



CHINA HONG KONG RAILWAY INSTITUTION

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7th August 2014

August Function: Phased Array Ultrasonic Technique in Wheel and axle Inspection

Date: Monday 18th Aug. 2014

Time: 6:30 pm to 7:30 pm

Venue: Theatre, 2/F, Fo Tan Railway House

The quality of the wheel sets straightly affects the safety of railway operation, especially for high speed train and heavy haul transportation, due to the dynamic load produced in the wheel sets. Peels, cracks and defects occur in the area of wheel tread, wheel rim, wheel disk and axle where the stress will be concentrated on. The traditional method features the disadvantage of time consuming, high manpower cost, low efficiency and reliability, which makes the railway transportation undertaking the risk of safety.

Phased Array UT has some advantages, which can be used in wheel and axle defect inspection and quality control. The automatic inspection equipment based on the PA UT has been developed according to the maintenance levels. The practical application for PA UT integration system shows the reliability to find the defects in the key areas of wheels and axles.

The speaker will introduce wheel set phased array ultrasonic testing technique, including the principle, solution for wheel inspection, solution for solid axle inspection and study on resolution improvement.

Guest Speaker

Professor Gao Xiaorong, Professor of Southwest Jiaotong University

She was graduated from Semiconductor Physics and Devices of Electronic Engineering Department in Southeast University, with bachelor degree in 1991. In 1994, she received her master degree in Semiconductor Physics and Devices of Microelectronics Department of University of Electronic Science and Technology of China. She started her teaching career in Southwest Jiaotong University since 1994, and was associate professor in 2000. From 2004 to now, she is professor of Southwest Jiaotong University.

Professor Gao engages in the research of photoelectric inspection and image processing, and ultrasonic non-destructive testing technology. She has published over 100 academic articles, including 40 papers in SCI, EI and ISTP. Professor Gao Xiaorong lead her team complete 6 National Projects, about 10 Provincial and Ministerial Projects besides more than 30 scientific research development projects. In which, 7 projects passed the Provincial and Ministerial Certification, acquired 6 National Important New Products Certificate, 5 Provincial S&T Progress Award and 5 Chengdu S&T Progress Award. She

got more than 30 patents including 10 invention patents and 20 practical and new-style patents. Up to now, she has already tutored 40 postgraduates.

Professor Gao applies the photoelectric inspection and image processing technology and ultrasonic non-destructive testing technology to the research of developing safety detection and ensuring devices. The application brings good economic returns and social benefits in the fields of railway high speed train wheel testing, wheel quality control and pantograph catenary inspection.

For registration, each participant has to confirm to CHKRI his/her name, employer and contact telephone number. Please provide your membership number and grade at the same time when returning your application by e-mail to secretary@chkri.hk on or before **14th August 2014**.

Anthony Tong
Secretary, CHKRI

