ORIGIN

Opportunity Marketing Piece

Vice President of Engineering

Location
Sacramento, CA

ROPELLA
GROWING GREAT COMPANIES

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ABOUT ORIGIN MATERIALS

Origin Materials is a technology company based in California and Ontario. Through chemistry and engineering, they replace petroleum with cheap, renewable sources of carbon (like pine, spruce, wood waste, waste paper, and agricultural waste) to create building-block chemicals used in everyday things. Origin's vision is to industrialize a new material basis for the chemical industry — one built on technology that's not just sustainable, but restorative.

Origin's technology represents a scientific breakthrough in the production of renewable and recyclable packaging used in the food and beverage industry. In 2017, Origin Materials launched the NaturaALL Bottle Alliance research consortium. This alliance has brought together large multinationals Nestlé Waters, Danone and PepsiCo as both strategic partners and investors.

The Alliance seeks to make a fully renewable and recyclable polyethylene terephthalate (PET) bottle available to the food and beverage industry using biomass feedstocks like used cardboard and sawdust to avoid diverting resources or land from food production for human or animal consumption. They are using the scraps left over from the process of turning logs into lumber and converting them into the building blocks used to make recyclable plastic bottles.

In 2018, KSH Solutions was selected as an engineering partner for the construction of a new demonstration-scale production plant to turn biomass into bio-based chemicals used in plastics and other materials. KSH is providing detailed engineering, procurement, and field engineering services for the project. The demonstration-scale plant, located in Sarnia, Ontario, is expected to have a capacity of 18,000 tons of biomass and be fully operational by 2022.

QUICK FACTS

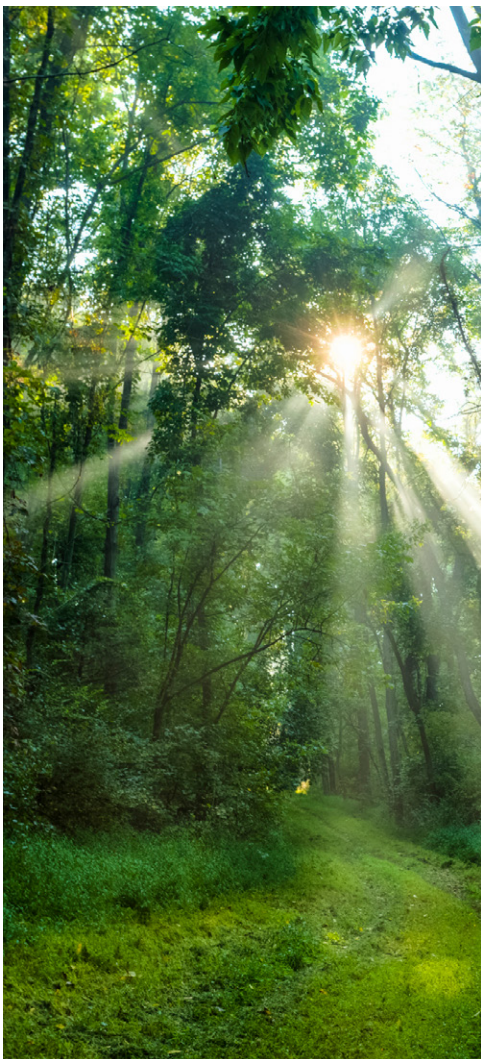
40+
EMPLOYEES

JOHN BISSELL
CEO

2008
ESTABLISHED

SACRAMENTO, CA
HEADQUARTERS

ORIGINMATERIALS.COM



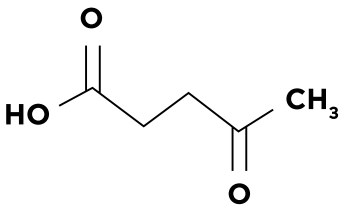
THE POWER OF CHEMISTRY

Origin Materials has developed a way to convert ligno-cellulosic biomass, such as wood chips, into isolated chemical intermediate building blocks. These can be used to economically produce specialty and commodity chemicals such as para-xylene — a hydrocarbon usually derived from oil and used to manufacture PET plastics.

