

2017 International Workshop on Future Computing: Memristive Devices and Systems

Science Lecture Hall, Zhongguanyuan Global Village, Peking University, Beijing, Sept. 1 – Sept. 2, 2017

September 1, Friday					
Time	Session	Contribution	Speaker	Institution	Talk title
08:00-09:00	REGISTRATION				
09:00-09:10	Opening <i>(Chair: J. Joshua Yang)</i>	Opening	Ru Huang	Peking University	Welcome address
09:10-10:40		Plenary	Leon Chua	University of California, Berkeley	10 Things You Didn't Know About Memristors
10:40-11:00	GROUP PHOTO & COFFEE BREAK				
11:00-11:30	Memristor dynamics <i>(Chair: M. Di Ventra)</i>	Invited	J. Joshua Yang	University of Massachusetts, Amherst	Diffusive Memristors for Computing
11:30-12:00		Invited	Jennifer Rupp	Massachusetts Institute of Technology	Oxide-Memristor Building Blocks for Neuromorphic Computing: Ionic and Protonic Transfer
12:00-12:30		Invited	Yuchao Yang	Peking University	Memristive Devices: Switching Dynamics and Computing Applications
12:30-14:00	LUNCH				
14:00-14:30	Architecture & Systems <i>(Chair: Daniele Ielmini)</i>	Invited	Karlheinz Meier	University of Heidelberg	An Accelerated Physical Model Neuromorphic Machine with Hybrid Learning Capabilities
14:30-15:00		Invited	Tim Cheng	HKUST	Energy, Lifetime and Variation-Aware ReRAM Architectures for Memory and Neuromorphic Computing Applications
15:00-15:30		Invited	Hai (Helen) Li	Duke University	Enhance the Reliability and Efficiency of Memristor-based Neuromorphic Systems
15:30-16:00		Invited	Nanjian Wu	Chinese Academy of Sciences	Smart Vision Chip
16:00-16:20	COFFEE BREAK				
16:20-16:50	Memcomputing <i>(Chair: Jennifer Rupp)</i>	Invited	Massimiliano Di Ventra	UC San Diego	MemComputing: a Brain-inspired Efficient Computing Paradigm
16:50-17:20		Invited	Ronald Tetzlaff	TU Dresden	Memcomputing by Cellular Nonlinear Networks
17:20-17:50		Invited	Fernando Corinto	Politecnico di Torino	Computing with Bio-inspired Memristor Networks
17:50-18:05		Regular	Vetriveeran Rajamani	Chonbuk National University	Morris-Lecar Model of Third-order Barnacle Muscle Fiber is Made of Memristors
18:05-20:00	GALA DINNER				

September 2, Saturday					
Time	Session	Contribution	Speaker	Institution	Talk title
08:45-09:45	Future computing concepts (Chair: Ru Huang)	Plenary	R. Stanley Williams	HP Labs	Memristor Chaos as a Computational Resource
09:45-10:15		Invited	Todd Hylton	UC San Diego	Thermodynamics and the Future of Computing
10:15-10:30	COFFEE BREAK				
10:30-11:00	Neuroscience & Algorithm (Chair: Wei D. Lu)	Invited	Joe Z. Tsien	Augusta University	The Basic Wiring and Computational Logic of the Brain
11:00-11:30		Invited	Tiejun Huang	Peking University	Mapping and Emulating the Primate Retina
11:30-12:00		Invited	Lihong Cao	Communication University of China	Predicting Spikes with Artificial Neural Networks
12:00-12:30		Invited	Si Wu	Beijing Normal University	Atoms of Neural Computation
12:30-14:00	LUNCH				
14:00-14:30	Neuromorphic Applications (Chair: Karlheinz Meier)	Invited	Wei Lu	University of Michigan	Feature Extraction and Image analysis using memristor networks
14:30-15:00		Invited	Daniele Ielmini	Politecnico di Milano	Bio-inspired Neuromorphic Computing with Resistive-switching Plastic Synapses
15:00-15:30		Invited	Jeehwan Kim	Massachusetts Institute of Technology	Uniform Epitaxial RAM Towards Large-scale Neuromorphic Arrays
15:30-16:00		Invited	Luping Shi	Tsinghua University	Memristors for Brain Inspired Computing
16:00-16:30		Invited	Miguel Romera	CNRS/Thales	Pattern Classification with Coupled Spintronic Nano-oscillators
16:30-17:00		Invited	Hyongsuk Kim	Chonbuk National University	Excitatory and Inhibitory Actions of a Memristor Bridge Synapse
17:00-17:15	COFFEE BREAK				
17:15-18:15	Roundtable Discussion (Chair: J. Joshua Yang)	Topic: Prospect and Challenges of Neuromorphic Computing			
18:15-20:15	DINNER				