香港浸會大學 HONG KONG BAPTIST UNIVERSITY

香港浸會大學理學院 HKBU Faculty of Science

物理系 DEPARTMENT OF PHYSICS

聯通課程 Co-curricular Learning

DISTINGUISHED LECTURE

Disruptive and Revolutionary Era of Quantum Technology Revolution

Prof. Ching-Ray Chang

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University Chair Professor

Register Now

Date: May 23, 2023 (Tuesday)
Time: 11am - 12:30pm
Venue: WLB205, Shaw Campus

ABSTRACT

Quantum science was established in Europe in the early twentieth century and had brought in profound understanding of the universe. Quantum science is indeed outstanding in the conventional macroscopic world. For example, the concept of entanglement and uncertain principle not only caused great changes in science and technology, but also impacted on humanities and philosophy. The emergence of transistors and CMOS started the first quantum technological revolution, and electronics revolutionized human life. Strictly speaking, although electronics has brought about earth-shaking changes in human wealth and national power, only a small fraction of quantum science was being implemented. The superposition and entanglement of the science of the quanta, as well as quantum manipulation, only marked the beginning of the second quantum technology revolution. The new quantum technology provided by a few major industrial companies at present can be expected to rapidly promote the re-evolution of human civilization. This speech will outline the importance of the second quantum technology revolution, the possible impacts of the emergence of quantum computers, and the preparations that the industry and future quantum generations should have.

BIOGRAPHY

Prof. Ching-Ray Chang received his B. S. degree from National Taiwan University (NTU) in 1979, then Ph.D in Physics from University of California, San Diego, in 1988. In 1989, he joined NTU as Professor, then Head of the Physics Department, Dean of the School of Science, Executive Vice President, and Interim President of the University. Retiring from NTU in 2022, he joined Chung Yuan Christian University as Director of Quantum Information Center and Fujitsu DAU Quantum Computing Center. Prof. Chang has conducted research in micromagnetic numerical modeling since 1980s. He has made significant contributions on the understanding of nucleation, spin dynamics, thermal activation of magnetic materials, and more recently, spin transport in low dimensional materials. He has authored more than 280 publications and held 28 related patents. He was awarded IEEE Nanotechnology Best Paper award, 2019. He served as Presidents of both Taiwanese Physical Society and Taiwan Associations of Magnetic Technologies. He is both APS and IEEE Fellows. He was director of NTU-IBM quantum computer hub and the Chair of quantum computer promotion office, MOST.

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