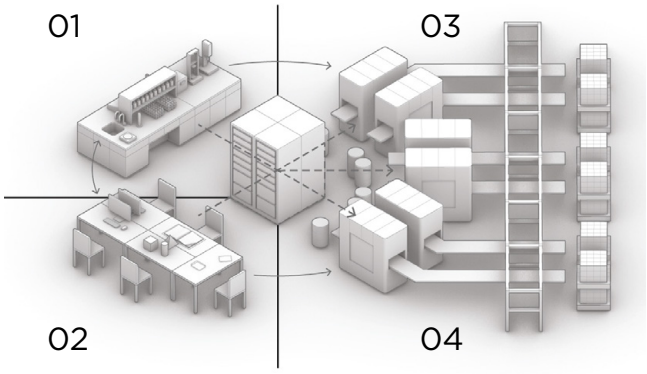


RAMP™

RAMP™ is OPT Industries' additive manufacturing system that provides print resolution down to 50 µm. RAMP™ produces materials featuring free-form structures, fine surface textures, and with no limit in production length.



INTEGRATED MANUFACTURING SOLUTIONS

From ideation to design, prototyping to mass production, OPT has the expertise and technology necessary for every step of end-product development.

01

POLYMER

OPT Industries offer a range of adaptable, high-performance polymers for their production pipeline.

02

DESIGN

OPT integrates multiple computational processes in order to construct 3D models for use in their digital factory.

03

SOFTWARE

Their fOS™ platform is a cloud based manufacturing infrastructure to visualize, collect, organize and manage all information & data streams in production.

04

PRODUCTION

Their RAMP™ system's continuous production line manufactures customers' fully-realized materials at high volume.

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THE INNOVATIVE PRODUCT SOLUTIONS AT OPT INDUSTRIES

Since 2020, OPT has launched two product lines for the cosmetics and medical industries. The products' finely-tuned materials and high-resolution features result in demonstrably superior performance. Their in-house manufacturing has supplied nearly one million units to the market.

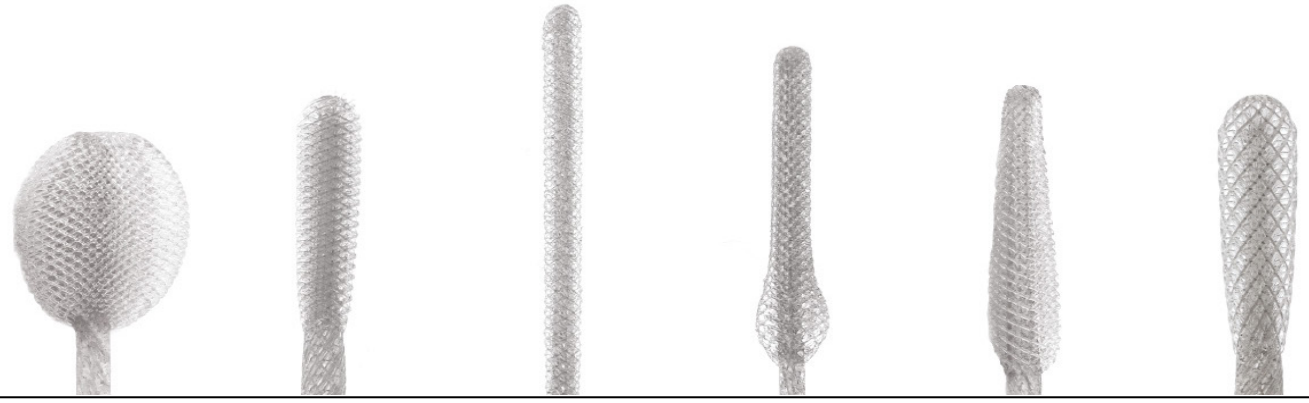
INSTASWAB™

Medical Fluid Samplers

Absorbent swabs with variable tip sizes and shapes for fluid collection that outperforms competitors in independent lab trials.

ABSORBENT BULB FOR INSTANT RELEASE

The porous microstructure of the bulb is tuned to collect and retain fluids while allowing quick release into a vial. The strong capillary hydraulics between the fibers of OPT's GM polymer increases maximum fluid sample uptake and rapid release.

