

# **Honorary Doctor of Science**

## **Professor XU Zhihong**

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Citation written and delivered by Mr CHAN Che-shing

Chairman:

Professor Xu Zhihong was born in Wuxi, Jiangsu province, in 1942. He studied botany at the Biology Department, Peking University, in 1959 and graduated in 1965. He joined the Shanghai Institute of Plant Physiology, Chinese Academy of Science, as a graduate student in 1965 and started his academic career there when he graduated in 1969.

A prominent botanist, Professor Xu has engaged in research in plant physiology, plant tissue, cell culture, protoplast manipulation, plant genetic transformation, and plant biotechnology. With outstanding accomplishments in his research areas, he always searches for new findings and seeks to make breakthroughs. Between 1979 and 1981 when he visited John Innes Institute and Nottingham University in the UK as visiting scholar, he made significant discoveries. He found that the density effect in anther culture of barley and the components in it could stimulate the growth of androgene. Hence he developed an appropriate process that could significantly improve the efficiency of anther culture of barley. He has also developed a technique of protoplast isolating from young roots that could significantly improve the success rate for culture of protoplast of peas and he proved the all-round nature of root protoplast.

When he returned to China in 1981, he systematically studied the pattern of embryo development and organ formation in cultured plant cells. He also led a research group to study the culture of protoplast of important crops and trees and succeeded in obtaining plant regeneration from cultured protoplast of 15 species of crops and trees including soya bean, peanut, broad bean, poplar, mulberry tree and sorghum. By using cultured cells and protoplast and the technique of direct DNA introduction, the research group studied cell transformation. They have established cell transformation systems for various plants and developed the necessary technology for performing research in genetic engineering of soya bean and sorghum.

His scientific accomplishments earned him the “First Prize in Natural Science” by the Chinese Academy of Science in 1990 and the “Third Prize of National Natural Science” in 1991.

Professor Xu’s study on auxin showed that auxin polar transport played a regulatory role in embryo development and bilateral symmetry in growth of foliage leaf. In his research of transgenic plants, he studied the physiological effects of Auxin Binding Protein (ABP) and identified the relationship between auxin and ABP.

In his study of anther culture of tobacco, he demonstrated that anther consists of a substance that can stimulate the growth of androgene and the IAA metabolism in the tapetum of anther plays an important role in pollen embryo development.

Since 1975, Professor Xu has presented over 180 papers in international conferences and published many books and articles on the growth, development and culture of cells and tissue, and genetic transformation of plants. His major works include *Tissue Culture of Economic Plants*, *Plants Protoplast Culture and Genetic Manipulation*, and *Plant Biotechnology*. In 1988, he was awarded the title of “Young/Middle-Aged Scientist with Outstanding Contribution” by the state.

Since 1983, Professor Xu has been appointed as the Deputy Director and Director of Shanghai Institute of Plant Physiology of the Chinese Academy of Science and concurrently Director of the National Laboratory of Plant Molecular Genetics. In 1992, he was appointed as the Vice President of the Chinese Academy of Science and in 1994 concurrently appointed as Director of Shanghai Research Centre of Life Sciences. In addition, he has been the Chairman of Chinese Society of Plant Physiology, and the Vice Chairman of Chinese Society of Biotechnology. He is currently the Chairman of Chinese Society of Cell Biology and Vice Chairman of Chinese Society of Botany, National Correspondent and Member of Executive Committee of International Association of Plant Tissue Culture (IAPTC), Council Member of International Cell Research Organization (ICRO) of UNESCO, and the Chairman of the National Committee of the Man and the Biosphere Programme of UNESCO. He is also an Academician of the Third World Academy of Sciences. In 1994, he was awarded an Honorary Doctorate of Science by the University of De Montfort in UK and an Honorary Professorship by the University of Hong Kong. In 1997, he was elected as Fellow of the Chinese Academy of Science and in 2000, he

was appointed by the Hong Kong Government as Non-Hong Kong Based Member of the Council of Advisors on Innovation and Technology, and was awarded an Honorary Doctorate of Science by the Nottingham University in UK.

In addition to the above important appointments, Professor Xu was appointed as the 30th President of Peking University in December 1999. He has since been serving concurrently as Vice-president of the Chinese Academy of Science.

When Professor Xu was appointed as President of his alma mater, It has been exactly 40 years since he began his undergraduate study at Peking University. In the past, he has been concentrating on natural science research and has never thought that he would one day serve his alma mater as its President. As he did not have much experience in university administration, it was a big challenge for him to head this top university in China with over 60,000 students and staff. However, Professor Xu, a modest and gentle scholar, willingly took up the challenge with confidence.

