pounds of antimony and other times as tellurium or tin because the number of electrons determines the chemistry, less so the identity of the nucleus underneath.

Nobel Prizes for 2000 Announced

The Royal Swedish Academy of Sciences has awarded the Nobel Prize in chemistry for 2000 jointly to **Alan J. Heeger** of the University of California—Santa Barbara, **Alan G. MacDiarmid** of the University of Pennsylvania, and **Hideki Shirakawa** of the University of Tsukuba, Japan, "for the discovery and development of conductive polymers."

For a polymer to be able to conduct electric current, it must consist alternately of single and double bonds between the carbon atoms. It must also be doped, enabling the holes or extra electrons to move along the molecule, becoming electrically conductive. Heeger, MacDiarmid, and Shirakawa made their seminal findings at the end of the 1970s and have subsequently developed conductive polymers into a research field yielding practical applications.

The Academy has awarded the Nobel Prize in physics for 2000 to scientists and inventors whose work has laid the foundation of modern information technology (IT), particularly through their invention of rapid transistors, laser diodes, and integrated circuits (chips). One-half of the prize is awarded to **Zhores I. Alferov** of A.F. Ioffe Physico-Technical Institute in St. Petersburg, Russia, and **Herbert Kroemer** of the University of California—Santa Barbara, "for developing semiconductor heterostructures used in high-speed- and opto-electronics" and one-half to **Jack S. Kilby** of Texas Instruments, Dallas, "for his part in the invention of the integrated circuit." □

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