



SME

School of Microelectronics, SUSTech

Academic Frontier Lecture
No. 025

Title: Emerging Memory Devices and Their Novel Applications

TIME: 10:00-11:00 August 21, 2019

VENUE: Room 201, Administration Building (行政楼201会议室)

SPEAKER: Hao Jiang, Postdoctoral Research Associate, Yale University

HOST: Prof. Hongyu Yu

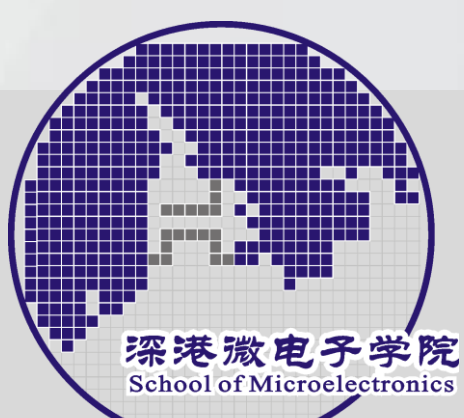
INTRODUCTION

Dr. Hao Jiang is currently a postdoctoral research associate of Department of Electrical Engineering at Yale University. His research interests include emerging electronic/ionic devices and their novel applications ranging from memory, brain-inspired computing to hardware security. Dr. Jiang has published more than 30 papers (9 of them as the first author) in high-profile journals such as Nature Materials, Nature Electronics and Nature Communications. His papers have been cited over 2000 times and his work has been orally presented in > 20 international conferences. Dr. Jiang received his Ph.D degree from University of Massachusetts Amherst in 2017 and B.S. degree from Nanjing University in 2011.



ABSTRACT

The traditional complementary metal-oxide-semiconductor (CMOS) technology is approaching its physical limit, which calls for the development of emerging memory devices based on new physics to satisfy the ever-increasing memory requirements of higher densities and performances. More importantly, hardware platforms based on these devices can eliminate the data shuttling between the memory unit and the processing unit, possess high parallelism, and hence have demonstrated significant area- and energy-efficiencies in unconventional computing. In this talk, I will introduce different types of emerging memory devices including ferroelectric and resistive devices. I will then discuss my efforts on device engineering and mechanism understanding. And finally, I will showcase their novel applications for in-memory computing and hardware security.



南方科技大学
SOUTHERN UNIVERSITY OF SCIENCE AND TECHNOLOGY

深港微电子学院
School of Microelectronics