



**Name in English:** Charles H. Sie  
**Name in Chinese:** 谢正刚[謝正剛]  
**Name in Pinyin:** Xiè Zhènggāng  
**Gender:** Male  
**Birth Year:** 1936 - 2013  
**Birth Place:** Shanghai, China  
**Philanthropy:** Yes

**Profession (s):** Technology Pioneer, Civil Rights Leader

**Education:** Bachelor, Electrical Engineering, Manhattan College, 1957; Ph.D. Electrical Engineering, Iowa State University, 1969

**Awards:** 1999, History Maker Award, Chinese American Historical Museum; 1988, Malcolm Baldrige Quality Award for Xerox;

**Contribution (s):** Dr. Charles Sie was the founding Chairman of Aviva Systems Biology from 1999 to 2002, a biotech startup in San Diego. He also served on the board of Aviva Biosciences and Cwill Telecommunication. He was the vice chairman of the Nankai International Business Forum at Nankai University in Tianjin, China.

Charles Sie's family fled Shanghai because of the communist takeover of China and arrived in the United States in 1950 when he was 14 years old. In 1969, he gained the attention of the computer world when he published a doctoral dissertation at Iowa State University about the feasibility of creating a chalcogenide phase change memory device (PRAM.) These have the potential to be smaller and much faster than current computer memory devices, for example making computer hard drives thousands of times faster in a more compact package. The memory also has the potential to be used in challenging environments such as high radiation areas found in military and aerospace applications where other methods are prone to failure. However, the challenge of manufacturing such small and materially complex and demanding devices meant that the first production of a commercial PRAM chip by BAE Systems only started in 2006, nearly forty years after Dr. Sie's dissertation. The technology is still too expensive to be found in consumer electronic devices but may well appear in the near future with potentially revolutionary applications.

Dr. Sie worked for Xerox Corporation from 1977 until he retired in 1999 as its Vice President of the Corporate Engineering Center's West Coast Site. He was one of the first Asian Americans to break the corporate glass ceiling by rising to management at Xerox. In 1978 he returned to China as part of a contingent of IEEE (Institute of Electrical and Electronics Engineers) members. In his twenty-three years at Xerox he served in various management positions; from corporate reengineering, software engineering, manufacturing quality to color printer development. In 1978, he made the initial contact with the Shanghai Photographic Equipment Company that eventually led to

Xerox's first joint venture in China. Dr. Sie held management, engineering, and research positions at IBM's Watson Research Center, Energy Conversion Devices, Inc. and RCA.

During the hysteria about Dr. Wen Ho Lee's alleged espionage at Los Alamos National Laboratory in the late 1990s, Dr. Sie stood up for the civil rights of Asian American scientists and engineers at the National Laboratories who were also tainted with unsubstantiated suspicions. In the end the uproar proved to be far overblown and the federal judge in charge of Dr. Lee's case apologized for his treatment and castigated the government for misconduct and outright misrepresentations. The Chinese American Historical Museum recognized Dr. Sie's efforts with its History Maker Award in 1999.

**Philanthropy:** Dr. Charles Sie served on the advisory board of International Bridges to Justice, a NGO organization dedicated to protecting the basic legal rights of ordinary citizens in countries such as the People's Republic of China, Burundi, Cambodia, Rwanda, Vietnam, and Zimbabwe. He also served as the Vice-Chairman of the Committee of 100, a national Chinese-American civic organization.

**Publications:** "Memory Devices Using Bistable Resistivity in Amorphous As-Te-Ge Films" C. H. Sie, PhD dissertation, Iowa State University, Proquest/UMI publication #69-20670, January 1969

"Chalcogenide Glass Bistable Resistivity Memory" C.H. Sie, A.V. Pohm, P. Uttecht, A. Kao and R. Agrawal, IEEE, MAG-6, 592, September 1970

**External Links:**

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[http://www.committee100.org/aboutus/member\\_bio.php?member\\_id=148](http://www.committee100.org/aboutus/member_bio.php?member_id=148)