

ALL ARE WELCOME
Enquiry: Dept. of Electronic and Information Engineering
The Hong Kong Polytechnic University
Tel: 2766 6223 Email: ensandy@inet.polyu.edu.hk

Distinguished Lecture on Electronic and Information Engineering

by Professor Leon Chua

Electrical Engineering and Computer Sciences Department, UC Berkeley

Memristor: *Past, Present and Future*

Date : 2 November 2012, Friday

Time : 4:30 p.m. - 6:30 p.m. (Refreshment starts at 4:00 p.m.)

Venue : Lecture Theatre Y305, The Hong Kong Polytechnic University

Abstract

The memristor, short for memory resistor, is the fourth fundamental circuit element. Its invention by Professor Leon Chua in 1971 explained hysteretic effects that had until then been considered random phenomena. Memristors were proposed as the right stuff for building low-power, laptop size, adaptive brain-like computers that could outperform existing supercomputers in many tasks, such as face recognition and dynamic associative memory. Recent advances in nanotechnology are capable of taking memristors to the next level where they can replicate the complexities of the brain.

The memristor behaves like a pipe whose diameter varies according to the amount and direction of charge passing through it. If the flow of charge is stopped, the pipe's diameter stays the same until it is switched on again, remembering the amount of current that has passed through it.

In this special lecture, Professor Leon Chua introduces the memristor and explains the theory behind it as well as the future ahead of it.

Biography



Professor Leon Chua received his MS and PhD degrees from the Massachusetts Institute of Technology and the University of Illinois at Champaign - Urbana. Since 1970, he has been at the University of California, Berkeley, where he is currently a Professor of Electrical Engineering and Computer Sciences.

He was the first recipient of the IEEE Gustav Robert Kirchhoff Award in 2005 and was awarded the IEEE Neural Networks Pioneer Award in 2000. Elected an IEEE Fellow in 1974, he has received many international prizes, including the IEEE Browder J. Thompson Memorial Prize, the IEEE W. R. G. Baker Prize, the Frederick Emmons Award, the M. E. Van Valkenburg Award (twice), and the 2005 Francqui Award from Belgium.

He has been awarded seven USA patents and 12 Honourary doctorates from universities in Europe and Japan.

He was elected a foreign member of the European Academy of Sciences and the Hungarian Academy of Sciences. In 2010, he was awarded a John Guggenheim Fellow and The Leverhulme Trust Visiting Professorship.

In 2011 he was awarded a Royal Academy of Engineering Distinguished Visiting Fellowship within Imperial College London.

Organized by

Department of Electronic and Information Engineering
The Hong Kong Polytechnic University

Co-organized by

Centre for Chaos and Complex Networks
City University of Hong Kong

Technical Committee on Nonlinear Circuits and Systems
IEEE Circuits and Systems Society



THE HONG KONG
POLYTECHNIC UNIVERSITY
香港理工大學



香港城市大學
City University of Hong Kong
混沌及複雜網絡研究中心
Centre for Chaos and Complex Networks



IEEE



CAS
IEEE CIRCUITS AND SYSTEMS SOCIETY