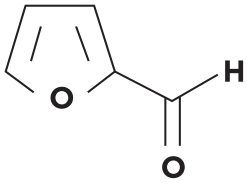
It begins with air, not petroleum. Traditional carbon for plastics is extracted from petroleum below the earth's surface. The biggest untapped source of carbon, atmospheric CO_2, is just waiting to be used.

Since trees and plants naturally capture CO_2 through photosynthesis, using sustainably sourced sawdust and wood chips as feedstock creates carbon negative intermediates, substantially reducing the carbon footprint of derivative materials.

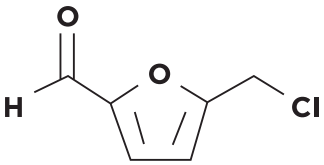
Origin Material's focus is sustainably harvested wood and old cardboard, and agriculture residues. Since non-food plant-based feedstocks don't compete with food production, it's a win for companies, people, and the environment.



Levulinic Acid



Furfural



Chloromethyl Furfural (CMF)

Hydrothermal Carbon (HTC)

MARKET INFORMATION

Origin Materials customers, Nestlé Waters, Danone, PepsiCo and others have agreed to purchase recyclable, 100% plant-based PET, made possible by converting Origin CMF into para-xylene. HTC is also being developed for applications in several markets including tire filler, carbon black, agriculture, and activated carbon.

"Our technology aims for 100% bio-based bottles at a commercial scale. With the NaturAll Alliance, we will be able to scale up our **proven technology."**
-John Bissel, CEO

CLIMATE CHANGE AND SUSTAINABILITY

Plastics have two major problems. The first is a beginning of life problem, where the production of plastics releases carbon emissions into the air, causing petroleum-based pollution and contributing to climate change. The second, is an end of life problem of where the plastics do not decompose and accumulate if not recycled or treated. Origin Materials is addressing the first of these problems and taking carbon-negative materials mainstream.

While the end of life of plastics will continue to be a priority, the plastic industry has become too important for global commerce to work on only one front to improve sustainability, especially considering soaring demand in emerging markets.

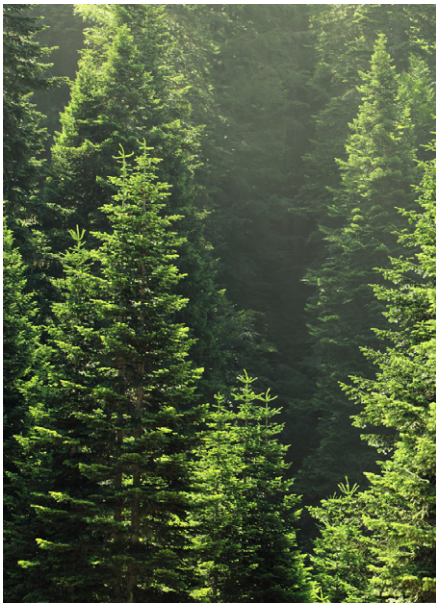
"Consumers are caring about plastic in a way that they haven't in a long time, maybe ever. Everyday things like bottles and clothing can now become carbon negative, but remain otherwise functionally identical." says CEO John Bissell.

