



The 10th Emerging Information & Technology Conference

James H. Clark Center, Stanford University
Stanford, California, USA

Saturday – Sunday, August 14-15, 2010

Program (draft as of 7/5/10)

Day 1 (Saturday, August 14, 2010)

8/14 (Sat) 8:00 am - 6:00 pm : Registration

Room:

8/14 (Sat) 8:30 am - 9:15 am : Opening Speech

Chair: **Professor Lin-shan Lee**, Dean, College of Electrical Engineering and Computer Science, National Taiwan University (國立台灣大學電資學院院長李琳山教授)

Room: the Clark Center Auditorium

Mr. J. C. Chen (tecosf@sbcglobal.net)

Director General

Taipei Economic & Cultural Office in San Francisco

駐舊金山台北經濟文化辦事處陳經銓處長

Professor Ching H. Wang (wangch@stanford.edu)

School of Medicine

Stanford University

Ms. Josephine M. Cheng (chengjm@us.ibm.com)

IBM Fellow and Vice President

IBM Research-Almaden

Professor Lin-shan Lee (lslee@cc.ee.ntu.edu.tw)

Dean, College of Electrical Engineering and Computer Science

National Taiwan University

國立台灣大學電資學院院長李琳山教授

Parallel Sessions:

8/14 (Sat) 9:15 am - 10:35 am : Technical Session D1-W1-T1: New Energy, Environment and Sustainability (1)

Chair:

Room: Seminar Room S363

“Green Data Center”

Dr. Hui-I Hsiao
Program Director
IBM Almaden Research

“Utility and Smart Grid”

Mr. Rick Geiger
Solutions Director, Utilities & Smart Grid
CISCO

Professor Wei-Jen Lee (wlee@uta.edu)
Professor of Electrical Engineering and the Director of Energy Systems Research Center
The University of Texas at Arlington
德州大學阿靈頓分校電機系教授及能源系統研究中心主任李偉仁教授

8/14 (Sat) 9:15 am - 10:35 am : Technical Session D1-W2-T1: Bio (1)

Chair:
Room: Seminar Room S362

Professor Jung-Ying Tzeng (jytzeng@stat.ncsu.edu)
Bioinformatic Research Center
North Carolina State University
北卡洛來那州立大學曾仲瑩教授

Professor Shengan Lee (shengan@mail.knu.edu.tw)
Department of Computer Science and Information Engineering
Kainan University
開南大學資訊工程學系李盛安教授

Mei-Ju Chen (meijuchen@ntu.edu.tw)
Department of Bio-Industrial Mechatronics Engineering
National Taiwan University

8/14 (Sat) 9:15 am - 10:35 am : Technical Session D1-W3-T1: NEMS and MEMS (1)

Chair: **Professor Darrin J. Young**, University of Utah (猶他州立大學楊駿教授)
Room: Seminar Room S361

"Nanogenerator for Electric Clothing"

Professor Liwei Lin (lwlin@me.berkeley.edu)
Co-Director, Berkeley Sensor and Actuator Center
Department of Mechanical Engineering
University of California at Berkeley

"Nanowire Electromechanical Devices and Systems – from Fundamentals to Emerging Technologies & Applications"

Dr. Xiaoli (Philip) Feng (xfeng@caltech.edu)
Condensed Matter Physics
California Institute of Technology

"Low Power Sensing Electronics for High-Resolution Error-Correcting Biomechanical Ground Reaction Sensor Cluster"

Professor Darrin J. Young (darrin.young@utah.edu)
Department of Electrical and Computer Engineering

University of Utah
猶他州立大學電機工程與計算機科學系楊駿教授

8/14 (Sat) 9:15 am - 10:35 am : Technical Session D1-W4-T1:

SoC/C4I (1)

Chair:

Room: Seminar Room S360

“System-on-Chip: Will scaling challenges curtail growth?”

Dr. Howard Ko (Howard.Ko@synopsys.com)

Senior Vice President and General Manager
Silicon Engineering Group, Synopsys

“Constructing Electronic System Level Models Using Simulink”

Dr. Ming-Fu Hsiao (emerson@faraday-tech.com)

Faraday

“Digital System Verification Using Massively Parallel Processor Arrays”

Dr. Mikhail Bershteyn (bmike@cadence.com)

Chief Hardware Fellow of Cadence

“System Level Design”

Dr. Andreas Kuehlmann (kuehl@cadence.com)

Cadence Research Lab.

