



Professor LU Yongxiang

Curriculum vitae

Professor LU Yongxiang is currently Vice-Chairman of the Standing Committee of the National People's Congress; President of the Chinese Academy of Sciences (CAS); Chairman of the CAS Presidium; Member of the Chinese Academy of Sciences; Member of the Chinese Academy of Engineering; Vice-Chairman of the Academic Degrees Committee of the State Council; Co-Chair of InterAcademy Council (IAC); President of the Chinese Mechanical Engineering Society; Professor of Zhejiang University; and Honorary Professor of the University of Hong Kong etc.

Professional Accomplishments

Born in Zhejiang Province on April 28, 1942, he graduated from Zhejiang University in 1964 and worked there as a teaching assistant and lecturer from 1964 to 1979. In 1979, he went to Germany as a Humboldt Fellowship scholar and studied at the Institute of Fluid Power Drives and Controls of Technical University of Aachen. Upon returning, he became a lecturer, associate Professor and then Director of the Fluid Power Transmission and Control Lab in Zhejiang University in 1981. He became Professor and Director of the Institute of Fluid Power Transmission and Control of the Department of Mechanical Engineering of the University in 1983. He was appointed Vice-President of Zhejiang University in 1985 and worked as President of the University from 1988 to 1995. He was appointed Vice-President of the Chinese Academy of Sciences in 1993 and Executive Vice-President from 1994 to 1997. Professor Lu has been President of the Chinese Academy of Sciences and Chairman of the CAS Presidium since July, 1997. Since March, 2003, he has served as Vice-Chairman of the Standing Committee of the National People's Congress.

He was Vice-Chairman of the China Association for Science and Technology from 1986 to 1996 and Chairman of the Higher Education Consultative Committee of the State Education Commission from 1990 to 1994; Chairman of China History of S&T Society from 1995 to 2004. He was Member of the University Grants Committee of Hong Kong SAR from 1996 to 2003; Member of the Chief Executive's Commission on Innovation and Technology, Hong Kong SAR, from 1998 to 1999 and is Special Advisor of the Advisory Commission on Innovation and

Technology, Hong Kong SAR, from 2000. He was elected Vice Chairman of the Academy of Sciences for the Developing World (TWAS) from 1998 to 2006. He has also been President of the Chinese Mechanical Engineering Society since November 2001. He has been elected Co-Chair of InterAcademy Council (IAC) since February 2005.

Educational Background

Professor Lu got his Doctor Degree in Engineering (Dr.°CIng) from the Technical University of Aachen, Germany in 1981. He holds a number of honorary Doctor Degrees, including Doctor of Engineering, honoris causa, from Hong Kong University of Science and Technology in 1995; Honorary Doctor of Engineering from the City University of Hong Kong in 1997; Doctor of Law, honoris causa, of the University of Melbourne, Australia; Doctor of Science, honoris causa, of the University of Nottingham, UK; and Doctor of Science, honoris causa, of the Open University of Hong Kong in 2004; Honorary Degree of Doctor of Science of Loughborough University, UK; Honorary Doctor Degree of Engineering Sciences of the National Academy of Sciences of Ukraine in 2005; the Degree of Doctor Honoris Causa of Linkoping University, Sweden in 2006.

Memberships in Honorary Societies Worldwide

He was elected Fellow of the Academy of Sciences for the Developing World(TWAS) in 1990; Member (in the Division of Technological Sciences) of the Chinese Academy of Sciences in 1991; and Member of the Chinese Academy of Engineering in 1994; Honorary Foreign Member of the Korean Academy of Sciences and Technology in 1999; Honorary Member of Hungarian Academy of Sciences; Honorary Fellowship of the Institute of Mechanical Engineering, UK; and the Corresponding Member of the Australian Academy of Science in 2004; Member of the German Academy of Natural Scientists Leopoldina in 2005; and Foreign Member of the Russian Academy of Sciences in 2006.

Academic Contributions

In his academic career, Professor Lu has made important contributions to the development of mechanical engineering, especially in the field of fluid power transmission and control and higher education of engineering. He has achieved about 25 patents in China, Europe and USA,

and published at home and abroad over 250 papers in research and engineering education and 5 monographs. As a professor, he has supervised 25 master degree students, 30 Ph.D students and 5 postdoctoral researchers. Based on existing knowledge, he creatively set up a new principle on feedback of measuring rate of two basic parameters \dot{C} pressure and flow rate, and had it applied in pilot operated pressure and flow control components. This achievement changed the traditional principle of Freeman-Jinken on controlling rate of flow, which had been applied for over 100 years, and another basic principle of Vickers on pilot-operated type pressure control, which had been used for over 40 years. Based on this principle, he has obtained 5 patents at home and abroad, for instance, 2-way cartridge electro-hydraulic proportional flow control device and electro-hydraulic proportional pressure control device, which improves remarkably the static and dynamic control performances for large flow rate and high pressure control. Combining with mechanical-electro-hydraulics' Cartridge Technique, he extended his principle into valve control, pump control and hydraulic motor, and successfully developed a series of new electro-hydraulic proportional control components and engineering application systems. His achievement in the electro-hydraulic proportional control has been regarded as one of the most important progresses from the 1980's in the field of the electro-hydraulic control technique and the principle has been widely used and cited in research papers, textbooks as well as manuals in Germany, Japan, Sweden and some other countries. The electro-hydraulic proportional control technique he developed has been listed for wider application in the Torch Program launched by the Ministry of Science and Technology. Professor Lu has also developed the related CAD and CAT supporting systems, which have been widely applied in a number of domestic enterprises and have promoted the technology progress of the mechanical industry in China. The Institute of Fluid Power Transmission and Control at Zhejiang University founded by him has now become a State Key Laboratory, a National Engineering Centre and Postdoctoral Research Station.

Awards

Professor Lu has been awarded the second prize of National Invention Award in 1988; the third prize of National Invention Award and National Engineering Higher Education Prize of China in 1989; the super prize for Guanhua Science Foundation in 1993. He has received a number of honours from Germany for his accomplishments, including Rudolf-Diesel Medal in Gold in 1997, Alexander von Humboldt Medal in 1998, the Knight Commander's Cross (Badge & Star) of the Order of Merit of the Federal Republic of Germany in 2000 and Werner

Heisenberg Medal from the Alexander von Humboldt Foundation in 2001. He received the Gold Badge for Science and Culture of Public President of Italy in 2004; and the first prize of National Higher Education Scholarship in 2005. He was awarded the Abdus Salam Medal of the Academy of Sciences for the Developing World(TWAS) in 2006.