



Science News, October 30, 2004

## Laser Landmark

*“Now, researchers in California have made a laser from silicon, achieving an important step toward optoelectronic or even purely photonic chips of silicon.”*

*“This is the first time that lasing in silicon has been achieved, says Bahram Jalali of University of California, Los Angeles (UCLA). ‘It’s something the textbooks tell you can’t be done.’ He and his colleagues describe the new laser in the Oct.18 Optics*

*Express and the Oct. 25 IEICE Electronics Express.”*

*“To get around this drawback, Jalali and his colleagues tapped a different atomic response in celebrity semiconductor. In a process known as Raman emission, incoming energy stimulates atomic vibrations, which the decay, in part, into photons.”*

*“ To build its laser, the UCLA team applied microfabrication techniques to a silicon chip to create a wire 2 centimeters across. By pumping light from another laser into the wire, the researchers made the silicon lase at infrared wavelengths. When 8 meters of optical fiber linked the wire’s ends, the light recirculated through the wire, stimulating the emission of more light. Jalali and his workers expect to soon replace the clumsy bundle of fiber with a disk-shaped microcomponent that will shrink the laser to the size that will fit on a chip, Jalali says.”*

*“ The new laser will me the first that fits on a chip that can emit certain infrared wavelengths, Jalali says. Potential uses for such a laser range from detecting chemical and biological agents to transmitting wireless Internet data at ultrahigh rates.”*