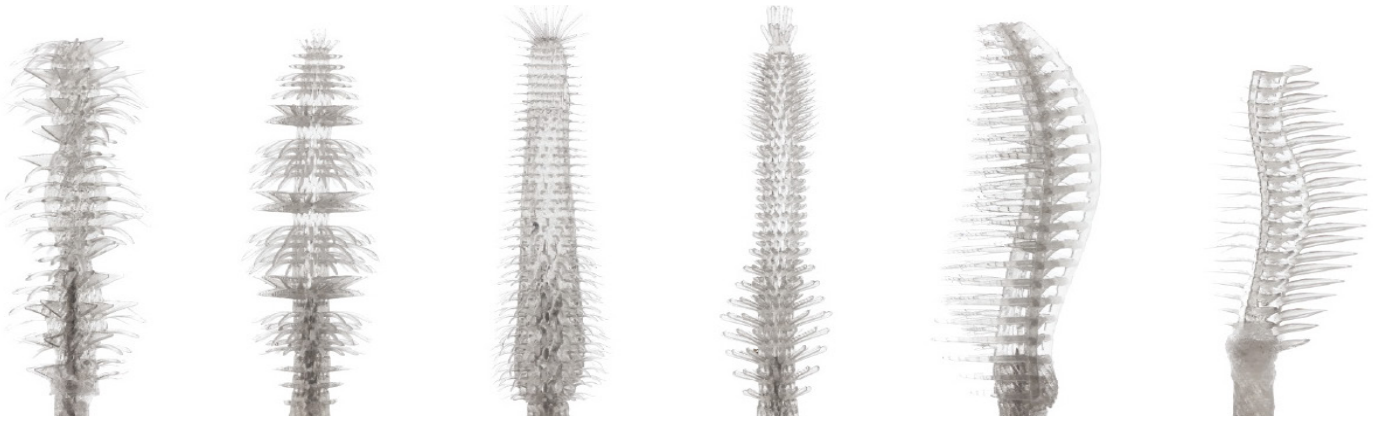


LUMOFIL™

Cosmetic Applicators

Fine featured mascara wands customizable for different eyelash types and makeup formulas.

OPT's **Lumofil™** technology provides clients with a simplified manufacturing experience that avoids the time consuming tooling and adjustment process of traditional injection molding. Their integrated manufacturing system shortens lead times and eliminates the need for recurrent design calibrations.



CULTURE AT **OPT INDUSTRIES**

OPT Industries is a rapidly growing, Series A venture-backed MIT spinoff company that focuses on building the next generation of additive manufacturing technology. Working at the intersection of automation engineering, computational design and polymer science, they design and commercially manufacture highly customizable materials and products — everything from medical devices to luxury fashion.

Their mission is to transform products by taking an integrated approach from design to manufacturing. As they continue to expand their operation, OPT Industries are looking for talented individuals who share their obsession for changing the way things are made. At their Medford, Massachusetts-based office, they value commitment, curiosity, and collaboration. The team at OPT is a group of highly collaborative, dynamic people that help the company run efficiently and grow quickly.

THE TEAM **AT OPT**

. . . an interdisciplinary, globally-diverse team of engineers, scientists, and creatives who share a vision to build the next generation of additively-manufactured materials.

They hold themselves and their work to equally high standards of scientific rigor and aesthetic sensitivity. The roles and responsibilities of their engineering, software, design, chemistry, and production teams overlap to ensure that every project is made to perform and designed to delight.

HIRING MANAGER

JIFEI OU
Founder & CEO

Jifei Ou is an inventor, entrepreneur and researcher. He is the founder and CEO of OPT Industries. Prior to OPT Industries, Jifei worked at the MIT Media lab as a researcher. His work focuses on developing mechanical metamaterials through additive manufacturing. He has been leading projects that study biomimicry and bio-derived materials to design stimuli-responsive packaging, garments and furniture.

Jifei was born and raised in southwest China and has brought his design practice and scientific research to Asia, Europe and the U.S. His works have been published in numerous academic conferences; awarded by design competitions. He has been granted over 10 US patents on his inventions.

Jifei holds an MS and PhD from the MIT Media Lab and a Diplom in Design from the Hochschule für Gestaltung Offenbach in Germany.

POSITION OVERVIEW

HEAD OF R&D

OPT INDUSTRIES

OPT Industries is a rapidly growing, venture-backed MIT spinoff company that focuses on building the next generation of additive manufacturing technology for material innovation. Working at the intersection of automation engineering, computational design and polymer science, they design and commercially manufacture highly customizable materials and products — everything from medical devices to luxury fashion.

OPT Industries's mission is to transform materials by taking an integrated approach from design to manufacturing. As they continue to expand their operation, they are looking for an experienced leader to drive the product growth strategy and meet increasing customer demands. This role will be working with the CEO directly to build and execute business strategies and operations for OPT's material products. Candidates must have a strong track record of leading product development efforts from R&D to full commercialization. An ideal candidate is self-motivated, possesses excellent communication skills, and is excited to collaborate with a dynamic team to bring material solutions to the world's top-tier brands.

OPPORTUNITIES

- Disrupting conventional material/product categories through new manufacturing technologies.
- Bringing new material solutions from the lab to market.
- Playing an integral part in shaping the company's strategy and growth as the company scales.
- Collaborating with a talented team with diverse engineering and design backgrounds to drive priorities.

