

## Dr. Sasan Fathpour wins the 2007 UCLA Chancellor's Award for Postdoctoral Research

*“Dr. Fathpour stood out from the crowd because of his pioneering Ph.D. thesis and he has been remarkably productive during his stay at UCLA. His work on energy-efficient silicon photonics represents an entirely new and highly relevant direction in the field. As a result, he is well-positioned to be a leader in emerging device technologies.”*

*— Professor Bahram Jalali*

If optics and electronics could be merged on the same microchip, the outcome might be faster, smaller, and cheaper computers and Internet networks. Sasan Fathpour has been working to remove the biggest hurdle to this achievement: Silicon, the bread-and-butter material of the electronics industry, becomes opaque at high optical powers. So that light can pass through, a diode has to be attached to the optical components to vacuum out the blocking electrons—with an unacceptable increase in the electrical power dissipation of the chips. Working with a team of researchers, Dr. Fathpour has found an innovative and clever way to hook up silicon so that the lost optical energy is not wasted as heat but actually harvested into useful electrical power. In other words, instead of using electrical power to clear the material standing in the way of light travel, the device actually generates electrical power.

Inspired by a couple of “wonderful high school physics teachers,” Dr. Fathpour got an engineering degree at Isfahan University of Technology in Iran. “I found the field more practical—making real things and getting them to work,” he says, but he never lost that initial interest in physics. He earned a master’s degree at the University of British Columbia, researching on the physical modeling of transistors, and a doctoral degree at the University of Michigan, with a thesis on high-performance quantum dot lasers and spin-polarized light sources.

The emerging field of silicon photonics caught his attention, and UCLA has one of the leading research groups in this field. Besides its first-rank research, UCLA has an atmosphere that is “lively, friendly, and fun,” Dr. Fathpour says. “Certainly the landscape and the weather play a part,” he says, “but I think the spirit of the founders of the university and the people they put together is the most important factor.”

**The above will appear in the spring 2007 issue of the [Graduate Quarterly](#). More information about Sasan Fathpour and his research can be found at his webpage: [www.ee.ucla.edu/~sasan](http://www.ee.ucla.edu/~sasan).**