8/14 (Sat) 10:35 am - 11:00 am : Break

Parallel Sessions:

8/14 (Sat) 11:00 am – 12:20 pm : Technical Session D1-W1-T2: New Energy, Environment and Sustainability (2)

Chair:

Room: Seminar Room S363

“Electrochemical Energy Conversion and Storage – Fuel Cells and Redox Battery”

Professor Kan-Lin Hsueh (KanLinHsueh@hotmail.com)

Director of Energy Research Center, National United University
國立聯合大學能源研究中心薛康琳主任

“Direct Conversion of Green Energy”

Professor Che-Wun Hong (cwhong@pme.nthu.edu.tw)

National Tsing-Hua University
國立清華大學動力機械工程學系洪哲文教授

“Smart Grid – Demand-Side Perspectives”

Dr. Edwin Liu

Vice President of Strategy Initiatives and Smart Grid
Quanta Technology, LLC

8/14 (Sat) 11:00 am – 12:20 pm : Technical Session D1-W2-T2: Bio (2)

Chair:

Room: Seminar Room S362

Professor Ching-Pin Chang (chingpin@stanford.edu)
School of Medicine
Stanford University

Wen-Yih Isaac Tseng (wyseng@ntu.edu.tw)
MRI Laboratory
National Taiwan University Hospital

Leanne (Lai-Hang) Chan
Children Hospital of Los Angeles

**8/14 (Sat) 11:00 am – 12:20 pm : Technical Session D1-W3-T2:
Nanotech (1)**

Chair:
Room: Seminar Room S361

“Nanoporous Membranes Formed by Interferometric Lithography”

Dr. Joseph W. Tringe, Maj, USAFR
Program Manager
Asian Office of Aerospace Research and Development
Lawrence Livermore National Lab

Professor Samuel Graham (sam.graham@me.gatech.edu)
School of Mechanical Engineering
Georgia Institute of Technology

**8/14 (Sat) 11:00 am – 12:20 pm : Technical Session D1-W4-T2:
Medical SoC (1)**

Chair:
Room: Seminar Room S360

“Low-Power Analog Front-End Circuits for HealthCare System and Telemetry Devices”

Professor Shuenn-Yuh Lee (ieesyl@ccu.edu.tw)
System-on-Chip (SoC) Research Center
National Chung Cheng University
國立中正大學電機工程學系李順裕教授

“Towards An Electronic Nose System-on-Chip”

Professor Kea-Tiong Samuel Tang (kttang@ee.nthu.edu.tw)
Department of Electrical Engineering
National Tsing Hua University, 國立清華大學電機工程系鄭桂忠教授

“Low-Power Analog Front-end Circuits for ECG Acquisition Systems”

Professor Tsung-Heng Tsai (ieeth@ccu.edu.tw)
Department of Electrical Engineering
National Chung Cheng University
國立中正大學電機工程學系蔡宗亨教授

8/14 (Sat) 12:20 pm - 1:55 pm : Lunch

Parallel Workshop Keynote Sessions:

8/14 (Sat) 1:55 pm - 2:55 pm: The Keynote Session - Workshop 1 & 3 (New Energy/Nanotechnology/NEMS)

Chair:

Room: Seminar Room S361

Professor Friedrich B. Prinz (fbp@cdr.stanford.edu)

Rodney H. Adams Professor and Robert Bosch Chair in the School of Engineering
Stanford University

8/14 (Sat) 1:55 pm - 2:55 pm: The Keynote Session - Workshop 2 (Bioinformatics/Biotechnology/Medicine/Public Health)

Chair:

Room: Seminar Room S362

(1 keynote speaker)

8/14 (Sat) 1:55 pm - 2:55 pm: The Keynote Session – Workshop 4 (SoC/C4I):

Chair: **Prof. Liang-Gee Chen**, Deputy Dean, College of Electrical Engineering and
Computer Science, National Taiwan University

Room: Seminar Room S360

“Chip Design and Implementation Service in Taiwan”

