

About Me



Disclaimer: While I try to keep the information update and accurate, there is no guarantee that the material provided here is absolutely accurate and error free.

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Professional Duty

- Professor, **Department Electronic and Computer Engineering, Hong Kong University of Science & Technology (HKUST)**
- Adjunct Professor, **Peking University Shenzhen Graduate School**
- Visiting Professor, **University of California at Berkeley**
- Board of Director, **Institute of Electrical & Electronic Engineer (IEEE)**
- Distinguished Lecturer of EDS, Institute of Electrical & Electronic Engineer (IEEE)
- Fellows of IEEE, IET and HKIE
- Serving in the Board of Directors in a number of Startup Companies

Education

- PhD, **Electrical Engineering, University of California at Berkeley**
- M.Sc., Electrical Engineering, University of California at Berkeley
- B.Sc., **Electrical Engineering & Computer Science University of California at San Diego**
- Secondary School: **St. Paul's Co-educational College**, Hong Kong



Religion

A Christian since 1988,
Currently with All Virtues Baptist Church
But I seldom go to church these days with some good reasons
(Don't ask me why).

What I used to do?

Fooling around with people; enjoying the fresh air in the countryside, windsurfing, painting, photography, ballroom dancing, chess playing, bridge, video gaming ...

What I am currently doing?

My daily routine now compose of teaching classes, drafting proposals, writing reports, talking to business people, preparing presentations, meeting with government officials in order to get money to support my research projects and students ...

What I will be doing?

I will be stuck in the current busy schedule for a while and in the future, I hope to contribute to the education activities for young children in the rural area, especially in China ...

- General
- Technical Biography**
- Resume
- Photos
- Interests

Projects



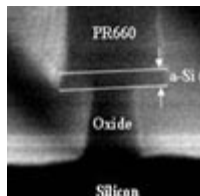
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Emerging Device Simulation Platform

The goal of this project is to develop an interactive Modeling and Online Simulation (**i-MOS**) platform with extend functionality for model developers to release their most updated model to the public. At the same time, users can visit i-MOS to gain access to the most update device model and perform circuit simulation on the platform. More detail description of the project can be found on the i-MOS website (<http://i-mos.org>).

Emerging Transistor Design & Fabrication



The objective is to design and fabricate transistors with emerging technology (including carbon nanotube and organic transistors) using top-down manufacturing approach (in contrast to the bottom-up self-assembly approach developed by Chemist and Physicists) to provide diversity of CMOS technology according to the ITRS Roadmap.

Emerging Device Modeling and Circuit Design

With the large number of new device structures proposed in the post-Moore era, a lot of modeling work is required to describe the operations of these devices and put them into a circuit simulator to perform circuit simulation. In addition, new circuit techniques have to be developed to optimize the performance of circuits designed using these device.

Carbon Based Interconnect Technology

With the technology scaling entering the sub-20nm regime, the interconnect technology becomes the bottleneck due to the increasing resistivity with dimension scaling and electromigration concerns under high current density. This project to study the integration of CNT as a via filling material into the mainstream CMOS technology. A systematic study on methodologies to achieve high areal CNT density, small tube diameter, and low CNT-metal contact at a temperature below the melting point of the interconnect metal is being pursued.

Phase-Change Memory Characterization and Modeling

This project is to study and model the physical mechanism of resistive memory including the driving device. In addition, a complete simulation tool is expected to be developed for studying the behavior of phase-change memory switching including a full simulation with various driving device such as diode circuit, double gate, multiple-gate and surrounding gate MOSFETs.

Bio-MEMS technology for DNA and Cell signal detection

This project is to develop IC based technology to interact with biological material. The technology can be used in Lab-on-a-chip technology to extract cell contents and detect the existence of certain DNA fragment. In addition non-invasive cell based technology to extract cell level signal for drug profiling is also being pursued.

