



香 港 大 學

THE UNIVERSITY OF HONG KONG

Dr. YAO Wang

Assistant Professor

Department of Physics, Faculty of Science

The University of Hong Kong

Biography

Dr. Yao Wang is currently assistant professor in Department of Physics in the University of Hong Kong (HKU). He graduated from Peking University in 2001, and received his PhD degree in physics from University of California, San Diego in 2006. He joined the University of Hong Kong in September 2008.

His main area of research is spin electronics and spin quantum computation, which aims at more energy-efficient electronics and much faster information processing, by exploiting new ways to represent information in physical systems (e.g. by using electron's internal degree of freedom such as spin), and exploiting new principles to process information (based on quantum physics instead of classical physics).



The current focus of his team is to investigate electron's spin and valley pseudospin in newly emerged atomically thin two-dimensional materials, and explore their quantum mechanical behavior for new concept quantum devices.

His most representative work in HKU is the prediction of the physics associated with valley pseudospin of electron, previously thought to be unusable as there lacks control over this degree of freedom. His work makes possible in newly emerged two-dimensional materials the electrical and optical controls of valley pseudospin, making it a suitable carrier of information in electronics. His theory predictions have been observed by many experimental groups, and are making high impact internationally.

Dr. Yao is a theoretician that works very closely with experimentalists. He enjoys both predicting new phenomena and identifying new physics from unexpected experimental observations, and has established fruitful collaborations with experimental groups both in Hong Kong and overseas.

Awards

2013 Croucher Innovation Award, The Croucher Foundation

2012-13 Outstanding Young Researcher Award, The University of Hong Kong