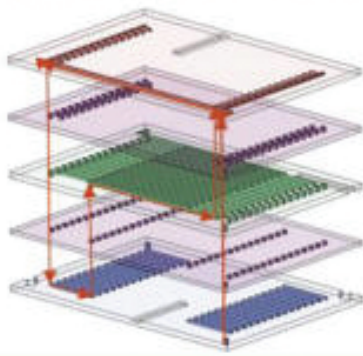
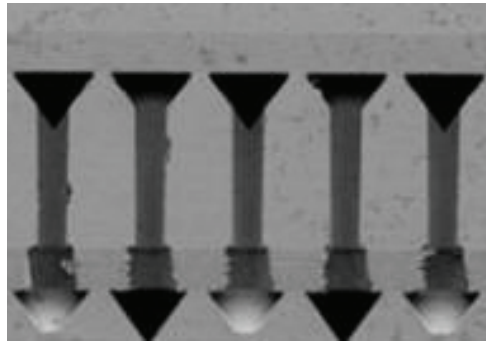


## CUSTOMER PROFILE

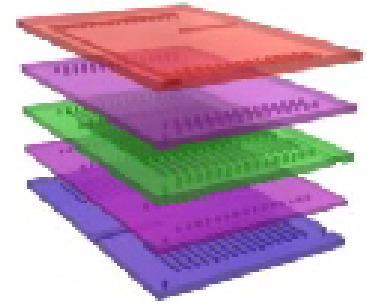
# Enabling PCR on a Chip with Thermal Gradient



Microfluidic Design (courtesy Thermal Gradient)



Cross section of assembled chip. The channels are roughly twice the width of a human hair.



3D View of Microfluidic Design

### Successful Start-up Company Praises ITC's Facilities and People

Thermal Gradient is a start-up company with a classic start-up story.

Two men—Joel Grover and Bob Juncosa—had an idea to make something that was better, faster and cheaper than anything in the current marketplace. In this case, it's a PCR (polymerase chain reaction) device that can amplify DNA in under 5 minutes.

Just a few years down the road from initial concept, Thermal Gradient today has proven the feasibility of amplifying DNA with its device and is working on second-generation technology under a major contract with the Department of Homeland Security.

Dr. Grover, the chief executive officer, is quick to credit the Infotonics Technology Center (ITC) for Thermal Gradient's rapid progress.

"Thanks to ITC, we went from concept to first devices in six months," Dr. Grover said. "Without ITC, we couldn't even have lined up the various people and entities to even begin the work in that period of time.

"Frankly," he said, "if ITC hadn't existed, we would have had to raise three times as much venture capital and spend it with half a dozen or more separate suppliers just to get things going."

Dr. Grover knew some of the people at ITC, respected their abilities and experience, and also knew the Center had the right facilities to do the job.

**"Thanks to ITC, we went from concept to first devices in six months."**

Dr. Joel Grover, CEO

"At the outset," he said, "we needed to find a way to make our device in such a way that it would be economical and would be able to be mass-produced. ITC was critically important in helping us through the feasibility phase. We're in the development phase now, and we'll soon move into a prototype phase."

According to Dr. Grover, ITC remains a "significant part of everything we do. ITC has produced more than 600 devices for us, and virtually every one of them has met our high quality requirements and has performed perfectly.

"Along the way," he said, "the experts at ITC have solved a host of problems, and we now have a very mature process for making these devices. So, in our view, it's much more than just the facilities that make ITC valuable for us—it's the people on their staff.

"These are men and women who have made parts and delivered them for

commercial applications in their earlier careers," Dr. Grover said. "They understand that you are not done when you can make a handful of devices that work. They realize that you are just starting to get done when you can make dozens or hundreds of devices that work, and that all work exactly the same.

"ITC has a very creative group of people—and they come up with creative solutions. We are very glad that ITC is here."