Dr. Chin-Long Wey (clwey@cic.org.tw)

National Chip Implementation Center, National Applied Research Labs,
國家實驗研究院國家晶片系統設計中心特聘研究員兼主任魏慶隆博士

Parallel Sessions:

8/14 (Sat) 2:55 pm – 4:15 pm : Technical Session D1-W1-T3: New Energy, Environment and Sustainability (3):

Chair:

Room: Seminar Room S363

“Smart Water Management”

Mr. Peter Williams

IBM Distinguished Engineer & CTO

IBM Big Green Innovations

“High Pressure Soda Pop - How Can We Use It Greenly?”

Dr. Hsiao-Yuan Bruce Li (bli@GhGSaviorTech.com)

President and CTO

GhG SaviorTech Corp.

GhG SaviorTech總裁李曉遠博士

“Trends of Green Vehicle Development”

Professor Yi-Hsuan Hung (hungyh@ntnu.edu.tw)

Department of Industrial Education, National Taiwan Normal University

國立台灣師範大學工業教育學系洪翊軒教授

8/14 (Sat) 2:55 pm – 4:15 pm : Technical Session D1-W2-T3: Bio (3)

Chair: Professor Li-San Wang (王立三), University of Pennsylvania

Room: Seminar Room S362

Professor Li-San Wang (lisanwang@gmail.com)
Institute on Aging / Penn Center for Bioinformatics
University of Pennsylvania
賓州大學醫學院王立三教授

Katie Kei Hang Chan (katiekhchan@ucla.edu)
University of California at Los Angeles

**8/14 (Sat) 2:55 pm – 4:15 pm : Technical Session D1-W3-T3:
Nanotech (2)**

Chair:
Room: Seminar Room S361

Dr. William Tong (will.tong@transelcorp.com)
Consultant, TRANSEL
唐文偉博士

“Mesoporous Materials for Biomedical and Energy Applications”
Professor Chia-Wen (Kevin) Wu (kevinwu@ntu.edu.tw)
Assistant Professor
Department of Chemical Engineering
National Taiwan University

“Towards Cost-effective Encapsulation Architectures and Barrier Layers for Organic Electronic Devices”
Dr. Jimmy Granstrom (jimmy.granstrom@me.gatech.edu)
Post-doctoral fellow, The George W. Woodruff School of Mechanical Engineering
Georgia Institute of Technology

**8/14 (Sat) 2:55 pm – 4:15 pm : Technical Session D1-W4-T3:
Wireless System**

Chair:
Room: Seminar Room S360

“Mobile and Cloud Computing Opportunities”
Professor Yung-Hsiang Lu (yunglu@purdue.edu)
School of Electrical and Computer Engineering
Purdue University

“Beyond 3G™, Unlimited Capacity”
Dr. J. Larsen (james.larsen@iwics.com)
iWICS, Inc.

“The Wireless Noiseless Handset”
Dr. ZK Cheng (zkc@iCHIPdesign.com)
Vice President and Chief Architect, iCHIPdesign International
iCHIPdesign 副總裁 鄭志剛

8/14 (Sat) 4:15 pm – 4:40 pm : Break

Parallel Sessions:

8/14 (Sat) 4:40 pm – 6:00 pm : Technical Session D1-W1-T4: New Energy, Environment and Sustainability (4):

Chair:

Room: Seminar Room S363

Professor Shih-Hsiung Chen (shchen86@hotmail.com)

National Cheng Kung University

國立成功大學航空太空工程研究所陳世雄教授

“Development of an Environmentally Benign, Multifunctional Biomedical Surface Treatment System Using an Atmospheric-Pressure Plasma Jet”

Professor Jong-Shinn Wu (chongsin@faculty.nctu.edu.tw)

National Chiao-Tung University

國立交通大學機械工程學系吳宗信教授

“American Power Act to World Power Practice: A Giant Paradigm Shift toward a Carbon Economy”

Dr. Truman Blocker III (tblocker3@GhGSaviorTech.com)

R&D Director, GhG SaviorTech Corp.

