香 港 大 學
THE UNIVERSITY OF HONG KONG

Professor Cui Xiaodong
Professor of Department of Physics, Faculty of Science
The University of Hong Kong

Biography

Professor Cui Xiaodong is a Professor of Physics at the University of Hong Kong (HKU). He obtained his Bachelor of Science in Physics from University of Science and Technology of China in 1997 and PhD from Arizona State University in 2001. After pursuing his PhD, he did a joint postdoctoral research at Columbia University and T.J. Watson research center, IBM. He joined the HKU Faculty of Science in 2004.

Professor Cui's research interests and experiences cover various subjects including molecular electronics, carbon nanotubes; and spin and valley physics in semiconductors. His research focuses on experimental solid state physics with an emphasis on characterizing electrical and optical properties of low dimensional materials.

Recently, his team has been actively exploring the physics properties of emerging two-dimensional semiconductors, particularly optical properties of 2D *transition metal dichalcogenides (*TMDs). Their work has contributed to the building of "Future Electronics".

Professor Cui said: "The atomic two-dimensional crystals have been attracting tremendous attentions from both fundamental research and application-oriented research. For scientists in solid state physics, the atomic 2D crystals offer an unprecedented platform for exploring physics in two-dimensional systems. As the material dimension shrinks to atomically thin, the unique features arising in the systems could be utilized towards future electronics."

Professor Cui's team is one of the international pioneering teams in the research on *Valleytronics*. While Conventional semiconductor electronics use the flow of electric charge, *Valleytronics* involves utilizing "valleys", a new degree of freedom of electrons (as information carriers) in a controlled way.

Awards

2016 Croucher Senior Research Fellowship, The Croucher Foundation
2010 Outstanding Young Researcher, The University of Hong Kong