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THIS WEEK'S ISSUE

\$5.3M infusion a gas for Cleveland firm's biofuel development

By **CHUCK SODER**

4:30 am, July 21, 2008

A Cleveland company developing more efficient ways to produce biofuels is officially running on a full tank.

Arisdyne Systems Inc. has raised a total of \$5.3 million that it will use to further develop a technology aimed at helping biofuel makers mix chemicals faster.

The money, from Arisdyn's current investors, will allow the company to buy lab equipment, to hire an undisclosed number of mechanical engineers and chemists, and to build three or four prototype reactors that use the company's techniques for creating biodiesel and ethanol, said president Fred Clarke.

The company also received a \$1 million Ohio Third Frontier grant in March, which it will use to develop its technology for producing ethanol.

The cash infusion will allow Arisdyn to capitalize on its newfound independence: The company in January spun off from electronics materials maker Five Star Technologies Inc.

Arisdyne separated from Five Star at the request of its investors: Early Stage Partners of Cleveland; Menlo Park, Calif.-based Morgenthaler Ventures, a division of Cleveland-based Morgenthaler Partners; Industrial Technology Ventures of Atlanta; and CTTV Investments, the venture capital arm of Houston-based Chevron Technology Ventures LLC.

Being a separate company allows Arisdyn to focus entirely on its own operations, and it gives the investors a more clearly defined investment vehicle, Mr. Clarke said.

"We needed an identity," he said.

Plus, Arisdyn's technology has little to do with Five Star's products.

Arisdyne uses a process called cavitation both to break corn into tiny bits during the production of ethanol and to separate alcohol and oil into miniscule droplets before combining them to make biodiesel.

Cavitation largely is known as a destructive process. It occurs when turbulence in a liquid, often caused by propellers or other machines, creates an area of low pressure, creating vacuums in the form of small bubbles. When the bubbles collapse, they release energy in the form of shockwaves that can damage equipment or, in this case, break up materials so they're easier to mix.

"Cavitation is destructive, but we've (found) a constructive way to use it," Mr. Clarke said.

Arisdyne's six employees still are housed in Five Star's former headquarters on Aerospace Parkway near the I-X Center, but the company is looking for a new location with a more efficient layout and better lab space, Mr. Clarke said.

Arisdyne already has one customer: CQ Inc. of Blairsville, Pa. The company, which

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develops and produces alternative fuels, has installed two of Arisdyn's reactors at a biodiesel plant in Middletown, Pa., that it bought in fall 2006.

The reactors are prototypes, but they still have helped CQ increase the plant's production capacity to 5 million gallons per year from about 2 million.


One of the advantages of the system is that it continuously mixes the chemicals to make biodiesel, whereas the plant previously produced it one batch at a time. Increasing the number of batches that could be produced would be much more expensive, said CQ president Clark Harrison.


Not only is the system fast, but it's economical and produces quality fuel, Mr. Harrison said.

"These guys have all three, and that's unusual," he said.

Arisdyne also is developing reactors that would be able to process oils from alternative sources such as algae, oil palm trees and jatropa plants. CQ will consider using that technology as well, said Glenn Shirey, general manager of Middletown Biofuels LLC, the CQ subsidiary that runs the plant.

"We're looking forward to seeing what else they have coming down the line," he said.

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