

Current status of Chinese Bioindustry and process in biotechnology industrialization in China

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Abstract: During the past years, the bioindustry in China has made remarkable progresses, especially in recent years. In some product categories such as organic acids and amino acids China has become the largest producer in the world. At the same time, biotechnology in China has moved forward rapidly. However, China still needs to develop more bio-based products to expand the current small portfolio, and the technological levels need be improved further. Fortunately, bioindustry has been designated as one of the most important industry areas for the new century by the government. As the main research force, various institutes of the Chinese Academy of Sciences and universities are taking advantage of this excellent opportunity. Overall, the Chinese bioindustry has several risk factors that should be considered: capital risks, technology risks, raw materials risks, market risks and policy risks. Risk forecast, evaluation and evasion are necessary for the realization of the bioindustry. And the combination of the government, enterprisers, investors, and the institutes will assure the bioindustry in China toward mature in the future. The Research system and the policy of China government will be presented and the National Science Development Plan in short and mid-long terms will be introduced. Some cases from basic research to applied research and further to industrialization will also be demonstrated.

Zhuan Cao, Professor of Tsinghua University, China, is currently the Vice president and General Secretary of Chinese Society of Biotechnology, Chairman of the Committee of Industrial and Environmental Biotechnology and Editor in Chief of Bioindustry technology (Chinese). He graduated from Tsinghua University majored in Engineering Physical Chemistry and has since then been working there. From 1963 to 1984 he was active in the fields of flash distillation of petroleum fraction, pyrolysis on naphthalene and catalytic reaction kinetics of petroleum fraction. In 1982-84 he visited Delaware University, after coming back to China he set up one of the first groups on biotechnology in Chinese universities. Since then he has been leading the research in many biotechnology fields in China: enzymatic technology and bioreactors; optimization of fermentation, large scale hybridoma cell culture; metabolic engineering, etc. As an advisory expert, he has served the Chinese Academy of Sciences, Chinese National Science Foundation and the Ministry of Science and Technology, National Committee of Development and Reforming for about twenty years. Professor Cao is a very well respected educator in the biotechnology field, where now also many of his students are active academic leaders. He has published over 120 scientific papers and four books.