

## **Bubble Survivors: Intematix Lights Up With Nanotech**

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*[Editor's note: This is one in a series profiling prominent venture-backed companies originally funded during the tech-bubble years of 1999 and 2000.]*

When venture investors first put money in nanotechnology materials developer Intematix Corp., the company had a very promising technology but lacked a market. Seven years later, Intematix finds itself in the enviable position of turning investors away, as consumers flip on the switch for new energy-efficient lighting. Intematix's story underscores how a start-up can prosper by narrowing its focus and placing a big bet in a small market, and then locking in suppliers to take advantage of an eventual increase in demand.

In the early days of the new millennium, nanotechnology had matured as a science, but companies were only beginning to recognize that the technology could be used in commercial products like lotions and coatings to enhance their performance.

Intematix raised its first \$2 million from East Gate Capital Management in August 2000. The company had developed a process for quickly and efficiently manufacturing nanoparticles -- microscopic materials prized for their unique physical characteristics. Because these materials are less than 100 nanometers in diameter, they can exhibit different physical properties -- for instance, copper is inflexible at a very small size and therefore can be used as a tough coating.

By 2003, the Fremont, Calif.-based company had established its technology sufficiently to start to test commercial waters, according to Draper Fisher Jurvetson Managing Director Jennifer Fonstad. "We saw a very strong material discovery platform," she said. "And a crop of young promising materials that would apply to about a dozen markets."

DFJ led the company's \$7 million second round in 2003, and focused production on a couple of materials that were closest to commercialization, Fonstad said. "Solid state lighting was, and continues to be, a high-growth area," she said. "We felt that working with the team to really focus their resources on just a couple of materials would enable them to get to market more quickly."

So Intematix began to produce phosphor, a key component for manufacturing light emitting diodes, or LEDs, the semiconductor-based lighting that is replacing conventional incandescent lighting. Using its proprietary nanomaterial discovery platform, Intematix can make tailored phosphors that modulate the color of light emitted from LEDs, making it easier to produce the kind of white light used in office buildings that now typically comes from fluorescent lights.

Now, the bulk of Intematix's revenue, which a person familiar with the company placed somewhere between \$10 million and \$20 million for 2006, comes from sales of phosphor to LED manufacturers.

**"I believe everything is going to be LED lighting over the longer run," said Dave Epstein, a general partner with San Francisco-based growth equity firm Crosslink Capital and a director on the Intematix board.**

**Crosslink co-led Intematix's \$16.5 million Series C round with Samsung Ventures late last year, as a way to place a bet on the hot LED market without having to invest in an LED manufacturer. Epstein said that the partners at Crosslink expect the LED manufacturing business to become commoditized, with margins looking increasingly slim as more businesses race to produce better, cheaper lights. "With a commodity business you don't get to make a lot of money," Epstein said.**

**Instead, with its investment in Intematix, Crosslink backed a company that sells a necessary LED component. "I liken it to selling Levi's [clothes] during the Gold Rush," said Epstein.**

In 2006, U.S. companies spent approximately \$30 billion on lighting equipment and that number is expected to rise to \$40 billion by 2011, according to a study from the U.S. Department of Energy, published in a recent report on the LED market by research firm Canaccord Adams. The market demand for LEDs is expected to climb from around \$230 million in 2005 to \$1 billion by 2010, the report indicated.

To make the leap into the mainstream, LEDs need to be able to produce a light similar in quality to the kind available from incandescent bulbs, according to Canaccord Adams analyst Jed Dorsheimer.

One of the easiest ways to produce white light, he said, is by using different kinds of phosphors to shade ultra violet light. "That is precisely what Intematix is doing," he said. "They're manufacturing phosphors that can reproduce the wavelength that an LED emits naturally and change it to a different color."

According to Canaccord Adams research, Intematix has locked up supply agreements with most of the major LED manufacturers, including Taipei-based Edison Opto Corp., Tokyo-based Sumitomo Corp., and Gyunggi-do, Korea-based LumiMicro Inc. The company declined to discuss its customers.

Despite the "significant traction" that Dorsheimer sees from Intematix, an IPO is not yet on the horizon for the company. Even as other nanomaterials manufacturers like Buffalo, N.Y.-based NanoDynamics Inc., which sells nano-metals, nano-ceramics, and nano-carbons for industrial applications, begin to list on the public markets, Intematix is holding back, according to Chief Executive Peter Larsson.

"We have more work to do," Larsson said. Now that the company has established itself in a core market, Larsson is looking to expand into new business sectors where it can apply its new materials production process. "A lot of the breakthroughs in cleantech and greentech will come from materials science," said Larsson. To that end Intematix is also pursuing projects related to novel materials for fuel cells, devices that convert some form of fuel into electricity, and solar power applications, Larsson said.

As the company pursues these new applications it will begin to face more direct competitors. Within the LED market, the main option to using phosphors from Intematix is to manufacture the material in-house, analysts said. In other cleantech applications there are far more competitors.

Still, investors are undeterred. "We look at nanotechnology as a new way of producing devices, mechanical devices, electrical devices or chemical devices," said Epstein. "The way nanotechnology is going to win in the market is when it's developed for a particular application to solve a particular problem."

By tackling one market at a time, investors expect to continue the company's steady growth, and eventually realize an exit.

<http://www.intematix.com>