8/14 (Sat) 4:40 pm – 6:00 pm : Technical Session D1-W2-T4: Bio (4)

Chair:

Room: Seminar Room S362

(3~4 speakers)

8/14 (Sat) 4:40 pm – 6:00 pm : Technical Session D1-W3-T4: Nanotech (3)

Chair:

Room: Seminar Room S361

“A Novel Computational Approach to Identify the Binding Modes of Various Dyes towards Different Protofibrils Associated with Neurodegenerative Disorders and Virtual Screening”

Professor Hsuan-Liang (Kevin) Liu (f10894@ntut.edu.tw)

Distinguished Professor

Graduate Institute of Biotechnology

Department of Chemical Engineering & Biotechnology

National Taipei University of Technology

國立台北科技大學生物科技研究所所長劉宣良教授

“Nanopore Characterization Techniques-Status Quo and Future Development”

Professor Kuo-Lun Allan Tung (kuolun@cycu.edu.tw)

Director, Research and Development Center for Membrane Technology and

Department of Chemical Engineering, Chung Yuan University

中原大學薄膜研發中心中心主任童國倫教授

Professor Chia-Chi Ho (Chiachi.Ho@UC.edu)

Department of Chemical and Materials Engineering

University of Cincinnati

**8/14 (Sat) 4:40 pm – 6:00 pm : Technical Session D1-W4-T4:
Multimedia SoC Design**

Chair:

Room: Seminar Room S360

“Low Power Video Technology for Multimedia SoC Design”

Professor Jiun-In Guo (jiguo@cs.ccu.edu.tw)

國立中正大學資訊工程系 郭峻因 教授

“Debunking the 100X GPU vs. CPU Myth: An Evaluation of Throughput Computing on CPU and GPU”

Dr. Yen-Kuang Chen (yen-kuang.chen@intel.com)

Principal Research Scientist

Intel Corporation

“Innovation and Commercialization of Microdisplay for 3D Entertainment”

Dr. Bor-Yeu Tsaur (Boryeu_Tsaur@kopin.com)

Executive Vice President and General Manager

Kopin Corporation

高平磊晶科技 執行副總裁 曹伯禹 博士

**8/14 (Sat) 7:00 pm – 9:00 pm : Keynote Speech and Dinner (by
invitation only)**

Hosts:

“The Economic Cooperation Framework Agreement (兩岸經濟協議)”

Dr. James Hsin-Hua Wu

Director, Commercial Division, Taipei Economic & Cultural Office in Los Angeles

駐洛杉磯台北經濟文化辦事處商務組組長吳新華博士

Day 2 (Sunday, August 15, 2010)

8/15 (Sun) 8:00 am - 6:00 pm : Registration

Room:

Parallel Sessions:

8/15 (Sun) 9:15 am - 10:35 am : Technical Session D2-W1-T1: New Energy, Environment and Sustainability (5):

Chair:

Room: Seminar Room S363

“Teaching Entrepreneurs How to Build Sustainable Businesses”

Dr. Dwight Colin

Professor, Presidio Graduate School (Sustainability Management).

“Green Supply Chain and Intelligent Transportation”

Dr. Grace Lin (gracelin.ny@gmail.com)

Founder, WRO & Green Value Net

Professor, Columbia University

哥倫比亞大學林蔚君教授

“BPM and Sustainable Globally Integrated Enterprise”

Dr. Ko-Yang Wang (kyw@us.ibm.com)

IBM Distinguished Engineer and IBM GBS BPM Practice Leader

IBM Global Business Services

IBM全球商業服務傑出工程師王可言博士

8/15 (Sun) 9:15 am - 10:35 am : Technical Session D2-W2-T1: Bio (5)

Chair:

Room: Seminar Room S362

(3~4 speakers)

8/15 (Sun) 9:15 am - 10:35 am : Technical Session D2-W3-T1:

Nanotech (4)

Chair: **Professor Lei Kerr**, Miami University

Room: Seminar Room S361

“Nano-Structures for Solar Cells”

Professor Ching-Fuh Lin (cflin@cc.ee.ntu.edu.tw)

IEEE Fellow, SPIE Fellow & a Member of Asia-Pacific Academy of Materials

Department of Electrical Engineering and

Graduate Institute of Photonics and Optoelectronics

National Taiwan University

國立台灣大學電機工程學系林清富教授

亞太材料科學院院士

Professor Yiying Wu (wu@chemistry.ohio-state.edu)

