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Innovation and Entrepreneurship Pattern for Undergraduate Education

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Abstract

Undergraduate education is a crucial part of the higher education, bearing the essential mission of widen students' views and cultivating topnotch innovative talents. This talk will present a four-phase pattern of innovation and entrepreneurship education for undergraduates at HIT: 1) Mechanical structure design and simulation competition for freshmen to facilitate them to be proficient with tools; 2) Annal project including bionic robots, undergraduate robot contests and innovation and entrepreneurship training programs for sophomores to stimulate their consciousness of creativeness; 3) Professor directed research projects for juniors to gain valuable insight, knowledge and skill; 4) International robotics contests and funding to support the innovation and mature ideas of entrepreneurship of senior students. This prototype has been implemented for years, and its effectiveness has been proved by the top awards won in competitions and a large number of excellent start-up companies. In addition, a big picture of Harbin Institute of Technology (HIT), which is one of the top universities in Engineering in China will be introduced in this talk.

Keywords
Education pattern, innovation and entrepreneurship, simulation and contests, research projects

Biography

Dr. Jihong Yan is a Professor (since 2005) in Industrial Engineering at Harbin Institute of Technology (HIT), she is also the deputy dean of School of Mechatronics Engineering and head of intelligent manufacturing scientific research team at HIT. She received her PhD from Harbin Institute of Technology in 1999. Then she joined Tsinghua University (from 1999 to 2001), the University of Wisconsin (from 2001 to 2004) and Pennsylvania State University (from 2004 to 2005) as a postdoctoral researcher. Dr. Yan is the director of National High-end Equipment Manufacturing Virtual and Simulation Experiment Teaching Center, head of Research Oriented Teaching Innovation Team for High-end Equipment Manufacturing of the Ministry of Industry and Information Technology of China, vice chairman of Production System Special Committee of Chinese Mechanical Engineering Society, and chairman of Industrial Engineering Professional Committee of the Mechanical Engineering Society of Heilongjiang Province.
Her main area of research is industrial big data, sustainable manufacturing, intelligent logistics and advanced maintenance of machinery. As a PI, Dr. Yan has worked on and accomplished 15 projects in intelligent manufacturing and sustainability related areas, funded by the NSF of China(NSFC), NSF-NSFC joint-project funding, National key R&D plan project funding, National High-tech project funding, National "863" project funding, EU EPSRC project funding, High-tech funding from industries, and so on. She has authored and co-authored over 100 research papers and published 3 books, two papers were ranked ESI high cited articles. Currently there are 17 professors and engineers with her research team, the team dedicates to theoretical research and system implementation in the fields of intelligent operation optimization theory and methods of manufacturing systems, manufacturing IoT technologies and devices, and equipment health monitoring, etc.