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CUTTING-EDGE OPTICS

Firm offers super-fast lasers, more

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May 13, 2011 12:00 am • Rikki Mitchell Arizona Daily Star

Try imagining something that happens in one ten-thousandth of a billionth of a second.

That's the speed of an ultra-short-pulse laser that a local startup company is working to produce.

Stephen McCahon and Brad House started Applied Optical Sciences in April 2010 with the idea that they wanted to develop technology that in three to five years would be on the cutting edge.

The company develops photonic devices like the ultra-short-pulse laser, which can be used in a variety of applications such as precision drilling and also in the medical field as a precise laser scalpel, said McCahon, president.

"The applications are growing dramatically for ultra-short-pulse lasers and the technology associated with them," he said. "It has taken about 20 years to move them out of the laboratory for everyday use and you're just starting to see that right now."

In order to develop these devices, the company bought high-technology equipment that it offers to other local companies and researchers for use in their own work.

The company has scanning electron microscopes, atomic probe microscopes and high-precision surface profilers.

McCahon said the cost of these devices ranged from a quarter-million to a half-million dollars each.

These types of analytical devices allow materials to be examined at the atom level, and the combination of those three devices is hard to find in one building, he said.

"When we first started this company, we couldn't find these analytical instruments in Southern Arizona," said McCahon. "So we had to buy them, and quite a few people come through here looking for that kind of help."

Bob Breault, chairman of the Arizona Optics Industry Association, said the optics industry is seeing a recovery, and companies like this one are helping.

"It may be a weak recovery right now ... but there is real growth," he said. "I expect it, quite honestly, to continue."

In the coming year, McCahon said, he hopes to produce and sell the company's first ultra-short-

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pulse laser.

House, vice president, said a customer is already interested in buying the laser, after some further testing.

Applied Optical Sciences also hopes to hire an additional 10 employees, and to have products sold in the commercial world, said McCahon. "That would be a good second year," he said.

The company has been financed by personal funds from McCahon and House.

"It's very costly but it's very important for those of us who have the resources and capability to invest in this type of technology," said McCahon.

He said he hopes to grow without the help of investors but realizes that as the company expands, it might need a little help.

"We're going to do organic growth but as production requires expansion we will look at outside funding," said McCahon.

This is the second company McCahon has started. He said he wasn't planning on starting another one, after leaving Applied Energetics Inc.

That Tucson-based company, founded in 2002 as Ionatron Inc., specializes in laser-guided directed energy products for military and security uses.

"Literally, I was just going to start a lab and buy some equipment and just do some basic research," he said.

House said that when McCahon approached him with the idea of starting Applied Optical Sciences, he was a little concerned.

"I thought I had to do a sanity check," said House. "I asked him several times, 'Do you have the energy to do this or do you want to be the crazy guy in your lab fiddling with knobs?'"

McCahon said he thought about it and decided instead of retiring, he wanted to continue pursuing his love of photonics.

"I'd rather stay busy and do something worthwhile," he said. "So we'll see what happens."

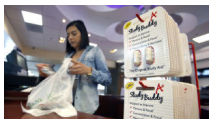
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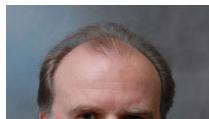
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