

DECEMBER 15, 2008, 8:08 PM

For Chip Makers, Hybrids May Be a Way Forward

By JOHN MARKOFF

Searching for new ways to make computers that run faster and use less power, the chip industry is once again eyeing some exotic materials that can offer great speed, but have been more costly and difficult to manufacture than silicon.

“There are still very serious problems and many challenges, but it looks promising,” said Jesus A. del Alamo, an electrical engineering professor who is working in the area and whose research is being partially funded by Intel.

One of the reasons that industry interest is so high is because of the rapidly growing power consumption of consumer gear.

“This is a green transistor,” said Albert Chin, one of the organizers of the conference and a professor at National Chiao Tung University in Taiwan.

The researchers also talked about new research on three-dimensional chip structures as a way around the increasing challenges of making smaller microelectronic devices.

Separately on Monday, Intel researchers described another novel technique for gaining computing speed. It involves “rotating” the basic silicon material used to create cylindrical ingots of silicon from which wafers and then chips are cut. This involves changing the way the basic crystalline silicon is “grown,” or extruded — creating a different crystalline structure, which can provide faster switching in some cases.