Department of Chemistry

Ohio State University

“Deposition Processes of Thin-Film CIGS-based Solar Cells”

Professor Chia-hua Huang (chuang@mail.ndhu.edu.tw)

Department of Electrical Engineering

National Dong Hwa University

國立東華大學電機工程學系黃家華教授

**8/15 (Sun) 9:15 am - 10:35 am : Technical Session D2-W4-T1:
SoC/C4I (2)**

Chair:

Room: Seminar Room S360

“Memory-Centric On-Chip Data Communication Platform for Energy-Efficient Heterogeneous Systems”

Professor Wei Hwang (hwang@mail.nctu.edu.tw)

Microelectronics and Information Systems Research Center

National Chiao-Tung University

國立交通大學電子工程系黃威教授

“Modularized Board-Level and System-in-Package (SiP) Platforms for Complex System Integration and Prototyping”

Dr. C.M. Huang (cmhuang@cic.org.tw)

National Chip Implementation Center, National Applied Research Labs,

國家實驗研究院國家晶片系統設計中心設計服務組長黃俊銘博士

8/15 (Sun) 10:35 am - 11:00 am : Break

Parallel Sessions:

8/15 (Sun) 11:00 am – 12:20 pm : Technical Session D2-W1-T2: New Energy, Environment and Sustainability (6)

Chair:

Room: Seminar Room S363

“Green Economy: A Socially Responsible and Green Enterprise”

Albert Oung (aoung@earthbuddy.hk)

Founder & CEO

Earth Buddy Inc.

“Venture Opportunities in Energy, Environment, and Sustainability”

Dr. Matthew Denesuk (denesulk@us.ibm.com)

Scientist, IBM Research & Partner, IBM Venture Capital

“Smart Grid”

Dr. Erfan Ibrahim (eibrahim@epri.com)

Technical Executive, Smart Grid Communications & Cyber Security Lead

EPRI (Electronic Power Research Institute)

8/15 (Sun) 11:00 am – 12:20 pm : Technical Session D2-W2-T2: Bio (6)

Chair:

Room: Seminar Room S362

(3~4 speakers)

**8/15 (Sun) 11:00 am – 12:20 pm : Technical Session D2-W3-T2:
Nanotech (5)**

Chair:

Room: Seminar Room S361

“CdS sensitized Nanocrystalline Solid State and Liquid State Solar Cells”

Professor Lei L. Kerr (kerrll@muohio.edu)

Assistant Professor

Department of Chemical and Paper Engineering

Miami University

俄亥俄州邁阿密大學化學工程系柯蕾教授

Professor Marco Rolandi (rolandi@u.washington.edu)

Materials Science & Engineering

University of Washington

Professor Yi Cui (yicui@stanford.edu)

Department of Materials Science and Engineering

Stanford University

**8/15 (Sun) 11:00 am – 12:20 pm : Technical Session D2-W4-T2:
Medical SoC (2)**

Chair:

Room: Seminar Room S360

Professor Liang-Gee Chen (lgchen@cc.ee.ntu.edu.tw)

IEEE Fellow

National Professorship

Distinguished Professor & Deputy Dean

College of Electrical Engineering and Computer Science

National Taiwan University

國立台灣大學電機工程學系特聘教授暨電機資訊學院副院長陳良基教授

“Smart CMOS Image Sensors for Biomedical Applications”

Professor Jun Ohta (ohta@ms.naist.jp)

NARA Institute of Science and Technology, Japan

“CMOS for Biomedical Applications”

Professor Luke Theogarajan (ltheogar@ece.ucsb.edu)

Department of Electrical and Computer Engineering

University of California at Santa Barbara

“Design and Implementation of an XML Parsing Engine”

Professor Sheng-De Wang (sdwang@ntu.edu.tw)

National Taiwan University

國立台灣大學王勝德教授

8/15 (Sun) 12:20 pm - 1:55 pm : Lunch

8/15 (Sun) 1:55 pm - 2:55 pm: Keynote Speech

Moderator:

Room: the Clark Center Auditorium

(1 keynote speaker)

