

THE CHINESE UNIVERSITY OF HONG KONG

THIRTY-SIXTH CONGREGATION

Conferment of the Degree of Doctor of Science, *honoris causa*

A Citation

Professor Zhao Zhong Xian

The great Russian dramatist Anton Chekhov once said, "There is no national science just as there is no national multiplication table; what is national is no longer science". And so while it is possible to, as Deng Xiaoping has said, "build socialism with Chinese characteristics" or as Professor Roderick MacFarquhar of Harvard University would prefer to say, "build China with socialist characteristics", no one in his right mind would want to claim that a particular area of scientific research is the exclusive domain of a particular people. Yet, in the field of superconductivity, it almost looks that way, for hot on the heels of Professor Chu Ching-Wu is another outstanding physicist from China, Professor Zhao Zhong Xian, a research scientist at the Institute of Physics of the Academia Sinica.

Professor Zhao and Professor Chu have quite a few things in common, although I would not want to speak of them as star-crossed researchers. Professor Zhao was born in Liaoning, China in 1941, the same year as Professor Chu. Both specialised in low-temperature physics. Professor Chu is a Fellow of the American Physical Society. Professor Zhao is a Fellow of the Chinese Physical Society. On February 16th, 1987, the United States National Science Foundation announced that the team headed by Professor Chu had observed superconductivity at temperatures as high as minus 180° Celsius. On February 24th, or scarcely eight days later, the Academia Sinica announced that the research group led by Professor Zhao had observed superconductivity at about the same temperature; it also released the chemical composition of the compound as an oxide of yttrium, barium and copper. If all of the above sounds too coincidental, it might as well be revealed that Professor Zhao did research in Professor Chu's laboratory at the University of Houston from January to March, 1986 and that the two are good friends and have a lot of respect for each other, the politics of the Taiwan Strait notwithstanding.

If my citation of Professor Chu gave the impression that his path from graduate student to premier scientist was an easy one, it was a misleading picture, for the budding young scientist who spearheaded the break-throughs in superconductivity had to compete very hard for meagre research funds, at least until two years ago. But the annual grant of US\$2 million from the United States National Science Foundation is positively princely compared to what Professor Zhao's team had to make do with. But they persevered and in the end, in spite of the many handicaps along the way, they have achieved the same outstanding result.

The team's leader, Zhao Zhong Xian, is no stranger to hard times. Born into a

working class family in the middle of the Second World War, young Zhao learned to scrape a living from a tender age. He was brilliant at school. He graduated from Fuxin Senior Middle School in 1959 and was immediately picked for the University of Science and Technology of China where he specialised in low temperature physics. The course took five years, a measure of the flexibility and heterogeneity in higher education which existed in China before the Cultural Revolution. A biography of Professor Zhao emphasized the point that he had graduated in 1964, *before* the dawn of the Cultural Revolution. He was not one of those who got through the university system by producing blank answers on blank pieces of paper.

Since 1964, Zhao Zhong Xian has been engaged in research on low temperature physics and superconductivity. In 1974-75, he was Visiting Scientist at Cambridge University where he studied the flux flow in type II superconductors. But it was only after 1978 with the return of more rational policies in China that his career took off. In 1979, he was appointed deputy head of the Superconductivity Materials Department of the Institute of Physics of the Academia Sinica and became editor-in-chief of *Acta Physica Temperatae Humilis Sinica*, the Chinese journal of low temperature physics. In the following year, he was elected a fellow of the Beijing Physical Society. In 1984-85, he was Visiting Scientist in the Ames Laboratory of the United States. Last year, on the strength of his research results, he was awarded the Third World Academy of Sciences Prize in Physics for outstanding contribution to an important field of scientific enquiry.

Today, we have the privilege and pleasure of bringing together, once again, the two foremost Chinese scientists in the field of superconductivity. They are an inspiration and example to a new generation of young Chinese scientists in different parts of world. In spite of the same ethnic origin, their diverse backgrounds, beliefs and value systems mark them as worlds apart, but they are as one in their determination to crack the mystery of superconductivity for the benefit of the human race.

Mr. Chancellor, for his pioneering research on superconductivity under greatly handicapped conditions, for the brilliance of his scientific mind which transcends race, nationality, class, creed, language and other human barriers, for his contribution to the re-affirming of China's position on the map of scientific discovery, I present Professor Zhao Zhong Xian, physicist, scientist and outstanding researcher, for the award of the degree of Doctor of Science, *honoris causa*.

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