RESPONSIBILITIES

- Leads and oversees the key material product development and commercialization.
- Develops, implements, and maintains an operating procedure for the development of new products to ensure that the finished product meets all product design requirements, including regulatory quality, cost, reliability, and schedule objectives.
- Proactively manages cost, schedule, and performance of portfolio investments (exploratory, technology development, product development, and sustaining product design).
- Creates and maintains technical centers of excellence around chemical and material development, which are comprised of experts who can address divisional and cross-team technical issues.
- Implements design control activities and ensure all product development activities are compliant with customer requirements and global regulations (i.e. FDA design control regulations).
- Develops and drives technology roadmaps for the business. Partners externally with research and industry specialists to drive innovation. Open minded and always has a pulse on the start-of-art polymer industry globally.
- Provides consistent team leadership through influence and example. Maintains team focus on achieving product requirements and milestones. Fosters a culture of continuous improvement and a mission centric mindset.
- Cultivates cross-functional relationships and build credibility with business development, product management and marketing to drive innovation.

REQUIREMENTS

- 15+ years' experience in engineering and product development with demonstrated capability and understanding of the product development process. Possess above-average skills in product development, project management and personnel management.
- Knowledge of design principles, regulatory requirements, and product verification & validation procedures. Thorough understanding of Quality System Regulations and ISO 13485.
- Experience with all phases of the product life cycle process (exploratory, technology development, product development, and sustaining).
- Strong problem-solving skills. Comfort with quantifying and mitigating risk, and with plotting a defensible path forward through uncertainty. Ability to contribute experience with PM processes from past experiences, and a willingness to adapt them to the unique environment at OPT.
- Excellent teamwork and collaboration skills both internally and with external partners and customers; proven ability to influence cross-functional teams without formal authority. Ability to balance between conflicting priorities and needs across the organization and customer base.
- Strong written and verbal communication. Ability to take ambiguous situations and add structure and clarity for the team.

PREFERRED EXPERIENCES

- Educational experience (BA, MS, PhD) in Materials Science, Chemistry, or Engineering.
- Experienced in translating emerging technology that resulted in brand/partner adoption of new materials solutions.
- Experienced in and energized by the opportunity to develop new materials business for applications across multiple industry verticals.

ABOUT **MEDFORD, MA**

The city of Medford, Massachusetts rests on the Mystic River. Incorporated in 1892, this city was a center of industry, including the manufacturing of brick, tile, and rum. It is home to a number of historical famous crimes including one of the biggest bank robberies and jewel heists of all time. The same property is used today as a restaurant where a hole in the ceiling that the robbers crawled through has been left for nostalgia. World-renowned Tufts University can be found in Medford, as well as Amelia Earhart's residence at 76 Brooks Street.

The greater Boston area is a wonderful blend of stylish sophistication and historic New England charm. Boston is widely viewed as the intellectual and historic capital of the United States. It is a cosmopolitan city with a complete set of services, a broad range of amenities, and a rich tradition and culture almost unmatched in the rest of the country. Boston has a modern, attractive, and completely walkable downtown. It is dotted with Revolutionary period historic sites along the Freedom Trail and preserved old streetscapes mixed in with modern commercial office buildings. The layout is interesting, and not at all on a typical grid – there are surprises around every corner. Areas near the waterfront are filled with attractions, including the historic Faneuil Hall marketplace, an excellent aquarium, and numerous shops and restaurants, and the historic North End. Downtown is a recreation destination, bustling with business and government workers and tourists at most times of day, nearly year round.

In fact, Boston, necessitated by geography and the spread of suburbs all around, has an excellent and well used commuter rail system – anyone planning to work downtown is well served to get familiar with it. As a general rule, arts and culture amenities in downtown Boston and the entire area are exceptional, and most, like the Boston Pops and the Museum of Fine Arts, are well known beyond the city limits. Boston's affinity for professional sports hardly needs mention, and the fact that 26,000-seat Fenway Park still exists well illustrates the area's devotion to tradition.

That tradition goes well beyond the limits of downtown. Suburban Boston is really a series of old towns, set up and distanced in the days of horseback a few miles apart. These towns, some along main corridors, some connected by roads following old Indian trails that seem to wind endlessly through the woods and past one stately home after another, are generally preserved as much as possible in their original form. Each neighborhood has its own little town center, clean, functional, accessible, and dominated by local businesses.

Education, at all levels, is excellent in the Boston area. Area public schools are nationally recognized; people move to the area just for the schools. Boston has the largest number of highly ranked universities in the country. It is hard to draw a single bottom line on the Boston area. Its positives – education, arts, entertainment, historic interest, housing – are unquestionably among the tops in the US.

BOSTON, MA AREA LINKS

AREA LINKS

City of Medford
medfordma.org

City of Boston
cityofboston.gov

Visit Boston
bostonusa.com

ARTS & ENTERTAINMENT

Visit Boston
bostonusa.com/things-to-do

Visit Boston
bostonusa.com/things-to-do/performing-arts-and-entertainment

Boston Syphony Orchestra
bso.org

SHOPPING

Visit Boston
bostonusa.com/things-to-do/shopping

SPORTS

Boston Red Sox
spartanburgsports.com

Boston Celtics
nba.com/celtics

New England Patriots
patriots.com

EDUCATION

Boston Public Schools
bostonpublicschools.org