Parallel Sessions:

8/15 (Sun) 2:55 pm – 4:15 pm : Technical Session D2-W1-T3: New Energy, Environment and Sustainability (7)

Chair:

Room: Seminar Room S363

(3~4 speakers)

8/15 (Sun) 2:55 pm – 4:15 pm : Technical Session D2-W2-T3: Bio (7)

Chair:

Room: Seminar Room S362

(3~4 speakers)

8/15 (Sun) 2:55 pm – 4:15 pm : Technical Session D2-W3-T3: Nanotech (6)

Chair:

Room: Seminar Room S361

Professor Jason C Hower (Jason.Hower@sdsmt.edu)
Chemical and Biological Engineering Department
South Dakota School of Mines & Technology

Professor Jun Jiao (jiaoj@pdx.edu)
Department of Electrical and Computer Engineering
Portland State University

“Well-Aligned Multi-Walled Carbon Nanotubes Emitting Natural White-Light under Microwave Irradiation”

Professor Kuan-Jiuh Lin (kjlin@dragon.nchu.edu.tw)
Department of Chemistry
National Chung-Hsing University
國立中興大學化學系林寬鋸教授

8/15 (Sun) 2:55 pm – 4:15 pm : Technical Session D2-W4-T3: Software Defined Radio

Chair:

Room: Seminar Room S360

“Recent Progress in Communications SoC’s”

Professor Chen-Yi Lee (cylee@mail.nctu.edu.tw)
Department of Electronics Engineering; Director, Center for Advanced SoC Research;
Vice President, Office of Research and Development
National Chiao-Tung University
國立交通大學研發長李鎮宜教授

“Physical design challenge to cognitive radio/software defined radio”

Professor Kazuya Masu (masu.k.aa@m.titech.ac.jp)
Tokyo Institute of Technology, Japan

“Recent Progress in Design Methodologies for Software Defined Radio”

Professor Yu-Hen Hu (hu@engr.wisc.edu)

Department Electrical and Computer Engineering

University of Wisconsin at Madison

威斯康辛州立大學電機系胡玉衡教授

8/15 (Sun) 4:15 pm – 4:40 pm : Break

Parallel Sessions:

8/15 (Sun) 4:40 pm – 6:00 pm : Technical Session D2-W1-T4: New Energy, Environment and Sustainability (8):

Chair:

Room: Seminar Room S363

(3~4 speakers)

8/15 (Sun) 4:40 pm – 6:00 pm : Technical Session D2-W2-T4: Bio (8)

Chair: Dr. Yi-Hsiang (Sean) Hsu (許益祥), Harvard University

Room: Seminar Room S362

(3~4 speakers)

8/15 (Sun) 4:40 pm – 6:00 pm : Technical Session D2-W3-T4: Nanotech (7)

Chair:

Room: Seminar Room S361

“New Paradigms for Manipulation of DNA Molecules at the Nanoliter Scale”

Professor Hsien-Hung Wei (hhwei@mail.ncku.edu.tw)

Associate Professor, Department of Chemical Engineering

National Cheng-Kung University

國立成功大學化學工程系魏憲鴻教授

Dr. Bo Zhou (Bo.Zhou@csm-instruments.com)

CSM Instruments SA, Switzerland

Professor Chih-Hung (Alex) Chang (chih-hung.chang@oregonstate.edu)

Associate Professor

Department of Chemical Engineering

Oregon State University

奧勒岡州立大學化學工程系張至弘教授

8/15 (Sun) 4:40 pm – 6:00 pm : Technical Session D2-W4-T4: New Media and Entertainment

Chair:

Room: Seminar Room S360

“Data Infrastructure at Facebook”

Dr. Scott C. Y. Chen, (cy.scott.chen@gmail.com)

Facebook

陳俊仰博士

"Mine Your Business!! -- Value and Utilization of Implicit Social Networks"

Dr. Ching-Yung Lin (chingyun@us.ibm.com)

Research Staff and Project Lead

Event and Streaming Systems Department

IBM T. J. Watson Research Center

"Technical Challenges and Solutions in Web-based Video Conferencing Systems"

Dr. Chuo-Ling Chang (chuoling@gmail.com)

張偉領博士