Name in English: Hung Chang "Jimmy" Lin
Name in Chinese: 凌宏璋 Simplified [Traditional]
Name in Pinyin: Líng Hóngzhāng
Gender: Male
Birth Year: 1919-2009
Birth Place: China
Philanthropy: Yes

Semiconductor and Audio Innovator

Profession(s): Inventor, Engineer, Professor

Education: B.S., Electrical Engineering, Shanghai Jiatong University; M.S., Engineering, 1948, University of Michigan; Doctor of Electrical Engineering, 1956, Polytechnic Institute of Brooklyn

Awards: 1969, Elected as Fellow of the Institute of Electrical and Electronics Engineers (IEEE); 1978, J.J. Ebers Award, Institute of Electrical and Electronics Engineers (IEEE); 1990, A. James Clark School Hall of Fame Inductee, School of Engineering, University of Maryland; 2000, Elected as member, Academia Sinica, Taiwan

Contributions:
For more than half a century, Dr. Hung Chang "Jimmy" Lin (also known as Hung C. Lin) made significant inventions and contributions in semiconductor devices and microchips. His influence on semiconductor development can still be found in an array of devices from wireless microphones to audio amplifiers.

Dr. Lin invented the lateral transistor, also known as the complementary transistor structure. Dr. Lin's lateral transistor is still used today in microchips, the basic building block of all computers and many electronic devices. A transistor, made of semiconductor material, is a device that amplifies or switches electronic signals. Dr. Lin's invention enabled two complementary types of transistors to be laid laterally enabling more transistors to be put on a single chip and reducing the size of the device.

Another key invention was his quasi-complementary circuit, used to amplify sound and used in many commercial audio amplifiers today, to the everlasting benefit of rock concerts and other musical events. In the 1960s, Beyerdynamic, a German equipment manufacturer, claimed that Dr. Lin invented the first wireless microphone, called the "transistophone" then. This credit has been disputed but the output driver or "totem," the device used to control the speakers of every audio system, was invented by Lin. Lin also invented the BiCMOS circuit, a kind of microchip that combined a certain type of transistor with the CMOS semiconductor technology. The BiCMOS circuit has been used in millions of computer CPU chips from IBM to Intel.

Dr. Lin's study of temperature effects on transistors made a huge impact on early transistor technology. Since temperature changes affect the amount of electric currents

delivered, transistors can stop working as a result of temperature differences. Dr. Lin's study led to the use of "diode compensation." A diode, a type of device that controls electric currents, is used to counteract or "compensate" the effects on electric currents from temperature changes. Today, diode compensation is still widely used in transistor amplifiers.

A dedicated and enthusiastic professor, Dr. Lin only missed one day of class in his 21 years of teaching at the University of Maryland from 1969 to 1990.

Philanthropy: In 2008, Dr. Lin gave $100,000 to create the Jimmy Lin Fund for Innovation and Invention at the Department of Electrical and Computer Engineering at the University of Maryland. He created the gift to help innovative students, staff and faculty to move their ideas through the often convoluted and costly patenting process.

Publications/Patents: Dr. Lin held 57 U.S. patents and was the author and co-author of 170 technical papers. He was the author of the book "Integrated Electronics" (1967), and co-author of three other books, "Selected Semiconductor Circuits Handbook" (1960), "Semiconductor Electronics Education Committee Notes 1" (1963), and "Electronics Designers Handbook" (1977).

External Links:

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