A LEADING ENGINEERING INSTITUTION REINVENTED IN SHENZHEN

A conversation with **ZHEN LIANG**, Ph.D., assistant president, Harbin Institute of Technology (HIT), executive vice director of the preparation office for Harbin Institute of Technology, Shenzhen (HITSZ), and distinguished professor of Chang Jiang Scholars Program

HITSZ is set on the picturesque Lake Xili and was jointly established by HIT and the municipal government of Shenzhen. HITSZ plays a key role in building HIT into a world-class university and is a major force in Shenzhen's higher education system. Here, Zhen Liang, who led the creation of HITSZ, outlines its development and plans for future endeavours.

How was HITSZ established?

HIT was founded in 1920 and is a multi-disciplinary university with a focus on science and engineering. It is a national key university with a world-wide reputation for education and research.

Seeking to remain connected to industry needs, HIT started building a graduate education and research arm in Shenzhen in 2002. The resulting HIT Shenzhen Graduate School proved a success. With the support of Shenzhen municipal government, we established HITSZ in 2014 and started recruiting undergraduates in 2016. The hope is to make it a state-of-the-art campus with comprehensive Bachelor's, Master's and doctoral programmes.

How is HITSZ positioned?

In 2015, HIT set a goal of becoming a world-class university with Chinese characteristics by 2020 while maintaining HIT quality. As a test field for HIT's higher education reform, HITSZ is designed to be a hub for quality talent and a testbed for novel school management strategies. We pursue internationalization, uniqueness and excellence. Our objective is to become a first-class university domestically in the short term, and eventually, a world-leading institution for science and engineering.

What are the advantages of HITSZ?

We are built upon the powerful brand of HIT, which, with traditional strength in engineering, has forged a global reputation. Academic Ranking of World Universities (ARWU) ranked HIT among the top 7 in China and top 200 globally. The U.S. News & World Report ranked HIT as the world's 7th best university in engineering. We also benefit from strong support from the Shenzhen government and the city's innovative vigour and open mindset. As a rapidly developing city, Shenzhen has a big demand for engineering talents and technologies, and with our long history in engineering, high-quality faculty, and advanced research platforms we can meet the demand. By marrying heritage with an innovative spirit, I believe we have great development opportunities.

What are your plans for academic programmes?

Our academic planning is guided by national strategic needs and international trends. Emphasizing collaboration with industry, we strive to meet the needs of Shenzhen to develop an innovation-driven economy and new industries. Our academic programmes encompass engineering, science, management science and economics, specifically

WE OFFER STRONG RESEARCH FUNDING SUPPORT AND AMPLE OPPORTUNITIES FOR INDUSTRIAL COLLABORATIONS.

featuring computer science and technology, information and communication engineering, electronic engineering, materials, environment, mechanical engineering, civil engineering, architecture and applied economics. Currently, we have nine schools, 31 research centres and 39 key laboratories and innovative institutions.

How does innovation influence the running of the school?

We seek innovation in scientific research by keeping up to date with the frontiers of science, and integrating engineering and science. We want to build a second site for HIT's state key laboratories in Shenzhen, building Shenzhen's first university-based state key laboratories to support developing a hi-tech industrial innovation centre in the city. To achieve educational innovation, we encourage students to take cross-disciplinary courses, including sciences and humanities. To build an innovative research team, we are seeking well-known scholars worldwide to become our deans,

who will attract more leading scholars and young talents. Lastly, we are reinventing our administrative services by building a professional and efficient service team, which is another major source of vigour and creativity at HITSZ.

What are major measures for faculty building?

Talent is the core resource and HITSZ is dedicated to building a quality faculty team of international standard. Our strategy is to capitalize on our strong subjects and advanced laboratories, which provides our talent with a platform for career development. With teams led by the top operators in the field, we can attract more talented researchers to tackle landmark scientific issues. On top of our recruitment list are world-class experts who can guide the planning of disciplinary development based on their foresight. We also want to attract leading educators who can promote our research and teachingquality, as well as young scholars with great potential. We offer competitive packages, and have a supportive economic environment and policies. We also provide strong research funding support and ample opportunities for industrial collaborations.

