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Edited by Liang Yande Chu Kam Piu

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PREFACE

As autumn's coming, the 10th International Conference on Modern Industrial Training (10th CMIT) will be convened in Dalian China. Since 1986, CMIT has been successfully held 9 times and it has grown to maturity from a new-born thing step by step in the recent 26 years. When CMIT was established, it presented prospectively the concept of modern industrial training in which the core contents include the theory, connotation, method and infrastructure, etc. These contents were always regarded in the development process of the conference. The experts and scholars in the area of modern industrial training around the world were able to exchange views and cooperate with each other in CMITs, which promoted the development of modern industrial training in global world.

In the past twenty years during the development of CMIT, the practical education in Chinese had been changed and reformed from the traditional "Metalworking practice" to modern "Engineering training". Since the practices of modern industrial training grows up fast in domestic universities and colleges, 34 engineering training centers have been selected so far as the national teaching demonstration centers. Recently, many domestic universities and colleges had implemented practices and widely in-depth exploration in the construction of engineering training teaching demonstration center and the improvement of teaching quality in engineering practice.

Under the theme "Engineering education, Industrial training", the 10th CMIT which is organized by Dalian University of Technology attracts more than 100 experts and scholars from different countries and regions to participate, and over 120 conference papers have been submitted. During the conference, it is expected to carry out a series of symposiums which involve the subjects of "Concept and connotation of industrial training", "Technologies and infrastructure", "Operation management of an industrial training center", "Work-integrated-education and industrial partnership" and other aspects.

We greatly appreciate support to CMIT from The Hong Kong Polytechnic University. And also grateful thanks to Dr. Chu Kam Piu and Prof. Liu Youhe for their continuous work in many years. Furthermore, we express heartfelt thanks to the contribution of participating experts and scholars, the paper authors and members of the Academic Committee.

Finally, we congratulate beforehand the complete success of 10th CMIT pageant.

Editors
October, 2012

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Plenary Session

Theme A: Concept and Connotation of Industrial Training

Theme B: Technologies and Infrastructure

Theme C: Operation Management of an Industrial Training Centre

Theme D: Work-Integrated-Education and Industrial Partnership

Plenary Session

CULTIVATING THE ENGINEERING TECHNOLOGICAL TALENTS SHOULD BEGIN WITH THE ENGINEERING TRAINING

FU SHUIGEN
Fundamental Industrial Training Center
Tsinghua University
Beijing
China

ABSTRACT
Beginning with the existed main problems of Chinese higher engineering education, probing into the new development of engineering practice ideas and systems; proposing to enhance the engineering practice ability of the students, should begin with following works: enhancing the engineering ability of the young teachers, prolonging the time period of engineering practice, joining the industry practice in factories, participating in various innovative practice training, establishing the engineering training center into comprehensive practice education platform with multifunction.

KEYWORDS
engineering education, main problems, engineering talents, engineering training, industry training, innovative practice training, comprehensive practice education platform with multifunction.

No matter the progress obtained in engineering material field, manufacturing field, aeronautical and astronautic field, micro-electro-mechanical system field, integrated circuit manufacturing field, modern agricultural field, life science field, or macro and micro substance world field in international or at home, repeatedly proof the word "Science and technology is the first productivity" by Deng Xiaoping. As the worker of science and technology, in order to promote the development of science and technology, should rely on both rich fundamental theory and engineering practice ability, which help us to realize the innovative targets. From this point, the new requirement for cultivating the higher engineering talents and professional talents was proposed.

1. THE MAIN PROBLEMS EXISTED IN HIGHER ENGINEERING EDUCATION

The higher engineering education in China obtained great progress in recent 20 years time, but still exists 4 problems:

First, in the evaluation system in higher engineering education field, overstressing on the academic papers, ignoring the innovation and development of engineering technology itself. This led to an abnormal phenomenon of paper dominating everything. The academic corruption happened in high education should be more or less related to it. Some researchers relied on the computer and the rich resources in the network can easily write their papers. How many values of these kinds of papers possess? Perhaps, only the authors know in their minds. Since 1980s in 20 century, a number of famous engineering experts observed the trend of engineering softening and proposed the call of "Engineering Repression" in time, but up to now, due to the various reasons, the will of "Engineering Repression" did not realized

Second, due to some supervisors at present were short of engineering ability, so the postgraduates guided by them also possessed such inheritance characteristic. In the higher education of China, some middle aged and young teachers mainly rely on the computer solving the soft problem, they could not accept and finish the real engineering problems since they were short of engineering practice ability and engineering experiences. While these master degree and doctor degree students under above environment entered the team of teacher, they would bring the