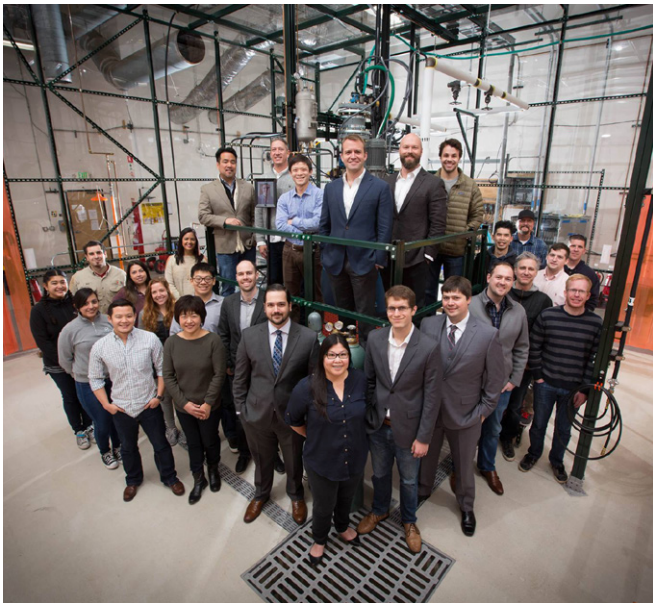
> ***Consumers are caring about plastic in a way that they haven't in a long time**, maybe ever. Everyday things like bottles and clothing can now become carbon negative, but remain otherwise functionally identical."*
> – John Bissell, CEO

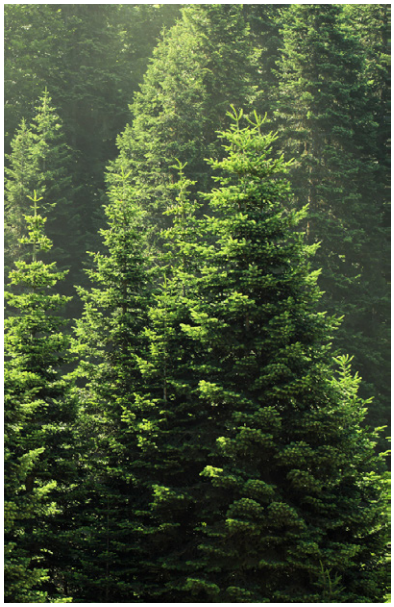
PET plastic is one of the most usable polymer grades finding widespread use for packaging and textiles. It is by far the most commonly recycled, but still contributes heavily to greenhouse gas emissions. Production and incineration of plastics release emissions — as much as 189 coal power plants in 2019, according to the Center for International Environmental Law. Opting to use wood waste, instead of oil to manufacture bio-PET resin, absorbs CO_2 from the atmosphere.

Origin Materials has spent 10 years working to develop alternative plastics that are both economic and don't contribute negatively to the climate. Right now, petroleum based plastics is a $500 billion market and is responsible for 5% of greenhouse gas emissions. Some projections see that ratio tripling in the next 30 years.

Though it may not be a complete solution, Origin's technology has the potential to make a substantial impact on global CO_2 levels.







JOHN BISSELL

Co-Founder and Chief Executive Officer

John's expertise is organizing and managing R&D, engineering, and business development in the chemical industry; as well as technical expertise in chemical engineering, chemical process development, process economic modeling, and technological due diligence related to chemicals and materials. Prior to founding Origin in 2008, John was an R&D engineer at AmpacFine Chemicals, and a researcher at UC Davis. John holds a B.S. in Chemical Engineering from UC Davis.

MAKOTO MASUNO

Head of Research and Development

Mako has expertise in pathway development and optimization, and structure/property relationships. Prior to joining Origin in 2011, Mako was an Assistant Adjunct Professor at Sacramento City College from 2010-2016 and a Professor at Westmont College from 2006-2009. Mako holds a Ph.D in Organic Chemistry from UC Davis and a B.S. in Chemistry from Westmont College.

POSITION PROFILE

VICE PRESIDENT OF ENGINEERING

ORIGIN MATERIALS

The Vice President of Engineering will be responsible for all aspects of the company's engineering activities and will focus on the structuring and operation of the engineering function as a cohesive unit; the conceptualization and day-to-day management of engineering projects; delivering product designs and engineering plans to agreed specifications within time and budget constraints, and the fostering of innovative solutions to cater to internal and external customer needs.