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Fang Binxing

Professor at HITSZ,
Member of the Chinese Academy of Engineering,
Deputy Director of Network and Information Security Special Committee, Advisory Committee for State Information of China

RESEARCH AREAS: network security, information content security, parallel processing, internet technology and information security theories

Dr. Fang, an expert in information security, has led numerous national level key projects, including two supported by the National Natural Science Foundation of China (NSFC), two by the State Planning Commission, three under the 863 Programme, and 10 by Commission of Science, Technology and Industry for National Defence. He has won a first prize in the State Science and Technology Progress Award, three second prizes and six third prizes in ministerial Science and Technology Progress Awards, along with several provincial and city-level awards. He was also honoured as the National Outstanding Technology Professional in 2002, and as exceptional personnel with major contribution to the Ministry of Information Industry. Dr. Fang, who has given a uniform definition to information security, has published more than 200 papers and one book, and supervised nearly 40 doctoral students.

Wei Fengsi

Professor at HITSZ,
Member of the Chinese Academy of Sciences,
Dean of Institute of Space Science and Applied Research at HITSZ

RESEARCH AREAS: solar-terrestrial physics, interplanetary physics, magnetohydrodynamics, space weather prediction.

Professor Wei specializes in studying the propagation of interplanetary shock waves, the effect of heliospheric current on shock wave propagation and interplanetary magnetic reconnection. He applies fuzzy mathematical method in geomagnetic disturbance prediction, and proposed new concepts and mechanisms for magnetic cloud boundary layer. Professor Wei proposed a mega-science project, the Meridian Chain of Comprehensive Ground-based Space Environment Monitors in the Eastern Hemisphere, which was approved by the government in 2005. His work was highly praised by international experts of the field and has been published on high-impact academic journals. Particularly, his research on interplanetary disturbance propagation has been widely acknowledged by the community and led to over 80 first-author publications, as well as six awards, including a second prize in National Natural Science Award, and a first prize in CAS Natural Science Award.

Philippe Fournier-Viger

Professor at HITSZ,
Thousand Young Talents Plan scholar

RESEARCH AREAS: data mining, pattern mining, sequence analysis and prediction, text mining, and social network mining

A computer science expert, Dr. Fournier-Viger is the director of HITSZ's Center of Innovative Industrial design. He was recently awarded the Overseas Talent of Shenzhen Peacock Plan by the city of Shenzhen and the Outstanding Young Talent by HIT. Dr. Fournier-Viger has published more than 140 research papers in international journals and conferences, which have received more than 1,200 citations. He has received several best paper awards (ICGEC 2015, ADMA 2014, MICAI 2014) and is the founder of the popular open-source data mining library, SPMF, which has been cited in more than 400 research papers since 2010. Dr. Fournier-Viger received his Ph.D. in computer science from the University of Quebec in Montreal, and his B.Sc. and M.Sc. degrees from the University of Sherbrooke in Canada.

Zhou Yu

Professor at HITSZ,
Thousand Talents Plan distinguished professor

RESEARCH AREAS: experimental fluid mechanics, fluid–solid coupling, turbulence and control

In 2013, Dr. Zhou joined HIT from Hong Kong Polytechnic University. He is a co-founder of the biannual Symposium on Fluid-Structure-Sound Interactions and Control, which has become a major platform for international exchange in the fluid-solid coupling field. He has published more than 300 academic papers, including more than 160 published in core international journals, total number of ISI citations reaching nearly 2,100. Zhou has been invited to give 12 plenary talks at domestic and international academic conferences. His books on fluid-structure-sound interactions and control are published by the world-renowned publisher, Springer. In 2014, Zhou was selected as a fellow of the Australasian Fluid Mechanics Society, the only one of the twenty-member group from China and even Asia. He is also an associate editor of the AIAA journal. Graduated from HIT in 1982, Zhou earned his doctorate in 1993 from the University of Newcastle in Australia.

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