It is a well-known fact that Peking University is not only the oldest university in China, but also where the “May Fourth Movement” started and the most important source of thoughts. The development of contemporary China during the last hundred years has been closely linked with Peking University, as it plays an important role in nurturing talents for the nation and is in many ways a cradle of civilisation for modern China. It is instrumental in the promotion and development of new ideas in China. Being a student of Peking University, one will of course feel a sense of pride and commitment. Being its President, one will undoubtedly feel the burden of responsibility.

As President of Peking University, Professor Xu does not only need to maintain the excellent tradition of the institution but also chart new directions for its future development. The tradition of Peking University, as understood by Professor Xu, is the spirit of “patriotism, progression, democracy, and science”. Since the “May Fourth Movement”, students and staff of Peking University have been concerned about the development of China and the livelihood of the people. While they are strongly patriotic, they have a good understanding of the nation’s social developments. Continuously seeking to make changes, Peking University makes advancement from the struggle between old traditions and new ideas. It is precisely for this reason that Peking University has produced so many distinguished persons

who have a profound influence on China. It is also why Peking University can become the leading century-old higher education institute in China.

Professor Xu feels that, in view of the circumstances of today, Peking University, as a well-established integrated university with a long history, should make use of its strengths in both natural science and humanities and seek new growth by combining the essence of the two disciplines.

Professor Xu knows very well the strengths of Peking University, and he understands its weaknesses too. He thinks that Peking University is forward looking and does not lack good ideas. Nevertheless, he feels that the problem with Peking University is that it “wakes early but gets up late” — in other words, it often has very good ideas but is slow in taking action. He wishes to see more pragmatic and hard-working talents working for the University instead of idealistic politicians, scientists or sociologists that have only ideas but never take any action.

Professor Xu emphasises the all-round development of students and aims at cultivating talents that will be of use to the country. By doing this, he hopes that even though they may in the future find themselves in a foreign land, they will never forget their love for their own country.

As President of Peking University, he wishes that all students and staff of Peking University will always be prepared for managing crises and will refrain from feeling complacent about the university’s status as the “Number One Higher Education Institute of China” or the “Leader in the Academic World”. Instead, Peking University should keep its mind and eyes open to the world and study and learn from other leading universities of the world. Democracy and innovative technology was developed at Peking University in the midst of the “May Fourth Movement” when China was facing serious internal and external problems and a feeling of uncertainty loomed over China. Today, Peking University should on the one hand continue to strive to improve itself and actively broaden its intellectual horizons. On the other hand, it should have a sense of responsibility and commitment to understanding the new environment and problems facing the society when reforms are under way. Only by then will Peking University succeed in becoming a leading university of the world.

Since taking up office for only a few months, he has already started to enhance the communication with both students and teaching staff of the University and

canvass their opinions by establishing an internal “President’s Mailbox” on the electronic bulletin board in the BBS System. Within one month, he was happy to receive over 2,000 messages of different opinions on the development of the University. He encourages management at all levels to garner the different views and good ideas of students and staff from various channels. By doing this, Professor Xu has also reflected the open-mindedness and democratic values of Peking University.

People who are well-acquainted with Professor Xu will describe him as a person with “innovation, energy, and strong organisation ability.” This may probably be the reason for his appointment as President of Peking University. In other people’s eyes, he is also a person who is good at balancing sense and sensibility; he is considerate but remains faithful to his own principles. He does not have to resort to strong words but you will understand exactly what he insists on. He always has the well-being of his students at heart and is more than willing to get close to them and listen to them. He is highly regarded by students and is very popular with them.

As a scientist who devotes his life to the study of botany, Professor Xu has always been focused on innovation and discoveries. His dedication has been a critical factor for his outstanding academic accomplishments, which has made important contributions to mankind. As the teaching of Zhuangzi says: “While one’s will undivided, one’s spirit will be energized.” and Shunzi’s “Sincerely put forth your efforts, and finally you will progress.” it is true that one can hardly achieve success if one does not pursue it whole-heartedly. Professor Xu has set a good example in this respect and is a role model for all of us. Despite his training as a scientist at Peking University, Professor Xu is not cold or indifferent like one would expect a scientist would be. Rather, his clear and logical thinking has not stopped him from being open-minded and gentle, and his words are often sincere and modest. Under his leadership, students and staff of Peking University will no doubt work together so that it will join the ranks of leading universities of the world.

Mr Chairman, in recognition of Professor Xu’s outstanding accomplishments in botany and his significant contribution to the development of higher education in China, I now present to you Professor Xu for the degree of Doctor of Science, *honoris causa*.