JOB RESPONSIBILITIES

- Lead and implement engineering design, production and projects to support the long term goals and strategy of the company
- Drive strategic approach for launches and production startup in alignment with the company's existing process technology and new technology developments as they arise
- Drive and augment the engineering process with primary goals of predictability, stability, and visibility
- Ensure strong cross-functional integration with the R&D team (interaction, communication, and two-way flow of information)
- Take ownership for new process developments and their translation into engineering plans in a start-up environment
- Develop and lead process for creation of a technical package, drawing on R&D activities, that can be provided to an engineering firm
- Develop programs and key objectives for the successful scaling of production from pilot to commercial launch
- Discern and prioritize the scope of engineering work on multi-disciplinary projects
- Proactively manage and communicate relevant engineering scope changes
- Motivate, mentor and develop a strong engineering team. Retain existing engineering staff and attract new top-tier engineering talent
- Empower engineers to innovate while providing technical expertise/targeted questions to make a decision that is best for the business
- Ensure engineers understand business direction and how individual work contributes to end goals
- Develop and communicate team goals in support of the company's mission by setting clear targets and expectations, tracking progress against the targets, ensuring feedback, and addressing performance problems and issues promptly
- Take responsibility for existing engineering designs and engineering contractor relationships
- Assess, select and manage existing and future relationships with third party engineering firms
- Responsibility for assistance with downstream toll manufacturers as needed to deliver technical packages and support
- Possess an understanding of the market and the technical implementation so as to be able to speak to feasibility versus opportunity of company direction and pivots
- Occasional interaction and exposure to executive level clients, investors and partners

QUALIFICATIONS

- Minimum 5 years' experience leading and mentoring a team of engineers
- Minimum 10 years' engineering experience in a project engineers capacity
- Direct chemical industry experience in chemical or specialty chemical manufacturing
- Bachelor's degree in engineering or a related technical discipline; graduate degree is a plus
- Experience leading the scale up of new process technology from design to execution on a commercial scale
- Strong understanding of manufacturing processes to lead the debugging and de-bottle necking efforts when bringing a new production facility on line
- Prior project management experience
- Experience with solid handling is preferred
- Experience in organic chemistry production is preferred
- Highly motivated, high energy, "can do" attitude, self-starter with a strong sense of urgency
- Ability to travel 15-20%

SACRAMENTO, CA

Sacramento is California's Capital City, an urban oasis surrounded by 1.5 million acres of farmland. The region offers a slice of everything that defines California, from farm-fresh cuisine and award-winning wine to countless entertainment options and outdoor adventures to explore. Located 90 miles northeast of San Francisco, 383 miles north of Los Angeles, Sacramento and its 1.5 million residents love to explore all of what California.

The city's history began in 1839 when Johann Augustus Sutter settled at the confluence of the American and Sacramento Rivers. Gold was discovered in 1848 just 30 miles east of Sacramento. The news of the discovery spread like wildfire around the globe, and fortune hunters came by the thousands from all corners of the world to Sacramento. California became an official state in 1850 and Sacramento became its capital four years later. Visitors can explore Old Sacramento and the city's past. As you enter the 28-acre town of historic buildings constructed in the mid-1800s, you'll step back in time to the California Gold Rush era. Wooden sidewalks, horse-drawn carriages, old-fashioned candy shops, and a Mississippi-style riverboat offer a hands-on introduction to early Golden State history. The City is also home to the historic Sacramento Valley train station that is currently in restoration.

If you're looking for events to fill your schedule, try the Sacramento Convention Center, Cal Expo, historic Memorial Auditorium, Golden 1 Center, and many full-service hotels that offer meeting spaces and full schedules of fun. The Sacramento Convention Center is currently under renovation and set to open in fall 2020. The new SAFE Credit Union Performing Art Convention & Performing Arts District will feature 240,000 square feet of programmable space, a 40,000 square-foot ballroom and a 15,300 square-foot outdoor plaza.

