



**THE HONG KONG UNIVERSITY OF SCIENCE & TECHNOLOGY**  
**Division of Life Science**

## **“State-dependent and cell-type-specific information processing in the brain”**

by

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### **Abstract**

The brain is never at rest. The state of our brain constantly changes even during sleep and plays a crucial role in many brain functions. For example, we vividly perceive sounds when we are alert. On the other hand, our perception is diminished when we fall asleep. But how? Our research group has been investigating such state-dependent information processing in the brain at the level of neural circuits. In particular, we are interested in the following three questions: how is the brain state organized? How does the brain state affect sensory processing? How is the brain state regulated? Combining in vivo electrophysiological, optogenetic, behavioral and computational approaches in rodents, we are addressing these issues, with an emphasis on the auditory cortex and basal forebrain. In this talk, I will discuss our latest results on each topic. In addition, I will introduce our collaborative effort to develop a novel device for massively parallel optogenetic neural control.

**Date : 23 February 2017 (Thursday)**

**Time : 4:00 p.m.**

**Venue : Room 2304 (Lifts 17/18)**

**The Hong Kong University of Science & Technology**  
**Clear Water Bay, Kowloon**

*(Host faculty: Dr. Kai Liu)*

***ALL ARE WELCOME!!***