

# RENEWABLE ENERGY FUELS

## Algae can make the world go round

BY LINDSAY RIDDELL

San Francisco Business Times

**S**olazyme's founders think there's very little algae can't do.

South San Francisco-based Solazyme is producing an oil from algae that it says can replace almost any oil-based product — which means big market opportunities for the little startup.

"We use oils in literally almost everything we touch," said co-founder and CEO Jonathan Wolfson. "There are

petroleum-based oils in plastics and all over your car. There are petroleum-based oils in fuels. There are petroleum-based oils in chemicals. We use natural oils in foods."

And in addition to exploiting its market potential, Solazyme is counting on its algae oil to help solve some of the world's biggest problems, including oil dependence and global warming.

"Our technology is really dedicated to producing these oils in a very clean, green and renewable way," Wolfson said.

Solazyme was founded in 2003 by



**Slick business plan:** Solazyme's Wolfson and Dillon explore ways to replace the petroleum in many products with algae.

Wolfson and Harrison Dillon. It has raised \$75 million in funding from investors, including the Berkeley-based Roda Group, Chicago-based BlueCrest Capital Finance, New York-based Harris & Harris, and Silicon Valley's Braemer Energy Ventures and Lightspeed Venture Partners.

It estimates it can produce its algae crude oil at prices that can compete with petroleum-derived oil in the next two to three years. It's testing its oils in products across many industries, including cosmetics and foods.

Solazyme's vehicle fuels produce 85 percent to 93 percent lower greenhouse gas emissions throughout their life

### SOLAZYME

**Founders:** Jonathan Wolfson and Harrison Dillon.

**Founded:** 2003.

**Venture capital:** \$75 million in debt, grants and equity.

**Employees:** 60.

**What it does:** Produces renewable algae oil.

cycle than ultra-low sulfur diesel, according to a recent study.

Solazyme has had its unblended algae fuel certified by the American Society for Testing and Materials, which develops voluntary standards for gasoline and other markets internationally, and Solazyme has tested it in jet engines and used it to power a diesel car.

Solazyme says its major advantage for the company is that its fuels can be transported and delivered using existing fuel infrastructure and used in unmodified vehicles.

"The breadth of this problem is so big, we're going to need a lot of solutions," said Wolfson. "In general, there's room for a lot of winners in these markets."

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## Fulcrum finds an energy balance

**F**ulcrum Bio Energy can cut greenhouse gas emissions and the size of landfills in a way that creates useable transportation fuels — something of a climate-change trifecta.

"There's an awful lot of garbage that has energy in it," said CEO E. James Macias.

Fulcrum has developed in its lab a way to gasify garbage and convert it to syngas, which can be converted into hydrogen, methanol, butanol and other valuable chemicals.

"But we're taking it to ethanol, because that's the big market," Macias said.

It is raising money for its first full-scale plant in Reno, Nev., and has applied for a Department of Energy Loan guarantee.

— Lindsay Riddell ■

### FINALIST

FULCRUM  
BIOENERGY INC.

### FULCRUM BIOENERGY INC.

**Location:** Pleasanton.

**CEO:** E. James Macias.

**What it does:** Fulcrum says it has developed a way to gasify garbage to convert it to ethanol and other chemicals.



Macias