Sacramento International Airport (SMF) opened its $1 billion expansion in October 2011 and is served by all major airlines with direct flights from Europe and Asia offered by several airlines. Nonstop service from Sacramento to the east coast is available on several carriers.

SACRAMENTO QUICK FACTS

1.5 MILLION
CENSUS POPULATION

SACRAMENTO INTERNATIONAL
CLOSEST AIRPORT

SAN FRANCISCO
CLOSEST MAJOR CITY

Sacramento was proclaimed 'America's Farm-to-Fork Capital' in 2012, paying tribute to the region's 1.5 million acres of surrounding farmland and 365-day growing season. While the idea of farm-to-fork may be nothing more than a slogan in some cities, for Sacramento, fresh food is a way of life. Home to more than 40 farmers markets, including one of the largest in the state, Sacramento is rapidly attracting world-class chefs who are eager to work with the region's bounty of fresh ingredients. The region's food scene is exploding as well, with exciting restaurant options around every corner. For wine lovers, the Sacramento region is home to more than 200 wineries, vineyards and tasting rooms.

Public art seems to be everywhere you turn in Sacramento — even the sides of buildings. Wide Open Walls, Sacramento's mural festival, has added works of art to buildings throughout the city over the years.

ABOUT SACRAMENTO, CA

Visitors can tour the murals and get a sense of the city at the same time with an excursion through the Sacramento Tour Company.

Visitors looking to explore Sacramento's music scene can take in all genres of music at venues like Ace of Spades, Harlow's, or enjoy larger concerts at the famed Memorial Auditorium and Crest Theatre. Museum buffs can get their fill by stepping into the Aerospace Museum of California or checking out the massive 'garage' at the California Automobile Museum. If you've got a young train-enthusiast in your family, then Sacramento's California State Railroad Museum should definitely be on your itinerary. You'll also find Sacramento History Museum, where kids are invited to try their luck at panning for gold.

Sacramento's unbeatable climate and gorgeous scenery provide the ideal spot for outdoor adventure. In a city bound by two rivers, water recreation tops the list for outdoor activities: river rafting, boating, fishing for Salmon and Steelhead and river rafting can be done on the 1,000 miles of waterways around Sacramento. Nearby Lakes also offer sailing and windsurfing. Sacramento municipal golf courses provide the surrounding community with 540 acres of quality fairways and greens. The American River Parkway offers a 32-mile, 5,000-acre park for biking, jogging, golfing and even picniking.

Sports fans have reasons to cheer year-round in Sacramento. The Sacramento River Cats, have been playing to sold-out crowds at Sutter Health Park for more than 15 seasons. The Sacramento Republic FC soccer team sold out almost every match in its inaugural season. And not to be outdone, "the loudest fans in the NBA" are watching the Sacramento Kings take to the court in the heart of downtown.

CITY INFORMATION

cityofsacramento.org
visitSacramento.com

ARTS & ENTERTAINMENT

Aerospace Museum
aerospaceca.org

CA Auto Museum
calautomuseum.org

CA Railroad Museum
californiarailroad.museum

Wide Open Walls
wideopenwalls.com

SHOPPING

Sacramento Farmers Market
sacramento365.com

PROFESSIONAL SPORTS

NBA Kings
nba.com/kings

MLS Republic
sacrepublicfc.com

MILB River Cats
milb.com

EDUCATION

Sacramento State University
csus.edu

REAL ESTATE

Zillow
zillow.com/sacramento-ca

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We can help you assess and upgrade your executive team with A players.

Looking to improve your recruitment process?

We'll show you the ROI impact our clients achieve with Ropella's RPO (Recruitment Process Outsourcing) services.

Do you have a Succession Plan for your impending retirements?

Roughly 10,000 Baby Boomers will turn 65 every day for the next decade. We're here to help!