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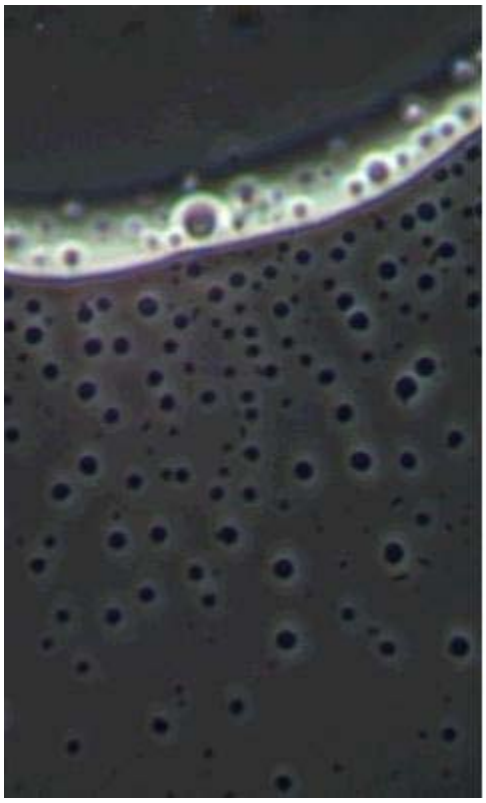
Micromidas to test sludge-to-plastic tech

by Martin LaMonica

Later this year, start-up Micromidas plans to test how well an army of microbes can convert sludge from wastewater treatment plants into a biodegradable plastic.

The Sacramento, Calif.-based company, which raised $3.6 million last month in series A venture funding, expects to start pilot testing a waste-to-plastic machine at its labs within a month. Then in about five months it hopes to take that biorefinery, which can fit in a shipping container, to a wastewater treatment plant, said CEO and founder John Bissell.

Because it's still early in development, the company doesn't know how much the system will cost compared to making the plastic polyhydroxyalkanoates (PHA) from glucose or fructose. But if successful, the system will be valuable to wastewater treatment facilities where as much as 40 percent of operating costs stem from handling sewage sludge, Bissell said.


(Credit: Micromidas)

Micromidas is one of a number of companies trying to create something valuable from waste. In another example, Ostara Nutrient Recovery Technologies on Thursday is opening a facility to **convert wastewater into a fertilizer**, which reduces the amount of nutrient run-off to waterways.

In the case of Micromidas, the company is using the carbon in sewage sludge as a feedstock to make plastic. "There are a bunch of nutrients available, which we feed to our microbes which consume it and then aggregate it," Bissell explained. "They eat it, they get fat, we kill them, and then we harvest the material."

Rather than genetically engineering one "superbug," the company uses a combination of microbes to essentially eat and digest portions of the sludge, Bissell said. The population can be adjusted for different facilities, which vary significantly, he said.

Micromidas is taking advantage of Autodesk's Clean Tech Partner program, in which the design and engineering software company makes its products available for free to qualifying clean-tech start-ups.

Using **simulation software Algor**, Micromidas' chemical engineers can "digitally experiment" with how different processes will work with a different population of microbes, Bissell said.

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